HOMEWOOD MOUNTAIN RESORT
SKI AREA MASTER PLAN
CEP PROJECT

Draft
Environmental Impact Report/Statement

SCH # 2008092008

Tahoe Regional Planning Agency
128 Market Street
P.O. Box 5310
Stateline, NV 89449

Placer County Community Development Resource Agency
Planning Department
3091 County Center Drive
Auburn, CA 95603

January 21, 2011

prepared by
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in association with
Fehr & Peers Transportation Consultants
Foothill Resources (Cultural and Historic Resources)
ICF International (Air Quality, Noise, and Climate Change)

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1.0 INTRODUCTION

1.1 TYPE AND PURPOSE OF EIR/EIS

This document fulfills the requirements of an Environmental Impact Report (EIR) for the California Environmental Quality Act (CEQA) process and an Environmental Impact Statement (EIS) for the Tahoe Regional Planning Agency (TRPA) Compact process. Placer County and TRPA will use the document to make decisions based on the respective agency's planning policies and statutory requirements.

The purpose of the Homewood Mountain Resort (HMR) Ski Area Master Plan Project (Project) is to maintain the viability of the ski facilities through a mixed-use development that provides recreational resources and base amenities attractive to skiers and tourists, supports local and regional needs, and meets the requirements of the *TRPA Ski Area Master Plan Guidelines* (TRPA 1990). This joint EIR/EIS will be used to determine whether the Project meets the regulatory requirements of Placer County (CEQA) and TRPA.

A Program EIR under the Provisions of CEQA Guidelines 15168 evaluates the impacts of a series of actions that can be characterized as one large project and are related either:

1) Geographically;

2) As logical parts in a chain of contemplated actions;

3) Are connected with issuances of rules, regulations, plans or other general criteria to govern the conduct of a continuing program; or

4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

For components evaluated at a program level in this EIR, additional environmental review may be required. As components are designed for implementation, the Project Applicant will conduct the appropriate level of environmental review prior to implementation.

A Project EIR, as defined by CEQA Guidelines 15161, is an EIR that examines the environmental impacts of a specific development project. The Project EIR evaluates the detailed project including planning, construction and operation.

The program and project level components of the Project are detailed in Chapter 3.

1.2 SCOPE OF EIR/EIS AND EFFECTS FOUND NOT TO BE SIGNIFICANT

1.2.1 Scope of the EIR/EIS

This EIR/EIS analyzes a range of environmental resource categories associated with the Project. Placer County and TRPA have determined that the Project may result in environmental impacts to environmental resource categories that are analyzed in detail in the following chapters of this EIR/EIS:

- 6.0 Land Use;
- 7.0 Population, Employment, and Housing;
- 8.0 Biological Resources;
- 9.0 Cultural Resources;
- 10.0 Visual Resources;
- 11.0 Transportation and Circulation;
- 12.0 Air Quality;
- 13.0 Noise;
- 14.0 Soils, Geology and Seismicity;
- 15.0 Hydrology, Water Rights, Surface Water Quality, and Groundwater;
- 16.0 Public Services and Utilities;
- 17.0 Hazardous Materials and Public Safety;
- 18.0 Recreation; and
- 19.0 Climate Change.

The format and content of the EIR/EIS are designed to meet the requirements of CEQA, TRPA, and Placer County. This document is organized as follows:

Chapter 1 "Introduction" – Establishes the purpose and scope of the EIR/EIS and provides an overview of the environmental review process, contents of the document, agency roles and authorities, Project history and background and a definition of terms.

Chapter 2 "Summary" – Summarizes the Proposed Project and Alternatives as well as the findings of the environmental analysis.

Chapter 3 "Project Description" – Describes the location, objectives, and components of the Proposed Project and Alternatives. Chapter 3 indicates the intended uses of the EIR/EIS and lists the agencies associated with this document.

Chapter 4 "Relationship to Existing Land Use Plans, Policies, and Regulations" – Lists the various federal, TRPA, State, and local plans, policies, and regulations applicable to the Project.

Chapter 5 "Environmental Analysis Introduction" – Provides an introduction to how the Project is analyzed and outlines the general format of resource chapters 6 through 19.

Chapter 6 "Land Use" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to land use.

Chapter 7 "Population, Employment, and Housing" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to population, employment and housing.

Chapter 8 "Biological Resources" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to biological resources.

Chapter 9 "Cultural Resources" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to cultural resources.

Chapter 10 "Visual Resources" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to visual resources.

Chapter 11 "Transportation and Circulation" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to transportation and circulation.

Chapter 12 "Air Quality" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to air quality.

Chapter 13 "Noise" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to noise.

Chapter 14 "Soils, Geology, and Seismicity" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to soils, geology and seismicity.

Chapter 15 "Hydrology, Water Rights, Surface Water Quality, and Groundwater" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to hydrology, water rights, surface water quality and groundwater.

Chapter 16 "Public Services and Utilities" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to public services and utilities.

Chapter 17 "Hazardous Materials and Public Safety" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to hazardous materials and public safety.

Chapter 18 "Recreation" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to recreation.

Chapter 19 "Climate Change" – Includes the environmental setting, regulatory setting, evaluation criteria with points of significance, environmental impacts and recommended mitigation and cumulative impacts and mitigation measures in relation to climate change.

Chapter 20 "Mandated Environmental Review" – Discusses the growth-inducing effects, the relationship between local short-term use of the environment and long-term productivity, the irreversible and irretrievable commitment of resources, the significant and unavoidable adverse impacts, and the environmentally superior/preferable alternative.

Chapter 21 "Mitigation and Monitoring Program" – Details the mitigation program approach, format, and measures established in the EIR/EIS.

1.2.2 Effects Found not to be Significant

Because initial environmental review of the Project indicated that the Project would not result in significant impacts to certain resources, these resources are not further analyzed in the EIR/EIS. A statement as to why these effects are not discussed in the EIR/EIS is also provided.

CEQA Appendix G Checklist items - Will the Project:

- II Agriculture Resources-a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use? – The Project is not located on farmland.

- II Agriculture Resources-b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? – The Project is not located on agricultural land or land associated with a Williamson Act contract.

- II Agriculture Resources-c) Involve other changes in the existing environment which could result in conversion of Farmland to non-agricultural use? – The Project is not located on or adjacent to farmland.

- VI Geology and Soils-e) Have soils incapable of supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? - The Project does not propose septic tanks or alternative wastewater disposal systems.

- VIII Hazards and Hazardous Materials-e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? – The Project is not located within an airport land use plan and there are no airports or airstrips within two miles of the Project area.

- VIII Hazards and Hazardous Materials-f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? - There are no airports or airstrips in the vicinity of the Project area.

- X Land Use and Planning-a) Physically divide an established community? - The Project is redevelopment of an existing resort site along SR 89 and is contained within the resort property limits.

- X Land Use and Planning-c) Conflict with any applicable habitat conservation plan (HCP) or natural community conservation plan (NCCP)? - There are no HCPs or NCCPs related to the Project area.

- XI Mineral Resources-a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? – The Project area contains no mineral resources.

- XI Mineral Resources-b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? – The Project area contains no mineral resource recovery sites.

- XII Noise-e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? – The Project is not located within an airport land use plan and there are no airports or airstrips within two miles of the Project area.

- XII Noise-f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? – There are no airports or airstrips in the vicinity of the Project area.

- XIII Population and Housing-b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? – There is no existing housing on-site.

- XIII Population and Housing-c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? – There are no existing resident populations or housing proposed to be removed/displaced.

TRPA Initial Environmental Checklist II items - Will the Proposal result in:

- 1. Land-f) Changes in deposition or erosion of beach sand, or changes in siltation, deposition or erosion, including natural littoral processes, which may modify the channel of a river or stream or the bed of a lake? – The Project area does not contain shorezone areas.

- 11. Population-b) Include or result in the temporary or permanent displacement of residents? – There are no residents on-site and the Project does not propose to displace surrounding residents.

- 12. Housing-b) Will the proposal result in the loss of housing for lower-income and very-low-income households? – There is no housing on-site and no housing units are proposed for removal.

1.3 DEFINITION OF BASELINE

CEQA Guidelines §15125 states, “An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to an understanding of the significant effects of the proposed project and its alternatives.” For this document, the baseline conditions are those conditions, as they existed at the time that the Notice of Preparation (NOP) was published, on September 2, 2008. The baseline condition indicates the conditions present to determine the Project’s impact significance.

1.4 SIGNIFICANCE CRITERIA

Significance criteria were determined based on Appendix G of the State CEQA Guidelines, the Placer County CEQA Checklist, TRPA Environmental Checklist, TRPA Code of Ordinances, and TRPA Environmental Threshold Carrying Capacities (ETCCs). Significance criteria are defined in each of the analysis Chapters (6.0 through 19.0) under the “Evaluation Criteria with Points of Significance” heading.

1.5 PROJECT BACKGROUND AND HISTORY

The HMR Ski Area Master Plan Area (Project area) was developed as a ski area during the 1960s and expanded in the 1970s with the acquisition of Tahoe Ski Bowl. Tahoe Ski Bowl was a small ski area located immediately south of the ski area that was then known as Ski Homewood. In the 1980s Ski Homewood and Tahoe Ski Bowl merged and began operations as a single ski area. The economic viability of the present day Project area has been marginal because of the age and conditions of the lifts, lodges and other facilities. In recent years the ski area has not been profitable.

The current owners and project proponents, Homewood Village Resorts, LLC, purchased the Project area in 2006 and began evaluating the existing conditions for redevelopment and improved economic viability. Under new management, skier visitation has been steady since 2006 (HMR Master Plan, October 2010) but the resort operations must still be subsidized because visitor numbers have dropped and infrastructure left from prior undercapitalized operations has aged. The operations of HMR have been improved but the Project area requires capital improvements for lifts and skier facilities to continue to attract skiers and remain economically competitive. Lodging and basic amenities and services within the Project area are also lacking.

The Project has been proposed to achieve the goals and objectives established by TRPA in the Community Enhancement Program (CEP). TRPA adopted a resolution (No. 2008-11) in February 2008 to list minimum requirements for HMR's continued participation as a qualified CEP project. As required by the CEP, an analysis of the project's compliance with Resolution 2008-11 will be prepared by TRPA staff and provided to the TRPA Governing Board during review of the project application. The analysis will document measures included in the action alternatives to comply with each item in the resolution, and if necessary, will identify additional measures necessary to meet the objectives of the CEP program.

Projects implemented through the CEP are intended to be consistent with the Regional Vision and Planning Concepts for the Lake Tahoe Basin (2007). The CEP focuses on the more developed areas of the Tahoe Basin since much of the past development in these areas offers the greatest potential for environmental, social and economic improvement. Many of these goals and objectives overlap and weave together to create the types of communities the CEP is promoting. Specifically, the goals and objectives of the CEP are as follows:

1. Create/Enhance mixed-use Community Centers

- Enhance community character in town and tourist centers
- Encourage mix of quality housing options, tourist accommodation options and compatible commercial uses that will serve the local population and the tourist population
- Provide a variety of sustainably designed housing, lodging and commercial choices to meet the needs of locals and visitors
- Implement Green Building Design
- Provide a variety of sustainably designed housing and tourist accommodations
- Provide housing that is economically attainable for basin employees
- Maximize density to achieve transit oriented development
- Consolidate commercial uses for economic, social and environmental gain

2. Create a multi-modal transit future

- Enhance and/or create multi-functional pedestrian activity centers that are walkable and provide multi-modal transportation linkages
- Reduce dependence on the automobile

3. Strengthen and create gathering places and economic centers

- Enrich the Lake Tahoe region and improve the quality of life of residents by providing new and improved gathering places, community services and cultural centers
- Encourage incorporation of cultural features, public spaces, and public service areas within project designs

4. Promote projects that result in the construction of threshold-related environmental improvements

- Provide area-wide (not parcel by parcel) urban water quality improvements that leverage private investment for environment gain, linked to existing or future systems, and are maintained in the long term
- Respond to site location and typical neighborhood contextual situations through site design, arrangement of building volumes, and the natural surroundings
- Enhance visual quality of and views from scenic roadway units, shoreline units, and resource areas and increase/enhance viewsheds from these areas to Lake Tahoe
- Provide public access and opportunities to recreational facilities such as trails, bike paths, beaches, and playgrounds/parks
- Be located in community plan core areas and promote pedestrian friendly/ transit oriented development
- Restore and/or protect native vegetation to reduce erosion potential and promote wildlife benefits
- Provide a reduction in overall land coverage
- Protect and enhance existing cultural/historic resources
- Ensure compatible land uses that minimize noise
- Implement an EIP Project

5. Promote transfer of development that results in substantial environmental benefits

- Achieve transit oriented development by transferring existing units of use from outside the community plan core
- Transfer existing development from sensitive lands and restoration of those lands
- Provide a variety of housing options utilizing existing units of use

6. Rehabilitate substandard development

- Create consolidated commercial and mixed-use development in the urban core
- Implement ‘green’ building design
- Rehabilitate disturbed sites and restore sensitive lands

7. Inform the new Regional, Local and Community Plan updates

8. Promote projects that feature a public/private partnership for cooperative implementation

- Provide projects that have clear public benefits with strong public support
- Leverage private investment to provide the local share of Environmental Improvement Program
- Projects are catalysts for further community revitalization

9. Create a model process for multi-jurisdictional review of project permits, implementation and monitoring

- Implement on-the-ground projects in a reasonable and timely fashion
- Provide an effective program designed to facilitate both large-scale and small-scale projects

1.6 PROJECT REVIEW AND ENVIRONMENTAL PROCESS

This EIR/EIS serves as a joint document that will meet the environmental review requirements of CEQA for Placer County and the Tahoe Regional Planning Compact, Code of Ordinances and Rules of Procedures. Each agency will use the EIR/EIS to make decisions based on the respective agency's planning policies and statutory requirements. This section explains each agency's roles, policies, and decision responsibilities. Because this document meets these regulatory needs, it is referred to as an EIR/EIS.

1.6.1 California Environmental Quality Act

The Project area is within Placer County and involves lands of the State of California (Caltrans ROW). Placer County is the lead agency under CEQA. As such, the document is prepared in accordance with the CEQA Statutes (Public Resources Code §21000 et seq.) and the CEQA Guidelines (California Administrative Code §15000 et seq.). The environmental impact report (EIR) is not, in and of itself, a decision document. The document's purpose is to disclose the environmental consequences of implementing the Proposed Project and Alternatives and identifies measures to avoid, minimize or otherwise mitigate adverse effects.

CEQA requires decision makers to balance the benefits of a project against its unavoidable significant environmental effects in deciding whether to carry out a project. The lead agency will consider the Draft EIR, comments received on the Draft EIR, and response to those comments before making a decision. If significant environmental effects are identified, the lead agency must adopt "Findings" indicating whether feasible mitigation measures or alternatives exist that can avoid or reduce those significant effects. If the significant environmental impacts are identified as significant and unavoidable because there are no feasible mitigation measures or alternatives that render such impacts less than significant, the lead agency may still approve the project if it determines that the social, economic, or other benefits outweigh the unavoidable significant impacts. The lead agency would then be required to prepare a "Statement of Overriding Considerations" that discusses the specific reasons for approving the project, based on information in the EIR and other information in the record.

This disclosure will allow the responsible reviewing officials of Placer County to adopt the Project if they believe the environmental issues are adequately addressed in the EIR. The Placer County Board of Supervisors is the decision-making body under CEQA. The Boards' decisions are whether to:

- Certify the Final EIR;
- Adopt the Proposed Project or an Alternative if applicable; and
- Amend the General Plan and Zoning, if applicable.

1.6.2 Tahoe Regional Planning Agency

The document serves as an EIS for the TRPA. TRPA is the lead agency under the Tahoe Regional Planning Compact (PL 96-551 94 Statute 3233). As such, this EIS has been prepared in accordance with Article VIII of the Tahoe Regional Planning Compact, Chapter 5 of the TRPA Code of Ordinances, and Article IV of the TRPA Rules of Procedure. The purpose of this EIS is defined in TRPA Code of Ordinances §5.8.A:

5.8.A Preparation of EIS: When preparing an EIS, TRPA shall:

(1) Utilize a systematic interdisciplinary approach, which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's environment.

(2) Study, develop and describe appropriate alternatives to recommended courses of action for any project which involves unresolved conflicts concerning alternative uses of available resources.

(3) Consult with and obtain the comments of any federal, state or local agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate federal, state and local agencies which are authorized to develop and enforce environmental standards shall be made available to the public and shall accompany the project through the review processes.

(4) Consult the public during the environmental impact statement process and solicit views during a public comment period of not less than 60 days.

In addition, the TRPA document requires the analysis of impacts in relation to the ETCCs and is intended to ensure consistency with the TRPA Regional Plan. TRPA required findings for an EIS are established in §5.8.D and §6.3 of the TRPA Code of Ordinances:

5.8.D Required Findings: Prior to approving a project for which an EIS was prepared, TRPA shall make either of the following findings for each significant adverse effect identified in the EIS:

(1) Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less than significant level; or

(2) Specific considerations such as economic, social or technical, make infeasible the mitigation measure or project alternatives discussed in the environmental impact statement on the project.

6.3 Threshold-Related Findings: The following specific findings shall be made, pursuant to Articles V(c), V(g) and VI(b) of the Compact in addition to any other findings required by law.

6.3.A Findings Necessary To Approve Any Project: To approve any project, TRPA must find, in accordance with §6.1 and §6.2, that:

(1) The project is consistent with, and will not adversely affect implementation of the Regional Plan, including all applicable Goals and Policies, plan area statements and maps, the Code and other TRPA plans and programs.

(2) The project will not cause the environmental threshold carrying capacities thresholds to be exceeded; and

(3) Wherever federal, State or local air and water quality standards applicable for the Region, whichever are strictest, must be attained and maintained pursuant to Article V(d) of the Tahoe Regional Planning Compact, the project meets or exceeds such standards.

The EIS provides analysis of proposed amendments to the TRPA Code of Ordinances Chapters 22 and 64, Plan Area Statements 157 (Homewood/Tahoe Ski Bowl), 158 (McKinney Tract), and 159 (Homewood/Commercial) and Goals and Policies (Chapters II and VII). TRPA required findings for amendment of the TRPA Code of Ordinances, Goals and Policies and Plan Area Statements are listed below.

6.4 Findings Necessary to amend the Regional Plan, including the Goals And Policies and Plan Area Statements and Maps: To approve any amendment to the Regional Plan, TRPA must find, in addition to the findings required pursuant to Subparagraphs 6.3.A(2) and 6.3.A(3) and Subsection 6.3.B, and in accordance with Sections 6.1 and 6.2, that the Regional Plan, as amended, achieves and maintains the thresholds.

6.5 Findings Necessary to amend or adopt TRPA Ordinances, Rules or Other TRPA Plans And Programs: To approve any amendment or adoption of the Code, Rules or other TRPA plans and programs which implement the Regional Plan, TRPA must find, in addition to the findings required pursuant to Section 6.3, and in accordance with Sections 6.1 and 6.2, that the Regional Plan and all of its elements, as implemented through the Code, Rules and other TRPA plans and programs, as amended, achieves and maintains the thresholds.

13.7.D Findings for Plan Area Amendments: Prior to adopting any plan area amendment, TRPA must find:

(1) The amendment is substantially consistent with the plan area designation criteria in Subsections 13.5.B and 13.5.C; and

(2) If the amendment is to expand an existing urban plan area boundary or to add residential, tourist accommodation, commercial, or public service as permissible uses to a non-urban plan area, it must be found that the amendment will make the plan area statement consistent with an adopted policy or standard of the Regional Plan, and that the amendment will satisfy one or more of the following criteria:

(a) The amendment is to correct an error which occurred at the time of adoption, including but not limited to a mapping error, an editing error, or an error based on erroneous information; or

(b) The amendment is to enable TRPA to make progress toward one or more environmental thresholds without degradation to other thresholds as measured by the Chapter 32 indicators; or

(c) The amendment is needed to protect public health and safety and there is no reasonable alternative.

(3) If the amendment is to add multiple-family as a permissible use to a plan area or for one or more parcels, except as provided for in (5) below, the plan area or affected parcel must be found suitable for transit-oriented development (TOD). TRPA shall find that the following factors, or a functional equivalent as provided for in (4) below, are satisfied when determining TOD suitability:

(a) The area must have access to operational transit within a 10 minute walk; and

(b) Neighborhood services within a 10 minute walk, (e.g., grocery/drug stores, medical services, retail stores, and laundry facilities); and

(c) Good pedestrian and bike connections; and

(d) Opportunities for residential infill (at densities greater than 8 units per acre) or infill with mixed uses; and

(e) Adequate public facilities, (e.g., public schools, urban or developed recreation sites, government services, and post offices).

(4) In order for TRPA to find a proposal is the functional equivalent of one of the factors listed in 13.7.D (3), or 13.7.D (5) (a), the proposal must be found to facilitate TOD in a manner that is equal or superior to that feature.

(5) If the amendment is to add multiple-family dwellings as a permissible use to a plan area or for one or more parcels, and would result in deed restricted affordable housing units, the plan area or affected parcel must be found suitable for transit-oriented development (TOD). TRPA shall find that the following factors are satisfied when determining TOD suitability:

(a) access to operational transit within a 10 minute walk, or a functional equivalent as provided for in (4) above; and

(b) neighborhood services; or

(c) public facilities.

1.6.3 National Environmental Policy Act

The Project does not propose any changes to federally owned or managed lands located in the Project area, or impacts to lands that would fall under the jurisdiction of the National Environmental Policy Act (NEPA) or its process.

1.7 PUBLIC INVOLVEMENT

The following public involvement and scoping process was instituted for the Project by Placer County and the TRPA.

1.7.1 Notices

On September 2, 2008 a Notice of Preparation (NOP) of an EIR/EIS was distributed to public agencies and interested individuals of the community, including residents within 1,000 feet of the Project area, for 30 days for public comment (Appendix A). Appendix B presents the comments received on the NOP.

1.7.2 Scoping Meetings

Two public scoping meetings where held to take oral comments on the Project on the following dates:

- September 10, 2008 at the TRPA Advisory Planning Commission and
- September 23, 2008 at the Granlibakken Resort.

At each of these meetings, the Placer County and TRPA personnel made presentations to describe the Proposed Project and Alternatives for evaluation in the EIR/EIS and to disclose and discuss key environmental issues identified by the TRPA Initial Environmental Checklist and CEQA Initial Study and Checklist.

1.8 DEFINITION OF TERMS

AADT	Annual Average Daily Traffic
AB 32	California Global Warming Solutions Act of 2006
ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
AF	Acre-Feet
AF/yr	Acre-Feet per Year
ANSI	American National Standards Institute
APCDs	Air Pollution Control Districts
AQMDs	Air Quality Management Districts
ARMR	Archaeological Resources Management Reports
Basin Plan	Water Quality Control Plan Report for the North Lahontan Basin
bgs	Below Ground Surface
BLM	United States Bureau of Land Management
BMP	Best Management Practice
BOD	Biological Oxygen Demand
BP	Before Present
CAA	Federal Clean Air Act of 1970
CAAA	1990 Clean Air Act Amendments
CalEPA	California Environmental Protection Agency
Cal-OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCIC	Central California Information Center
CDF	California Department of Forestry
CDFG	California Department of Fish and Game
CDMG	California Department of Mines and Geology
CDMGB	California State Mining and Geology Board
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CESA	California Endangered Species Act
CFA	Commercial Floor Area
CFR	Code of Federal Regulations
cfs	Cubic Feet per Second
CIP	Capital Improvement Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO_2	Carbon Dioxide
Cortese List	California's Hazardous Waste and Substance Sites List
CSWGPP	State of Nevada Comprehensive State Groundwater Protection Program
CWA	Clean Water Act of 1972
CWC	California Water Code
CWE	Cumulative Watershed Effect
dB	Decibel
dBA	A-weighted decibel
dbh	Diameter at Breast Height

DEIR	Draft Environmental Impact Report
DEIS	Draft Environmental Impact Statement
District	Tahoe City Public Utility District
Division	Nevada Division of Fish and Wildlife
DSOD	California Department of Water Resources, Division of Safety of Dams
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ERU	Equivalent Residential Unit
ETCCs	Environmental Threshold Carrying Capacities
FEMA	Flood Emergency Management Agency
FESA	Federal Endangered Species Act
FTE	Full Time Equivalent
Forest Service	United States Department of Agriculture Forest Service
Fossils	Paleontological Resources
GBUAPCD	Great Basin Unified Air Pollution Control District
GHG	Greenhouse Gases
H_2S	Hydrogen Sulfide
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HAP	Hazardous Air Pollutants
HAZWOPER	Hazardous Waste Operations and Emergency Response
in/yr	Inches per Year
Lahontan	Regional Water Quality Control Board-Lahontan Region
L_{dn}	Day-night Average Sound Level
L_{eq}	Energy Equivalent Sound Level
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
MCWC	Madden Creek Water Company
Mgal/yr.	Million Gallons per Year
mgd	Million Gallons per Day
mg/L	Milligrams per Liter
mg/L^3	Microgram per Cubic Liter
Mmax	Maximum Moment Magnitude
MMI	Modified Mercalli Intensity
$\mu g/m^3$	Microgram per Cubic Meter
MMP	Mitigation and Monitoring Program
MOA	Memorandum of Agreement
MPN	Most Probable Number
MRF	Eastern Regional Materials Recovery Facility
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NNPS	Nevada Native Plant Society
NO_2	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination Program
NRHP	National Register of Historic Places
NTFPD	North Tahoe Fire Protection District
NWP	Nationwide Permit

O_3	Ozone
OES	Office of Emergency Services
OPR	California Governor's Office of Planning and Research
OS	Open Space
OSHA	Occupational Safety and Health Administration
PA	Programmatic Agreement
Pb	Lead
PD	Planned Development
PGA	Peak Ground Acceleration
PM_{10}	Particulate Matter Less than 10 Microns in Diameter
$PM_{2.5}$	Particulate Matter Less than 2.5 Microns in Diameter
PPM	Parts per Million
PRC	Public Resource Code
Project	Homewood Mountain Resort Ski Area Master Plan
PSD	Prevention of Significant Deterioration Program
psi	Pounds per square inch
RCRA	Resource Conservation and Recovery Act
RIB	Rapid Infiltration Basin
RL	Rural Low
ROW	Right-of-Way
RR	Rural Residential
RWQCB	Regional Water Quality Control Boards
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SMARA	Surface Mining Reclamation Act of 1975
SO_2	Sulfur Dioxide
State Board	California State Water Resources Control Board
Superfund	Superfund Amendment and Reauthorization Act of 1986
SWPPP	Storm Water Pollution Prevention Plan
TCPUD	Tahoe City Public Utility District
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TP	Total Phosphorus
TROA	Truckee River Operating Agreement
TRPA	Tahoe Regional Planning Agency
TSS	Total Suspended Solids
TTSA	Tahoe-Truckee Sanitation Agency
TTSD	Tahoe-Truckee Sierra Disposal Company
TTUSD	Tahoe-Truckee Unified School District
UAPCDs	Unified Air Pollution Control Districts
UBC	Uniform Building Code 1997
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VMT	Vehicle Miles Traveled
WDR	Waste Discharge Requirements
WMA	Wildlife Management Areas
WWTP	Wastewater Treatment Plant
yds^3	Cubic Yards

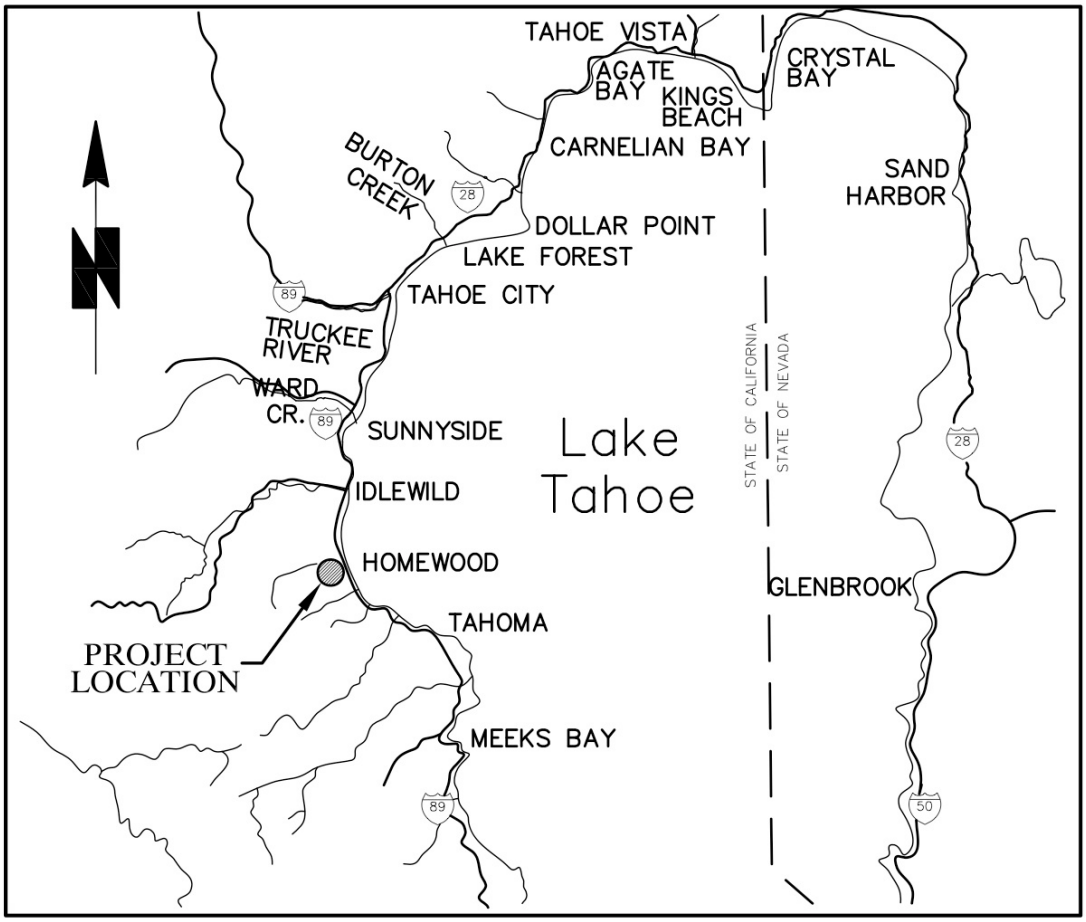
2.0 EXECUTIVE SUMMARY

Homewood Village Resorts, LLC, the Project Applicant, has prepared the Homewood Mountain Resort (HMR) Ski Area Master Plan (Project) to develop and upgrade mixed-uses at the North Base area, residential uses in the South Base area, a lodge at the Mid-Mountain Base area, and support facilities in the ski area. The HMR Ski Area Master Plan is a mixed-use project developed under the guidelines included in the Tahoe Regional Planning Agency's (TRPA) Community Enhancement Program (CEP) in August 2007.

2.1 PROJECT LOCATION

The 1,200-acre HMR Ski Area Master Plan Area (Project area) lies in the Lake Tahoe Basin of the Sierra Nevada Mountains on the western shore of Lake Tahoe and is located approximately six miles south of Tahoe City in Placer County, California. The Project area is bound by State Route (SR) 89 and Lake Tahoe to the east, Ellis Peak to the southwest, and Blackwood Ridge to the north. Access to the Project area is via SR 89 (West Lake Boulevard), from either Interstate 80 (I-80) from the north or U.S. Highway 50 (US 50) from the south. Figure 2-1 documents the Project area location in the Lake Tahoe Basin.

Figure 2-1. Project Location Map



2.2 SUMMARY OF THE PROPOSED PROJECT AND ALTERNATIVES TO BE CONSIDERED

The Proposed Project (Alternative 1), the No Project (Alternative 2) and Project Alternatives 3, 4,5 and 6 are summarized below. Chapter 3 provides the more detailed description for each Alternative.

Alternative 1 – Proposed Project (HMR Ski Area Master Plan)

The Proposed Project (Alternative 1) is described in the HMR Ski Area Master Plan dated October 2010 and is a conceptual plan to redevelop mixed-uses at the North Base area, residential uses at the South Base area, a lodge at the Mid-Mountain Base area, and beginner ski area at the top of a new gondola that would originate from the North Base area. At the North Base area, the Proposed Project (Alternative 1) would remove four existing ski lifts and associated pads, footings and utilities; buildings and concrete foundations; stormwater treatment systems; asphalt parking surfaces; overhead transmission lines; and a pumphouse. At the South Base area, the Proposed Project (Alternative 1) would remove one existing ski lift and associated pads, footings and utilities; buildings and concrete footings; concrete parking surfaces; and overhead transmission lines.

The 17-acre North Base area will include six new mixed-use buildings and eight new townhouse buildings to provide 36 residential condominiums, 16 townhouses, 20 fractional ownership units, 75 traditional hotel rooms, 40 two-bedroom for sale condominium/hotel units, 30 penthouse condominium units, 25,000 square feet of commercial floor area (CFA), 13 affordable housing units (adjoined to a 4-story 272 space day skier parking structure), and a 30,000 square foot skier services lodge. The 6-acre South Base area will be converted to a 99-unit neighborhood condominium complex. Day-skier access and skier amenities will be relocated to the North Base area. The South Base area condominiums will be in three, three-story buildings.

The Mid-Mountain Base area will include a new 15,000 square foot day-use lodge with a detached gondola terminal linked to the lodge by a covered passage, a new learn-to-ski lift, an outdoor swimming facility for use during the summer months by West Shore residents, a new snow-based vehicle (e.g., grooming equipment) maintenance facility, and two water storage tanks.

The Proposed Project (Alternative 1) would require TRPA *Code of Ordinance* amendments to Chapter 22 (Height) and 64 (Grading Standards), and TRPA Plan Area Statement (PAS) amendments for Plan Areas 157 (Homewood), 158 (McKinney Tract Residential) and 159 (Homewood/Commercial). Placer County Plan Areas would also require amendments to the same Plan Area Statements under the adopted West Shore Area General Plan (1998).

Alternative 2 – No Project (Existing Conditions)

Under the No Project (Alternative 2), HMR will continue to be operated under existing conditions. Total land coverage will remain around 1,781,000 square feet, (approximately 271,000 square feet - North Base area, 117,000 square feet - South Base area, and 1,394,000 square feet - on-mountain hard and soft coverage). Facilities at the existing North Base area include food services/bar, restrooms, ski school, rentals and repairs, retail sales, ticket sales, ski patrol, employee lockers, storage, mechanical rooms, and administrative offices. Facilities at the existing South Base area include food services/bar, restrooms, retail sales, daycare/nursery, ticket sales, ski patrol, employee lockers, storage, mechanical rooms, and administrative offices. The white tent structure (warming shelter) and the existing concrete foundation located near the Mid-Mountain will remain. No TRPA Code of Ordinance or PAS amendments would be required for the No Project (Alternative 2).

Alternative 3 – No Code Amendment for Building Height

Alternative 3 would include the same uses identified above for the Proposed Project (Alternative 1). However, under Alternative 3, additional buildings with larger building footprints would accommodate proposed uses with building heights that meet existing TRPA height standards. At the North Base area, Buildings A and B would include four additional structures located up slope of the building sites in the Proposed Project (Alternative 1). At the South Base area, Buildings A and B would include two additional structures located up slope of the building sites in the Proposed Project (Alternative 1). Alternative 3 would require each of the TRPA Code of Ordinance and PAS amendments outlined for the Proposed Project (Alternative 1) with the exception of the Chapter 22 amendment for additional height, which would not be required.

Alternative 4 – Close Ski Resort – Estate Lots

Alternative 4 would close HMR and create 16 estate residential lots on the mountain and one commercial lot. A majority of the estate home lots would be located on the lower portion of the former ski area, and the commercial lot would be located at the North Base area. For purposes of this analysis, the commercial lot would include up to 15,000 square feet of CFA in the area of the existing parking lots, which would have to be transferred to the Project area. One PAS amendment is proposed under Alternative 4. Alternative 4 proposes commercial uses within the North Base area parking lot currently located in TRPA Plan Area 157 and Placer County Plan Area 159. No TRPA Code of Ordinance amendments would be required for Alternative 4.

Alternative 5 – Compact Project Area

Under Alternative 5, the PAS 159 boundary line adjustment proposed under Alternatives 1 and 3 would be reduced to include only the existing paved and gravel parking lots at the North Base area. North Base areas above these two parking areas and the entirety of the South Base area would remain in Plan Area 157 (Recreation). The proposed 225 multi-family residential units would be located in the existing North Base parking areas, substantially reducing the area proposed for addition to Plan Area 159 (Commercial). The 75-room hotel, 30,000 square feet of CFA, and 25,000 square feet of skier service uses would remain in Plan Area 157 up slope of the multi-family residential uses, where these uses are currently allowed. At the South Base area, 16 single-family residential lots would be reconfigured along with a small skier services building for locals using existing HMR parcels and a boundary line adjustment. Alternative 5 includes 12 onsite affordable housing units attached to a 156-space day skier parking structure. An amendment to TRPA Code of Ordinances Chapter 22 will be required for additional building height. TRPA will require PAS 159, 158 and 157 amendments for plan area boundaries, allowable uses, density, and special policies. Placer County Plan Areas would also require amendments to the same Plan Area Statements under the adopted West Shore Area General Plan (1998).

Alternative 6 – Reduced Project

Under Alternative 6, the PAS 159 boundary line adjustment proposed for the Proposed Project (Alternative 1) and Alternative 3 would be reduced to eliminate the proposed townhouses at the North Base area. A majority of the South Base area would remain in Plan Area 157 (Recreation) with the exception of the site of the existing skier services lodge, which would be redeveloped into a multi-family residential condominium building and added to Plan Area 158 (Residential). Alternative 6 proposes 75 tourist accommodation units (TAUs) located in the hotel/lodge building. To offset the large reduction in TAUs under Alternative 6, the number of proposed multi-family residential units (for sale units) would be increased to a total of 195 (from 181 included in Alternative 1), of which 145 units would be located at the North Base area and 50 units would be located at the South Base area. The remainder of the South

Base area would include 14 single-family residential lots reconfigured along with a small skier services building using existing HMR parcels and a boundary line adjustment. Alternative 6 includes 12 onsite affordable housing units attached to a 156-space day skier parking structure. The proposed development at the Mid-Mountain area will be the same as the Proposed Project (Alternative 1) and Alternatives 3 and 5. Amendments to TRPA Code of Ordinances are proposed for Chapter 22 – additional building height, Chapter 33 – additional TAU distribution, Chapter 35 – tourist accommodation bonus units, and Chapter 64 – groundwater interception for below-grade parking. TRPA will require PAS 159, 158 and 157 amendments for plan area boundaries, allowable uses, density, and special policies. Placer County Plan Areas would also require amendments to the same Plan Area Statements under the adopted West Shore Area General Plan (1998).

2.3 ENVIROMENTAL IMPACTS AND RECOMMENDED MITIGATION MEASURE SUMMARY

For the Proposed Project (Alternative 1), No Project (Alternative 2), and Alternatives 3, 4, 5 and 6, Table 2-1 summarizes the impacts, mitigation measures designed to eliminate or reduce the impacts, the duration of the impact, and the level of significance of each impact after mitigation is implemented. The following acronyms are used:

- SU – Significant and Unavoidable Impact
- S – Significant Impact
- PS – Potentially Significant Impact
- LS – Less than Significant Impact
- NI – No Impact
- P – Permanent (indefinitely)
- LT – Long–term (6+ years)
- T – Temporary (0-5 years)
- C – Construction (construction period)

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
6.0 Land Use				
LU-1. Will the Project be consistent with the land use plan or zoning plan, or land use goals, policies, and provisions of the TRPA Regional Plan, including the Goals and Policies, Code of Ordinances, Plan Area Statements, or Ski Area Master Plan Guidelines, and the Placer County General Plan and West Shore Area General Plan?	Alt. 1 – LS Alt. 2 – S Alt. 3 – LS Alt. 4 – S Alt. 5 – S Alt. 6 – LS	None feasible for Alternatives 2, 4 and 5 Note: Alts 1, 3, 5, and 6 propose amendments to TRPA PAS, Code Chapters, Goals and the Placer County West Shore Area General Plan to attain consistency	Alt. 1 – LS Alt. 2 – SU Alt. 3 – LS Alt. 4 – SU Alt. 5 – SU Alt. 6 –LS	P
LU-2. Will the Project be consistent with adjacent land uses or expand/intensify existing non-conforming uses?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	LU-2a: Purchase and Transfer of Additional ERUs (Alts 1, 3, and 6) LU-2b: CFA Reduction or Additional CFA Reservation (Alts 1, 3, 5, and 6) LU-2c: Purchase and Transfer of Additional ERUs (Alt 5)	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – SU Alt. 6 –LS	P
LU-C1: Will the Project have significant cumulative impacts to land use?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – S Alt. 5 – S Alt. 6 – LS	None feasible for Alternatives 4 and 5	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – SU Alt. 5 – SU Alt. 6 – LS	P

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
7.0 Population, Employment and Housing				
PEH-1. Will the Project increase the demand for housing, thereby causing direct or indirect environmental impacts?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	PEH-1: Develop Homewood Employee/Workforce Housing Plan	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P
PEH-2. Will the Project alter the location, distribution, density, or growth rate of the human population planned for the Region?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P
PEH-C1. Will the Project have significant cumulative impacts to population, employment, and housing?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
8.0 Biological Resources				
BIO-1. Will the Project, directly or indirectly (including through spread of noxious weeds and habitat modification), cause a loss of individuals or occupied habitat of endangered or threatened fish or wildlife species?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P
BIO-2. Will the Project cause loss of raptor nests, migratory bird nests, or wildlife nursery sites?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	BIO-2: Active Raptor, Migratory Bird Nest Site, Wildlife Nursery/Den Site, and Bat Roost Protection Program	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	C
BIO-3. Will the Project substantially block or disrupt major fish or wildlife migration or travel corridors?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	BIO-3: Fish Passage Protection and Enhancement	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
BIO-4. Will the Project cause a permanent loss of sensitive wildlife individuals or habitat, as defined by the Tahoe Regional Planning Agency, Placer County General Plan Section 6, or California Department of Fish and Game or cause a decline in population levels below a viable population level?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	BIO-2: Active Raptor, Migratory Bird Nest Site, Wildlife Nursery/Den Site, and Bat Roost Protection Program BIO-4a: Bat Roost Relocation Program BIO-4b: Trash Management Program	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	C
BIO-5. Will the Project affect wetlands or waters of the U.S. and/or riparian and Stream Environment Zones (SEZ) through direct removal, filling, hydrologic interruption, encroachment, removal of streamside vegetation or other means?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	BIO-5a: Final Homewood Creek SEZ Restoration Plan (Alternatives 1 and 3) BIO-5b: SEZ Restoration Plan for Gravel Parking Lot (Alternatives 5 and 6)	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P
BIO-6. Will the Project, directly or indirectly (including through spread of noxious weeds), cause a loss of individuals or occupied habitat of endangered, threatened, or CNPS List 1b, 2, and 3, or TRPA listed plant species?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	BIO-6a: Noxious Weed Risk Assessment and Eradication BIO-6B: Pre-Construction Rare Plant Surveys	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
BIO-7. Will the Project have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or the US Fish and Wildlife Service?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – NI Alt. 5 – S Alt. 6 – S	BIO-5a: Homewood Creek SEZ Restoration Plan (Alternatives 1 and 3) BIO-5b: SEZ Restoration Plan for Gravel Parking Lot (Alternatives 5 and 6)	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – NI Alt. 5 – LS Alt. 6 – LS	P
BIO-8. Will the Project cause a change in diversity or distribution of species or result in permanent loss of sensitive native plant communities (including SEZs and communities defined as sensitive in the California Natural Diversity Data Base), including trees, shrubs, grass, crops, micro flora and aquatic plants through direct removal or indirect lowering of the groundwater table?	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – NI Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – NI Alt. 5 – LS Alt. 6 – LS	P
BIO-9. Will the Project introduce new vegetation that will require excessive fertilizer or water, or will provide a barrier to the normal replenishment of existing species?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	BIO-9: Final Landscape/Revegetation and Fertilizer Management Plan	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
BIO-10. Will the Project result in the removal of any native live, dead or dying trees 30 inches or greater in diameter at breast height (dbh) within TRPA's Conservation or Recreational land use classifications, remove native vegetation in excess of the area utilized for the actual development permitted by the land capability, or cause a change in the natural functioning of an old growth ecosystem?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	BIO-10: Prepare Forest Plan and Tree Protection Plan For Homewood Mountain Resort	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P
BIO-C1. Will the Project have significant cumulative impacts to biological resources?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P
9.0 Cultural Resources				
CUL-1. Will the Project adversely change the significance of an eligible or potentially-eligible National Register property, or a resource that meets the criteria for inclusion in the California Register of Historical Resources, or a resource on TRPA maps, including archaeological, historical, architectural, and Native American/traditional heritage resources?	Alt. 1 – NI Alt. 2 – NI Alt. 3 – NI Alt. 4 – NI Alt. 5 – NI Alt. 6 – NI	None Required	Alt. 1 – NI Alt. 2 – NI Alt. 3 – NI Alt. 4 – NI Alt. 5 – NI Alt. 6 – NI	P

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
CUL-2. Will the Project cause a physical change which would adversely affect unique ethnic cultural values or restrict historic or pre-historic religious or sacred uses within the potential impact area?	Alt. 1 – NI Alt. 2 – NI Alt. 3 – NI Alt. 4 – NI Alt. 5 – NI Alt. 6 – NI	None Required	Alt. 1 – NI Alt. 2 – NI Alt. 3 – NI Alt. 4 – NI Alt. 5 – NI Alt. 6 – NI	P
CUL-3. Will the Project disturb significant unknown archaeological resources?	Alt. 1 – S Alt. 2 – S Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	CUL-3: Identify and Protect Undiscovered Archaeological Resources	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, C
CUL-4. Will the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Alt. 1 – S Alt. 2 – S Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	CUL-4. Identify and Protect Undiscovered Paleontological Resources	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, C

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
CUL-5. Will the Project disturb any human remains, including those interred outside formal cemeteries?	Alt. 1 – S Alt. 2 – S Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	CUL-3: Identify and Protect Undiscovered Archaeological Resources	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, C
CUL-C1. Will the Project have significant cumulative impacts to cultural or historical resources?	Alt. 1 – NI Alt. 2 – NI Alt. 3 – NI Alt. 4 – NI Alt. 5 – NI Alt. 6 – NI	None Required	Alt. 1 – NI Alt. 2 – NI Alt. 3 – NI Alt. 4 – NI Alt. 5 – NI Alt. 6 – NI	P
10.0 Scenic Resources				
SCENIC-1. Will the Project be inconsistent with a County General Plan or TRPA regulations, standards, or guidelines applicable to the Project area?	Alt. 1 – S Alt. 2 – S Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	BIO-10: Prepare Forest Plan for Homewood Mountain Resort (Alts 1, 3, 5 and 6) SCENIC-1a: Alternative 5 North Base Area Building Height Reductions (Alternative 5) SCENIC-1b: Alternative 6 North Base Area Building Redesign (Alternative 6)	Alt. 1 – LS Alt. 2 – SU Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, C

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
SCENIC-2. Will the Project be visible from or cause an adverse effect on foreground or middle ground views from a high volume travel way, recreation use area, or other public use area, including Lake Tahoe, TRPA designated bike trail, or state or federal highway?	Alt. 1 – S Alt. 2 – S Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	SCENIC-2a: Slope Vegetation Management (Alts 1, 3, 5 and 6) SCENIC-2b: Mid-Mountain Lodge Redesign (1, 3, 5 and 6) SCENIC-1a: Alternative 5 North Base Area Building Height Reductions (Alternative 5)	Alt. 1 – LS Alt. 2 – SU Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, C
SCENIC-3. Will the Project create an unacceptable new light source or cause glare or affect day or nighttime views in the area?	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required Note: Alts 1, 3, 4, 5 and 6 will comply with TRPA and Placer County Design Guidelines to ensure all light sources shall be shielded so no light source is directed off-site	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, C
SCENIC-C1. Will the Project have significant cumulative impacts to scenic resources?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	SCENIC-1a: Alternative 5 North Base Area Building Height Reductions SCENIC -1b: Alternative 6 North Base Area Building Redesign SCENIC-2a: Slope Vegetation Management (Alts 1, 3, 5 and 6) SCENIC-2b: Mid-Mountain Lodge Redesign (Alts 1, 3, 5 and 6)	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, C

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
11.0 Transportation, Parking, and Circulation				
TRANS-1. Will the Project result in generation of 200 or more new Daily Vehicle Trip Ends (DVTE)?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	TRANS-1: Traffic and Air Quality Mitigation Program	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT
TRANS-2. Will the Project result in changes to existing parking facilities, or demand for new parking?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – S Alt. 5 – LS Alt. 6 – S	TRANS-2: Provide Adequate Parking to Meet Placer County Requirements	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT
TRANS-3. Will the Project result in a substantial impact upon the existing transportation systems, including roadways and intersections? *Summer LOS*	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	TRANS-3: Implement Intersection Improvements	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
TRANS-3. Will the Project result in a substantial impact upon the existing transportation systems, including roadways and intersections? *Summer Queuing*	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	None feasible for Alternatives 1, 3, 5, and 6	Alt. 1 – SU Alt. 2 – NI Alt. 3 – SU Alt. 4 – LS Alt. 5 – SU Alt. 6 – SU	P, LT
TRANS-3. Will the Project result in a substantial impact upon the existing transportation systems, including roadways and intersections? *Winter LOS*	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	TRANS-3: Implement Intersection Improvements	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT
TRANS-3. Will the Project result in a substantial impact upon the existing transportation systems, including roadways and intersections? *Winter Queuing*	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
TRANS-4. Will the Project result in a substantial impact upon the existing transportation systems, including transit facilities?	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – NI Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – NI Alt. 5 – LS Alt. 6 – LS	LT
TRANS-5. Will the Project result in a substantial impact upon the existing transportation systems, including bicycle or pedestrian facilities?	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – NI Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – NI Alt. 5 – LS Alt. 6 – LS	LT
TRANS-6. Will the Project result in a temporary impact upon existing transportation systems due to construction traffic?	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	C

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
TRANS-7. Will the Project result in alterations to the present patterns of circulation or movement of people and/or goods?	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	LT
TRANS-8. Will the Project result in an increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	LT
TRANS-C1. Will the Project result in a substantial impact upon cumulative transportation systems, including roadways and intersections? *Summer LOS*	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	TRANS-C1: Implement Intersection Improvements (Cumulative) TRANS-C2. Payment of Countywide Traffic Impact Fees	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
TRANS-C1. Will the Project have significant cumulative impacts to transportation or circulation? *Summer Queuing*	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	None feasible for Alternatives 1, 3, 5, and 6	Alt. 1 – SU Alt. 2 – NI Alt. 3 – SU Alt. 4 – LS Alt. 5 – SU Alt. 6 – SU	P, LT
TRANS-C1. Will the Project have significant cumulative impacts to transportation or circulation? *Winter LOS*	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	TRANS-C1: Implement Intersection Improvements (Cumulative) TRANS-C2. Payment of Countywide Traffic Impact Fees	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT
TRANS-C1. Will the Project have significant cumulative impacts to transportation or circulation? *Winter Queuing*	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
12.0 Air Quality				
AQ-1. Will the Project generate construction emissions in excess of applicable standards?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	AQ-1: Implement PCAPCD Best Management Practices (BMPs) to reduce pollutant emissions during construction	Alt. 1 –LS Alt. 2 – NI Alt. 3 – SU Alt. 4 – LS Alt. 5 – SU Alt. 6 – SU	T, C
AQ-2. Will the Project generate operational emissions or vehicle miles traveled (VMT) in excess of applicable standards?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	AQ-2a: Contribute to the TRPA Traffic and Air Quality Mitigation Program AQ-2b: Prohibit Installation of Wood-Burning Appliances	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT
AQ-3. Will the Project result in exposure of sensitive receptors to substantial pollutant concentrations?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
AQ-4. Will the Project conflict with or obstruct implementation of the applicable air quality plan?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	AQ-1: Implement PCAPCD Best Management Practices (BMPs) to reduce pollutant emissions during construction	Alt. 1 – LS Alt. 2 – NI Alt. 3 – SU Alt. 4 – LS Alt. 5 – SU Alt. 6 – SU	T, C
AQ-5. Will the Project generate objectionable odors?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	
AQ-C1. Would the Project result in a cumulative short-term impact on air quality?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	AQ-1: Implement PCAPCD BMPs to reduce pollutant emissions during construction	Alt. 1 – LS Alt. 2 – NI Alt. 3 – SU Alt. 4 – LS Alt. 5 – SU Alt. 6 – SU	T, C

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
AQ-C2. Would the Project result in a cumulative long-term impact on air quality?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	AQ-2a: Contribute to the TRPA Traffic and Air Quality Mitigation Program	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT
AQ-C3. Would the Project result in a cumulative long-term local impact on air quality?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	
13.0 Noise				
NOI-1. Will construction (including blasting activities) of the Project expose the public to high noise levels or vibration?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	NOI-1a. Employ Measures to Reduce Airblast and Vibration from Blasting NOI-1b. Conduct Building Inspection prior to Blasting NOI-1c: Employ Noise-Reducing Construction Practices	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	T, C

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
NOISE-2. Will operation and maintenance of the Project expose the public to high noise levels (e.g., above CNEL permitted in the applicable Plan Area Statements, Community Plan or Master Plan) from transportation sources?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	NOI-2: Employ Measures to Ensure Project-Related Traffic Noise Does Not Increase Relative to Future No Project Conditions	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT
NOI-3. Will noise from Project concerts, snowmaking, or other resort operations effect existing or proposed noise-sensitive land uses?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	NOI-3a: Design New Residences to Reduce Interior Noise Below 45dBA, L_{dn} NOI-3b. Implement design and operational measures at the amphitheater to ensure compliance with the adjacent Planning Area Statement (PAS) CNEL limit at existing residences NOI-3c: Implement Measures to Ensure Noise Levels at Existing Residences are Reduced to Meet the Adjacent Plan Area Statement (PAS) CNEL Limit	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
NOI-C1. Will the Project have significant cumulative noise impacts?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	NOI-2: Employ Measures to Ensure Project-Related Traffic Noise Does Not Increase Relative to Future No Project Conditions NOI-3a: Design New Residences to Reduce Interior Noise Below 45dBA, L_{dn} NOI-3b. Implement design and operational measures at the amphitheater to ensure compliance with the adjacent Planning Area Statement (PAS) CNEL limit at existing residences NOI-3c: Implement Measures to Ensure Noise Levels at Existing Residences are Reduced to Meet the Adjacent Plan Area Statement (PAS) CNEL Limit	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT
14.0 Soils, Geology, and Seismicity				
GEO-1. Will the Project expose people or structures to adverse geological hazards, including risk of loss, injury, or death involving fault rupture, strong seismic ground shaking, seismic related ground failure (e.g., liquefaction), or landslides?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	GEO-1: Submit Final Geotechnical Report	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
GEO-2. Will Project facilities be located within an area of unstable soil conditions, including soils susceptible to collapse, subsidence, corrosion, or expansion?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	GEO-1: Submit Final Geotechnical Report	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P
GEO-3. Will the Project result in compaction or covering of the soil beyond the limits allowed in the land capability system, including coverage within sensitive Class 1a and 1b lands?	Alt. 1 – S Alt. 2 – S Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	GEO-3: Comply with Excess Land Coverage Mitigation Program	Alt. 1 – LS Alt. 2 – SU Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
GEO-4. Will construction of the Project result in changes to native geologic substructures or cause erosion, loss of topsoil, or changes in topography from excavation, grading or filling?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	GEO-4a: Design Construction-related BMPs According to the California Stormwater Quality Association Stormwater BMP Handbooks and TRPA's Handbook of BMPs GEO-4b: Conform to Provisions of Placer County Grading and Erosion Control Ordinance GEO-4c: Identify Stockpiling and/or Vehicle Staging Areas on Improvement Plans GEO-4d: Comply with Placer County Blasting Requirement GEO-4e: Obtain NPDES Permit GEO-4f: Satisfy the requirements of Section II of the Land Development Manual (LDM) GEO-4g: Final Construction Dewatering Plan	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	C, P

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
GEO-C1. Will the Project have significant cumulative impacts to geologic resources?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P
15.0 Hydrology, Water Rights, Surface Water Quality and Groundwater				
HYDRO-1. Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?	Alt. 1 – PS Alt. 2 – S Alt. 3 – PS Alt. 4 – LS Alt. 5 – PS Alt. 6 – PS	HYDRO-1a: Design Water Quality Protection BMPs According to the California Stormwater Quality Association Stormwater BMP Handbooks and TRPA's Handbook of BMPs HYDRO-1b: Storm Drain Stenciling HYDRO-1c: Stormwater Routing for Refuse Management HYDRO-1d: Inspection, Operations, Maintenance and Monitoring Plan for Stormwater Treatment Systems and Permanent BMPs HYDRO-1e: Apply Project Security Fee Towards BMP and Stormwater System Improvements	Alt. 1 – LS Alt. 2 – SU Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	C, P

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
		and/or Restoration Projects if Discharge Limits are Not Met HYDRO-1f: Restrict Development within Quail Lake Creek Watershed until Compliance with Project Area TOC BIO-9: Final Landscape/Revegetation Plan and Fertilizer Management Plan GEO-4a: Design Construction-related BMPs According to the California Stormwater Quality Association Stormwater BMP Handbooks and TRPA's Handbook of BMPs GEO-4b: Conform to Provisions of Placer County Grading, Erosion, and Sediment Control Ordinance GEO-4c: Identify Stockpiling and/or Vehicle Staging Areas on Improvement Plans GEO-4e: Obtain NPDES Permit GEO-4f: Satisfy the requirements of Section II of the Land Development Manual. (LDM).		

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
HYDRO-2. Will Project construction or operation alter the existing surface water drainage patterns or cause increased runoff resulting in flooding or stream bank erosion or contribute runoff in rates or volumes that will exceed the capacity of existing or planned storm water drainage systems so that a 20-yr, 1-hr storm runoff (approximately 1 inch per hour) cannot be contained on the site?	Alt. 1 – S Alt. 2 – S Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	HYDRO-2a: TRPA Soils Hydrological Approval Conditions HYDRO-2b: Submit Final Drainage Report– Conformance with Section 5 of the Placer County Land Development Manual and Stormwater Management Manual HYDRO-2c: Drainage Facilities to Conform to Placer County Stormwater Management Manual HYDRO-2d; Reduce Stormwater Runoff to Pre-Project Volumes HYDRO-2e: Implement the Homewood Creek SEZ Restoration Plan (Alternatives 4, 5 and 6) BIO-5a: Homewood Creek Restoration Plan GEO-4b: Conform to Provisions of Placer County Grading, Erosion, and Sediment Control Ordinance GEO-4f: Satisfy the requirements of Section II of the Land Development Manual. (LDM)	Alt. 1 – LS Alt. 2 – SU Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
HYDRO-3. Will Project construction activities or long-term operations result in a substantial degradation of groundwater or result in a substantial change in the quality, quantity, elevation, infiltration, or movement of groundwater?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	HYDRO-3a: Implement Operation Dewatering Plan/ Implement Engineered Groundwater Mitigations HYDRO-3b: Inspection, Maintenance and Monitoring Plan Groundwater Infiltration Systems for Underground Parking Structures HYDRO-3c: Complete a Water Balance Analysis for the North Base Well and the TCPUD McKinney Well	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	C, LT, P
HYDRO-4. Will the Project alter the course or flow of the 100-year floodwaters or expose people or structures to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches?	Alt. 1 – S Alt. 2 – S Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	HYDRO-4a: Emergency Response and Evacuation Plan HYDRO-4b: Comply with Placer County Stormwater Management Manual Section VI HYDRO-4c: Comply with Placer County Flood Damage Prevention Ordinance	Alt. 1 – LS Alt. 2 – SU Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	LT, P

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
HYDRO-5. Will the Project change the amount of surface water in any water body, substantially reduce the amount of water otherwise available for public water supplies, or be located within 600 feet of a drinking water source?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	HYDRO-5: Water Use/Water Rights Monitoring Program/Install meters at Points of Diversions and Application or Use HYDRO-3c: Complete a Water Balance Analysis for the HMR-Owned Wells and the TCPUD McKinney Well PSU-1a: Water Supply Assessment and Infrastructure	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P
HYDRO-C1. Will the Project have significant cumulative impacts to water resources?	Alt. 1 – LS Alt. 2 – S Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – SU Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P
16.0 Public Services and Utilities				
PSU-1. Will the Project increase demand or exacerbate peak period service demand of fire, law enforcement, schools, government services, water, sewage treatment and disposal, communication systems, solid waste, gas, or electric to such a degree that service standards and objectives cannot be maintained or new facilities are needed that could cause significant environmental effects?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	PSU-1a: Final Water Supply Assessment and Infrastructure PSU-1b: Coordination of Construction Waste Disposal with ERSL PSU-1c: Payment of Development Impact Fee to Placer County Sheriff's Department	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
PSU-2. Does the Project have the potential to damage existing utility infrastructure?	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P
PSU-3. Will Project construction interfere with law enforcement and fire protection services?	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P
PSU-C1. Will the Project have significant cumulative impacts to public service and utility resources?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
17.0 Hazardous Materials and Public Safety				
PS-1. Will the Project expose people or structures to a significant risk or loss, injury or death involving fire hazards, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	PS-1: NTFPD Design Approval and Annexation	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT
PS-2. Will the Project result in an interference with emergency response plans or emergency evacuation plans?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	PS-2: Ensure Emergency Access During Construction and Operation	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	T, C, P, LT
PS-3. Will the Project involve the use of explosives for trenching?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	PS-3: Implement Blast Management Techniques to Reduce Adverse Effects	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	T, C

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
PS-4. Does the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, release of hazardous materials into the environment, or emit hazardous emissions within one-quarter mile of an existing or proposed school?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	-
PS-5. Does the Project have the potential to encounter contaminated soils or expose workers or the public to health hazards, including those from a known hazardous waste site?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	PS-5: Construction and Design Review by the Placer Mosquito and Vector Control District	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	T, C, P, LT
PSU-C1. Will the Project have significant cumulative impacts to public safety?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	-

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
18.0 Recreation				
REC-1. Will the Project result in a decrease or loss of public access to any lake, waterway, or public lands or decrease in the quality of a recreational experience?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	REC-1a: Beach Access Maintenance Funding (Alternatives 1, 3, 5 and 6) REC-1b: Maintain or Enhance Public Access to Public Lands (Alternative 4)	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P
REC-2. Will the Project create conflicts between recreation uses, either existing or proposed?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – S Alt. 5 – LS Alt. 6 – LS	None Available for Alternative 4	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – SU Alt. 5 – LS Alt. 6 – LS	P, LT
REC-3. Will the Project result in the need to construct new recreational facilities or expansion of existing facilities?	Alt. 1 – S Alt. 2 – LS Alt. 3 – S Alt. 4 – S Alt. 5 – S Alt. 6 – S	REC-3: Provide On-site Recreational Facilities and Park Fees to Placer County; Operate Shuttle Service to State Parks	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
REC-4. Will the Project create additional recreational capacity?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT
REC-C1. Will the Project have significant cumulative impacts to recreation?	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – S Alt. 5 – LS Alt. 6 – LS	None Available for Alternative 4	Alt. 1 – LS Alt. 2 – LS Alt. 3 – LS Alt. 4 – SU Alt. 5 – LS Alt. 6 – LS	P, LT
19.0 Climate Change				
CC-1. Will the Project Result in a Significant Project-Level Impact on Climate Change?	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	None Required	Alt. 1 – LS Alt. 2 – NI Alt. 3 – LS Alt. 4 – LS Alt. 5 – LS Alt. 6 – LS	P, LT

Table 2-1

Summary of Impacts and Mitigation Measures for the Proposed Project (Alternative1), No Project (Alternative 2) and Alternatives 3, 4, 5 and 6

Impact	Significance before Mitigation	Recommended Mitigation Measures*	Significance after Mitigation	Duration of Impact
CC-C1. Will the Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	CC-C1: Document and Verify Implementation of the Project GHG Reduction Commitments CC-C2: Implement Project Design Features to Further Reduce Project Contribution to Climate Change	Alt. 1 – SU Alt. 2 – NI Alt. 3 – SU Alt. 4 – LS Alt. 5 – SU Alt. 6 – SU	P, LT
CC-C2. Will the Project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?	Alt. 1 – S Alt. 2 – NI Alt. 3 – S Alt. 4 – LS Alt. 5 – S Alt. 6 – S	CC-C1: Document and Verify Implementation of the Project GHG Reduction Commitments CC-C2: Implement Project Design Features to Further Reduce Project Contribution to Climate Change	Alt. 1 – SU Alt. 2 – NI Alt. 3 – SU Alt. 4 – LS Alt. 5 – SU Alt. 6 – SU	P, LT

Source: Hauge Brueck Associates 2010

Notes: * Mitigation measures apply to those Alternatives denoted by a “S” in the Significance before Mitigation column.

Table 2-2 summarizes benefits associated with the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 by applicable impact. More detailed analysis of potential benefits is included in the "environmental impacts and recommended mitigation" section of Chapters 6 through 17. This table illustrates how the CEP Alternatives listed above would result in a variety of environmental and community benefits that exceed standard TRPA and Placer County requirements. Table 2-2 does not address the No Project (Alternative 2) or Alternative 4 because these alternatives do not include benefits required under the CEP.

Table 2-2

Summary of Environmental Benefits under the CEP Alternatives, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6

Impact	Project Benefits
6.0 Land Use	
LU-1. Will the Project be consistent with the land use plan or zoning plan, or land use goals, policies, and provisions of the TRPA Regional Plan, including the Goals and Policies, Code of Ordinances, Plan Area Statements, or Ski Area Master Plan Guidelines, and the Placer County General Plan and West Shore Area General Plan?	• HMR open space will be publically accessible. Primary open space areas at North Base area centered around the seasonal public ice pond area/ miniature golf & landscaped frontage adjacent to SR 89. • Deed restriction from further non-recreational development to be placed on whole of mountain beyond the North and South Base areas and Mid-Mountain area. • EIP Project Number 632 - Homewood Ski Area Master Plan.
LU-2. Will the Project be consistent with adjacent land uses or expand/intensify existing non-conforming uses?	• EIP Project Number 632 - Homewood Ski Area Master Plan.
7.0 Population, Employment, and Housing	
PEH-1. Will the Project increase the demand for housing, thereby causing direct or indirect environmental impacts?	• Provision of 13 on-site affordable employee housing units under the Proposed Project (Alternative 1) and Alternative 3, and 12 units for Alternatives 5 and 6. • Employee transportation (buses & shuttles) to be provided for off-site employee housing locations (Tahoma/Sunnyside).
PEH-2. Will the Project alter the location, distribution, density, or growth rate of the human population planned for the Region?	• Provision of 13 on-site affordable employee housing units under the Proposed Project (Alternative 1) and Alternative 3, and 12 units for Alternatives 5 and 6. • Employee transportation (buses & shuttles) to be provided for off-site employee housing locations (Tahoma/Sunnyside).
8.0 Biological Resources	
BIO-5. Will the Project affect wetlands or waters of the U.S. and/or riparian and Stream Environment Zones (SEZ) through direct removal, filling, hydrologic interruption, encroachment, removal of streamside vegetation or other means?	• Removal of culvert and fill from the SEZ at the South Base area and day lighting Ellis/Homewood Creek channel: the Proposed Project (Alternative 1) and Alternative 3. • Removal of fill from SEZ in the gravel parking lot at the North Base area: Alternatives 1, 3, 5 and 6.

Table 2-2

Summary of Environmental Benefits under the CEP Alternatives, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6

Impact	Project Benefits
BIO-8. Will the Project cause a change in diversity or distribution of species or result in permanent loss of sensitive native plant communities (including SEZs and communities defined as sensitive in the California Natural Diversity Data Base), including trees, shrubs, grass, crops, micro flora and aquatic plants through direct removal or indirect lowering of the groundwater table?	• Removal of culvert and fill from the SEZ at the South Base area and day lighting Ellis/Homewood Creek channel: the Proposed Project (Alternative 1) and Alternative 3. • Removal of fill from SEZ in the gravel parking lot at the North Base area: Alternatives 1, 3, 5 and 6.
10.0 Scenic Resources	
SCENIC-1. Will the Project be inconsistent with a County General Plan or TRPA regulations, standards, or guidelines applicable to the Project area?	• Underground utility lines. • Existing landmark trees integrated into landscape design. • Implement landscape frontage improvements, access controls, building upgrades, sign conformance and walkways throughout project site. • Underground parking and replacement of surface parking lot at frontage with landscaping and pedestrian paths. • Articulated design and incorporation of natural building materials. • Public outdoor artwork at hotel landscaped area, day skier drop-off landscaped area, and public ice pond. Public art also planned at indoor public spaces in hotel and day skier facility. Artwork by local/regionally based artists.
SCENIC-2. Will the Project be visible from or cause an adverse effect on foreground or middle ground views from a high volume travel way, recreation use area, or other public use area, including Lake Tahoe, TRPA designated bike trail, or state or federal highway?	• Underground utility lines. • Existing landmark trees integrated into landscape design. • Implement landscape frontage improvements, access controls, building upgrades, sign conformance & walkways throughout project site. • Underground parking and replacement of surface parking lot at frontage with landscaping and pedestrian paths. • Articulated design and incorporation of natural building materials. • Public outdoor artwork at hotel landscaped area, day skier drop-off landscaped area, and public ice pond. Public art also planned at indoor public spaces in hotel and day skier facility. Artwork by local/regionally based artists.

Table 2-2

Summary of Environmental Benefits under the CEP Alternatives, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6

Impact	Project Benefits
	• EIP Project Number 86 - Scenic Roadway Unit 11-Homewood.
11.0 Transportation, Parking, and Circulation	
TRANS-1. Will the Project result in generation of 200 or more new Daily Vehicle Trip Ends (DVTE)?	• Pedestrian facilities will be built in the Homewood area to serve commercial businesses, improve access, improve drainage collection and treatment and provide scenic improvements (EIP 775) • Pedestrian oriented plans, with pedestrian access to neighborhood oriented retail, Tahoe City Public Utility District (TCPUD) bike trail connection to North Base area, and on-site daycare reduces vehicle miles traveled (VMT). • Provision of transit kiosk with signs, maps, etc. • Integrate transportation linkages. • Limitation of total maximum ticket sales during the winter season and limiting day skier parking to 400 on-site parking spaces; electronic sign at Tahoe City "Y" alerting travelers when ski parking is full, use alternative means of transportation. Project would limit ticket sales to those arriving via transit only once parking lot at site is full.
TRANS-2. Will the Project result in changes to existing parking facilities, or demand for new parking?	• Limitation of total maximum ticket sales during the winter season and limiting day skier parking to 400 on-site parking spaces; electronic sign at Tahoe City "Y" alerting travelers when ski parking is full, use alternative means of transportation. Project would limit ticket sales to those arriving via transit only once parking lot at site is full.
TRANS-3. Will the Project result in a substantial impact upon the existing transportation systems, including roadways and intersections? *Summer LOS*	• A TCPUD bike path into the North Base area. An eight-passenger gondola will bring guests up to the Mid-Mountain Base area. Existing Tahoe Area Regional Transit (TART) stops will be furnished with shelters (two, possibly three, stops at HMR), and proposed dial-a-ride, shuttle, and water taxi services will be provided to reduce VMT. • Fair-share participant in SR 28/SR 89 intersection improvement project (EIP 855).
TRANS-3. Will the Project result in a substantial impact upon the existing transportation systems, including roadways and intersections? *Summer Queuing*	• A TCPUD bike path into the North Base area. An eight-passenger gondola will bring guests to the Mid-Mountain Base area. Existing TART stops will be furnished with shelters (two-three stops at HMR), and dial-a-ride, shuttle, and water taxi services will

Table 2-2

Summary of Environmental Benefits under the CEP Alternatives, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6

Impact	Project Benefits
	be provided to reduce VMT. • Fair-share participant in SR 28/SR 89 intersection improvement project (EIP 855).
TRANS-3. Will the Project result in a substantial impact upon the existing transportation systems, including roadways and intersections? *Winter LOS*	• Winter VMT reduction based on reducing existing weekend day visitors with residents and guests at HMR. • A TCPUD bike path into the North Base area. An eight-passenger gondola will bring guests up to the Mid-Mountain Base area. Existing TART stops will be furnished with shelters (two possibly three stops at HMR), and dial-a-ride, shuttle, and water taxi services will be provided to reduce VMT. • Fair-share participant in SR 28/SR 89 intersection improvement project (EIP 855) • Limitation of total maximum ticket sales during the winter season and limiting day skier parking to 400 on-site parking spaces; electronic sign at Tahoe City "Y" alerting travelers when ski parking is full, use alternative means of transportation. Project would limit ticket sales to those arriving via transit only once parking lot at site is full.
TRANS-3. Will the Project result in a substantial impact upon the existing transportation systems, including roadways and intersections? *Winter Queuing*	• Winter VMT reduction (based on reducing existing weekend day visitors with residents and guests of the proposed resort facilities). • A TCPUD bike path into the North Base area. An eight-passenger gondola will bring guests to the Mid-Mountain Base area. Existing TART stops will be furnished with shelters (two-three stops at HMR), and dial-a-ride, shuttle, and water taxi services will be provided to reduce VMT. • Fair-share participant in SR 28/SR 89 intersection improvement project (EIP 855). • Limitation of total maximum ticket sales during the winter season and limiting day skier parking to 400 on-site parking spaces; electronic signage at the Tahoe City "Y" alerting travelers when ski parking is full, use alternative means of transportation. Project would limit ticket sales to those arriving via transit only once parking lot at site is full.
TRANS-4. Will the Project result in a substantial impact upon the existing transportation systems, including transit facilities?	• Alternative transportation initiatives include up to two 25 passenger water taxis for use during summer months, daily summer and winter dial-a-ride service

Table 2-2

Summary of Environmental Benefits under the CEP Alternatives, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6

Impact	Project Benefits
	(at a minimum from 8:00 AM to 6:00 PM), and shuttle service. Shuttle service between bases will reduce parking demand at the North Base area. Additional alternative transportation measures planned include a free-use bicycle fleet for resort guests, five hybrid-electric rental vehicles for resort guest use, completion missing bike trail segment. TART passes provided for employees, and shuttle service provided to/from employee housing areas not on a TART route. Daily summer scheduled shuttle service to/from Tahoe City from 9:00 AM to 8:00 PM to augment existing TART service. • Provision of transit kiosk with signs, maps, etc. • Integrate transportation linkages. • A TCPUD bike path to the North Base area. An eight-passenger gondola will bring guests to the Mid-Mountain Base area. Existing TART stops will be furnished with shelters (two-three stops at HMR), and dial-a-ride, shuttle, and water taxi services will be provided to reduce VMTs.
TRANS-5. Will the Project result in a substantial impact upon the existing transportation systems, including bicycle or pedestrian facilities?	• Pedestrian facilities will be built in the Homewood area to serve commercial businesses, improve access, improve drainage collection and treatment and provide scenic improvements (EIP 775) • Pedestrian oriented plans, with pedestrian access to neighborhood oriented retail, TCPUD bike trail connection to North Base area, and on-site daycare reduces VMT. • Provision of transit kiosk with signs, maps, etc. • Integrate transportation linkages. • A TCPUD bike path into the North Base area. An eight-passenger gondola will bring guests to the Mid-Mountain Base area. Existing TART stops will be furnished with shelters (two-three stops at HMR), and dial-a-ride, shuttle, and water taxi services will be provided to reduce VMT.
TRANS-6. Will the Project result in a temporary impact upon existing transportation systems due to construction traffic?	• Potential to stockpile excavated materials on-site for use by other area projects such as the Blackwood Creek Restoration Project. This would reduce truck trips and VMT caused by material hauling during construction.

Table 2-2

Summary of Environmental Benefits under the CEP Alternatives, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6

Impact	Project Benefits
TRANS-8. Will the Project result in an increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?	• Pedestrian facilities will be built in the Homewood area to serve commercial businesses, improve access, improve drainage collection and treatment and provide scenic improvements (EIP 775) • Pedestrian oriented plans, with pedestrian access to neighborhood oriented retail, TCPUD bike trail connection to North Base area, and on-site daycare reduces VMT.
12.0 Air Quality	
AQ-1. Will the Project generate construction emissions in excess of applicable standards?	• Potential to stockpile excavated materials on-site for use by other area projects such as the Blackwood Creek Restoration Project. This would reduce truck trips and VMT caused by material hauling during construction.
AQ-2. Will the Project generate operational emissions or VMT in excess of applicable standards?	• Winter VMT reduction based on reducing existing weekend day visitors with HMR residents and guests. • Alternative transportation initiatives include up to two 25 passenger water taxis for use during summer months, daily summer and winter dial-a-ride service (at a minimum from 8 AM to 6 PM), and shuttle service. Shuttle service between bases will reduce parking demand at the North Base. Additional alternative transportation measures planned include a free-use bicycle fleet for resort guests, five hybrid-electric rental vehicles for HMR guest use, and completion of the missing bike trail segment. TART passes provided for employees, and shuttle service provided to/from employee housing areas not on a TART route. Summer scheduled shuttle service to/from Tahoe City, daily from 9:00 AM to 8:00 PM to augment existing TART service. • Pedestrian facilities will be built in the Homewood area to serve commercial businesses, improve access, improve drainage collection and treatment and provide scenic improvements (EIP 775) • Pedestrian oriented plans, with pedestrian access to neighborhood oriented retail, TCPUD bike trail connection to North Base area, and on-site daycare reduces VMT. • A TCPUD bike path into the North Base area. An eight-passenger gondola will bring guests to the Mid-Mountain Base area. Existing TART stops will

Table 2-2

Summary of Environmental Benefits under the CEP Alternatives, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6

Impact	Project Benefits
	be furnished with shelters (two-three stops at HMR), and dial-a-ride, shuttle, and water taxi services will be provided to reduce VMT. • Fair-share participant in SR 28/SR 89 intersection improvement project (EIP 855) • Limitation of total maximum ticket sales during the winter season and limiting day skier parking to 400 on-site parking spaces; electronic sign at Tahoe City "Y" alerting travelers when ski parking is full, use alternative means of transportation. Limiting ticket sales to those arriving via transit only once parking lot at site is full.
13.0 Noise	
NOI-3. Will noise from Project concerts, snowmaking, or other resort operations effect existing or proposed noise-sensitive land uses?	• Alternative transportation initiatives include up to two 25 passenger water taxis for use during summer months, daily summer and winter dial-a-ride service (a minimum from 8:00 AM to 6:00 PM), and shuttle service. Shuttle service between bases will reduce parking demand at the North Base. Additional alternative transportation measures planned include a free-use bicycle fleet for resort guests, five hybrid-electric rental vehicles for HMR guest use, and completion of the missing bike trail segment. TART passes provided for employees, and shuttle service provided to/from employee housing areas not on a TART route. Summer scheduled shuttle service to/from Tahoe City, daily from 9:00 AM to 8:00 PM to augment existing TART service. • Pedestrian facilities will be built in the Homewood area to serve commercial businesses, improve access, improve drainage collection and treatment and provide scenic improvements (EIP 775) • Pedestrian oriented plans, with pedestrian access to neighborhood oriented retail, TCPUD bike trail connection to North Base area, and on-site daycare reduces VMT. • A TCPUD bike path into the North Base area. An eight-passenger gondola will bring guests to the Mid-Mountain Base area. Existing TART stops will be furnished with shelters (two-three stops at HMR), and dial-a-ride, shuttle, and water taxi services will be provided to reduce VMT.

Table 2-2

Summary of Environmental Benefits under the CEP Alternatives, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6

Impact	Project Benefits
14.0 Soils, Geology and Seismicity	
GEO-3. Will the Project result in compaction or covering of the soil beyond the limits allowed in the land capability system, including coverage within sensitive Class 1a and 1b lands?	• Substantial land coverage reduction and restoration on the upper mountain areas (HMR commits a total of 500,000 square feet of restoration that must be verified by TRPA for relocation and permanent retirement of at least 10 percent of existing project area land coverage). • A majority of building footprints to be located on land capability classes 4 and higher.
15.0 Hydrology, Water Rights, Surface Water Quality and Groundwater	
HYDRO-1. Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?	• Treatment of the 50-year/1-hour storm event for redevelopment areas (EIP 725). Capture of water runoff planned through a series of vaults and infiltration galleries. • Removal of culvert and fill from the SEZ at the South Base area and day lighting Ellis/Homewood Creek channel with the Proposed Project (Alternative 1) and Alternatives 3, and 6. • Participation in local Homewood elements of EIP 996; a nine mile segment of SR 89 in Placer County by helping to implement runoff treatment facilities and erosion control features, including high level stormwater treatment vault and a series of additional vegetated basins to treat SR 89 runoff. • Substantial land coverage reduction and restoration on the upper mountain areas (HMR commits a total of 500,000 square feet of restoration that must be verified by TRPA for relocation and permanent retirement of at least 10 percent of existing project area land coverage). • A majority of building footprints to be located on land capability classes 4 and higher.
HYDRO-2. Will Project construction or operation alter the existing surface water drainage patterns or cause increased runoff resulting in flooding or stream bank erosion or contribute runoff in rates or volumes that will exceed the capacity of existing or planned storm water drainage systems so that a 20-yr, 1-hr storm runoff (approximately 1 inch per hour) cannot be contained on the site?	• Treatment of the 50-year/1-hour storm event for redevelopment areas (EIP 725). Capture of water runoff planned through a series of vaults and infiltration galleries. • Removal of culvert and fill from the SEZ at the South Base area and day lighting Ellis/Homewood Creek channel. • Participation in local Homewood elements of EIP 996; a nine mile segment of SR 89 in Placer County by helping to implement runoff treatment facilities

Table 2-2

Summary of Environmental Benefits under the CEP Alternatives, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6

Impact	Project Benefits
	and erosion control features, including high level stormwater treatment vault and a series of additional vegetated basins to treat SR 89 runoff. • Substantial land coverage reduction and restoration on the upper mountain areas (HMR commits a total of 500,000 square feet of restoration that must be verified by TRPA for relocation and permanent retirement of at least 10 percent of existing project area land coverage). • A majority of building footprints to be located on land capability classes 4 and higher.
HYDRO-3. Will Project construction activities or long-term operations result in a substantial degradation of groundwater or result in a substantial change in the quality, quantity, elevation, infiltration, or movement of groundwater?	• Treatment of the 50-year/1-hour storm event for redevelopment areas (EIP 725). Capture of water runoff planned through a series of vaults and infiltration galleries. • Removal of culvert and fill from the SEZ at the South Base area and day lighting Ellis/Homewood Creek channel for Alternatives 1 and 3. • Removal of fill from SEZ in the gravel parking lot at the North Base area: Alternatives 1, 3, 5 and 6. • Participation in local Homewood elements of EIP 996; a nine mile segment of SR 89 in Placer County by helping to implement runoff treatment facilities and erosion control features, including high level stormwater treatment vault and a series of additional vegetated basins to treat SR 89 runoff. • Substantial land coverage reduction and restoration on the upper mountain areas (HMR commits a total of 500,000 square feet of restoration that must be verified by TRPA for relocation and permanent retirement of at least 10 percent of existing project area land coverage). • A majority of building footprints to be located on land capability classes 4 and higher.
HYDRO-C1. Will the Project have significant cumulative impacts to water resources?	• Treatment of the 50-year/1-hour storm event for redevelopment areas (EIP 725). Capture of water runoff planned through a series of vaults and infiltration galleries. • Participation in local Homewood elements of EIP 996; a nine mile segment of SR 89 in Placer County by helping to implement runoff treatment facilities and erosion control features, including high level

Table 2-2

Summary of Environmental Benefits under the CEP Alternatives, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6

Impact	Project Benefits
	stormwater treatment vault and a series of additional vegetated basins to treat SR 89 runoff.
17.0 Hazardous Materials and Public Safety	
PS-1. Will the Project expose people or structures to a significant risk or loss, injury or death involving fire hazards, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands?	• HMR has treated over 400 acres of forested areas to reduce the threat of catastrophic fire. There is a plan to continue the forest thinning/fuels management for forested areas at the 1,200-acre HMR and the adjacent 100-acre TCPUD open space parcel. The fuels management program uses a chipper that grinds up fuels waste and spreads the resulting chip material onto the forest floor which helps to reduce storm water runoff and maintain forest soil health.
18.0 Recreation	
REC-1. Will the Project result in a decrease or loss of public access to any lake, waterway, or public lands or decrease in the quality of a recreational experience?	• By keeping HMR open, existing PAOTs HMR would remain in operation and the 1987 TRPA Regional Plan assignment of 1,100 PAOTs to HMR would remain available for use (although the Project does not propose to expand PAOT capacity). • Provide five miles of hiking trails within PAS 157. Trails include directional markings, mapping, and interpretive signs. Trails will also be linked to pedestrian access pathways at the North Base area and South Base areas. • Mid-Mountain Base area lodge located at the top of the Gondola would be available for public use (pool, access to hiking, etc.). The lodge will include a space dedicated to members of the HMR HOA. Use of the pool will be open to residents of the west shore from Tahoma to Sunnyside (proximate to Homewood) to fill a void for area residents. • New outdoor amphitheater at the North Base area for hosting outdoor concert events and use as the permanent home of the Lake Tahoe Music Festival. • A cross-country ski connection, which is an extension of the old Olympic course, is proposed for future consideration. • HMR open space will be publically accessible. Primary open space areas at North Base area centered on the seasonal public ice pond area/ miniature golf and& landscaped frontage adjacent to SR 89. • Deed restriction from further non-recreational development to be placed on whole of mountain

Table 2-2

Summary of Environmental Benefits under the CEP Alternatives, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6

Impact	Project Benefits
	beyond the North and South Base areas and Mid-Mountain Base area. • Linkage from the public/pedestrian oriented spaces at base areas to a hiking trail system on mountain aided through a new way finding/graphic system.
19.0 Climate Change	
CC-1. Will the Project Result in a Significant Project-Level Impact on Climate Change?	• The North Base area has been accepted into and will be designed under the LEED for Neighborhood Development Pilot Program. The South Base area, although not a part of the LEED for Neighborhood Pilot Program, will also be designed to stringent sustainable development standards using the LEED criteria as a template. Although the goal is to achieve LEED Silver certification, the US Green Building Council initial formal feedback suggests plan is on course for Gold Level.

Source: HBA 2010.

2.4 AREAS OF KNOWN CONTROVERSY AND ISSUES TO BE RESOLVED

The public scoping process that preceded preparation of the Homewood Mountain Resort Ski Area Master Plan EIR/EIS identified overall Project size as the primary area of controversy. Some scoping participants deemed the Project size, number of units proposed, and Project scale too large and extensive and many suggested a reduced Project. Many of the issues to be resolved in the EIR/EIS correlate to this controversy over Project size. The issues to be resolved that pertain to this area of known controversy include the following by resource topic. The Chapter for each resource topic is provided in parenthesis.

Land Use (Chapter 6.0)

- Increased development density;
- Consistency with the adjacent community and community character;
- Plan area boundary expansion (expanding residential and tourist land use areas in a plan area designated as a recreation land use area); and
- Consistency with TRPA and Placer County land use regulations.

Population, Employment, and Housing (Chapter 7.0)

- Adequacy of the affordable housing provision; and
- Area population increases.

Biological Resources (Chapter 8.0)

- Tree removal;
- Impacts to wildlife; and
- SEZ disturbance and changes to the SEZ.

Cultural Resources (Chapter 9.0)

- Disturbance to potentially undiscovered resources.

Scenic Resources (Chapter 10.0)

- Height and massing of proposed development;
- Visibility from Lake Tahoe and other public view corridors; and
- Visual compatibility of the development with the surrounding neighborhood.

Transportation, Parking, and Circulation (Chapter 11.0)

- Short-term construction traffic;
- Long-term increase in vehicle trips;
- Increased vehicle miles traveled; and
- Parking supply and demand.

Air Quality (Chapter 12.0)

- Short-term construction emissions; and
- Long-term term air quality impacts in relation to increased traffic.

Noise (Chapter 13.0)

- Short-term construction noise and vibration;
- Increased vehicle/traffic noise; and
- Increased noise levels due to expanded snowmaking operations.

Soils, Geology, and Seismicity (Chapter 14.0)

- Modifications to land coverage, particularly since land capability district 1a is currently overcovered; and
- Potential for hazards related to the unnamed seismic faults on the site.

Hydrology, Water Rights, Surface Water Quality and Groundwater (Chapter 15.0)

- Construction and operations impacts on water quality;
- Increased stormwater runoff;
- Cumulative watershed effects as required by the TRPA Ski Area Master Plan Guidelines; and
- TROA compliance.

Public Services and Utilities (Chapter 16.0)

- Water supply volume and capacity adequacy;
- TROA compliance; and
- Potential to overwhelm public service providers such as water, wastewater, power, solid waste, law enforcement, fire protection, school, energy (natural gas and electricity), and communication services.

Hazardous Materials and Public Safety (Chapter 17.0)

- Wildfire protection;
- Wildland/urban interface issues; and
- Evacuation issues in relation to increased population and traffic.

Recreation (Chapter 18.0)

- Loss of winter day use recreational capacity should the ski facilities close (Alternative 4); and
- Increased resident and visitor demand for/use of lake and beach access.

Climate Change (Chapter 19.0)

- Increases in greenhouse gas emissions due to construction, building materials and increased traffic and energy use from project operation.

3.0 DESCRIPTION OF PROPOSED PROJECT AND ALTERNATIVES

Homewood Village Resorts, LLC, the Project Applicant, has prepared the Homewood Mountain Resort (HMR) Ski Area Master Plan Project (Project) with the goal of upgrading the Project area by redeveloping the mountain into a mixed-use base area in the north of the resort, a residential base area in the south, and a Mid-Mountain lodge and support facilities in the upper ski area. The HMR Ski Area Master Plan is a mixed-use project developed under the guidelines included in the Tahoe Regional Planning Agency's (TRPA) Community Enhancement Program (CEP) in August 2007. The Project considers six implementation options that include the Proposed Project (Alternative 1), the No Project (Alternative 2), the No Code Amendment for Building Height alternative (Alternative 3), the Close Ski Area – Develop Estate Lots alternative (Alternative 4), the Compact Project area alternative (Alternative 5) and the Reduced Project alternative (Alternative 6).

During the past several years, Homewood Village Resorts, LLC, held a number of workshops with residents of the Lake Tahoe West Shore communities, homeowner's associations, and civil organizations with over 1,000 persons participating and providing input to the development of the HMR Ski Area Master Plan concept. Homewood Village Resorts, LLC met with TRPA and Placer County staff to discuss the concept and incorporate place-based planning and visioning input received during the preparation of TRPA's Regional Plan Update.

3.1 PROJECT AREA LOCATION AND CHARACTERISTICS

The approximately 1,253-acre HMR Ski Area Master Plan Area, the Project area, lies on the western shore of the Lake Tahoe Basin of the Sierra Nevada Mountains, approximately six miles south of Tahoe City in Placer County, California. The Project area is bound by State Route (SR) 89 and Lake Tahoe to the east, Ellis Peak to the southwest, and Blackwood Ridge to the north. Access to the Project area is via SR 89 (West Lake Boulevard), from either Interstate 80 (I-80) from the north or U.S. Highway 50 (US 50) from the south. The Project area includes twenty (20) contiguous parcels of varying sizes. Figure 3-1 provides a map of the Project location and existing land use designations in the TRPA Plan Area Statements (PAS) in the Project area. Figure 3-2 provides a map of the Project location and existing land use designations in the Placer County West Shore Area General Plan in the Project area. Table 3-1 summarizes the TRPA and Placer County PAS, plan designations, and planning statements in the Project area. Table 3-2 details the Project area parcels, including appraisal parcel numbers (APNs) that were combined to create the current parcel configuration at Homewood Mountain Resort, parcel area and TRPA and Placer County Zoning.

Figure 3-3 documents the existing ski resort facilities located at the North and South Base areas. Parcel boundaries are detailed in Figure 3-4.

The Project area is characterized as a "mountain," and the topography has a wide-range of values. The portions of the Project area proposed for development range from reasonably flat (1 to 10%) up to 30% slopes. Special features onsite include Watersheds (Homewood Mountain contains a portion of three watersheds and one intervening area), Lakes (Quail Lake and more than half of Lake Louis), and Mixed-Conifer forests.

Table 3-1

Existing TRPA and Placer County Plan Area Statements in the Project Area

TRPA PAS	Plan Designation	Planning Statements
157 – Homewood/Tahoe Ski Bowl	Land Use Classification: Recreation Management Strategy: Mitigation Special Designation: Scenic Restoration Area	This area should continue to provide opportunities for downhill skiing within guidelines prepared through ski area master plans and scenic restoration plans.
158 – McKinney Tract	Land Use Classification: Residential Management Strategy: Mitigation Special Designation: Scenic Restoration Area	This area should remain residential, with a density of one single-family dwelling per parcel.
159 – Homewood/ Commercial	Land Use Classification: Tourist Management Strategy: Redirection Special Designation: Preliminary Community Plan Area; Transfer of Development Rights (TDR) Receiving Area for Existing Development; Scenic Restoration Area	This area should continue to be a tourist commercial area. However, there is a need for rehabilitation while maintaining the scale and character of the west shore.
Placer County Zoning	**Plan Designation**	**Planning Statements**
157 – Homewood Ski Area/Conservation	Land Use Classification: Recreation Management Strategy: Mitigation Special Designation: Scenic Restoration Area	This area should continue to provide opportunities for downhill skiing within guidelines prepared through ski area master plans and scenic restoration plans for the west shore.
158 – McKinney Tract Residential	Land Use Classification: Residential Management Strategy: Mitigation Special Designation: Scenic Restoration Area	This area should remain residential, with a density of one single-family dwelling per parcel.
159 – Homewood Commercial*	Land Use Classification: Commercial/Tourist Management Strategy: Redirection Special Designation: Preliminary Community Plan Area; **Transfer of Development Rights (**TDR) Receiving Area for Existing Development; Scenic Restoration Area	This area should continue to be a mixed residential and commercial area. However, there is a need for rehabilitation while maintaining the scale and character of the west shore. Because of the historic development of the area, for example, residential uses interspersed with commercial, the boundaries of this plan area are not contiguous. Special areas have been created with limitations on permissible uses to minimize conflicts with adjoining land uses.
160 – Homewood Residential	Land Use Classification: Residential Management Strategy: Mitigation Special Designation: Scenic Restoration Area	The unit should remain a low density residential area while upgrading the area in character with the west shore.

Source: TRPA Plan Area Statements 1986 and West Shore Area General Plan 1998

Table 3-2

Assessor Parcel Numbers and Existing Zoning

Parcel Number	APN	Placer County Zoning	TRPA Zoning	Area (acres)
1	097-050-082	PAS 157	PAS 157	9.99
2	097-050-083 097-050-087	PAS 157	PAS 157	204.88*
3	097-050-050 097-050-084	PAS 157	PAS 157	23.96
4	097-050-053 097-050-086 097-050-085	PAS 157	PAS 157	30.75
5	097-050-091 097-050-092 097-060-036	PAS 157	PAS 157	132.08
6	097-060-035	PAS 157	PAS 157	12.52
7	097-060-023	PAS 157	PAS 157	38.13
8	097-060-016 097-060-020	PAS 157	PAS 157	31.66**
9	097-050-058	PAS 157	PAS 157	9.31
10	097-060-024 097-140-003 097-140-033 097-130-034	PAS 157 PAS159 (paved parking area fronting SR 89)	PAS 157 PAS 158 (gravel parking area)	18.60
11	097-050-059 097-050-090	PAS 157	PAS 157	18.59
12	097-060-032 097-050-068 097-050-076	PAS 157	PAS 157	15.58*
13	097-050-079 097-050-069	PAS 157	PAS 157	15.05*
14	097-050-071 097-050-070	PAS 157	PAS 157	7.84
15	097-210-024 097-170-013 097-050-072	PAS 157	PAS 157	5.67
16	097-050-045 097-050-057 097-050-055 097-050-066 097-050-067	PAS 157	PAS 157	25.76
17	097-050-034	PAS 157	PAS 157	28.96
18	097-050-089 097-060-031	PAS 157	PAS 157	205.89
19	097-050-088 097-060-030	PAS 157	PAS 157	221.59
20	097-050-073 097-060-029	PAS 157	PAS 157	196.42
Total				1,253.23

Notes: * Parcels 2, 12 and 13 are part of the Master Plan Project area but are not owned by Homewood Mountain Resort.
** Total area (Net Area with Exception)

Figure 3-1. Project area Location and TRPA Plan Area Statements

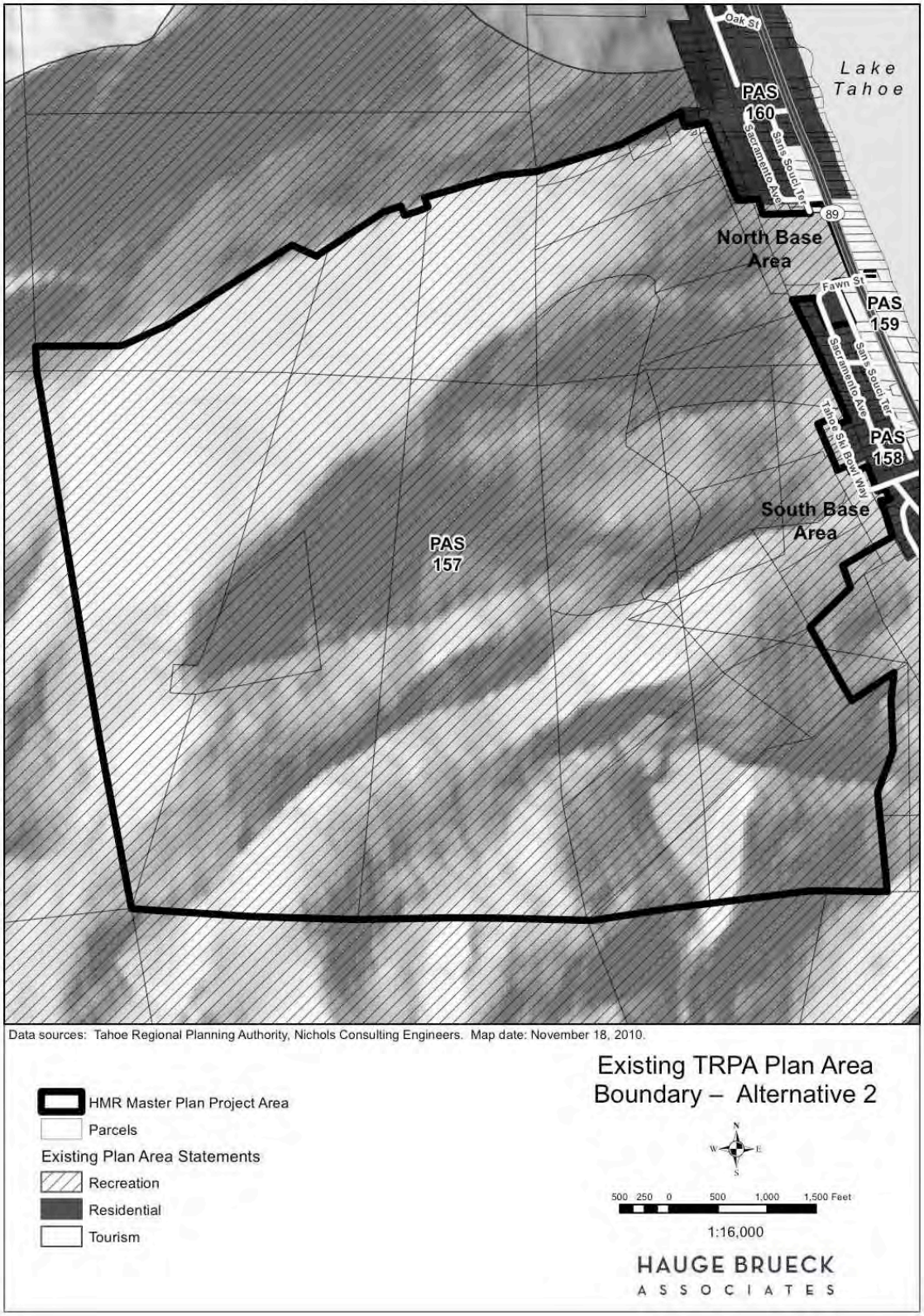


Figure 3-2. Project Area Location and Placer County West Shore Zoning

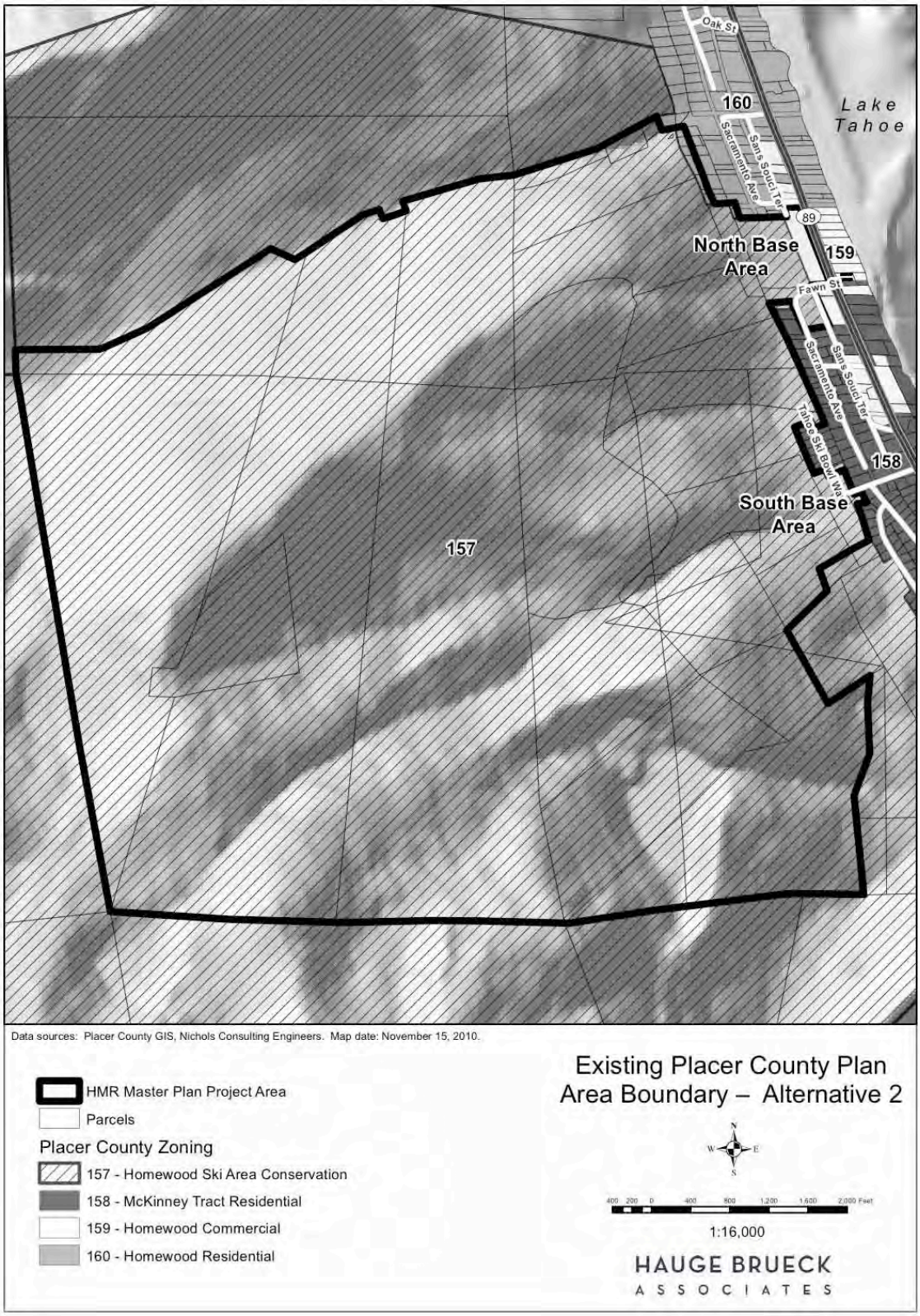
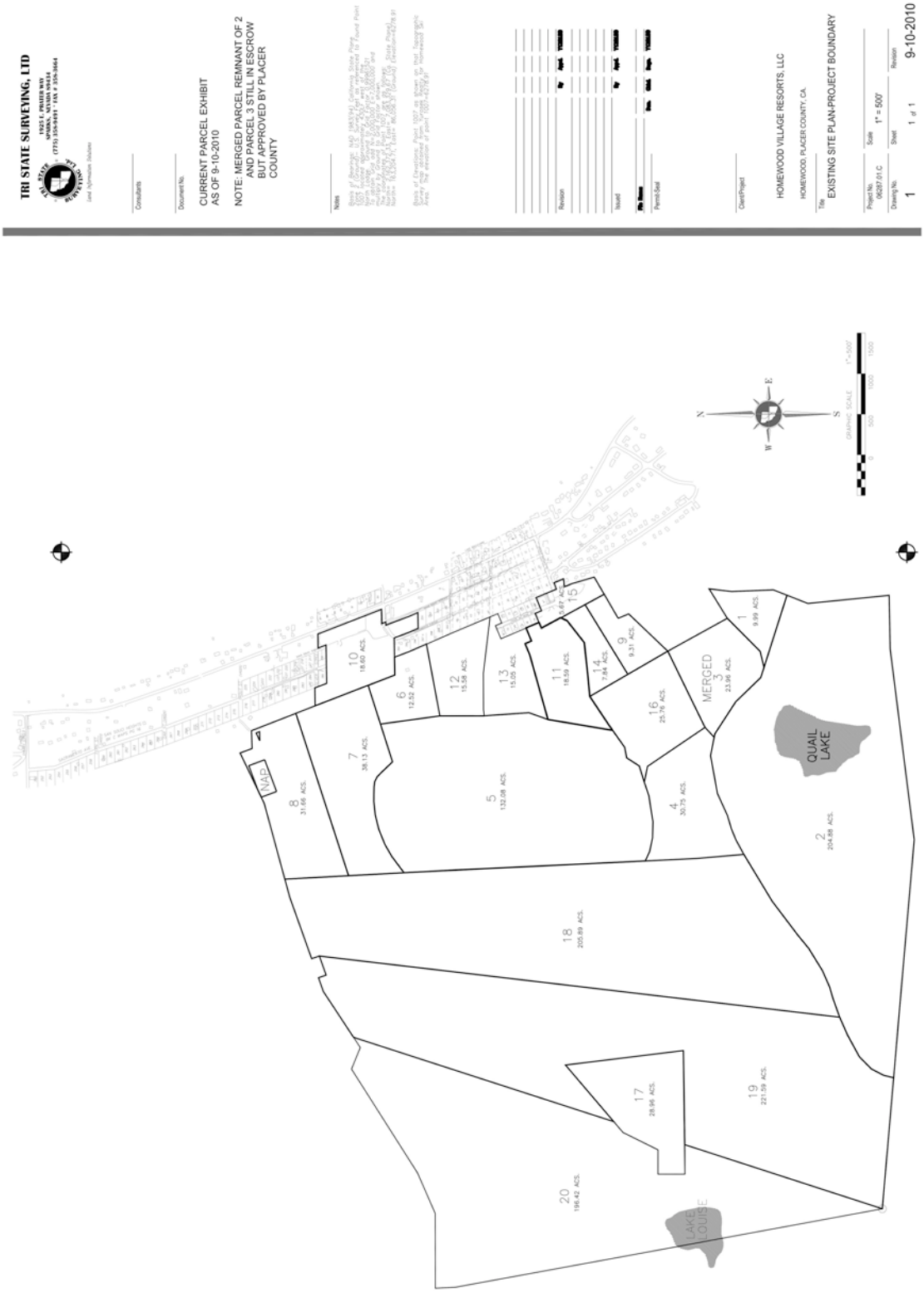


Figure 3-3. Existing South and North Base Area Facility Locations

Figure 3-4. Current Parcel Boundaries - HMR



Existing land coverage is approximately 1,781,000 square feet (including public ROW), which includes approximately 271,000 square feet of coverage at the North Base area and approximately 117,000 square feet at the South Base area. Across the Project area, approximately 288,000 square feet is hard coverage consisting of parking and ski facilities, lodges, etc. and the balance is roadways and trails.

There are no existing tourist accommodation units (TAUs) or residential units currently at the Project area. The existing North Base lodge is 13,943 square feet. The South Base lodge is 7,300 square feet and the vehicle shop/maintenance facility located adjacent to the South Base area is 3,884 square feet. Uses at and adjacent to the North Base area include food services/bar, restrooms, rentals and repairs, retail sales, ticket sales, ski patrol, employee lockers, storage, mechanical rooms, and administrative offices. Uses at and adjacent to the South Base area include food services/bar, restrooms, retail sales, daycare/nursery, ticket sales, ski patrol, ski school, employee lockers, storage, mechanical rooms, and administrative offices. There is no lodge at the Mid-Mountain Base area, but a temporary white tent structure (warming shelter) is used during winter operations, along with a composting toilet/restroom, which does not meet current Placer County Health and Human Services requirements.

Existing ski area parking includes approximately 700 surface spaces at the North Base area and 242 surface parking spaces at the South Base area. During peak weekends during winter ski operations, HMR also uses up to 280 off-site parking spaces located along area roadways, including SR 89, Tahoe Ski Bowl Way, Fawn Street, Sacramento Avenue, Lagoon Road, and Meadow Road.

HMR currently operates eight ski lifts, including one quadruple chair, three triple chairs, and four surface lifts. The eight ski lifts have a current operating capacity of 8,646 passengers per hour (pph) (HMR Needs Assessment, September 14, 2009). According to the Needs Assessment, three ski lifts were removed in 2004 with a verified capacity of 2,478 pph. This unused capacity is banked and available for use for lift replacements or upgrades. There are 62 numbered ski trails in the Project area covering 411 acres. During the summer, five miles of hiking trails are available for use by the public.

In the Lake Tahoe Basin, TRPA uses a recreation-use capacity measure called “Persons-at-one-Time” (PAOTs), which refers to the number of simultaneous users a given area can support. The total PAOT allocation for the Project area is 1,704.

Current snowmaking operations within the Project area use airless, tower mounted fan guns. The system has the capability to cover 23.8 acres and currently uses up to 14.2 million gallons of water per year or 43.6 acre-feet/year (Snowmakers, Inc. 2010).

Water supplies available for snowmaking are the Tahoe City Public Utility District (TCPUD) McKinney well, which produces non-potable water at up to 1,000 gallons per minute (gpm), and domestic water (up to 300 gpm at both the North and South Base areas) available from the TCPUD and the Madden Creek Water Company (MCWC) between 6 p.m. to 6 a.m.

3.2 PROJECT OBJECTIVES

With input received during public meetings in West Shore communities, Homewood Village Resorts, LLC developed objectives for the Project. The Project’s objectives are to:

- Construct onsite residential and tourist accommodation units to support increased HMR skier visits during mid week operations;
- Optimize the quality of the existing winter ski experience and improve the year-round use of the site while responding to changes in technology, market trends and user preferences;

- Maintain consistency with the scale and character of Homewood, California;
- Enhance the lifestyle and property values of West Shore residents; and
- Generate sufficient revenues to support the proposed environmental and fire safety improvements and ensure the continued viability of the ski operations.

3.3 AGENCY ALTERNATIVE REQUIREMENTS

In accordance with TRPA Code of Ordinances §5.3.A and §15126.6 of the State of California CEQA Guidelines, this environmental document includes an analysis of alternatives that would feasibly attain most of the Project's objectives but would avoid or substantially lessen any of the significant effects of the Project, a review of a "No Project" alternative, and a discussion of off-site and on-site alternatives considered but determined to be infeasible. The analysis provides a comparison of a reasonable range of alternatives that feasibly avoid or lessen at least one significant effect of the Project and still achieve most of the Project's objectives as outlined above (PRC §21002; CEQA Guidelines §15126.6(a)). TRPA Code or Ordinances §5.8 requires that alternatives be included in the Draft EIR/EIS for consideration.

The alternatives described include variations in development intensity, residential type, and land use locations to provide flexibility to TRPA and Placer County in selecting the alternative that best meets the needs of the community and the environment. The CEQA Guidelines state that the range of alternatives is governed by the "rule of reason," requiring evaluation of only those alternatives "necessary to permit a reasoned choice"; further, an EIR "need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative."

To meet TRPA requirements for the consideration of alternatives, this environmental document evaluates the potential impacts of the Proposed Project (Alternative 1 – HMR Ski Area Master Plan), continuing operations in the Project area under existing conditions (Alternative 2 – No Project), and four "Action Alternatives" that involve varying quantities and locations of Project elements. The Action Alternatives, described in detail below, are:

- Alternative 3 – No Code Amendment for Building Height;
- Alternative 4 – Close Ski Area, Develop Estate Lots;
- Alternative 5 – Compact Project area; and
- Alternative 6 –Reduced Project.

3.3.1 Off-Site Alternatives

CEQA Guideline §15126.6(f) require that the analysis of alternatives should identify whether any of the significant effects of the Project would be avoided or substantially lessened by changing the Project location. CEQA Guidelines (§15126.6(f)) also state that if the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion. Among the factors considered when addressing the feasibility of off-site alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, and whether the Project Applicant can reasonably acquire, control, or otherwise have access to the alternative site. There is no feasible alternative site for the Project for the following reasons:

- The Project area is already developed as a ski resort, and the planning and development of a new ski area on a currently undeveloped site would involve substantially greater potentially significant environmental impacts compared to the Project area, including potentially greater impacts to biological resources due to vegetation removal and habitat disturbance, impacts to air and water quality due to additional construction activities required, impacts to hydrology due to substantial new surfacing required, and land use impacts due to potential incompatibilities with existing communities;

- There are no vacant or closed ski resorts in the Project area vicinity that could be reasonably acquired or controlled by Homewood Village Resorts, LLC, the Project Applicant;

- The Project area is located on SR 89, the only major thoroughfare along the West Shore of Lake Tahoe. A new project site is not expected to be located on an existing major road, and planning and development would be expected to result in substantially greater impacts to traffic and transportation compared to the Project area;

- An alternative location would not meet three out of four identified planning objectives to:

    - Optimize the quality of the existing winter ski experience and improve the year-round use of the site while responding to changes in technology, market trends and user preference;

    - Enhance the lifestyle and property values of West Shore residents; and

    - Generate sufficient revenues to support the proposed environmental and fire safety improvements and ensure the continued viability of the ski operations.

Therefore, alternative locations are not being considered in this environmental analysis because an alternative site is not expected to substantially lessen the environmental effects of the Project, substantially meet most of the Project's objectives, or be feasible due to the low probability of being able to acquire an alternative property.

3.4 ALTERNATIVES CONSIDERED BUT REJECTED

Sections 3.5 through 3.10 define the Proposed Project (Alternative 1), No Project (Alternative 2) and Action Alternatives 3, 4, 5 and 6. The public suggested several alternatives during the Project Scoping process through written and oral comments. While the specific components varied with each comment, three main types of alternatives were suggested: A Reduced Size Alternative, an Existing Coverage Alternative, and a Conservation Alternative. These alternatives were suggested to reduce or avoid potential project-related impacts to air and water quality, noise, traffic, biological resources, and compatibility with adjacent communities. The alternatives below were considered during initial alternative development and in response to public scoping, but were rejected for further consideration as a result of limited or unidentified environmental impacts as described below. Table 3-3 summarizes the comments received during scoping that requested further analysis of additional alternatives.

3.4.1 Reduced Size Alternative

Multiple scoping comments requested consideration of alternatives that would substantially reduce the size or scale of the Project. Under a Reduced Size Alternative, the scope and scale of the Project would be reduced to provide a fewer number of residential/tourist accommodation units and smaller resort facilities. Alternative 6 is a Reduced Project Alternative developed by TRPA that reduces the number of total tourist accommodation and residential units proposed for the Master Plan from 336 (Proposed

Project) to 284. According to HMR prepared financial documentation, Alternative 6 fails to meet the minimum number of residential/tourist accommodation units required for HMR to feasibly achieve the number of skier visits needed during the winter mid-week period to achieve a key project objective (generate sufficient revenues to support the proposed environmental and fire safety improvements and ensure the continued viability of the ski operations). However, for comparison purposes in the EIR/EIS, TRPA decided to analyze an alternative that would reduce development proposed in the HMR Master Plan by approximately 15 percent.

HMR prepared a financial analysis for agency review to justify the number of tourist accommodation and residential units they have proposed in their Master Plan application. The typical ski season on average consists of 110 days, 60 of which are non-holiday mid-week days. Non-holiday mid-week days have historically averaged around 300 skier visits per day. HMR's financial analysis states that the Ski Resort needs to increase mid-week ticket sales by an average of 400 in order to generate sustainable revenues and at minimum cover cost of operations. HMR's analysis states that weekends and holidays have sufficient skier visits and related revenue generation to cover operating expenses, but that the marked decline in skier visitation during the mid-week period has been an impediment to balancing the overall annual cost of operations with revenue. In order to increase mid week visitation to generate 400 additional ticket sales per day, HMR states that a minimum of 316 onsite tourist accommodation and residential units are required. Their analysis assumes that each unit will be occupied by an average of 2.25 skiers and will have an average occupancy rate of 55 percent resulting in approximately 400 additional skier visits per day during the mid-week period (316 tourist accommodation & residential units (336 including units with lock-offs) times an average of 2.25 occupants per unit times 55 percent average occupancy rate equals approximately 400 skier visits). The occupancy rate and average number of occupants per unit that was modeled in the HMR analysis was derived from historic data of area resorts and other tourist accommodations tracked by the North Lake Tahoe Resort Association. Therefore, Reduced Size Alternatives proposed for fewer units than Alternative 6, which only has 282 units, have been rejected from further consideration.

3.4.2 Existing Coverage Alternative

Under an Existing Coverage Alternative, the Project would be limited to redevelopment or new development in existing disturbed or built areas. An Existing Coverage Alternative was rejected from further consideration because it would not meet most of the project objectives and does not avoid or lessen at least one significant effect of the Project. Overall Project area land coverage reduction can be achieved within the Project area, but a majority of the existing land coverage to be removed is located on the upper mountain, which is not suitable for development of the proposed multi-family residential units, TAUs, and commercial retail uses.

3.4.3 Conservation Alternative

Under a Conservation Alternative, the Project would be redesigned to avoid construction in SEZs, wetlands, and riparian habitats. A Conservation Alternative was rejected from further consideration because the Project includes redevelopment in two previously disturbed SEZ areas that have already been previously impacted. At the South Base area SEZ, the existing fill and culvert associated with the public roadway ROW is being removed and replaced with a bridge span, resulting in decreased impacts to SEZs and riparian habitats as compared to existing conditions. At the North Base area SEZ, the parking structure and the employee/workforce housing units will be located within the existing gravel parking lot area partially delineated as SEZ. Although the site is partially delineated as SEZ, the site is developed as a gravel parking lot and has diminished habitat value. With the proposed redevelopment, the disturbance in existing SEZ will be eliminated under the Project through SEZ setbacks and restoration. Thus, from an environmental perspective, a "conservation alternative" that avoids these two SEZs at the Base areas has

no additional environmental advantages as compared to the Project. For the extension of Tahoe Ski Bowl Way to serve the proposed Townhouses, there is no alternative but to cross a small SEZ drainage way that is located between the North and South Base areas. Alternatives 5 and 6 do not include the proposed Townhouses and would therefore avoid this SEZ crossing because no extension of Tahoe Ski Bowl Way would be required.

Table 3-3

Project Alternatives Proposed in Scoping Comments

Commenter	Proposed Alternative	Consideration in the EIR/EIS
Written Comments		
Gerald J. Wotel. 02/08/2008	**Reduced Size Alternative.** Consider a reduced size (scale, density, height, and character) alternative, due to concerns about traffic, and SEZs and wetlands at Tahoe Ski Bowl Way, Fawn St., Sacramento Ave., and condo locations. Quantities: 90 condos; remove parking from North Base; 10 or less workforce housing; reduce CFA by 20,000 feet; remove 42 two-story residential units; reduce North Base Lodge to 30,000 square feet; 30 two-story homes; detached single-family homes instead of parking garage; remove dining facility at Mid-Mountain lodge; reduce rentals to 82 TAUs and 101 TAUs.	See Section 3.4.1 above. Alternative 6 reduces the scale and density of the Project.
Carole Gray. 08/23/2008	**Reduced Size (200-Unit) Alternative.** Consider a 200-unit alternative with shuttles to reduce impacts to traffic and aesthetics (due to parking lot), water quality, and character of the area.	See Section 3.4.1 above. Alternative 6 reduces the scale and density of the Project.
Woody Shackleton. 09/03/2008	**Reduced Size (250-Unit) Alternative.** Consider an alternative with 250 or fewer units to reduce traffic impacts, and a greater percentage of individual vs. fractional ownership.	See Section 3.4.1 above. Alternative 6 reduces the scale and density of the Project.
Michael Lozeau. 9/05/2008	**Existing Coverage Alternative.** Consider an alternative with no net increase in coverage at HMR, and results in a net reduction in pollutants, especially air emissions.	Net land coverage will be reduced under Alternatives 1, 3, 4, 5, and 6.
Judy Tornes and Jerry Winters. 09/07/2008.	**Reduced Size Alternative.** Consider an alternative with reduced scale and size, such that code amendments and transferred TAUs are not required, and reduces or avoid impacts related to: scenic resources (special heights, increased setbacks, views from the lake, impacts to neighbors, tree heights); scale and character (timeshares/fractional ownership, neighborhood compatibility, real estate); environmental (land capability, avalanche and landslide concerns, runoff from roofs, increased population and traffic, greenhouse gases, construction impacts, CO, light, water supply, public services, number of trees removed, wildlife habitat, historical significance, future link to Alpine); recreation	See Section 3.4.1 above. Alternative 6 reduces the scale and density of the Project.

Commenter	Proposed Alternative	Consideration in the EIR/EIS
	(beach access, pedestrian crossings, sidewalks, additional amenities, mix of uses, additional boats, views for Lake Tahoe Music Festival, access to Mid-Mountain pool, current skiing trends at Lake Tahoe); Cumulative impacts (include all CEP projects); code amendments (concessions, compliance with Placer and TRPA); traffic (carrying capacity of SR 89, entrances/access, driveways, Fawn St. and Silver St., employee housing and access, long term benefits from shuttles and buses, performance bond); parking (assigned parking, impacts from garage, boat ands trailer parking, storage); and fire safety (water supply and infrastructure, evacuation plan, mitigations through payment of fees).	
Susan Gearhart. 09/22/2008.	**Conservation/Current Land Capability Alternative.** Consider an alternative with no changes to land capability, no development on Land capability district (LCD) 1a lands, and no Mid-Mountain lodge to reduce or avoid impacts to water quality, water supply, and SEZs.	See Sections 3.4.2 and 3.4.3 above.
Paul Eisenhardt. 09/30/2008.	**Vehicle Depot Garage and Roadway Relocation Alternative.** Consider an alternative to relocate the vehicle depot garage and roadway to avoid impacts related to noise and vehicle turnaround on adjacent properties.	The vehicle depot (south base area maintenance area) would be relocated under Alternatives 1, 3, 5, and 6.
Robert Mullarkey. 09/30/2008	**40-Foot Height Alternative.** Consider an alternative with maximum 40-foot building heights to avoid impacts to scenic resources.	Alternative 3 would be consistent with existing Code Chapter 22 (Height) requirements.
Rick and Ali Van Zee. 10/01/2008.	**Mixed-Use on Existing Disturbed Areas Alternative.** Consider an alternative that develops mixed uses on existing disturbed areas with impervious surfaces to reduce or avoid impacts to traffic, noise, light pollution, wetlands, wildlife, and health (West Nile virus); and to maintain compatibility with the existing community.	See Section 3.4.2 above.
Michael Donahoe, Ron Grassi, and Jennifer Quashnick. 10/01/2008.	**Regional Plan Alternative/ Reduced Project Alternatives.** Consider alternatives that are consistent with the level of development in the Regional Plan or Reduced Project (25, 50 and 75% of overnight population density) Alternatives based on Bailey's Classification limits and on the Community Plan due to concerns about future water supply with climate change, exposure of people and property to natural disasters (landslides, wildfire, flooding), consistency with the character of Homewood, potential to physically divide an established community traffic, parking, emergency evacuation plans, air quality impacts (CO, O_3, PM_{10}, $PM_{2.5}$), water quality impacts (siltation, deicing) stormwater runoff, noise, wildlife, fisheries, scenic quality, recreation, vegetation, and invasive plants. **Mid-Mountain Lodge Size Alternative.** Consider an	See Sections 3.4.1, 3.4.2 and 3.4.3 above. Alternatives 1, 3, 5, and 6 propose amendments to Code Chapters 33 and 35 to allow for use of bonus units (e.g., TABU/MRBU) within Ski Area Master Plans. This Code amendment is required for use of bonus units within the Master Plan. The amendment would not result in significant impacts. Therefore, requiring geographic restrictions for

Commenter	Proposed Alternative	Consideration in the EIR/EIS
	alternative that maintains the Mid-Mountain lodge to the existing legal coverage. **Local TABU/MRBU Use Alternative.** Consider an alternative that limits to the use of TABUs and MRBUs to within same and adjacent watersheds. **Allowable Height Alternatives.** Consider a range of alternatives that offer a variation in the range of allowable and proposed heights to avoid or reduce impacts to visual resources.	use of the TABU/MRBU is rejected from further consideration. Alternative 3 would be consistent with existing Code Chapter 22 (Height) requirements.
Jason Kuchnicki. 10/02/2008	**LEED Certification Levels Alternatives.** Consider alternatives based on a range of LEED Certification levels. **No SEZ Development Alternative.** Consider an alternative with no development on low capability lands such as SEZs.	Alternatives 1, 3, 5 and 6 propose to comply with the LEED Neighborhood Development Pilot Program. See Section 3.4.3 above.
William Davis. 10/02/2008.	**Sidewalk and No On-Street Parking Alternative.** Consider an alternative that adds sidewalks and eliminates on-street parking to avoid or reduce impacts to pedestrians and bicyclist.	Alternatives 1, 3, 5 and 6 include increased pedestrian and bicycle facilities and use of onsite parking for resort guests.
Brenda Hunt, TRPA. 10/08/2008	**Boutique Resort Alternative.** Consider an alternative with a boutique-style resort and no fractional ownership. **North Base Access Alternative.** Consider an alternative with access provided through North Base instead of through Tahoe Ski Bowl Way. **Reduced Parking Alternative.** Consider an alternative that provides reduced parking. **Base Development Alternative.** Consider an alternative that restricts development to the bases, and avoids development at the Mid-Mountain to reduce or avoid impacts to wildlife.	Alternatives 5 and 6 do not include fractional units. Alternatives 5 and 6 do not include access to the North Base from Tahoe Ski Bowl Way. Alternatives 1, 3, 4, 5, and 6 reduce parking. Development proposed for the Mid Mountain lodge area does not result in significant impacts to wildlife. Therefore, restricting development to the base areas to avoid impacts to wildlife is rejected from further consideration.
Flavia Sordelet. 10/14/2008.	**Conservation/Restoration Alternative.** Consider an alternative that includes restoration of disturbed sites and allows for low impact recreation.	See Section 3.4.3 above.
Oral Comments, September 10, 2008, TRPA APC Hearing		
Flavia Sordelet, League to Save Lake Tahoe	**Reduced Size Alternative.** Consider an alternative to reduce the scale and density of the Project to reduce or avoid impacts to SEZs, air quality, water quality, sewage	Alternative 6 reduces the scale and density of the Project.

Commenter	Proposed Alternative	Consideration in the EIR/EIS
	treatment capacity, traffic, and ETCCs.	
Ron Grassi, Sierra Club	**Reduced Size Alternative.** The TRPA should consider an alternative that reduces the size of the Project to reduce or avoid impacts to water supply, fire protection services, traffic, evacuation routes, and parking supply.	Alternative 6 reduces the scale and density of the Project.
Susan Gearhart	**Reduced Size Alternative.** Consider an alternative that reduces the size of the Project to avoid a land capability challenge and reduces or avoids impacts associated with construction on steep slopes and LCD 1a lands, SEZs, and impacts to visual quality.	See Sections 3.4.2 and 3.4.3 above. Alternative 6 reduces the scale and density of the Project.
Lauri Kemper, APC	**Reduced Size Alternative.** Consider an alternative that reduces the overall size of the Project to reduce or avoid impacts to sewage treatment capacity. This alternative should consider pumped stormwater storage ponds to avoid affecting water quality in existing lakes, additional building height to reduce the developed footprint, and maintenance facilities located at the base to facilitate fuel spill clean-ups.	Alternative 6 reduces the scale and density of the Project. Alternatives 1, 5 and 6 include additional building height to reduce building footprints. Alternatives 1, 3, 5, and 6 relocate rubber-tired vehicle maintenance to offsite facilities designed to accommodate vehicle maintenance. Tracked vehicle maintenance would be performed at a newly constructed facility located next to the mid mountain lodge.
Oral Comments, September 23, 2008, Granlibakken Resort, Tahoe City, CA		
Susan Gearhart	**Conservation Alternative.** Consider an alternative that includes mixed uses limited to the area of existing disturbed areas (parking lots, buildings), with the objective of enhancing the community, and avoids or reduces impacts to water supply (considering climate change), SEZs, steep slopes, and wetlands.	See Sections 3.4.2 and 3.4.3 above.
Flavia Sordelet, League to Save Lake Tahoe	**Reduced Size Alternative.** Consider an alternative to reduce the size and scale of the Project by limiting building heights; allowed uses; transfer of TAU (bedroom ratio); and the land capability of TAU. This alternative should include the restoration of SEZs, compliance with ETCCs, reduction of impervious surfaces, and alternative transportation (bikes/water taxi/shuttle).	Alternative 6 reduces the scale and density of the Project.

Commenter	Proposed Alternative	Consideration in the EIR/EIS
Jerry Wotel, North Tahoe Citizen Action Alliance.	**Reduced Size Alternative.** Consider an alternative that reduces the size of the Project.	Alternative 6 reduces the scale and density of the Project.

Source: Appendix B, NOP Scoping Comments, 2008

3.5 ALTERNATIVE 1 – PROPOSED PROJECT

The Proposed Project (Alternative 1) is described in the HMR Ski Area Master Plan dated October 2010 and is a conceptual plan to redevelop a mixed-use base area in the north Project area, a residential base area in the south, and a Mid-Mountain lodge and beginner ski area. The Proposed Project would provide for up to 155 tourist accommodation units, 181 residential units and 13 workforce/employee housing units at the North and South Base areas. The Project area and proposed redevelopment is shown on Figures 3-1 through 3-10 and described below.

As explained in Chapter 1, this document is both a Program EIR and a Project EIR under CEQA, based on the level of detail provided for each project component. Table 3-4 details the project-level and program-level components of the Proposed Project (Alternative 1).

3.5.1 Removal of Existing Structures

The initial step of the Project development would be to remove existing structures and ski area facilities. At the North Base area, the Proposed Project (Alternative 1) will remove four existing ski lifts (including beginner lifts and the base of the Madden Ski Lift) and associated pads, footings and utilities; buildings and concrete foundations; storm drain structures; asphalt parking surfaces; overhead transmission lines; and a pumphouse. Buildings and facilities at the North Base area to be removed are shown in Figure 3-5.

At the South Base area, the Proposed Project (Alternative 1) will remove one existing ski lift (the beginner surface lift) and associated pads, footings and utilities; buildings and concrete footings; asphalt parking surfaces; and overhead transmission lines. Structures and facilities at the South Base area to be removed are shown in Figure 3-6.

At the Mid-Mountain area, the Proposed Project (Alternative 1) will remove existing shacks, an abandoned foundation, the white tent structure, the top station of the existing Madden Ski Lift and associated pads, footings and utilities.

Table 3-4

Project-level and Programmatic-level Components – Proposed Project (Alternative 1)

Phasing	Project-level Component	Program-level Component
Phase 1	Amendments to TRPA Plan Area Statements, Code of Ordinance and Goals and Policies	Extension of Cross-Country Ski Trails at South Base Area
	Mid Mountain Day Lodge and Accessory Structures (e.g., Gondola Terminal)	Mid Mountain Learn to Ski Lift and Ellis Chair Lift Replacement
	Mid Mountain Maintenance/Water Tanks	Snowmaking Expansion including Accessory Buildings (e.g., pump houses)
	Gondola	On Mountain Road Abandonment and Restoration (e.g., restoration sites with potential use of project generated fill material)
	North Base Hotel/Lodge Building B	
	North Base Day Skier Services Building and Residential Units Building A	
	Alternative Transportation Program (e.g., Summer Water Taxi, Shuttles, Dial-A-Ride)	
	Extend TCPUD Bike Trail through North Base Area	
	Amphitheater	
	North Base Commercial and Residential Units Building C	
	North Base Employee/Workforce Housing and Day Skier Parking Structure Building P	
	North Base Gathering/Ice Pond Area	
	North Base Residential Units Building D	
	North Base Residential Units Building E	
Phase 2	Demolish South Base Maintenance Facility	South Base Tahoe Ski Bowl Way Extension to North Base Townhouses
	South Base Residential Units Building A	North Base Townhouses
	South Base Residential Units Building B	
	South Base Culvert Removal/SEZ Restoration	

Source: HMR Master Plan 2010

3.5.2 North Base Area

The approximately 17-acre North Base area will include six new mixed-use structures and eight new townhouse structures to provide up to:

- 36 residential condominiums (multi-family residential units);

- 16 townhouses (multi-family residential units);
- 20 fractional ownership units (TAUs with 10% or more units with kitchens);
- A resort lodge with
    - 75 traditional hotel rooms (TAUs with less than 10% of units with kitchens),
    - 40 two-bedroom for sale condominium/hotel units (up to 20 of which will have one-room lock-offs, which means the units could be used as two rentals instead of one for a total of 60 TAUs with 10% or more units with kitchens), and
    - 30 penthouse condominium units (TAUs with 10% or more units with kitchens located on the upper floors of the hotel);
- 25,000 square feet of commercial floor space (a portion of which may be provided at the Mid-Mountain lodge);
- 13 employee/workforce housing units (multi-family residential bonus units);
- A 272 space day skier parking structure on four levels; and
- 30,000 square feet of skier services to provide food and beverage service, adult and children's ski school services, rental shop, locker facilities, restrooms, first aid, and mountain administration and operations offices.

Under the Proposed Project, day-skier access and ski resort amenities and services will be relocated to the North Base in Buildings A and B (Figures 3-7 and 3-8). The Proposed Project (Alternative 1) will provide 729 parking spaces at the North Base (with potentially up to 770 spaces provided based on final parking layout design), including 272 day use parking spaces in a four-level parking structure located adjacent to Building P, 47 limited surface parking spaces at the retail and skier drop off area, and 410 underground valet stacked and single parking spaces below the hotel and skier services buildings (Buildings A and B). The commercial/retail areas are designed to be accessible from the adjacent residential neighborhood, employee/workforce housing, and the day-skier parking structure.

The 75-room, five-star boutique-style hotel (Building B, Figure 3-7) will feature resort amenities that are expected to include full service restaurant, spa and fitness facility. Hotel rooms will be combined with 40 two-bedroom, two-bath condominium/hotel units (up to 20 with one-room lock-offs) and 30 individually owned penthouse condominium units (top floor of Building B). The condominium/hotel units and penthouse condominium units will be individually owned and owners will be offered full hotel services.

The 36 residential condominiums and up to 20 fractional ownership units will be spread between 2- and 3-story buildings located adjacent to SR 89 (Buildings C, D and E, Figure 3-7). Some of these units will be located in buildings with village retail space on the ground floor. Thirteen employee/workforce housing apartments with, up to four bedrooms each, will be located adjacent to the above ground parking structure accessed from Fawn Street to the south of the hotel and condominium units in Building P.

Vehicle access to 16 townhouses in eight buildings in the North Base area would be via an extension of Tahoe Ski Bowl Way from the South Base area. Per Placer County requirements, a secondary access road is required to be constructed to serve these townhomes due to the length of Tahoe Ski Bowl Way, however, the project has not included details for a secondary access to allow analysis of potential impact of this road construction in this EIR/EIS. The North Base townhomes are a Phase 2 project component that will be analyzed at a project level for Placer County CEQA and TRPA purposes prior to its eventual permitting.

3.5.3 South Base Area

Under the Proposed Project (Alternative 1), the South Base area will be converted to a neighborhood residential area, with day-skier access and skier amenities re-located to the North Base area. The approximately six-acre South Base area will include up to 99 residential condominiums (multi-family residential units). The condominiums will be spread throughout the South Base area in Buildings A, A1, and B (Figures 3-7 and 3-9) that will be up to three stories in height. The condominium structures will be located at the present location of the children's facilities, ski school, and day lodge buildings that would be removed.

There will be 117 underground parking spaces provided, with up to 150 underground parking spaces ultimately provided based on final parking layout design, located directly below the residential footprints, which utilizes the excavation required for the building foundations and allows for more pervious landscape surfaces around the buildings in lieu of surface parking. During peak seasons, the area will include a small snack bar in one of the residential buildings. The South Base area will include access to 16 new townhouses located slightly above the North Base area off of an extension of Tahoe Ski Bowl Way. At its crossing of Homewood Creek adjacent to the existing base lodge, Tahoe Ski Bowl Way will be realigned slightly to the east and the existing culvert will be removed and replaced with a bridge span. In order to relocate the roadway, HMR must comply with Placer County Procedures for Abandonment of County Easements. County requirements for the realigned segment of Tahoe Ski Bowl Way include a 40-foot minimum width and a turnaround (Plate U-22.1 or U-22.2) with public road easement dedication at the end of the Tahoe Ski Bowl Way public road easement (just north of the proposed South Base area buildings). The existing maintenance facility and surface parking areas will be removed from the South Base area.

Figure 3-5. Proposed Project (Alternative 1) North Base Area Demolition Plan

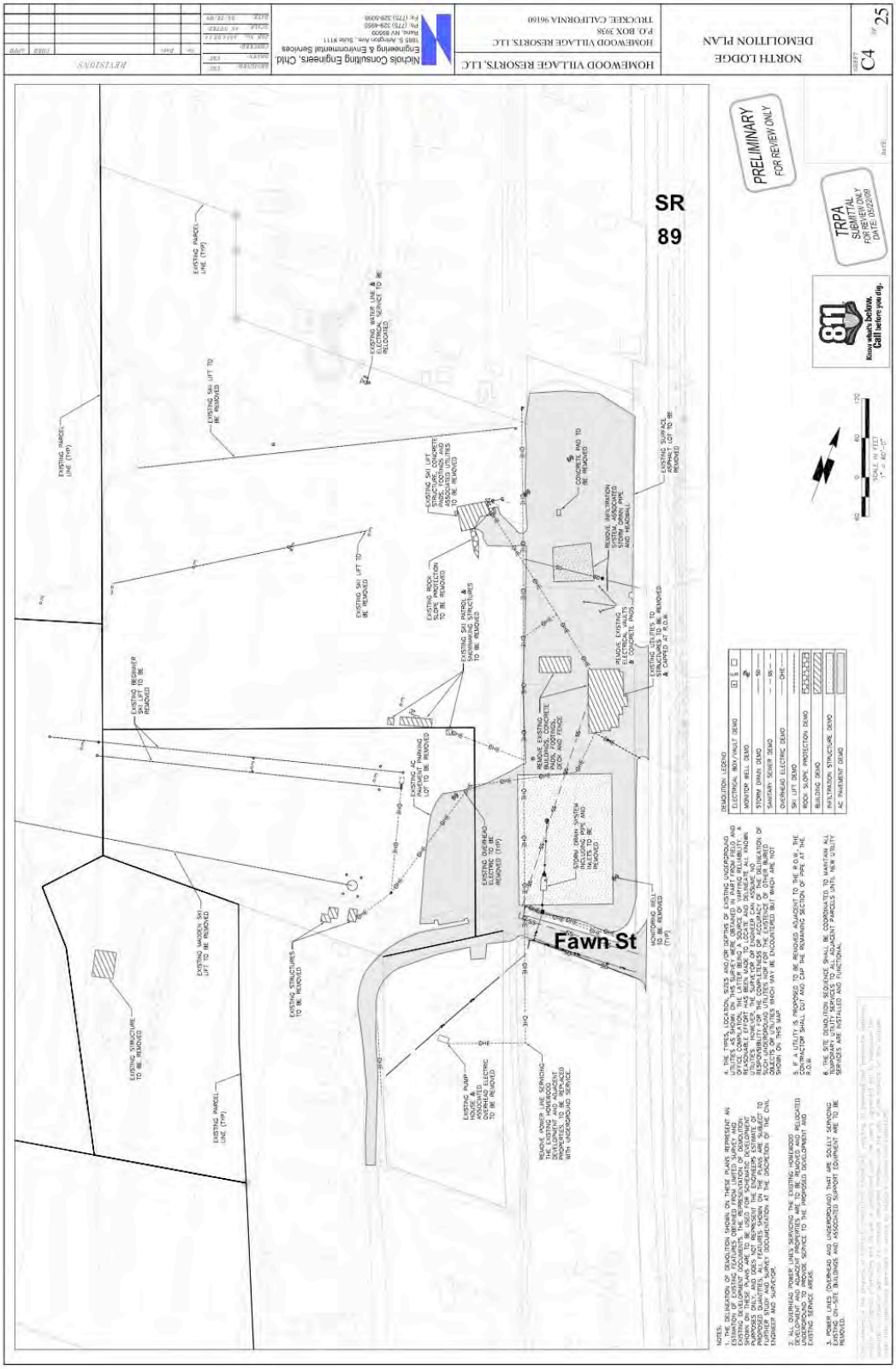


Figure 3-6. Proposed Project (Alternative 1) South Base Area Demolition Plan

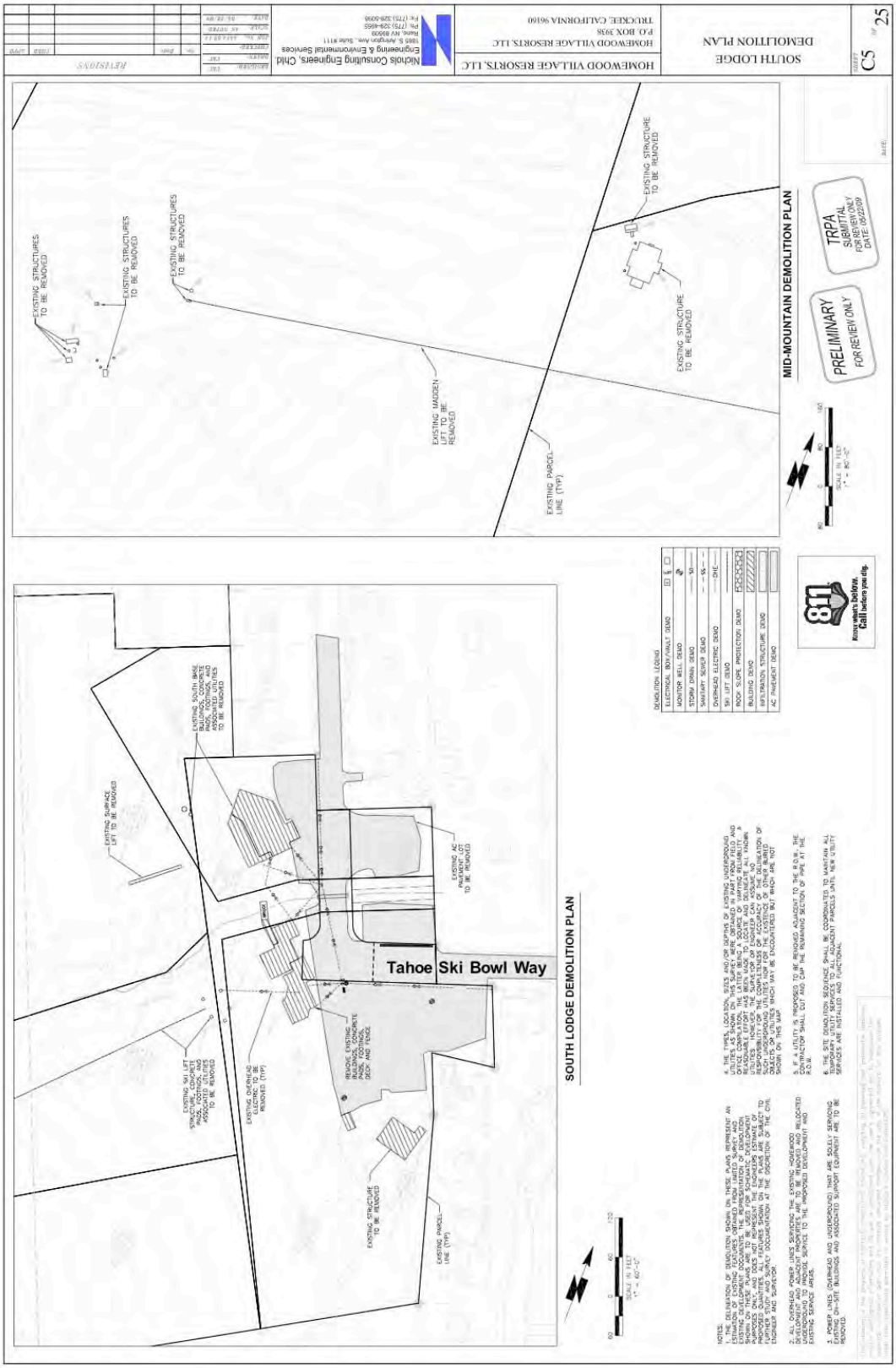
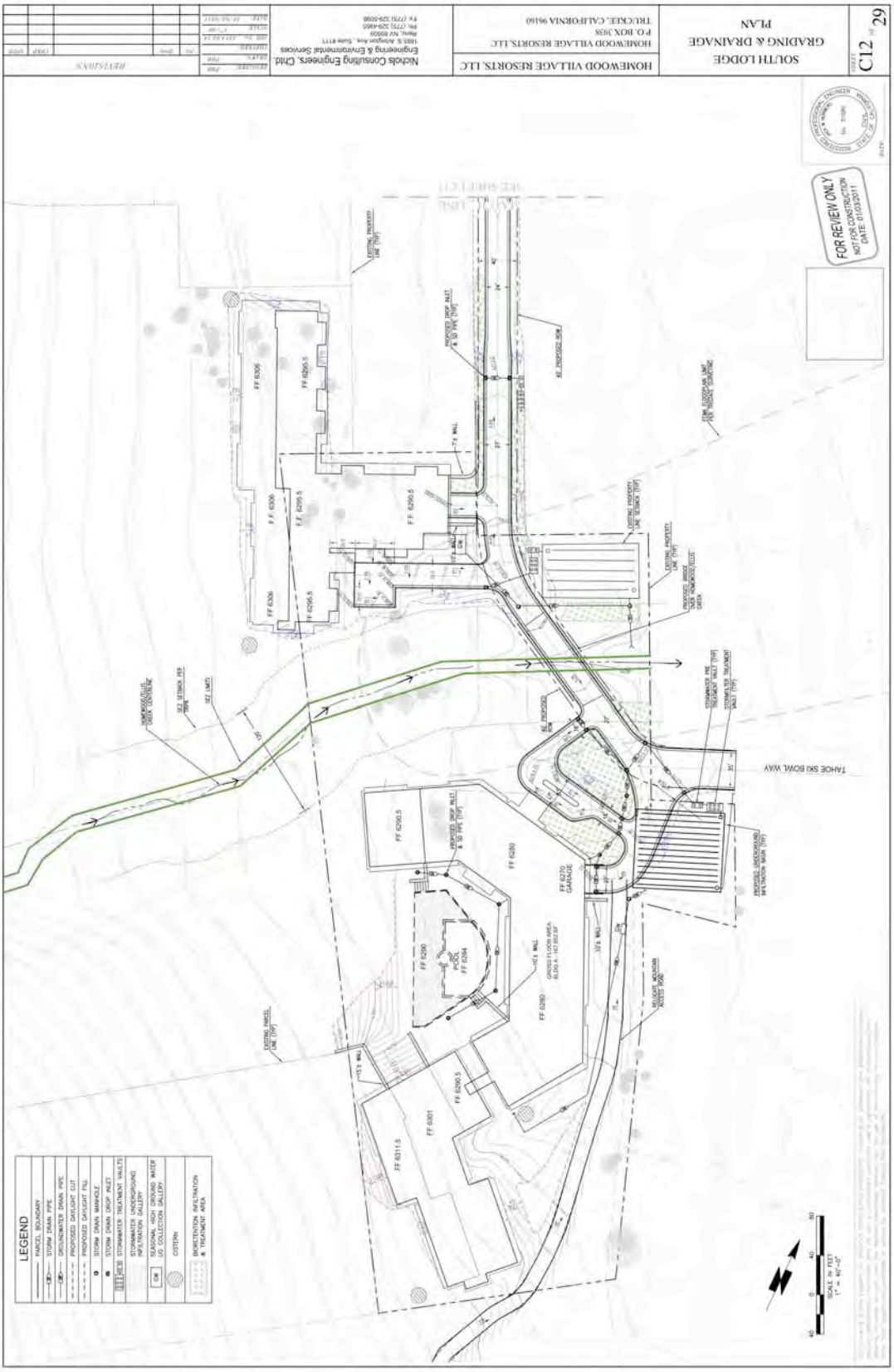


Figure 3-7. Proposed Project (Alternative 1) Overall Site Plan

Figure 3-8 Proposed Project (Alternative 1) North Base Area Site Plan

Figure 3-9 Proposed Project (Alternative 1) South Base Area Site



3.5.4 Mid-Mountain Area

The Mid-Mountain area will include:

- A 15,000 square feet day-use lodge with a detached gondola terminal linked to the lodge by a covered passage;
- A learn-to-ski lift;
- A food & beverage facility with indoor & outdoor dining (part of day lodge);
- A small sundry outlet (part of day lodge);
- An outdoor swimming facility for use during the summer months by West Shore residents (adjacent to day lodge);
- A snow-based vehicle (e.g., grooming equipment) maintenance facility; and
- Two water storage tanks located up hill from the day-use lodge.

The Mid-Mountain lodge, as shown in Figure 3-10, will replace the white tent structure and the concrete foundation located at the Mid-Mountain near the top of the Madden ski lift. As part of the Proposed Project (Alternative 1), the composting toilet/restroom will be removed and replaced with connection to the public sewer system. The learn-to-ski lift will be located north of the proposed lodge on gently sloping terrain. The snow-based vehicle shop/maintenance facility will be relocated from the South Base area to the Mid-Mountain area in an 8,000 square feet facility directly behind the gondola terminal. Two 250,000-gallon water storage tanks will be constructed at Mid-Mountain area on the slope above the vehicle shop/maintenance facility to serve the entire Homewood Mountain Resort project area.

Mid-mountain lodge will include accessory uses: 1) Office of Emergency Services (OES) communication room, repeater antennas and emergency generator room; 2) An emergency cache room (fire fighting equipment) for North Tahoe Fire Protection District (NTFPD) and; 3) possibly Homewood ski patrol office.

Figure 3-10. Proposed Project (Alternative 1) Mid-Mountain Area Site Plan

3.5.5 Accessory Buildings

Several small accessory buildings will be associated with snowmaking operations (e.g., new/updated pump houses) and alternative energy generation. Opportunities for providing alternative energy sources will be explored during development of the Project. Plans include exploration of renewable energy sources such as micro-hydro, solar, geothermal, biomass, and wind energy for serving the Project area. The most promising possibility for energy generation lies in a potential micro-hydro development on Madden Creek and the Quail Lake outlet stream. These proposals, once developed in more detail, will require additional environmental analysis and permit review in the future.

3.5.6 Leadership in Energy and Environmental Design (LEED)

The North Base area has been accepted into and will be designed under the Leadership in Energy and Environmental Design (LEED) for Neighborhood Development Pilot Program as an example of exemplary green and sustainable development. The South Base area, although not appropriate for the

LEED for Neighborhood Pilot Program because it is not a mixed use development, will be designed to achieve sustainable development goals using the LEED criteria as a template.

The LEED certification standards put a great emphasis on the reuse of building materials and the limiting of waste disposal for previously developed sites. The Project area has a number of existing buildings that will be taken down as part of the redevelopment process. The architecture of the new buildings will utilize the some of the existing materials from these dismantled structures. The opportunities for reuse are not limited solely to the architecture. The components from old chair lifts can be used when building new chair lifts on-site or at other local ski resorts. The ability to implement the sustainable practice of material reuse and decreasing waste production will be one way that HMR can minimize their impact on the environment.

HMR is creating a "Green Guide" or sustainability plan that addresses the concerns associated with the building process. Architectural design at the Project area will consider the "life-cycle" costs of the infrastructure and buildings used at HMR. Green building principles that are planned to be implemented during redevelopment include:

Building Orientation - The proper positioning or orientation of the buildings to play a significant role in how much energy is expended throughout the year.

Building Materials - The materials from the de-constructed buildings will be recycled and reused in new buildings and the components from old chair lifts can potentially be reused at HMR and at other ski resorts.

Building Energy Efficiency - The buildings in the Project area will be well-insulated with tight construction and the use of non-toxic and/or recycled insulation materials and plans will include exploring ways to recapture waste heat from boilers for uses such as radiant heat systems, domestic hot water, laundry needs, pools, hot tubs and other places that require heat.

Building Electrical Systems - For spaces that require artificial lighting, high efficiency lighting that utilize fluorescent and LED fixtures will lower energy costs.

Water Conservation - Low flow efficient fixtures are planned in all facilities including transient lodging, residential, and commercial.

Water Use - A portion of roof runoff, which is generally considered clean runoff that does not require mechanical treatment, will be routed to and captured in cisterns located next to residential and commercial buildings for use as supplemental irrigation water for landscaping and potentially tying in to the snow making system during winter months.

3.5.7 Roads, Best Management Practices, and Land Coverage Removal

Starting in 2006, HMR teamed with Integrated Environmental Restoration Services (IERS) to complete sediment source control and road removal and restoration projects and monitoring in anticipation of eventual improvements within the Project area. Onsite road restoration in the upper mountain area will continue as part of the Proposed Project (Alternative 1). The value of removing unpaved roads in the upper watershed is defined in the Lake Tahoe TMDL Pollutant Reduction Opportunity Report (Roberts, D. and J. Reuter, 2007). Unpaved roads in the Project area are generally characterized by highly compacted soil conditions with low to no surface cover and high runoff and sediment loading rates (IERS 2009).

HMR has begun restoration of onsite roads at locations illustrated in Figure 14-4 in Chapter 14, Geology, Soils and Seismicity. These sediment source control projects are discussed according to potential land coverage removal and reductions in section 14.1.8. These sediment source control projects and the monitoring results for revegetation success and reduced erosion are described in Chapter 15, Hydrology, Water Rights, Surface Water Quality and Groundwater in section 15. IERS typically prepares monitoring reports on two-year intervals. A monitoring report is published for sediment source control projects completed in 2006 and 2007 (IERS 2008) and a report is forthcoming for 2008 and 2009.

In 2006 and 2007, six road restoration projects, ranging in size from 3,500 square feet to 48,300 square feet, were completed, for a total of over 105,000 square feet or 2.4 acres of restoration. In years 2008 and 2009, eight road restoration projects were completed, ranging in size from 1,920 square feet to 38,788 square feet, for a total of over 134,651 square feet or 3.1 acres of restoration. This land coverage is considered legally existing until HMR submits banking applications with TRPA and these applications are verified and approved by TRPA.

A State-matching grant of $650,000 was awarded to HMR in 2009 to study Best Management Practices (BMPs) and mitigation measures for sediment source control in Project area watersheds. The monies will be used to continue on-mountain studies of water quality improvements, restoration and revegetation projects that could be applied basin-wide.

A minimum of 500,000 square feet of existing on-mountain access roads will be removed, restored, and banked as part of the Proposed Project (Alternative 1). HMR intends to apply land coverage that was removed and restored through projects completed between 2006 and 2009 towards this 500,000 square foot goal with the remaining balance removed through future projects as discussed in Chapter 14. Potential locations for land coverage removal and restoration are identified on Figure 14-15.

Other existing on-mountain roads will be retained, as these roads will be used for mountain operations during summer. The privately funded extension of Tahoe Ski Bowl Way, the roadway that will provide access to the townhouses at the North Base area from the South Base area, will be used year-round. Off-site roads to be evaluated for improvements include SR 89, Silver Street, Fawn Street, Sacramento Avenue, and Tahoe Ski Bowl Way. These roadways will be upgraded or improved when they are adjacent to development proposals included in the Proposed Project (Alternative 1). Per Placer County Land Development Manual standards, roadway plans will include appropriate street improvements (e.g., full width road construction or half-width construction for frontage improvements as required by the Placer County Street Improvements Ordinance), existing and proposed right-of-way (ROW), and necessary measures to reduce and minimize environmental impacts (e.g., drainage facilities, cut and fill slopes, street cross sections).

3.5.8 Utilities

Power lines (32 kV or less) will be installed underground within the Project area and along the SR 89 ROW corridor. An overhead power utility corridor currently exists, and will be utilized for future sub-surface placement of electric power in collaboration with Nevada Energy. HMR will participate in the funding for planning and construction of the existing and proposed sub-surface electric lines within the Project area.

The existing onsite above ground 5,000-gallon diesel fuel tank will remain at the South Base area until the start of Phase 2 construction, which includes the demolition of the existing South Base ski and maintenance facilities. With the demolition of the South Base maintenance facility, diesel tanks will be constructed at the new Mid-Mountain maintenance facility and will be sized to sustain operations throughout the winter because diesel fuel trucks would be unable to access the mid-mountain when snow

cover is present. HMR estimates that a total of 40,000 gallons will be needed at Mid-Mountain for winter operations. This quantity of storage would be provided by two 20,000-gallon above ground tanks that would be located underneath the maintenance facility within the crawl space. The tanks would be serviced from the paved apron area adjacent to the maintenance building.

HMR will connect to domestic water and sewer systems at existing connection points located within the project area at the North and South Base areas to serve the entire project area, including the Mid-Mountain area and the future 16 townhomes to be constructed at the end of the proposed extension of Tahoe Ski Bowl Way. Water distribution system installation within the Homewood Mountain Resort project development will be completed with the construction of each phase of the Master Plan.

3.5.9 Snowmaking

The existing snowmaking system will be upgraded to ensure adequate early and late season snowpack. Adequate snow depth provides a predictable and safe sliding surface for skiing and snowboarding. Ideally, ski trails require in excess of four feet of snow to ensure a long lasting quality surface for a full season with typical weather conditions. Ski trails typically require a minimum cover of 12 inches of packed snow over a finely groomed summer surface. Less snow cover accelerates snow pack melting and can allow vegetation or other obstructions to emerge through the surface, posing hazards to skiers.

The expansion of the snowmaking system from the current 23.8 acres to a total of 102.3 acres of ski trails requires additional water supply, distribution pipelines, electrical supply, and transmission lines along with the snowmaking equipment necessary to convert these resources into snow. The pipeline and electrical power alignments generally follow existing onsite roadways or ski trails and are shown in HMR snowmaking and electrical piping mapping included with the *Homewood Mountain Resort Snowmaking Plan* dated September 17, 2010 (Snowmakers Inc 2010).

To prepare for opening day, the existing and proposed snowmaking system is expected to require 14.4 million gallons of water for the north side of the mountain and 6.4 million gallons for the south side of the mountain (20.8 million gallons total). Per season, the snowmaking system is anticipated to require an additional 30.7 million gallons/year on the north side and an additional 15.9 million gallons/year on the south side of the mountain (Snowmakers, Inc. 2010). When added to the existing total demand for snowmaking of 14.2 million gallons/year (Snowmakers, Inc. 2010), the expanded water supply for snowmaking equates to approximately 60.8 million gallons/year or 187 acre-feet/year.

The operating water consumptions would average between 1,900 gallons per minute (gpm) and 3,400 gpm. The ratio of surface water from TCPUD to groundwater from TCPUD, Madden Creek Water Company and HMR private wells that will be used for snowmaking uses is uncertain based on information presented in the HMR Water Supply Assessment (Nichols 2009).

Proposed water supplies available for Project area snowmaking include the following:

- McKinney well – This well produces non-potable water and can provide between 800-1000 gpm. The McKinney well, owned and operated by TCPUD, has been flow tested and has potential for 1,000 gpm. This is subject to final agreement with the TCPUD.

- South Base area – The TCPUD provides domestic water of up to 300 gpm from 6 p.m. to 6 a.m. A cooling tower is required for use and will be located in a new snowmaking pumphouse building.

- North Base area – The MCWC provides domestic water of up to 300 gpm from 6 p.m. to 6 a.m. A cooling tower is required for use. The existing HMR well in the North Base area gravel parking lot has been tested and can provide flows up to 800 gpm. However, at present this well inoperable and would need other improvements to operate at 800 gpm because the size of the pipe on the discharge side of the well pump and the tank in the pump house only allow operation up to 500 gpm. A new pumphouse will be required for snowmaking because the existing structure is located in the area of the proposed day-skier parking structure.

The snowmaking water delivery system will be designed and constructed to be compatible with fire protection needs on the mountain.

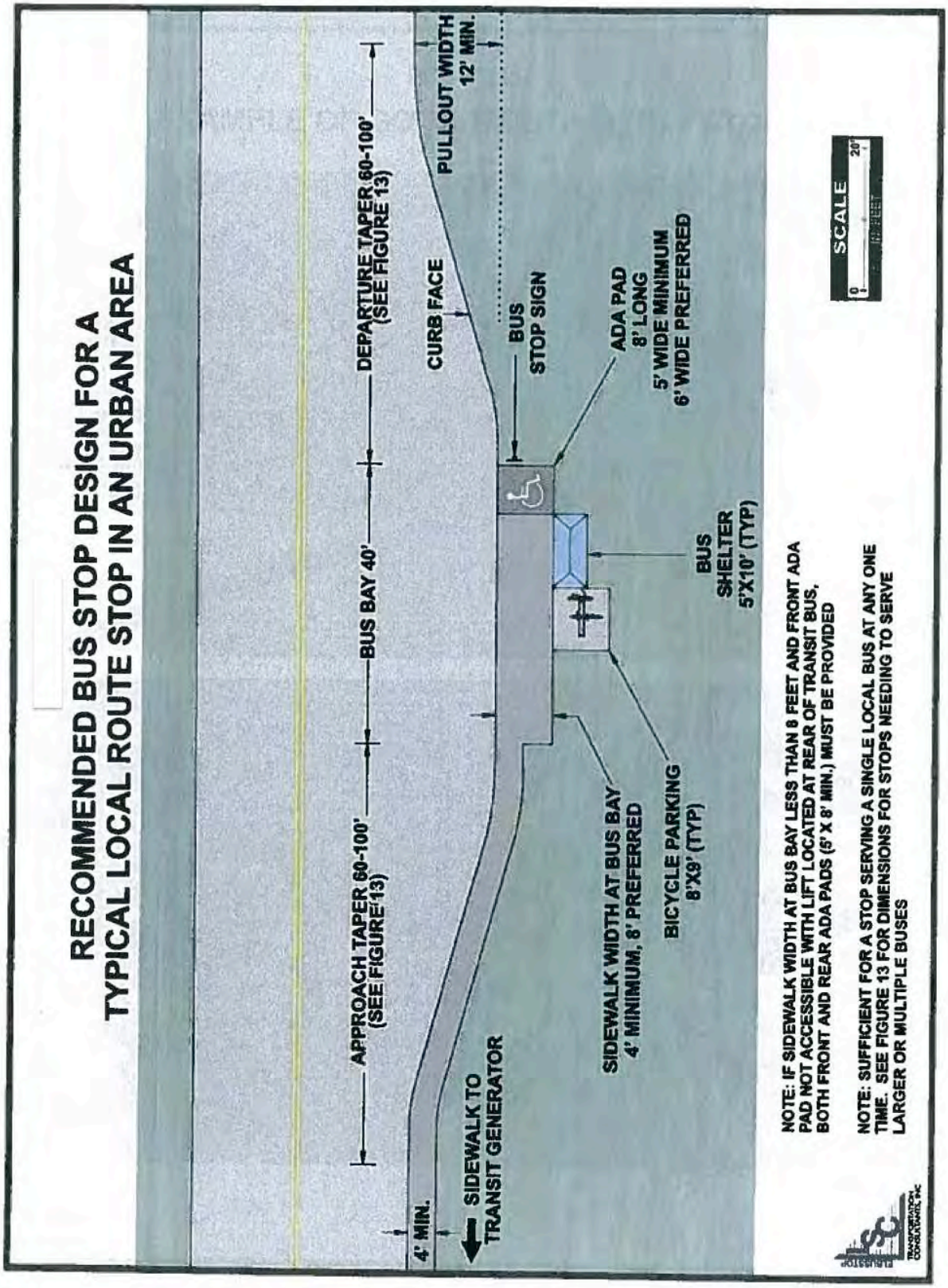
3.5.10 Linkages

The applicant has identified several opportunities for providing linkages or connection points into the project area. The Proposed Project (Alternative 1) will integrate the extension of the existing TCPUD bike path through the North Base area. An eight-passenger gondola will bring guests up to the Mid-Mountain area. The gondola will replace the existing Madden triple chair lift. An improved Tahoe Area Regional Transit (TART) stop adjacent to southbound SR 89 will be furnished, and proposed dial-a-ride, shuttle stops (at the Skier Services and Hotel entrances), and water taxi (using the West Shore Café pier) services will expand alternative transportation options to reduce vehicle miles traveled (VMTs). The improved TART turnout will be located within the SR 89 ROW mid-way between the proposed hotel entry driveway and Fawn Street using a design similar to the one depicted on Figure 3-11. The turnout will be located in the vicinity of the existing transit stop and located within the Caltrans SR 89 ROW on previously disturbed roadbed or shoulder areas. Any land coverage required for the proposed transit stop improvements will be transferred to the public ROW from the HMR project area. A pedestrian pathway/sidewalk along the northern side of the Fawn Street access driveway will be provided to connect pedestrians from SR 89 and the proposed TART transit stop to the Homewood on-site pedestrian pathways. Other offsite improvements necessary to mitigate identified impacts, if any, are included in this environmental analysis.

3.5.11 Ski Facilities

Under the Proposed Project (Alternative 1), the Madden Ski lift, a triple chair lift that runs to the Mid-Mountain area from the North Base area will be replaced in nearly the same alignment with an eight-passenger high-speed gondola, increasing lift capacity from 1,800 to 2,400 persons per hour. A new learn-to-ski (beginner) lift will be constructed at the Mid-Mountain area for beginner use. The existing South Happy Platter, North Happy Platter, and Alpine Platter lifts will be removed. The Tailings T-Bar, South T-Bar, and Spring Chair lift have already been removed and will not be replaced. The verified capacity of these removed lifts is available for use on other lift replacements or upgrades. Table 3-5 summarizes the Proposed Project's changes to the ski lift system in the Project area. As documented in Table 3-5, proposed lift improvements will not increase lift capacity above the verified capacity within the Master Plan boundary. Therefore, no increase in existing lift capacity is required.

Figure 3-11. Recommended SR 89 Transit Stop Design



3.5.12 People at One Time (PAOT)

TRPA requires an allocation of PAOTs for expansion of ski areas that include increased uphill lift capacity. While improvements to the ski lifts are expected to increase the current operating hourly capacity of the system from 8,646 pph to 9,797 pph as documented above, overall operations will remain below the verified capacity of 10,653 pph. HMR's verified capacity is used to define the existing PAOT capacity for TRPA. At present, HMR does not expect to increase uphill lift capacity such that it would exceed its existing banked verified PAOT capacity of 1,704. However, as options for transporting skiers to and around the mountain are evaluated, increases to uphill capacity may become necessary to improve skier flow on the mountain. If lift capacity is proposed beyond the currently verified capacity, a PAOT allocation will be required for the Proposed Project (Alternative 1). A PAOT allocation would require subsequent environmental review. TRPA Plan Area 157 includes an additional 1,100 winter day-use PAOTs for use within the Project area. As part of the proposed Master Plan, HMR has agreed to deed restrict the portions of the Project area remaining within Plan Area 157 to only recreational uses. As such, if the proposed HMR Master Plan is adopted, non-recreational uses (e.g., estate homes) would not be allowed on the upper mountain under any future Master Plan amendment.

Table 3-5

Existing and Proposed Ski Lift Capacity

Lift Name	Verified Capacity* (pph)	Current Operating Capacity (pph)	Proposed Capacity (pph)
Madden Chair	1,800	1,800	2,400
Ellis Chair	1,500	1,500	2,400
Quad Chair	2,028	1,800	1,800
Quail Chair	818	1,637	1,637
South Happy Platter	630	630	0
North Happy Platter	500	500	0
Alpine Platter	419	419	0
Tailings T-Bar	750	0	0
South T-Bar	875	0	0
Magic Carpet	360	360	360
Spring Chair	973	0	0
Beginner @ Mid-Mountain	0	0	1,200
TOTALS	10,653	8,646	9,797

Source: HMR Needs Assessment, September 14, 2009 as verified by TRPA

Notes:
pph = persons per hour
* TRPA verified lift capacity is the hourly capacity assigned to the lift by TRPA when it was constructed.

3.5.13 Additional Recreation

Existing recreational opportunities in the Project area include downhill skiing and snowboarding, fishing, and walking trails. New recreation opportunities at the North Base area will include an outdoor amphitheater, ice skating, biking on an extension of the TCPUD west shore bike trail, and a seasonal miniature golf course during the summer months where the ice pond is located. A new outdoor amphitheater will provide a venue for outdoor concert events such as the Lake Tahoe Music Festival. The 1,500-seat amphitheater will be located just north of the gondola base terminal and adjacent to outdoor spaces for the hotel building. An extension of a cross-country ski trails used during the 1960 Winter Olympics will be made from the South Base area. An approximately 25 meter outdoor community swimming pool will be located at the Mid-Mountain area for use during summer months. The TRPA Ski Area Master Plan Guidelines reference TRPA goals to promote year round use of recreational facilities.

3.5.14 SEZ Restoration

Homewood Creek, which is currently collected and piped under the north-south extension of Tahoe Ski Bowl Way at the South Base area, will be day-lighted and riparian habitat restored with TRPA-approved native or adapted species. A preliminary conceptual SEZ restoration plan and schematic design are presented in Appendix C. The conceptual plan includes removing the existing roadway and culvert, widening of the stream cross-sectional area to match characteristics above and below the existing culvert, and increasing flow length through incorporation of meanders within the stream channel. A new roadway alignment with bridge will cross the stream and will be sized to accommodate the 100-year floodway.

At the North Base area, the delineated SEZ located in the existing gravel parking lot will be restored as part of the development of the day skier parking structure and employee/workforce housing units (Building P). Detailed restoration plans are not available in the design plans, but the proposed restoration would reduce existing SEZ disturbance by approximately 7,500 square feet.

3.5.15 Stormwater Treatment

Water quality improvements will be coordinated with Caltrans and the Placer County Homewood Erosion Control Project (TRPA EIP Project 996) to treat runoff from SR 89, local streets, and a portion of the Project area. Stormwater treatment systems are proposed for the North Base, South Base, Tahoe Ski Bowl Way extension, Mid-Mountain area and off-site Caltrans/Placer County/HMR EIP project. The systems are considered part of the Proposed Project (Alternative 1) and are outlined as compliance measures for conformance with TRPA, Placer County and Lahontan requirements for project approval and permitting. Under the Proposed Project (Alternative 1), the existing stormwater treatment systems will be replaced with upgraded systems that are sized to capture and treat runoff from impervious land coverage and contributing watershed areas in the North and South Base area, along the extended Tahoe Ski Bowl Way, and the Mid-Mountain area. Systems in the North and South Base areas are sized to treat runoff volumes in excess of the TRPA 20-year, 1-hour design storm. The system capacities have been maximized, with maximum capacities dictated by site constraints, most specifically the seasonal high water table. Runoff from parking lots and streets will be routed through storm drains to a treatment vault for coarse sediment removal, then a secondary treatment vault for fine sediment removal and then to underground infiltration galleries for soil treatment. Runoff from roofs, internal walkways, and pervious areas is considered “clean runoff” that does not require mechanical treatment for removal of pollutants and will be routed to bioretention areas for stormwater treatment, one of several Low Impact Development (LID) design strategies.

LID is a sustainable practice that benefits water supply and contributes to water quality protection. Unlike traditional storm water management, which collects and conveys storm water runoff through storm

drains, pipes, or other conveyances to a centralized storm water facility, LID takes a different approach by using site design and storm water management to maintain the site's pre-development runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall collection. LID has been a proven approach in other parts of the country and is seen in California as an alternative to conventional storm water management. LID provides economical as well as environmental benefits. LID practices result in less disturbance of the development area, conservation of natural features, and are often less expensive than traditional storm water controls. The cost savings applies not only to construction costs, but also to long-term maintenance and life cycle cost. LID provides multiple opportunities to retrofit existing highly urbanized areas and can be applied to a range of lot sizes.

LID includes specific techniques, tools, and materials to control the amount of impervious surface, increase infiltration, improve water quality by reducing runoff from developed sites, and reduce costly infrastructure. LID practices include; bioretention facilities or rain gardens, sidewalk storage, grass swales and channels, vegetated rooftops, rain barrels and cisterns, vegetated filter strips, swales and buffers, tree preservation, roof leader disconnection, permeable pavements and pavers, impervious surface reductions and disconnection, soil amendments, pollution prevention and good housekeeping (http://waterbaords.ca.gov/water_issues/programs/low_impact_development).

Stormwater treatment systems are detailed in Chapter 15, Hydrology, Water Rights, Surface Water Quality and Groundwater, under impact HYDRO-2.

3.5.16 Groundwater Interception, Construction Dewatering, and Operational Dewatering

Groundwater flows around and within the Project area have been previously modified by the construction of parking lots, mountain access roads, SR 89, and Placer County Roads, affecting historic surface and groundwater conditions. Construction of the Proposed Project (Alternative 1) will involve earthwork activities, including grading, excavation and fill activities. Excavation of earth below existing ground surfaces presents the potential to intercept or interfere with seasonal groundwater movement during construction activities and long-term operations of the Project area.

A Soils Hydrologic Scoping and Final Report was prepared by Kleinfelder (October 2010) and submitted to TRPA for review and approval. The TRPA Soils Hydrologic approval letter and cross-sections of proposed structures, foundation footings and the retaining walls of underground parking structures in reference to the seasonal high water table are provided in Appendix D. Appendix D also includes the methods of calculation of the groundwater flow rates for the North and South Base areas and the historic groundwater data for the Project area.

Based on groundwater monitoring data and site conditions, groundwater is anticipated to be intercepted during construction and long-term operations in the North and South Base areas as a result of excavations. To reduce potential impacts from excavations at the North and South Base areas, the hotel foundation footings were redesigned to avoid groundwater interception and underground parking structures were designed to minimize groundwater interception. Remaining groundwater that is intercepted by the underground parking structures will require an amendment to TRPA Code Chapter 64, as described below under Code of Ordinance/Plan Area Amendments, for the addition of underground parking structures within Ski Area Master Plans to the list of exemptions.

Because groundwater will be intercepted during construction, which is the process of diverting and/or capturing the groundwater flows, dewatering will be implemented onsite. Construction dewatering is the removal and deposition of the water on-site and is detailed in Chapter 14, Geology, Soils and Seismicity, under impact GEO-3.

Because groundwater will be intercepted during long-term operations, an operational dewatering plan and compliance measures will be necessary. Preliminary analyses completed by Kleinfelder indicate that perimeter drains can be effectively used to prevent groundwater levels from increasing behind retaining walls designed for the underground parking structures and that planned infiltration galleries will be capable of infiltrating estimated flow rates if properly maintained. Operational dewatering is discussed in Chapter 15, Hydrology, Water Rights, Surface Water Quality and Groundwater, under impact HYDRO-3.

3.5.17 Total Maximum Daily Load (TMDL)

The Proposed Project (Alternative 1) will install a network of interrelated stormwater treatment systems, revegetation strategies and LID strategies appropriate for urban infill regions. These strategies fall into four categories and are designed to reduce annual runoff of total sediment, fine sediment, nitrogen and phosphorus from the Project area and serve to help meet the Lake Tahoe TMDL load reduction strategies specified in the Lake Tahoe TMDL Pollutant Reduction Opportunity Report (Lahontan and NDEP 2008). The TMDL strategies include:

- Pollutant Source Controls (PSC) - reduction in impervious land coverage on low capability lands (Land Capability Districts - LCDs - 1a and 1b), improved roadways, stabilization of and enhanced soil infiltration rates on steep slopes, relocation of fuel storage facilities away from SEZs and areas of high groundwater levels.

- Hydrologic Source Controls (HSC) - underground stormwater treatment systems with primary removal of coarse sediments and secondary removal of fine sediments (down to the 15 micron particle size); pervious pavement and pavers, bioretention areas for stormwater treatment, use of cisterns to catch roof runoff.

- Airborne Source Control (ASC) - underground parking, revegetation of disturbed areas and ornamental landscaping of public areas, and alternative and public transportation programs.

Using a combined upslope-urban local watershed model, Project area conditions have been modeled to estimate annual average total sediment in Tons (T) for comparison of existing conditions, BMPs designs based on the 20-year, 1-hour TRPA design storm, and proposed project conditions. The results are discussed in Chapter 15, Hydrology, Water Rights, Surface Water Quality and Groundwater.

3.5.18 Revegetation Plan

The Revegetation Plan will apply to areas disturbed during construction activities, the steep slopes above the North and South Base areas and the bioretention areas for stormwater treatment. The objective of the soil and revegetation treatments is to control sediment at its source, to maximize hydrologic and biological function in the soil and to develop and support a robust vegetation community. Specific treatment outcomes will include:

- Maximize soil infiltration rates and minimize runoff;
- Protect the soil surface with functional mulch cover;
- Reestablish soil nutrient cycling; and
- Reestablish an appropriate, self-sustaining native plant community.

Four types of revegetation are proposed:

1. Type A – Upland disturbed areas

2. Type B – Infiltration enhancement areas

3. Type H – Road Removal areas

4. Bioretention – Bioretention areas for stormwater treatment

Bioretention areas will receive similar treatments as disturbed areas. Bioretention areas are not expected to be wet during much of the growing season and are therefore not under the influence of a mesic or wet hydrologic regime. Soil treatments will be the same as for the disturbed areas. Since runoff will be routed into bioretention areas for stormwater treatment, these areas will be designed such that concentrated flow will be routed through energy dissipaters using rocks or other landscape elements to eliminate scouring flows.

The soil and vegetation restoration for the four treatment areas, along with a generalized upland seed mix and irrigation approach are outlined in Appendix C. Slow-release, organic fertilizer will be used and irrigation will be applied so that water penetrates to at least eight inches below ground surface (bgs) within 24 hours of irrigation. The irrigation system will be designed to meet this specification without displacing mulch or causing erosion. The final Revegetation Plan will include site-specific fertilizer and irrigation rates and a monitoring plan and will be submitted to TRPA for project approval and permitting.

Up to 100,000 cubic yards of excavated materials could be generated during buildout of the Proposed Project (Alternative 1). There are opportunities for the onsite use of excavated materials that is generated during project construction to be used as fill, as identified on Figure 3-12 and detailed in Table 3-6.

If materials cannot be used on-site for construction or restoration and revegetation efforts, the materials would be exported out of the Project area and used at California Tahoe Conservancy (CTC) and Placer County project sites or if necessary, exported to a TRPA designated disposal site outside of the Lake Tahoe Basin. Opportunities may also exist on the west shore for the use of excavated materials and fill rock at CTC restoration projects such as the Lower Blackwood Creek Restoration project. HMR will coordinate with Placer County and the CTC on the potential storage and use of export material for publicly sponsored restoration projects.

3.5.19 Landscaping Plan

The Landscaping Plan will apply to public use areas of the North, South and Mid-Mountain Base areas. Appendix C contains the preliminary irrigation calculations, the narrative explaining the assumptions for the irrigation calculations, the defined hydrozone areas for the public use areas, and TRPA plant species lists associated with each hydrozone. A final Landscaping Plan with site plans and plant lists will be developed based on the final configuration of the Proposed Project (Alternative 1) or alternative and submitted to TRPA for project approval and permitting.

The Proposed Project (Alternative 1) landscaping objective is to present a natural and native visual experience to the user while achieving erosion control, fire safety, water quality and water conservation. The North, South and Mid-Mountain areas were defined as high, medium and low hydrozones according to anticipated irrigation requirements. Areas of high visibility or use, such as near building and Project area entries, are defined as high; areas of less visibility or use are medium; and revegetation areas away from use areas and areas of slope disturbance are low.

Plant species included in the high, medium and low hydrozone seed mixtures will be native or adapted species approved by TRPA, the majority of which are drought-tolerant after establishment.

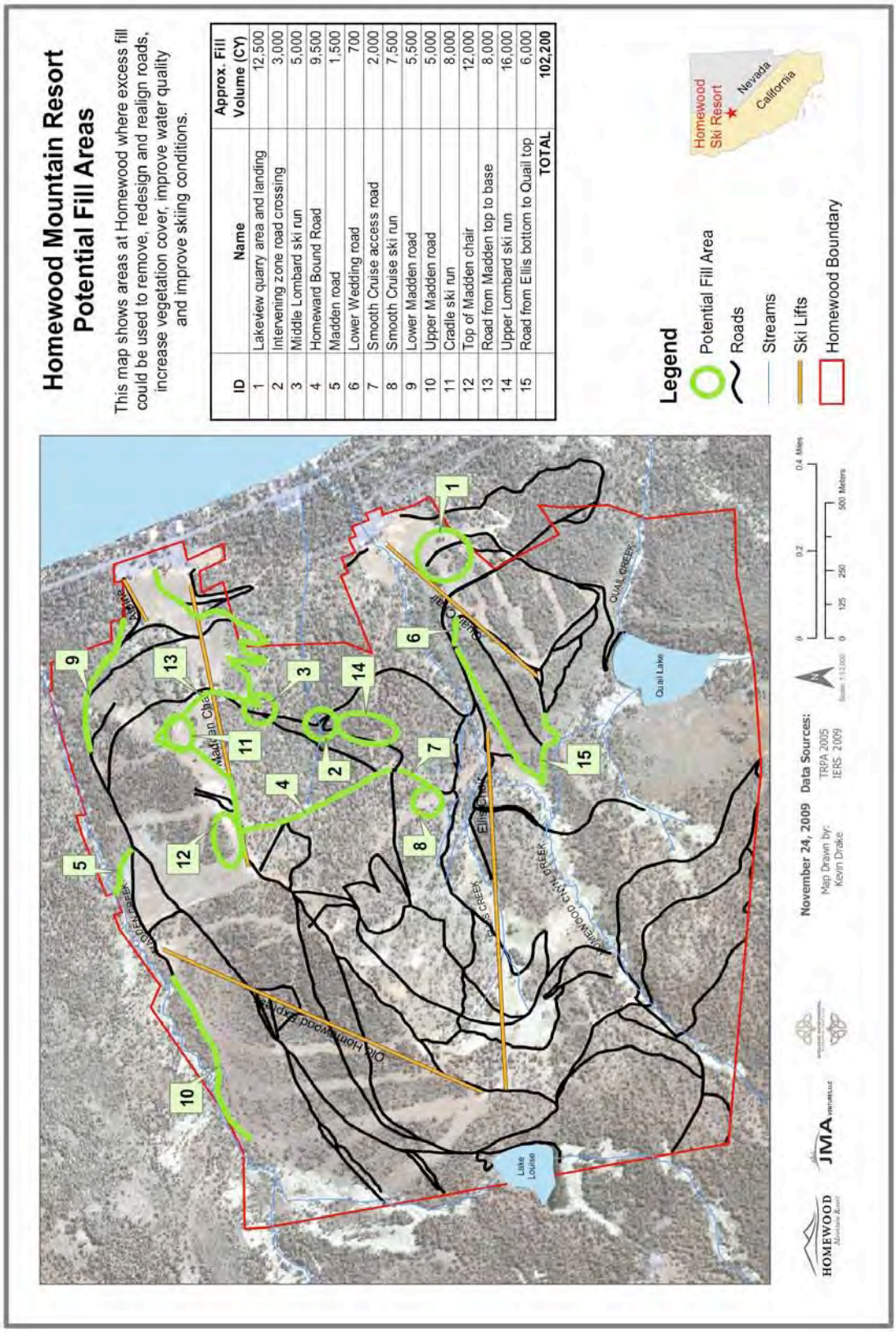
Table 3-6

Potential Fill Areas within the Project Area

MAP ID	Area Name	Approximate Fill Volume (cubic feet)	Description
1	Lakeview quarry area and landing	12,500	Place and stabilize fill in quarry area and landing/ access road.
2	Intervening zone road crossing	3,000	Place fill, construct bottomless culvert or span bridge and realign road (and Lombard ski run) to achieve continuous grade across ephemeral stream (intervening zone).
3	Middle Lombard ski run	5,000	Place and stabilize fill on steeply side- sloping Lombard ski run to achieve sidehill slope angle of 2-4 degrees.
4	Homeward Bound Road	9,500	Place fill in several large grade transitions along road to achieve more continuous, lower slope angle. Outslope road to fix existing drainage/erosion issues.
5	Madden road	1,500	Place fill and remove/restore existing road (which leads directly to Madden Creek).
6	Lower Wedding road	700	Place fill and remove/restore existing road.
7	Smooth Cruise access road	2,000	Place fill and reconstruct outsloped road with proper drainage.
8	Smooth Cruise ski run	7,500	Place fill material in grade transition and revegetate.
9	Lower Madden road	5,500	Place fill and remove/restore existing road. This road is very steep and heavily eroded, making vehicle travel difficult.
10	Upper Madden road	5,000	Place fill and remove/restore existing road.
11	Cradle ski run	8,000	Place fill material in grade transition and revegetate.
12	Top of Madden chair	12,000	Place fill in several large grade transitions along beginner ski run and revegetate/stabilize.
13	Road from Madden top to base	8,000	Place fill and reconstruct outsloped road with proper drainage. There are several significant grade transitions along this road segment.
14	Upper Lombard ski run	16,000	Place and stabilize fill on steeply side- sloping Lombard ski run to achieve sidehill slope angle of 2-4 degrees.
15	Road from Ellis bottom to Quail top	6,000	Place fill and reconstruct outsloped road with proper drainage. This road currently captures water when the Quail diversion overbanks and has significant drainage issues.
	Total	**102,200**	

Source: IERS, 2010

Figure 3-12. Potential Fill Areas within the Project Area



ID	Name	Approx. Fill Volume (CY)
1	Lakeview quarry area and landing	12,500
2	Intervening zone road crossing	3,000
3	Middle Lombard ski run	5,000
4	Homeward Bound Road	9,500
5	Madden road	1,500
6	Lower Wedding road	700
7	Smooth Cruise access road	2,000
8	Smooth Cruise ski run	7,500
9	Lower Madden road	5,500
10	Upper Madden road	5,000
11	Cradle ski run	8,000
12	Top of Madden chair	12,000
13	Road from Madden top to base	8,000
14	Upper Lombard ski run	16,000
15	Road from Ellis bottom to Quail top	6,000
	TOTAL	102,200

Landscaping water usage for irrigation is estimated at 10.8 acre-feet/year for the first two years of plant establishment and should decline significantly after the first few growing seasons. Final irrigation rates will be calculated as based on the final design of the preferred alternative.

The Proposed Project (Alternative 1) includes the following measures to minimize nutrients entering surface water or escaping the root zone and being delivered to groundwater:

- Use of non-mowed or slow-growing turf grass species, locally native or adapted species with annual fertilizer requirements that do not exceed 1.5 pounds per 1,000 square feet;
- Implementation of a Fertilizer Management Plan that meets the requirements of Section 81.7 of TRPA Code or Ordinances;
    - Determination of appropriate fertilizer rates by a soil/revegetation specialist and based on the results of soil nutrient testing;
    - Incorporation of fertilizer into soils prior to seed application to prevent burning and low germination rates;
    - Use of Biosol or other organic, slow-release fertilizers that do not contain nitrate or ammonium with careful application to avoid application on hardscape;
- Prohibit fertilizer use on bioretention areas for stormwater treatment after initial establishment; and
- Installation of a highly controlled spray irrigation system to avoid over irrigation and overspray onto hardscape.

3.5.20 Alternative Transportation Plan

The Proposed Project (Alternative 1) includes an Alternative Transportation Plan (ATP) to reduce vehicle trips in the Project area and vicinity. One of a series of transportation strategies, the ATP is expected to include the following year-round, winter, and summer program elements:

Year-Round

- Extension of TCPUD West Shore Bike Trail to the North Base area
- Employee Shuttle Bus
- Employee Public Bus Transit Fares
- Scheduled Shuttle Service
- North Base-South Base Shuttle Service
- Electric/Hybrid Car Rental Service
- Free “Bicycle Share” Service

Winter Program

- Winter West Shore Dial-a-Ride Service
- Skier Intercept Shuttle Service

Summer Program

- Water Taxi Service

- Summer West Shore Dial-A-Ride Service

Additional transportation strategies will include:

- Accommodate boat trailer parking during the summer at day skier parking facilities;
- Day skier parking control (e.g., limit ticket sales so that parking does not exceed onsite supply); and
- Transportation Information Exchange (e.g., provide information on Tahoe City electronic sign board to notify day skiers when ski resort is at capacity).

The proposed summer water taxi service is planned for operation from approximately mid May to the end of September. The service is planned to be operated using a vessel with up to a 25-passenger capacity between Homewood and Tahoe City. There may be other periodic service between Homewood and South Shore as well dependent upon demand. This service is planned to be operated seven days a week between 9 AM and 8 PM on at least an hourly frequency. HMR residents and guests will be served at no fare, while other passengers will be served as space permits for a modest fare. This service is designed to provide an opportunity to get out on the Lake while also avoiding the existing traffic congestion in the SR 89/SR 28 Wye (e.g., Fanny Bridge) area. Should demand warrant in the future, one additional water taxi could be added with the same capacity. The plan would be to acquire a fuel efficient (possibly hybrid electric technology), low noise emitting water taxi vessel. With Homewood's recent acquisition of the lakeside West Shore Café, the water taxi would pick up passengers at the café pier, which is an existing pier structure designed to allow for passenger drop-off and pick-up. The potential use of the existing pier for use by a water taxi would be subject to any requisite regulatory approvals, but is not expected to require any additional facilities. Parking for use of the water taxi would not be required at the West Shore Café since it is intended to serve HMR guests and area residents who would walk to the pier from their accommodations. Fueling, storage and maintenance of the water taxi(s) could occur at one of the two adjacent Homewood marinas.

3.5.21 TRPA Land Coverage

Existing land coverage within the 1,253-acre Project area is approximately 1,781,000 square feet, which includes approximately 271,000 square feet of coverage at the North Base area and approximately 117,000 square feet at the South Base area. Approximately 288,000 square feet of the total land coverage is hard coverage associated with parking and ski facilities, lodges, paved roads and buildings.

In 2000, 126,324 square feet of land coverage was restored and banked with the TRPA (TRPA File 970662, dated March 21, 2000). An additional 500,000 square feet of land coverage will be removed under the Proposed Project (Alternative 1). Some of the restored land coverage will be relocated within the Project area, but HMR intends to permanently retire at least 10% of the total existing land coverage as part of the Proposed Project (Alternative 1), to comply with the TRPA Governing Board CEP Resolution and proposed height ordinance amendments.

HMR will submit applications to TRPA to bank a portion of the restored land coverage. The amount of permanent land coverage retirement will be determined through the analysis of the proposed commodities (see discussion below). The balance of restored land coverage will be banked for possible use within the Project area or for transfer to allowable uses as permitted by the TRPA Code of Ordinances.

3.5.22 Reservation of Commodities

In 2008, HMR requested the reservation of 25,000 square feet of CFA, 50 tourist accommodation bonus units (TABU) and 12 multi-residential bonus units (MRBU) from TRPA under the CEP for

implementation of the Proposed Project (Alternative 1). HMR's current plans are to construct 13 multi-residential units for employee/workforce workforce housing, and as such, they are requesting one additional multi-residential bonus unit. For commodities to be reserved and projects to be approved, CEP projects must commit to substantial environmental improvements and include specifically identified EIP projects such as permanent land coverage reduction and stormwater treatment in excess of current regulatory requirements. See section 3.5.25 for a list of EIP projects proposed for full or partial implementation by HMR).

3.5.23 Building Height, Scenic Improvements and Compliance with Design Guidelines

Design of the Proposed Project (Alternative 1) integrates the "Old Tahoe" architectural style. Architectural features include hipped and gabled roofs, dormers, exposed timber, and natural materials. Buildings are clustered to conserve natural areas and reduce the visual prominence of structures. Two-story structures are located along SR 89, with three to four story buildings set back from the roadway and behind shorter structures and a pedestrian plaza. Due to onsite slopes, these taller structures exceed the TRPA maximum allowable height limits defined in Code of Ordinances Chapter 22. A Chapter 22 height amendment is needed for the Proposed Project (Alternative 1) to allow for the consideration of the building heights in accordance with the proposed height amendment. Table 3-7 summarizes buildings, setbacks, and allowable and proposed heights as measured by the TRPA Code Chapter 22 amendment associated with the Proposed Project (Alternative 1).

3.5.24 TRPA Environmental Improvement Program (EIP)

As part of the Proposed Project (Alternative 1), HMR proposes to implement or participate in the following EIP projects:

- Project Number 632 (Homewood Ski Area Master Plan) - Homewood Ski Area Master Plan application submitted in 2006; follow-up with specific Administrative Draft master plan document in 2009. Environmental analysis of the proposed Master Plan is required for TRPA to consider adoption.
- Project Number 86 (Scenic Roadway Unit 11-Homewood) - Landscaping planned along SR 89 frontage, all new building structures, & pedestrian/bike pathways. Utilities and most parking undergrounded or put into parking structure located off of SR 89 and screened by proposed residential units.
- Project number 775 (Homewood Area Pedestrian Facilities) - Both base areas (north & south) are designed as pedestrian oriented plans; north base includes up to 15,000 square feet of commercial uses, new access points, and landscaped visual frontage. The existing TCPUD bicycle trail located north and south of the Homewood north base area will be connected through the project.
- Project numbers 725 and 996 (Water quality improvements) – HMR completed land restoration to date totals approximately 240,000 square feet; capture of stormwater runoff planned through a series of bioretention areas in line with vaults and infiltration galleries at the North and South Base areas. Caltrans has initiated a project to improve the SR 89 stormwater collection and treatment through Homewood and is estimated to start construction in 2012. HMR is cooperating with Caltrans for joint water quality improvements in the SR 89 right of way area adjacent to the North Base.
- Participation in Project Number 855 ("Y" Realignment) - HMR to participate (fair share based on increased traffic projections) in the intersection improvement project.

Table 3-7

Proposed Project (Alternative 1) Building Heights and Setbacks

Building	Grade (%)	Roof Pitch	Setback from SR 89 ROW (ft)	Allowable Height (ft) *	Proposed Height (ft) **
North Base					
A (Skier Services/ Residential)	18%	6:12	283	50’	47’
B (Hotel/Residential)	11%	6:12	248	50’	47’
C (Retail/ Residential/Fractional)	3%	6:12	53	42’	42’
D (Residential/ Fractional)	2%	6:12	42	42’	31’
E (Residential/ Fractional)	1%	6:12	45	42’	33’
P (Parking/Employee Housing)	1%	2:12	237	50’	48
South Base					
A (Residential/Skier Services)	9%	6:12	--	50’	49’
A1 (Residential)	13%	6:12	--	50’	49’
B (Residential)	13%	6:12	--	50’	49’
Mid-Mountain					
Gondola	23%	2:12	--	35’	24’
Gondola Entry/ Skier Services	23%	2:12	--	35’	33’
Restaurant	23%	6:12	--	35’	31’

Source: HMR 2010

Notes:

* Allowable Height as calculated using the proposed TRPA Code of Ordinances Chapter 22 height amendment. .

** Proposed Height based on the method for calculating height included in the proposed TRPA Code of Ordinances Chapter 22 height amendment (Appendix F).

3.5.25 Code of Ordinance/Plan Area Statement/Goals and Policies Amendments

HMR Master Plan implementation under the Proposed Project (Alternative 1) will require an amendment to TRPA Code of Ordinances Chapters 22 and 64 for additional building height and exceptions for groundwater interception and amendments to TRPA and Placer County Plan Area Statement (PAS) boundaries, allowable uses, density, and special policies. The Master Plan will also require amendments to Goals and Policies to allow for the use of Tourist Accommodation Bonus Units within the Master Plan boundary. The required amendments for implementation of the Proposed Project (Alternative 1) are described below.

Amendments to TRPA and Placer County Plan Area Statement Boundary Lines

Figure 3-13 shows the location of the proposed PAS boundary amendments required for the Proposed Project (Alternative 1). The proposed boundary line amendments include:

PAS 158 – McKinney Tract Residential – Expand TRPA and Placer County PAS 158 boundary (shown in yellow) to include entirety of South Base area currently located in PAS 157 (yellow hatching area within black dashed line). Create a "Special Area" for the expanded portion of PAS 158.

PAS 159 – Homewood Commercial – Expand TRPA PAS 159 boundary (shown in purple) to include entirety of North Base area currently located primarily in PAS 157 (purple hatching area within black dashed line). A portion of the North Base area is currently located in the McKinney Tract Residential – PAS 158 and is shown in yellow.

The Placer County PAS 159 boundary is different than TRPA PAS 159 boundary. Placer County PAS 159 includes the existing North Base area paved parking lot immediately west of SR 89. The proposed amendments would also expand Placer County PAS 159 boundary to include the entirety of the North Base area currently located in PAS 157 (purple hatching area within black dashed line).

Amendments to TRPA and Placer County Plan Area Statement Allowable Uses

A copy of the proposed amendments to PAS 157, 158 and 159 (shown in revision mode) is included in Appendix E and summarized as follows:

PAS 157 – Homewood Tahoe Ski Bowl Recreation - Add Personal Services (S) and Participant Sports Facility (S) as permissible uses.

PAS 157 – Homewood Tahoe Ski Bowl Recreation - Add TDR Receiving Area for Existing Development (commercial) to newly created Special Area 1 (that includes the Mid Mountain Lodge).

PAS 157 – Homewood Tahoe Ski Bowl Recreation – Modify Special Policy 6 to allow commercial at the mid mountain lodge.

PAS 157 – Homewood Tahoe Ski Bowl Recreation – Modify Special Policy 8 to allow commercial uses pursuant to a Ski Area Master Plan.

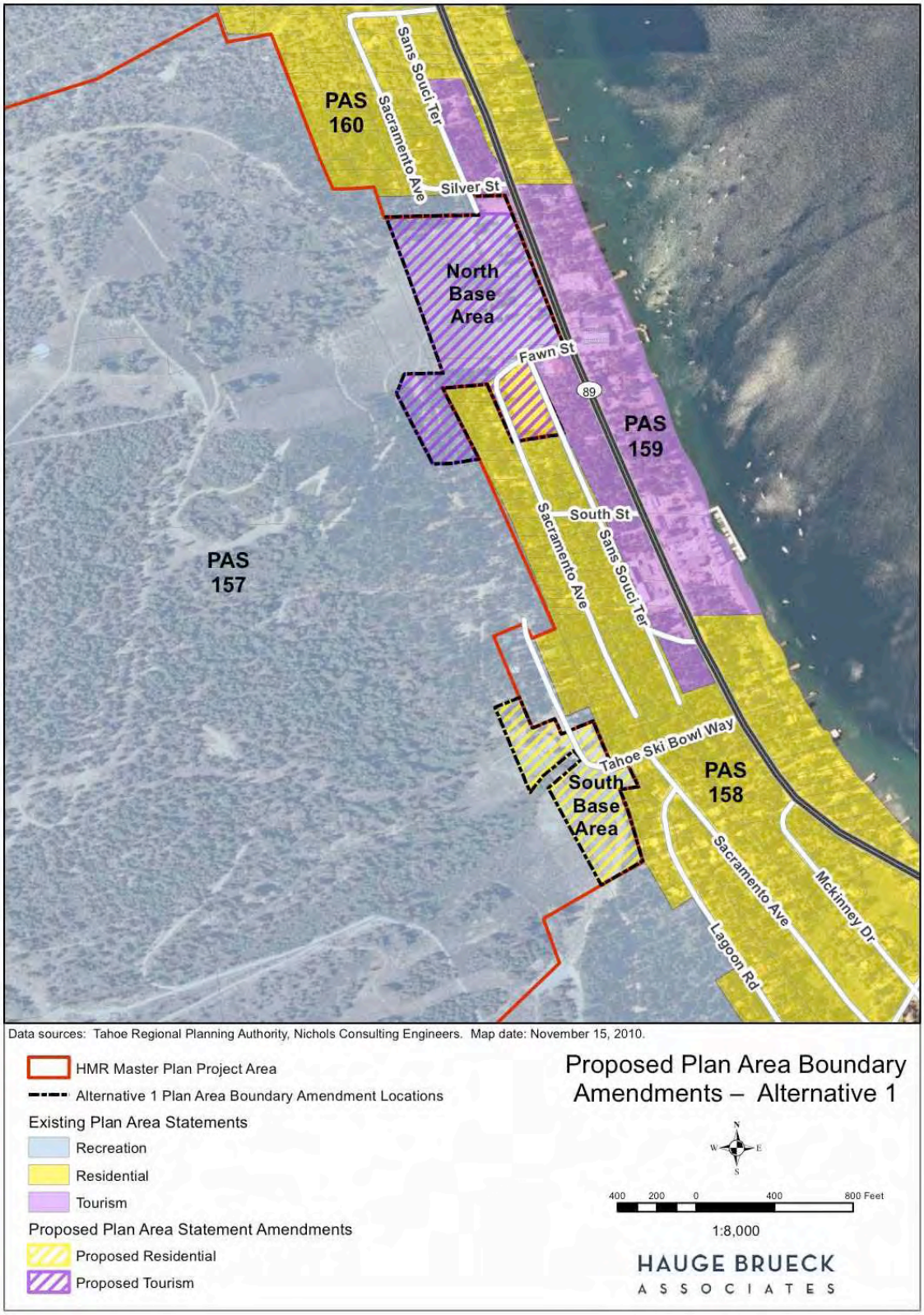
PAS 158 – McKinney Tract Residential - Add Multi-Family Dwellings (S) and Skiing Facilities (A) as permissible uses to the newly created "Special Area 1" shown on Figure 3-13 (yellow hatching).

PAS 158 - McKinney Tract Residential - Add TDR Receiving Area for 1) Existing Development, and 2) Multi-Residential Units to the newly created "Special Area 1" shown on Figure 3-13 (yellow hatching).

PAS 158 - McKinney Tract Residential - Add Multiple Family Dwellings (Special Area 1 only) to Maximum Densities with a Maximum Density of 15 units per acre.

PAS 159 – Homewood Commercial - Add Multi-Family Dwellings (S) and Privately Owned Assembly and Entertainment (S) as permissible uses to the newly created "Special Area 1" shown on Figure 3-13 (purple hatching).

Figure 3-13. Plan Area Statement Boundary Amendments – Proposed Project (Alternative 1)



PAS 159 – Homewood Commercial - Add TDR Receiving Area for Multi-Residential Units (to Special Area 1 only).

PAS 159 – Homewood Commercial - Increase Multiple Family Dwellings (Special Area 1 only) and Employee Housing Maximum Densities to 15 units per acre (from a current Maximum Density of 8 units per acre).

Amendments to TRPA Code of Ordinances

Chapter 22 Height – Add a new Code Subsection 22.4.G outlining procedures to obtain additional height for Ski Area Master Plans. The proposed height amendment also requires amendments to several goals and policies to allow for additional height for projects in Ski Area Master Plans. A copy of the proposed Code Subsection and Goals and Policies Amendments is included in Appendix F.

Chapter 22 Height - Amend Code Subsection 22.7(6) to allow additional height in Ski Area Master Plans as well as Community Plans as follows:

> (6) The building is located within an approved community plan **or Ski Area Master Plan**, which identifies the project area as being suitable for the additional height being proposed.

Chapter 33 Allocation of Development – Amend Code Subsection 33.4.A(3) to allow for use and distribution of additional tourist accommodation units in Ski Area Master Plans as well as Community Plans as follows:

> (3) Maximum Number And Distribution Of Allocations For Additional Tourist Accommodation Units: A maximum of 400 additional tourist accommodation units may be approved for construction. After January 1, 2007, the original 200 tourist accommodation bonus units (with 172 units remaining) shall be limited to special projects (in accordance with sub-section 33.3.D.(3)) and shall only be permitted when matched by transfers of existing units (pursuant to Chapter 34) from sensitive lands that have been restored. After January 1, 2007, TRPA shall allocate the 200 tourist accommodation bonus units, (with 170 units remaining) to projects within adopted community plans **or Ski Area Master Plans** in accordance with Chapter 35. Distribution of units within the community plan **or Ski Area Master Plan** shall be pursuant to the provisions of the adopted community plan **or Ski Area Master Plan** and the following criteria:

Chapter 35 Bonus Unit Incentive Program – Amend Code Section 35.3 and Subsection 35.3.B to allow for use and distribution of tourist accommodation bonus units in Ski Area Master Plans as well as Community Plans as follows:

> 35.3 Tourist Accommodation Bonus Unit Program: Tourist accommodation bonus units may be approved by TRPA only on parcels located within an adopted community plan **or Ski Area Master Plan** and only when at least one existing tourist accommodation unit is transferred in accordance with Chapter 34 for each tourist accommodation bonus unit approved.
>
> 35.3.A Assignment Of Bonus Units: A maximum of 400 tourist accommodation bonus units may be approved by TRPA.

35.3.B Criteria: Projects receiving tourist accommodation bonus units pursuant to this chapter shall comply with the following criteria:

(1) The proposed density, including any tourist accommodation bonus units, shall not exceed the maximum density limits set forth in the adopted community or redevelopment plan **or Ski Area Master Plan**.

(2) Tourist accommodation units shall be designated in the plan area or community plan as an allowed use, or a special use for which the findings required in Section 18.1 have been made.

(3) The project shall be located on a parcel designated in an adopted community or redevelopment plan **or Ski Area Master Plan** as being eligible to receive tourist accommodation bonus units and the project shall not exceed the density set forth in the community or redevelopment plan.

(4) All tourist accommodation bonus units shall be allocated in accordance with Chapter 33.

Chapter 64 Grading– Amend Code Subsection 64.7.A(2)(i) to allow for the consideration of groundwater interception for below-grade parking in Ski Area Master Plans as follows:

(i) It is necessary to provide below grade parking for projects qualifying for additional height under Subsection 22.4.D **or 22.4.G**, to achieve environmental goals including scenic improvements, land coverage reduction, and area-wide drainage systems; and measures are included in the project to prevent groundwater from leaving the Project area as surface flow and that groundwater, if any is interfered with, is rerouted into the groundwater flow to avoid adverse impacts to hydrologic conditions, SEZ vegetation, and mature trees.

New Code Chapter 22 (Height) Section 22.4.G, as proposed, is referenced to Appendix F of this EIR/EIS. Code Section 22.4.G, as proposed, would allow additional height for projects located in special areas within the Homewood Ski Area Master Plan.

Amendments to TRPA Goals and Policies

Chapter II Land Use Element – Amend Land Use Goal 2, Policy 5, Subparagraph "Tourist Accommodation" to allow for use and distribution of tourist accommodation bonus units in Ski Area Master Plans as well as Community Plans as follows:

Tourist Accommodation: There is a limited need for additional tourist accommodation units. Based on demonstrated need, projects may be permitted additional units as specified within a community plan **or Ski Area Master Plan** and as provided for in Goal #3, of the Development and Implementation Priorities Subelement. The total number of additional tourist accommodation units shall not exceed 400 units. (See Goals #2 and #3 of the Development and Implementation Priorities Subelement for more detail.)

Chapter VII Implementation Element – Amend Development and Implementation Priorities Goal 3, Policy 2.B, to allow for use and distribution of tourist accommodation bonus units in Ski Area Master Plans as well as Community Plans as follows:

As provided in Goal #2 of this subelement and Goal #2 of the land Use Subelement, up to 400 additional units may be granted as bonus units in conjunction with transfer of development. Ordinances shall establish detailed provisions which shall allow bonuses of varying amounts in relation to a unit transferred, depending on the public benefits being provided by the project. No bonuses shall be allowed for projects outside adopted CPs **or Ski Area Master Plans**. Benefits to consider shall include extent of coverage planned, transportation improvements, water quality improvements, scenic improvements, and accessory services provided.

Amendments to North Tahoe Fire Protection District Boundary (NTFPD)

Amend NTFPD service boundary to include the Mid-Mountain lodge area. This would require an amendment of the NTFPD service boundary through the Local Agency Formation Commission (LAFCO). The California Department of Forestry and Fire Protection (Cal Fire) currently has jurisdiction for the Mid-Mountain lodge area and would be required to approve the service boundary change.

3.5.26 Master Plan Phasing

It is expected that a project being constructed under a Master Plan will be accomplished over time. TRPA's master plan guidelines anticipate the phasing of the project and requires that the master plan document describe, in general terms, when specific project elements will be constructed. HMR anticipates a ten (10) year time frame for the build out of the Ski Area Master Plan. The following outlines the anticipated development phasing.

Phase 1 – North Base area - Implementation in years 1 through 5:

1a. Mid Mountain Day Lodge and accessory structures (two 250,000-gallon water tanks and Gondola terminal), Mid Mountain Learn to Ski Lift, Mid Mountain Maintenance Facility, Gondola, North Base Amphitheater, North Base Hotel/Lodge (Building B), North Base Day Skier Services Building and Residential Units (Building A), North Base Commercial and Residential Units (Building C) and Landscape/Ice Pond Area, North Base Employee/Workforce Housing and Day Skier Parking Structure (Building P), TCPUD bike trail extension, and LEED Commissioning;

1b. North Base Residential Building Adjacent to Highway 89 (Building D); and

1c. North Base Residential Building Adjacent to Highway 89 (Building E).

A Phase 1 construction staging and parking plan will be prepared at the beginning of Master Plan implementation – HMR intends to shut down the entire North Base area for Phase 1 construction and utilize the existing parking areas according to a detailed construction logistics plan. The selected general contractor would be required to put such a logistics plan together as one of their first tasks. The focus of the first phase 1a would be the hotel, day skier facility, and parking/workforce housing structure, which would leave the existing paved parking area fronting SR 89 open and available for staging of materials and construction parking. During Phase 1a construction, winter ski operations would continue to operate out of the South Base area.

Phase 2 – South Base – Implementation in years 6 through 10:

2a. Culvert Removal, Tahoe Ski Bowl Way road realignment and SEZ Restoration; South Base Residential Building A (southern building);

2b. South Base Residential Building B (northern building); and

2c. Tahoe Ski Bowl Way roadway extension and Townhouses (located above North Base area, but accessed from the South Base area).

3.6 ALTERNATIVE 2 – NO PROJECT (EXISTING CONDITIONS)

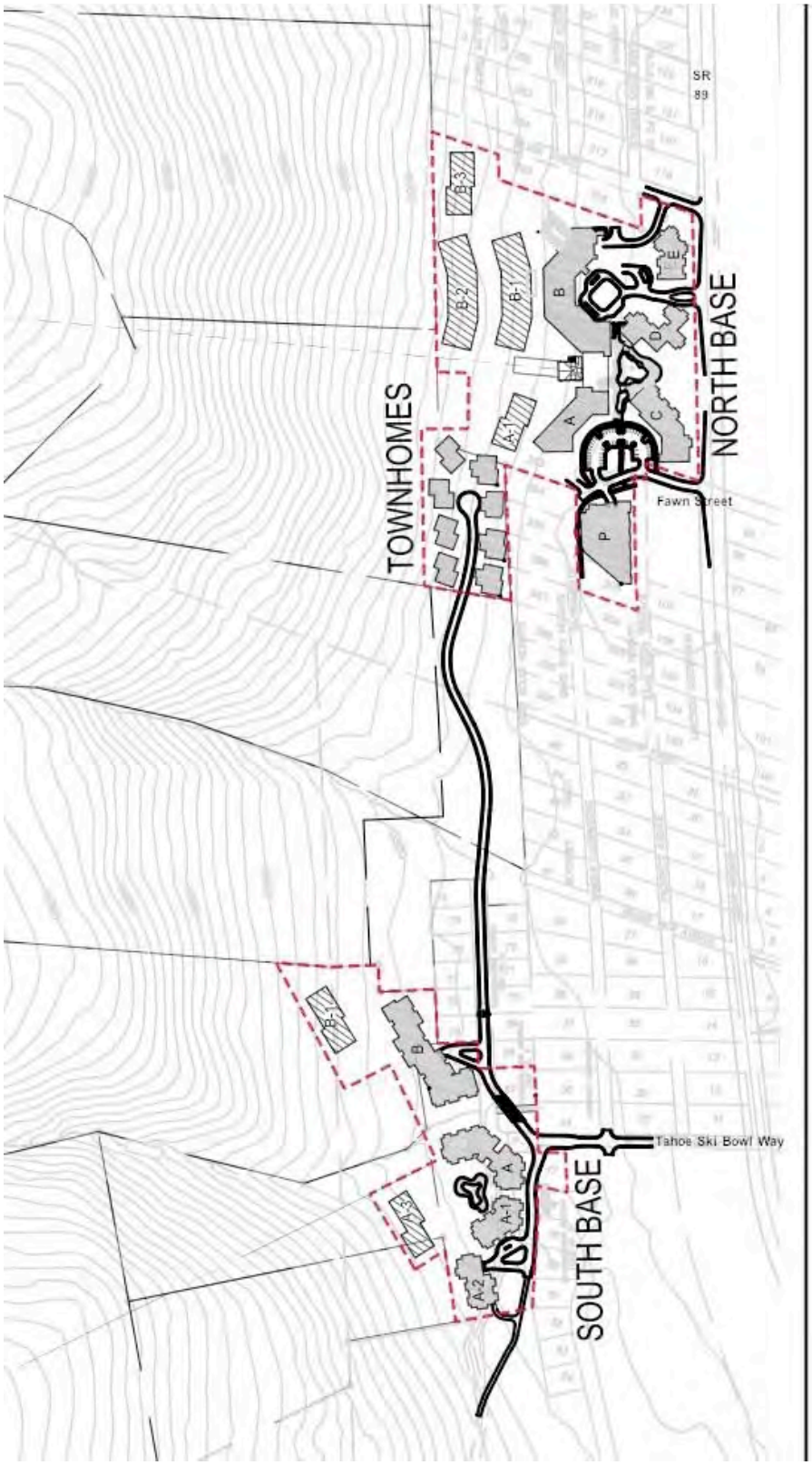
Under the No Project (Alternative 2), the Project area will continue to be operated under existing conditions. The existing ski area facilities, land coverage, and capacity are described above in Section 3.1. Further restoration of existing land coverage, treatment of forest stands, and other environmental improvements proposed in the HMR Ski Area Master Plan would not occur under the No Project (Alternative 2). No Code of Ordinance or Plan Area amendments are required for Alternative 2.

3.7 ALTERNATIVE 3 – NO CODE AMENDMENT FOR BUILDING HEIGHT

Alternative 3 would involve the same land uses (e.g., residential, tourist, commercial and skier services) and facilities (e.g., number of units, number of parking spaces, etc.) described above under the Proposed Project (Alternative 1). As with the Proposed Project (Alternative 1), Alternative 3 would provide for up to 336 tourist accommodation and residential units at the North and South Base areas. However, under Alternative 3, building footprints would be expanded and additional buildings constructed to accommodate the proposed land uses in buildings that meet current TRPA Code Chapter 22 height standards. This Alternative is analyzed to document the differences in environmental effects (e.g., land coverage) that would occur if additional height is not provided for the Project. Figure 3-14 shows the increased building area (hatched buildings) needed to accommodate the proposed uses with buildings that meet current TRPA height standards. At the North Base area, Buildings A and B would include four additional buildings located up slope to the west of the building sites identified in the Proposed Project (Alternative 1). As a result, Alternative 3 would require approximately 54,800 square feet more land coverage than the Proposed Project (Alternative 1) at the North Base area.

At the South Base area, Buildings A and B include two additional buildings located up slope and west of the building sites in the Proposed Project (Alternative 1). As a result, Alternative 3 would require approximately 40,700 square feet more land coverage than the Proposed Project (Alternative 1) at the South Base area.

Figure 3-14. Alternative 3 No Code Amendment for Building Height Site Plan



With the exception of amendments to Code Chapter 22 (Height), Alternative 3 requires the same Code of Ordinance and PAS amendments as the Proposed Project (Alternative 1) that are outlined in Section 3.5 above. Figure 3-15 shows the location of the proposed PAS boundary amendments required for Alternative 3. The PAS boundary amendments are larger under Alternative 3 than Alternative 1 to accommodate the larger building footprint (e.g., 4 acres at the North Base area and 3.5 acres at the South Base area). As with the Proposed Project (Alternative 1), an amendment to Code Chapter 64 is required to allow for exceptions to groundwater interception for below ground parking facilities. Under Alternative 3 there is no amendment proposed for Code Chapter 22 (Height), so the Code Chapter 64 amendment requires the insertion of a new Subsection 64.7.A(2)(k) as follows:

> **Chapter 64 Grading– Add** Code Subsection 64.7.A(2)(k) to allow for the consideration of groundwater interception for below-grade parking in Ski Area Master Plans as follows:
>
> > **(k) It is necessary to provide below grade parking for buildings located within the Homewood Mountain Resort Ski Area Master Plan that are designed to step up the slope; incorporate community design features such as steep pitched roofs, articulated facades, articulated roof planes; use of earth tone colors consistent with the Design Review Guidelines; and achieve environmental goals including scenic improvements, land coverage reduction, and area-wide drainage systems; and measures are included in the project to prevent groundwater from leaving the Project area as surface flow and that groundwater, if any is interfered with, is rerouted into the groundwater flow to avoid adverse impacts to hydrologic conditions, SEZ vegetation, and mature trees.**

Table 3-8 summarizes buildings, setbacks, and TRPA measured heights associated with Alternative 3.

Table 3-8

Alternative 3 Building Heights and Setbacks

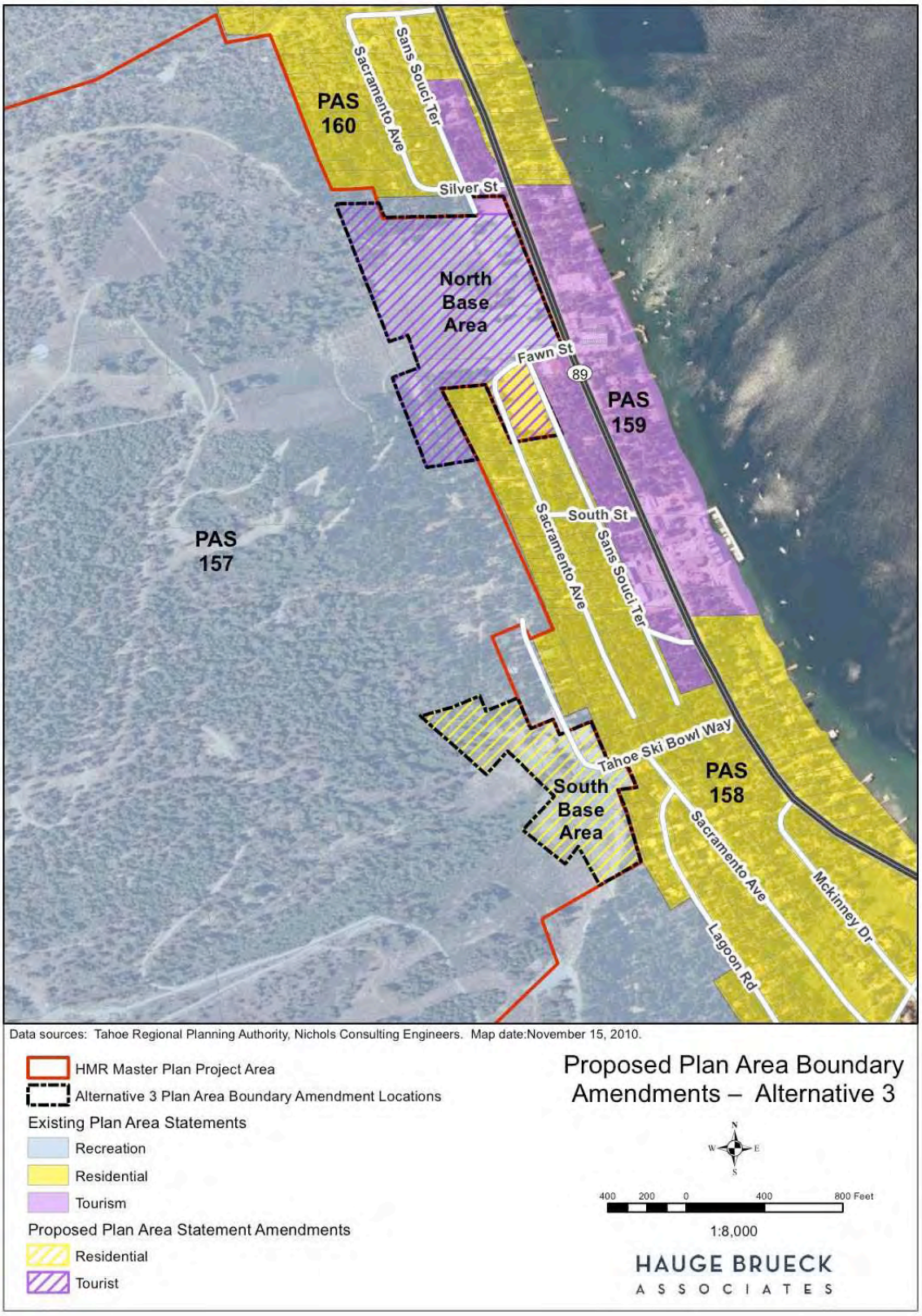
Building	Grade (%)	Roof Pitch	Setback to SR 89 ROW	Allowable Base Height (ft) *	Proposed Height (ft) **
North Base Area					
A (Skier Services/Residential)	15%	6:12	283	40’ 8”	40’
A1	20%	6:12	520	42’ 0”	33’
B (Hotel/Residential)	11%	3:12	280	36’ 1”	36’
B1	11%	3:12	525	36’ 1”	36’
B2	20%	3:12	698	38’ 7	38’
B3	18%	3:12	698	38’ 1”	38’
C (Retail/Residential/ Fractional)	3%	6:12	53	31’ 8”	31’
D (Retail/Residential/ Fractional)	2%	6:12	42	31’ 8”	31’
E (Residential/Fractional)	1%	6:12	45	31’ 2”	31’
P (Parking Structure/ Employee Housing)	1%	2:12	237	32’ 5”	32’
South Base Area					
A (Residential/Skier Services)	4%	6:12	--	38’ 2”	38’
A1 (Residential)	6%	6:12	--	32’ 8”	32’
A2 (Residential)	25%	6:12	--	37’ 2”	37’
A3 (Residential)	25%	6:12	--	37’ 2”	37’
B (Residential)	5%	6:12	--	32’ 2”	32’
B1 (Residential)	25%	6:12	--	37’ 2”	37’
Mid-Mountain Area					
Gondola	23%	2:12	--	37’ 11”	34’
Gondola Entry/Skier Services	23%	2:12	--	37’ 11”	37’
Restaurant	23%	6:12	--	42’ 0”	42’

Notes:

* Allowable Base Height as calculated using TRPA Code Chapter 22, Table A plus additional height with findings.

** Proposed Height based on the method for calculating height defined in TRPA Code Section 22.2.A. Additional height findings are required for many of the proposed buildings and are documented in Chapter 10, Scenic Resources.

Figure 3-15. Proposed Plan Area Statement Boundary Amendments – Alternative 3



3.8 ALTERNATIVE 4 – CLOSE SKI RESORT – ESTATE LOTS

Alternative 4 would close HMR and adjust existing parcels, allowing the development of up to 16 estate residential lots and one commercial lot for sale to individual owners. This Alternative is being studied to document the potential effects of ski resort closure and the development that would likely replace the ski resort facilities. The initial phase of development would include the removal of existing ski area lift facilities and accessory structures (snowmaking pump houses, etc.) as shown in Figures 3-5 and 3-6. However, existing lodge buildings and a majority of existing onsite roadways and parking areas would remain for potential use by the new owners. As shown in Figure 3-16, a majority of the estate home lots would be located on the lower half of the ski area, and a commercial lot would be located at the North Base area. For purposes of this analysis, the commercial lot would include up to 15,000 square feet of commercial floor area (CFA), which would have to be transferred to the North Base area parcels. The commercial lot is proposed because of the North Base area's proximity to PAS 159 (Homewood Commercial) and the commercial needs identified for the Homewood area during HMR's development of the Master Plan program.

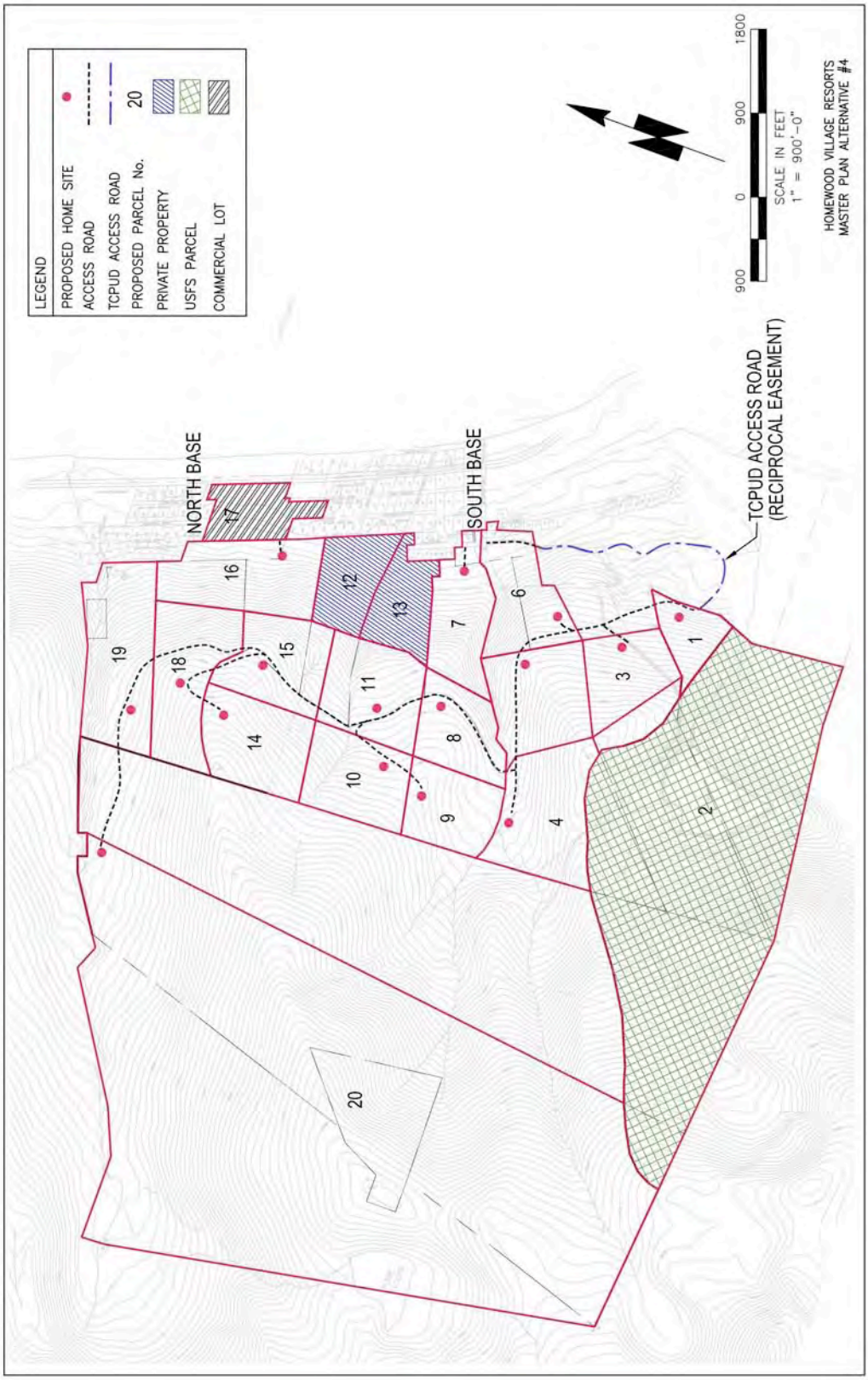
Three of the existing parcels located within the Project area would not be included in Alternative 4. Two lots located between the South and North Base areas are owned by others. The third non-HMR parcel identified as Parcel 2 in Figure 3-16 has been sold to the United States Department of Agriculture (USDA) Lake Tahoe Basin Management Unit (LTBMU) and will not be physically modified under any Alternative, including Alternative 4.

The 16 individual residential estate lots would be developed as single-family residences accessed by existing on mountain roadways. Once sold, each owner would be responsible for the BMPs, maintenance and upkeep of their private lot, including onsite roadways and forested areas. Individual owners would also be responsible for the permitting of their residential homes. For analysis purposes, it is assumed that each residential lot will include 5,000 square feet of new land coverage for development of the home and access from the existing onsite roadways.

Alternative 4 proposes commercial use of Lot 17, which includes frontage on SR 89 and the paved and unpaved parking areas currently used for ski area operations. Commercial uses are currently allowed on Lot 17, which is located in PAS 157, but would require the transfer of the commercial floor area from outside of the PAS. To accommodate transfer of commercial floor area to PAS 157, one PAS amendment is required, adding transfer of development rights for existing development.

No other Code of Ordinance or PAS amendments would be required for Alternative 4. Alternative 4 is analyzed to disclose impacts associated with the potential closure of the existing ski resort. HMR states that the ski resort closure is likely if a mixed-use redevelopment project is not approved that would help reverse the financial losses that HMR has seen since acquiring the resort.

Figure 3-16. Alternative 4 Close Ski Resort - Estate Lots Plan



3.9 ALTERNATIVE 5 – COMPACT PROJECT AREA

3.9.1 North and South Base Areas

Under Alternative 5, the PAS 159 – Homewood/Commercial boundary line adjustment (PAS boundary amendment) proposed for the Proposed Project (Alternative 1) would be reduced to include only the existing parking areas at the North Base area. The North Base area to the west of these two parking areas and the entirety of the South Base area would remain in PAS 157 – Homewood/Ski Homewood Area (Recreation). The two North Base parking areas are currently designated as residential and tourist land uses in existing plan documents. The existing paved parking area at the North Base area is currently included in the Placer County West Shore PAS 159 (Commercial), although for TRPA it is included in PAS 157 (Recreation). The existing gravel parking area at the North Base area is currently included in TRPA PAS 158 (Residential). This Alternative is being studied to document the potential effects of placing all of the proposed multi-family residential units in locations that currently allow for such uses. Alternative 5 would provide for up to 300 tourist accommodation and residential units at the North and South Base areas, a reduction of 36 units compared to the Proposed Project (Alternative 1).

Under Alternative 5, all of the 225 multi-family residential units would be located in the North Base parking areas, reducing the area proposed for inclusion in PAS 159 (Commercial) by approximately 11 acres. The 75-room hotel, 25,000 square feet of commercial uses, and 30,000 square feet of skier service uses would remain in PAS 157, where these uses are currently allowed. At the South Base area, 16 single-family residential lots would be developed using existing HMR lots along with a small skier services building to service residents and skiers utilizing the Quail lift. Alternative 5 includes 12 onsite employee/workforce housing units that would be attached to a smaller parking structure (156 spaces), because the alternative parking structure location does not include enough land area for the 13 units and 272 parking spaces proposed in Alternatives 1 and 3. Figure 3-17 shows the location of development at the North and South Base areas under Alternative 5. Figure 3-18 shows the location of single-family residential units and the skier services building at the South Base area. Table 3-9 summarizes buildings, setbacks, and TRPA measured heights associated with Alternative 5. Under Alternative 5, the proposed development at the Mid-Mountain area will be the same as Alternatives 1 and 3.

Alternative 5 is analyzed because it would reduce the area of PAS boundary expansion required for the proposed Master Plan. Certain findings are required to amend PAS boundaries, including a finding that the project will move the environmental thresholds towards attainment. Under Alternative 5, the North Base area multi-family development currently not permitted in PAS 157 (Recreation) would be added to only the existing parking lots. The existing North Base area parking lots are already located partially in plan areas that allow for residential development (the gravel lot is in TRPA PAS 158 – Residential and the paved parking lot is in Placer County PAS 159 – Commercial). In the South Base area, Alternative 5 would include no changes to PAS boundaries.

Table 3-9

Alternative 5 Building Heights and Setbacks

Building	Grade (%)	Roof Pitch	Setback to SR 89 ROW	Allowable Height (ft) *	Proposed Height (ft) **
North Base Area					
A (Skier Services)	13%	6:12	283	50’	27’
B (Hotel/Lodge)	12%	6:12	248	50’	20’
C (Residential)	2%	6:12	247	50’	54’
D (Retail/Residential)	2%	6:12	41	42’	54’
E (Residential)	3%	6:12	41	42’	50’
P (Parking Structure/ Employee Housing)	7%	2:12	237	50’	37’
Mid-Mountain Area					
Gondola	23%	2:12	--	35’	24’
Gondola Entry/Skier Services	23%	2:12	--	35’	33’
Restaurant	23%	6:12	--	35’	31’

Notes:

* Allowable Height as calculated using the proposed TRPA Code of Ordinances Chapter 22 height amendment (Appendix F).

** Proposed Height based on the method for calculating height included in the proposed TRPA Code of Ordinances Chapter 22 height amendment (Appendix F). Chapter 10 (Impact SCENIC-1) addresses the inconsistency of the height required for Alternative 5 and the proposed height limits included in the proposed Code Chapter 22 amendment.

Figure 3-17. Alternative 5 Compact Project Area Site Plan

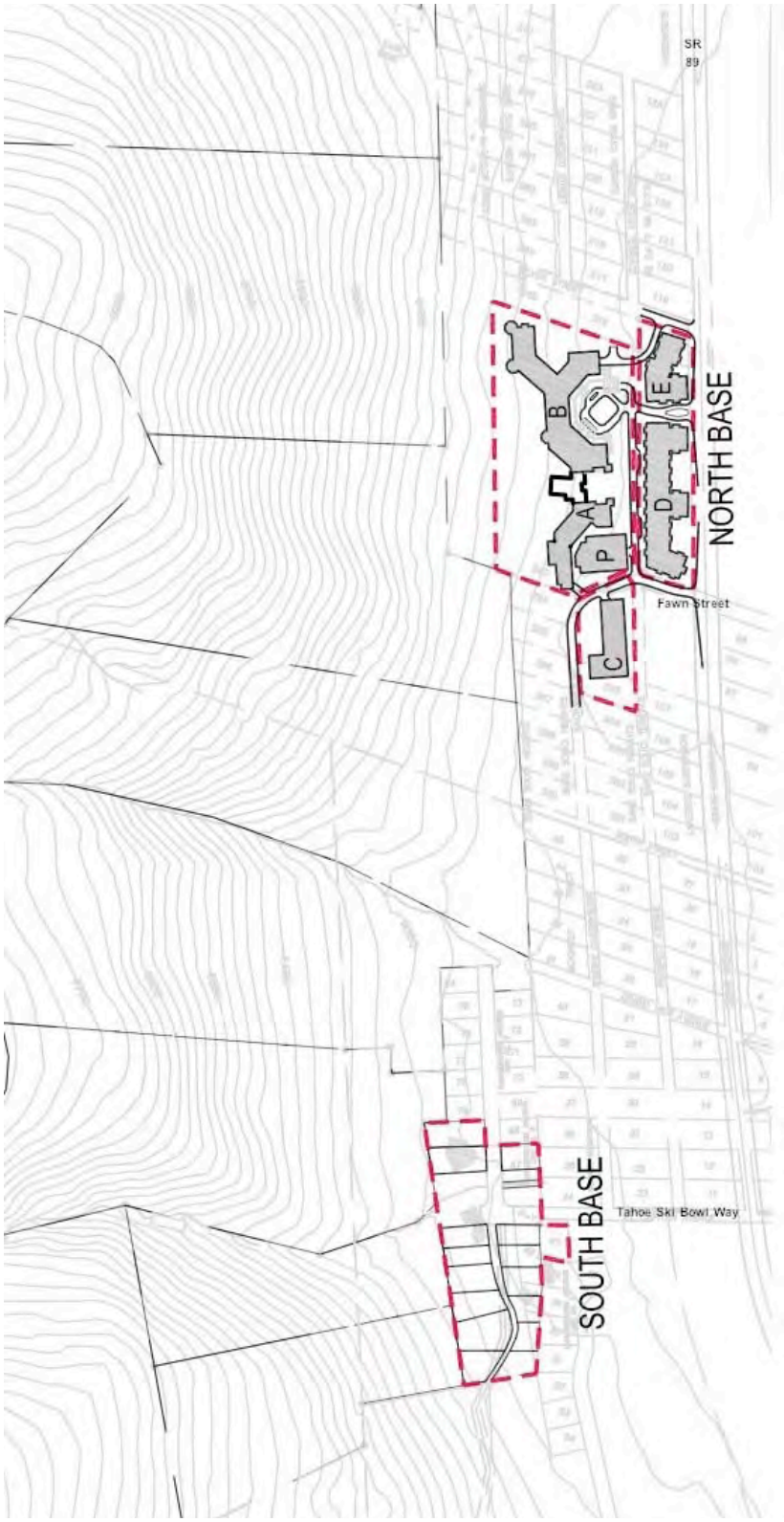
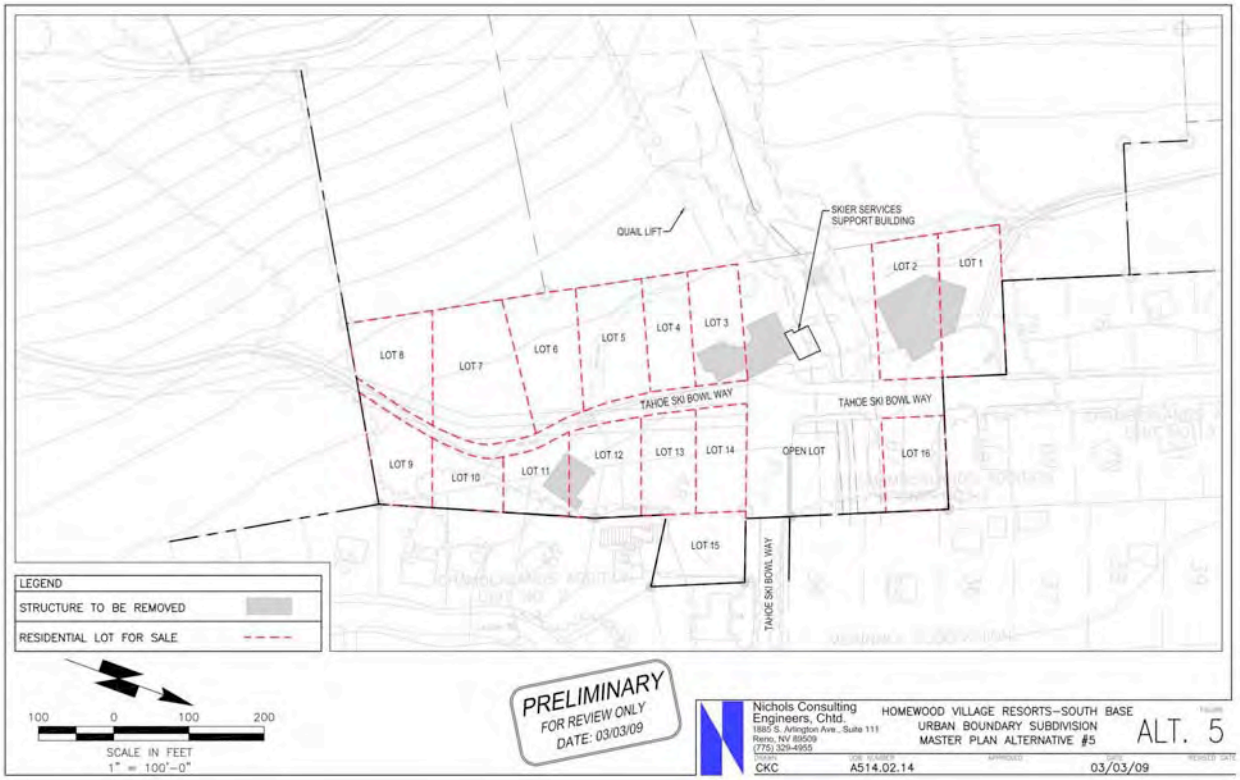


Figure 3-18. Alternative 5 South Base Area Site Plan



3.9.2 Code of Ordinance/Plan Area Amendments

Alternative 5 implementation will require an amendment to TRPA Code of Ordinances Chapters 22 and 64 for additional building height and exceptions for groundwater interception, and amendments to TRPA and Placer County PAS boundaries, allowable uses, density, and special policies. The required amendments for Alternative 5 implementation are described below.

Amendment to TRPA and Placer County Plan Area Statement Boundary Lines

Figure 3-19 shows the location of the proposed PAS boundary amendment required for Alternative 5. The proposed boundary line amendment includes:

Plan Area 159 – Homewood Commercial – Expand TRPA PAS 159 boundary (shown in purple) to include the existing North Base area parking lots currently located primarily in PAS 157 (purple hatching area within black dashed line). A portion of the North Base area (currently used as a gravel parking lot) is currently located in the McKinney Tract Residential - PAS 158 and is shown in yellow.

The Placer County PAS 159 boundary is different than TRPA PAS 159 boundary. Placer County PAS 159 presently includes the existing North Base area paved parking lot immediately west of SR 89 (purple hatching within black dashed line immediately west of SR 89). Therefore, for Alternative 5, only the yellow area included in the purple hatching would be added to Placer County PAS 159.

Amendments to TRPA and Placer County Plan Area Statement Allowable Uses

The proposed amendments to PAS 157, 158 and 159 are summarized below.

PAS 157 – Homewood Tahoe Ski Bowl Recreation - Add Personal Services (S), Participant Sports Facility (S) and Privately Owned Assembly and Entertainment (S) as permissible uses.

PAS 157 – Homewood Tahoe Ski Bowl Recreation - Add TDR Receiving Area for Existing Development (commercial) to newly created Special Area 1 (that includes Mid Mountain Lodge).

PAS 157 – Homewood Tahoe Ski Bowl Recreation - Add TDR Receiving Area for Existing Development (TAU) to newly created Special Area 2 at the North Base (area that includes non-residential Buildings A, B, and P located west of PAS 159 Special Area 1).

PAS 157 – Homewood Tahoe Ski Bowl Recreation – Modify Special Policy 6 to allow commercial at the mid mountain lodge.

PAS 157 – Homewood Tahoe Ski Bowl Recreation – Modify Special Policy 8 to allow commercial uses pursuant to a Ski Area Master Plan.

PAS 159 – Homewood Commercial - Add Multi-Family Dwellings (S) as a permissible use to the newly created "Special Area 1" shown on Figure 3-19 (purple hatching).

PAS 159 – Homewood Commercial - Add TDR Receiving Area for Multi-Residential Units (to Special Area 1 only).

PAS 159 – Homewood Commercial - Increase Multiple Family Dwellings (Special Area 1 only) and Employee Housing Maximum Densities to 15 units per acre (from a current Maximum Density of 8 units per acre). Note: Under Alternative 5, density would exceed Plan Area maximum if lands outside the proposed PAS 159 boundary cannot be used to calculate density (see discussion in Chapter 6, Land Use).

Amendments to TRPA Code of Ordinances

Chapter 22 Height – Add a new Code Subsection 22.4.G outlining procedures to obtain additional height for Ski Area Master Plans. The proposed height amendment also requires amendments to several goals and policies to allow for additional height for projects in Ski Area Master Plans. A copy of the proposed Code Subsection and Goals and Policies Amendments is included in Appendix F. Note: The height amendment required for Alternative 5 has been determined to degrade existing scenic quality ratings (see Chapter 10, Scenic Resources).

Chapter 22 Height - Amend Code Subsection 22.7(6) to allow additional height in Ski Area Master Plans as well as Community Plans as follows:

> (6) The building is located within an approved community plan **<u>or Ski Area Master Plan</u>**, which identifies the project area as being suitable for the additional height being proposed.

Chapter 33 Allocation of Development – Amend Code Subsection 33.4.A(3) to allow for use and distribution of additional tourist accommodation units in Ski Area Master Plans as well as Community Plans as follows:

(3) Maximum Number And Distribution Of Allocations For Additional Tourist Accommodation Units: A maximum of 400 additional tourist accommodation units may be approved for construction. After January 1, 2007, the original 200 tourist accommodation bonus units (with 172 units remaining) shall be limited to special projects (in accordance with sub-section 33.3.D.(3)) and shall only be permitted when matched by transfers of existing units (pursuant to Chapter 34) from sensitive lands that have been restored. After January 1, 2007, TRPA shall allocate the 200 tourist accommodation bonus units, (with 170 units remaining) to projects within adopted community plans **or Ski Area Master Plans** in accordance with Chapter 35. Distribution of units within the community plan **or Ski Area Master Plan** shall be pursuant to the provisions of the adopted community plan **or Ski Area Master Plan** and the following criteria:

Chapter 35 Bonus Unit Incentive Program – Amend Code Section 35.3 and Subsection 35.3.B to allow for use and distribution of tourist accommodation bonus units in Ski Area Master Plans as well as Community Plans as follows:

Tourist Accommodation Bonus Unit Program: Tourist accommodation bonus units may be approved by TRPA only on parcels located within an adopted community plan **or Ski Area Master Plan** and only when at least one existing tourist accommodation unit is transferred in accordance with Chapter 34 for each tourist accommodation bonus unit approved.

35.3.A Assignment Of Bonus Units: A maximum of 400 tourist accommodation bonus units may be approved by TRPA.

35.3.B Criteria: Projects receiving tourist accommodation bonus units pursuant to this chapter shall comply with the following criteria:

(1) The proposed density, including any tourist accommodation bonus units, shall not exceed the maximum density limits set forth in the adopted community or redevelopment plan **or Ski Area Master Plan**.

(2) Tourist accommodation units shall be designated in the plan area or community plan as an allowed use, or a special use for which the findings required in Section 18.1 have been made.

(3) The project shall be located on a parcel designated in an adopted community or redevelopment plan **or Ski Area Master Plan** as being eligible to receive tourist accommodation bonus units and the project shall not exceed the density set forth in the community or redevelopment plan.

(4) All tourist accommodation bonus units shall be allocated in accordance with Chapter 33.

Chapter 64 Grading– Amend Code Subsection 64.7.A(2)(i) to allow for the consideration of groundwater interception for below-grade parking in Ski Area Master Plans as follows:

(i) It is necessary to provide below grade parking for projects qualifying for additional height under Subsection 22.4.D **or 22.4.G**, to achieve environmental goals including scenic improvements, land coverage reduction, and area-wide drainage systems; and

> measures are included in the project to prevent ground water from leaving the Project area as surface flow and that groundwater, if any is interfered with, is rerouted into the groundwater flow to avoid adverse impacts to hydrologic conditions, SEZ vegetation, and mature trees.

New Code Chapter 22 (Height) Section 22.4.G, as proposed, is referenced to Appendix F of this EIR/EIS. Code Section 22.4.G, as proposed, would allow additional height for projects located in special areas within the Homewood Ski Area Master Plan.

Amendments to TRPA Goals and Policies

Chapter II Land Use Element – Amend Land Use Goal 2, Policy 5, Subparagraph "Tourist Accommodation" to allow for use and distribution of tourist accommodation bonus units in Ski Area Master Plans as well as Community Plans as follows:

> Tourist Accommodation: There is a limited need for additional tourist accommodation units. Based on demonstrated need, projects may be permitted additional units as specified within a community plan **or Ski Area Master Plan** and as provided for in Goal #3, of the Development and Implementation Priorities Subelement. The total number of additional tourist accommodation units shall not exceed 400 units. (See Goals #2 and #3 of the Development and Implementation Priorities Subelement for more detail.)

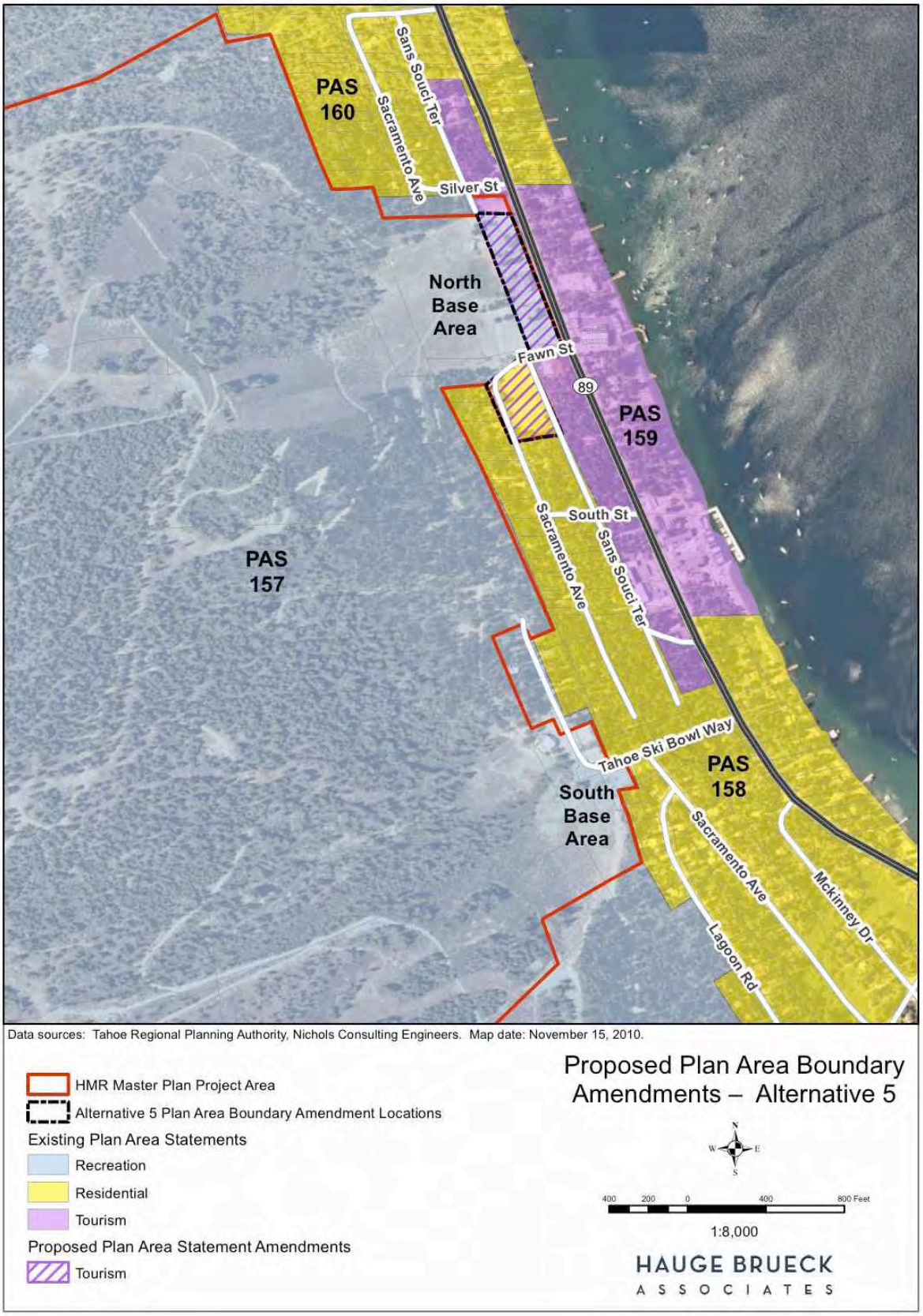
Chapter VII Implementation Element – Amend Development and Implementation Priorities Goal 3, Policy 2.B, to allow for use and distribution of tourist accommodation bonus units in Ski Area Master Plans as well as Community Plans as follows:

> As provided in Goal #2 of this subelement and Goal #2 of the land Use Subelement, up to 400 additional units may be granted as bonus units in conjunction with transfer of development. Ordinances shall establish detailed provisions which shall allow bonuses of varying amounts in relation to a unit transferred, depending on the public benefits being provided by the project. No bonuses shall be allowed for projects outside adopted CPs **or Ski Area Master Plans**. Benefits to consider shall include extent of coverage planned, transportation improvements, water quality improvements, scenic improvements, and accessory services provided.

Amendments to North Tahoe Fire Protection District Boundary (NTFPD)

Amend NTFPD service boundary to include the Mid-Mountain lodge area. This would require an amendment of the NTFPD service boundary through the Local Agency Formation Commission (LAFCO). The California Department of Forestry and Fire Protection (Cal Fire) currently has jurisdiction for the Mid-Mountain lodge area and would be required to approve the service boundary change.

Figure 3-19. Proposed Plan Area Statement Boundary Amendments – Alternative 5



3.10 ALTERNATIVE 6 – REDUCED PROJECT

3.10.1 North and South Base Areas

Under Alternative 6, the PAS 159 – Homewood/Commercial boundary line adjustment (PAS boundary amendment) proposed for the Proposed Project (Alternative 1) would be reduced to eliminate the proposed Townhouses at the North Base area. In addition, a majority of the South Base area would remain in PAS 157 with the exception of the site of the existing skier services lodge located north of Homewood Creek, which would be redeveloped into a multi-family residential condominium building and added to PAS 158 – McKinney Tract Residential. Under Alternative 6, the total number of TAUs proposed for the North Base area under Alternative 1 would be reduced from 155 to 75. Each of the TAUs would be located in the hotel/lodge building located north of the skier services building. To offset the large reduction in TAUs under Alternative 6, the number of proposed multi-family residential units (for sale units) would be increased from 181 to 195. Under Alternative 6, 145 of the multi-family residential units would be located at the North Base area, spread out amongst each of the proposed residential buildings and also the upper floors of the skier services building. At the South Base area, up to 50 multi-family residential units would be located in one building located north of Homewood Creek, in the same location and design as one of the buildings proposed under Alternative 1. The remainder of the South Base area would include 14 single-family residential lots developed using existing HMR lots along with a small skier services building to service residents and skiers utilizing the Quail lift. This Alternative is being studied to document the potential effects of a reduced development scenario. This Alternative includes a minimum number of units required by HMR to feasibly achieve the number of skier visits needed during the winter mid-week period in order to potentially achieve economic sustainability of the resort. Alternative 6 would provide for up to 284 tourist accommodation and residential units at the North and South Base areas, a reduction of 52 units compared to the Proposed Project (Alternative 1).

Alternative 6 includes 12 onsite employee/workforce housing units that would be attached to a smaller parking structure (156 spaces), because the alternative parking structure location does not include enough land area for the 13 units and 272 parking spaces proposed in Alternatives 1 and 3. Figure 3-20 shows the location of development at the North and South Base areas under Alternative 6. Figure 3-21 shows the location of single-family residential units, one multi-family residential building, and the skier services building at the South Base area. Table 3-10 summarizes buildings, setbacks, and TRPA measured heights associated with Alternative 6. Under Alternative 6, the proposed development at the Mid-Mountain area will be the same as Alternatives 1, 3 and 5.

Table 3-10

Alternative 6 Building Heights and Setbacks

Building	Grade (%)	Roof Pitch	Setback to SR 89 ROW	Allowable Height (ft) *	Proposed Height (ft) **
North Base Area					
A (Skier Services/Residential)	13%	6:12	283	50’	47’
B (Hotel/Residential)	12%	6:12	248	50’	40’
C (Residential)	2%	6:12	247	50’	42’
D (Retail/Residential)	2%	6:12	41	42’	42’
E (Residential)	3%	6:12	41	42’	38’
P (Parking Structure/ Employee Housing)	7%	2:12	237	50’	37’
Mid-Mountain Area					
Gondola	23%	2:12	--	35’	24’
Gondola Entry/Skier Services	23%	2:12	--	35’	33’
Restaurant	23%	6:12	--	35’	31’

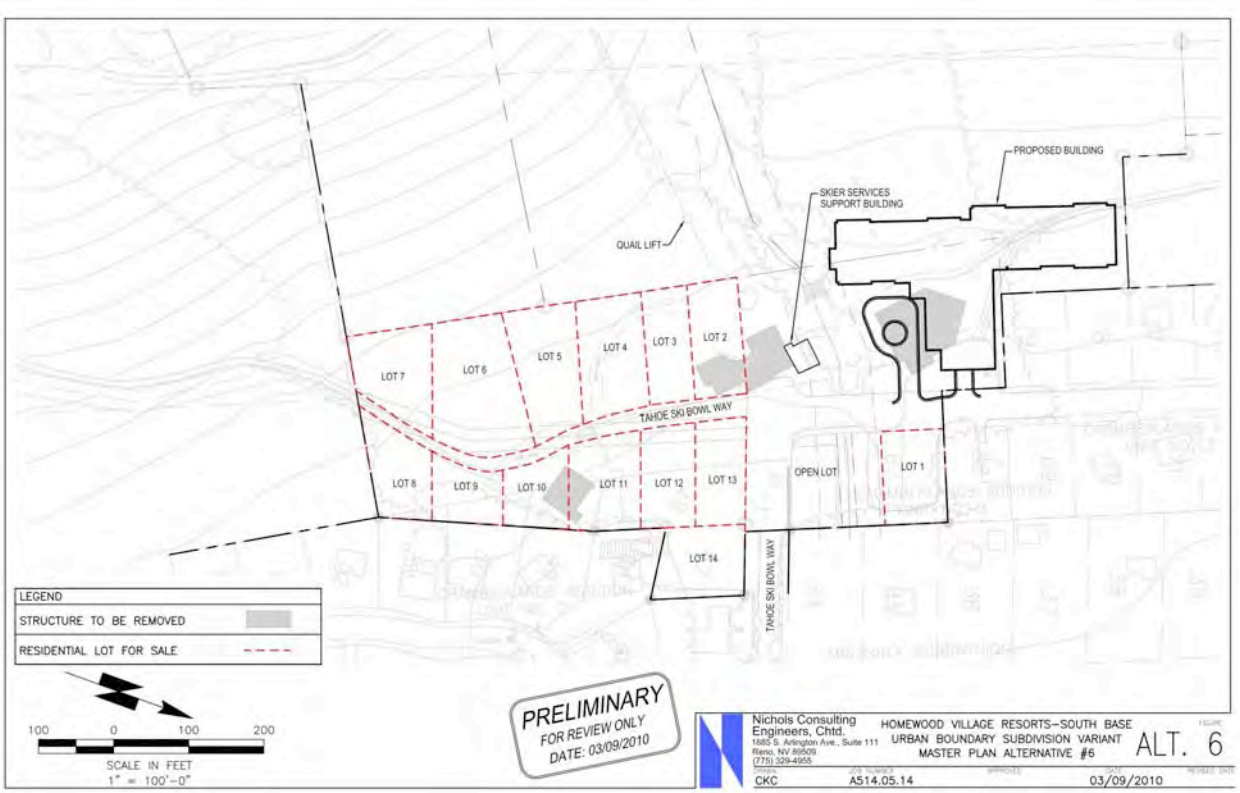
Notes:

* Allowable Height as calculated using the proposed TRPA Code of Ordinances Chapter 22 height amendment. .

** Proposed Height based on the method for calculating height included in the proposed TRPA Code of Ordinances Chapter 22 height amendment (Appendix F).

Figure 3-20. Alternative 6 Reduced Project Site Plan

Figure 3-21. Alternative 6 South Base Area Site Plan



3.10.2 Code of Ordinance/Plan Area Statement Amendments

Alternative 6 implementation will require an amendment to TRPA Code of Ordinances Chapters 22 and 64 for additional building height and exceptions for groundwater interception, and amendments to TRPA and Placer County PAS boundaries, allowable uses, density, and special policies. The required amendments for Alternative 6 implementation are described below.

Amendment to TRPA and Placer County Plan Area Statement Boundary Lines

Figure 3-22 shows the location of the proposed PAS boundary amendments required for Alternative 6. The proposed boundary line amendments include:

Plan Area 159 – Homewood Commercial – Expand TRPA PAS 159 boundary (shown in purple) to include entirety of North Base area currently located primarily in PAS 157 (purple hatching area within black dashed line). A portion of the North Base area (currently used as a gravel parking lot) is currently located in the McKinney Tract Residential - PAS 158 and is shown in yellow.

The Placer County PAS 159 boundary is different than TRPA PAS 159 boundary. Placer County PAS 159 includes the existing North Base area paved parking lot immediately west of SR 89. The proposed amendments would also expand Placer County PAS 159 boundary to include the

entirety of the North Base area currently located in PAS 157 (purple hatching area within black dashed line).

Amendments to TRPA and Placer County Plan Area Statement Allowable Uses

The proposed amendments to PAS 157, 158 and 159 are summarized below.

PAS 157 – Homewood Tahoe Ski Bowl Recreation - Add Personal Services (S) and Participant Sports Facility (S) as permissible uses.

PAS 157 – Homewood Tahoe Ski Bowl Recreation - Add TDR Receiving Area for Existing Development (commercial) to newly created Special Area 1 (that includes Mid Mountain Lodge).

PAS 157 – Homewood Tahoe Ski Bowl Recreation – Modify Special Policy 6 to allow commercial at the mid mountain lodge.

PAS 157 – Homewood Tahoe Ski Bowl Recreation – Modify Special Policy 8 to allow commercial uses pursuant to a Ski Area Master Plan.

PAS 158 – McKinney Tract Residential - Add Multi-Family Dwellings (S) as a permissible use to the newly created "Special Area 1" shown on Figure 3-22 (yellow hatching).

PAS 158 - McKinney Tract Residential - Add TDR Receiving Area for 1) Existing Development, and 2) Multi-Residential Units to the newly created "Special Area" shown on Figure 3-22 (yellow hatching).

PAS 158 - McKinney Tract Residential - Add Multiple Family Dwellings (Special Area 1 only) to Maximum Densities with a Maximum Density of 15 units per acre.

PAS 159 – Homewood Commercial - Add Multi-Family Dwellings (S) and Privately Owned Assembly and Entertainment (S) as permissible uses to the newly created "Special Area 1" shown on Figure 3-22 (purple hatching).

PAS 159 – Homewood Commercial - Add TDR Receiving Area for Multi-Residential Units (to Special Area 1 only).

PAS 159 – Homewood Commercial - Increase Multiple Family Dwellings (Special Area 1 only) and Employee Housing Maximum Densities to 15 units per acre (from a current Maximum Density of 8 units per acre).

Amendments to TRPA Code of Ordinances

Chapter 22 Height – Add a new Code Subsection 22.4.G outlining procedures to obtain additional height for Ski Area Master Plans. The proposed height amendment also requires amendments to several goals and policies to allow for additional height for projects in Ski Area Master Plans. A copy of the proposed Code Subsection and Goals and Policies Amendments is included in Appendix F.

Chapter 22 Height - Amend Code Subsection 22.7(6) to allow additional height in Ski Area Master Plans as well as Community Plans as follows:

> (6) The building is located within an approved community plan **or Ski Area Master Plan**, which identifies the project area as being suitable for the additional height being proposed.

Chapter 33 Allocation of Development – Amend Code Subsection 33.4.A(3) to allow for use and distribution of additional tourist accommodation units in Ski Area Master Plans as well as Community Plans as follows:

> (3) Maximum Number And Distribution Of Allocations For Additional Tourist Accommodation Units: A maximum of 400 additional tourist accommodation units may be approved for construction. After January 1, 2007, the original 200 tourist accommodation bonus units (with 172 units remaining) shall be limited to special projects (in accordance with sub-section 33.3.D.(3)) and shall only be permitted when matched by transfers of existing units (pursuant to Chapter 34) from sensitive lands that have been restored. After January 1, 2007, TRPA shall allocate the 200 tourist accommodation bonus units, (with 170 units remaining) to projects within adopted community plans **or Ski Area Master Plans** in accordance with Chapter 35. Distribution of units within the community plan **or Ski Area Master Plan** shall be pursuant to the provisions of the adopted community plan **or Ski Area Master Plan** and the following criteria:

Chapter 35 Bonus Unit Incentive Program – Amend Code Section 35.3 and Subsection 35.3.B to allow for use and distribution of tourist accommodation bonus units in Ski Area Master Plans as well as Community Plans as follows:

> Tourist Accommodation Bonus Unit Program: Tourist accommodation bonus units may be approved by TRPA only on parcels located within an adopted community plan **or Ski Area Master Plan** and only when at least one existing tourist accommodation unit is transferred in accordance with Chapter 34 for each tourist accommodation bonus unit approved.
>
> 35.3.A Assignment Of Bonus Units: A maximum of 400 tourist accommodation bonus units may be approved by TRPA.
>
> 35.3.B Criteria: Projects receiving tourist accommodation bonus units pursuant to this chapter shall comply with the following criteria:
>
> (1) The proposed density, including any tourist accommodation bonus units, shall not exceed the maximum density limits set forth in the adopted community or redevelopment plan **or Ski Area Master Plan**.
>
> (2) Tourist accommodation units shall be designated in the plan area or community plan as an allowed use, or a special use for which the findings required in Section 18.1 have been made.
>
> (3) The project shall be located on a parcel designated in an adopted community or redevelopment plan **or Ski Area Master Plan** as being eligible to receive tourist accommodation bonus units and the project shall not exceed the density set forth in the community or redevelopment plan.
>
> (4) All tourist accommodation bonus units shall be allocated in accordance with Chapter 33.

Chapter 64 Grading– Amend Code Subsection 64.7.A(2)(i) to allow for the consideration of groundwater interception for below-grade parking in Ski Area Master Plans as follows:

(i) It is necessary to provide below grade parking for projects qualifying for additional height under Subsection 22.4.D **or 22.4.G**, to achieve environmental goals including scenic improvements, land coverage reduction, and area-wide drainage systems; and measures are included in the project to prevent groundwater from leaving the Project area as surface flow and that groundwater, if any is interfered with, is rerouted into the groundwater flow to avoid adverse impacts to hydrologic conditions, SEZ vegetation, and mature trees.

New Code Chapter 22 (Height) Section 22.4.G, as proposed, is referenced to Appendix F of this EIR/EIS. Code Section 22.4.G, as proposed, would allow additional height for projects located in special areas within the Homewood Ski Area Master Plan.

Amendments to TRPA Goals and Policies

Chapter II Land Use Element – Amend Land Use Goal 2, Policy 5, Subparagraph "Tourist Accommodation" to allow for use and distribution of tourist accommodation bonus units in Ski Area Master Plans as well as Community Plans as follows:

> Tourist Accommodation: There is a limited need for additional tourist accommodation units. Based on demonstrated need, projects may be permitted additional units as specified within a community plan **or Ski Area Master Plan** and as provided for in Goal #3, of the Development and Implementation Priorities Subelement. The total number of additional tourist accommodation units shall not exceed 400 units. (See Goals #2 and #3 of the Development and Implementation Priorities Subelement for more detail.)

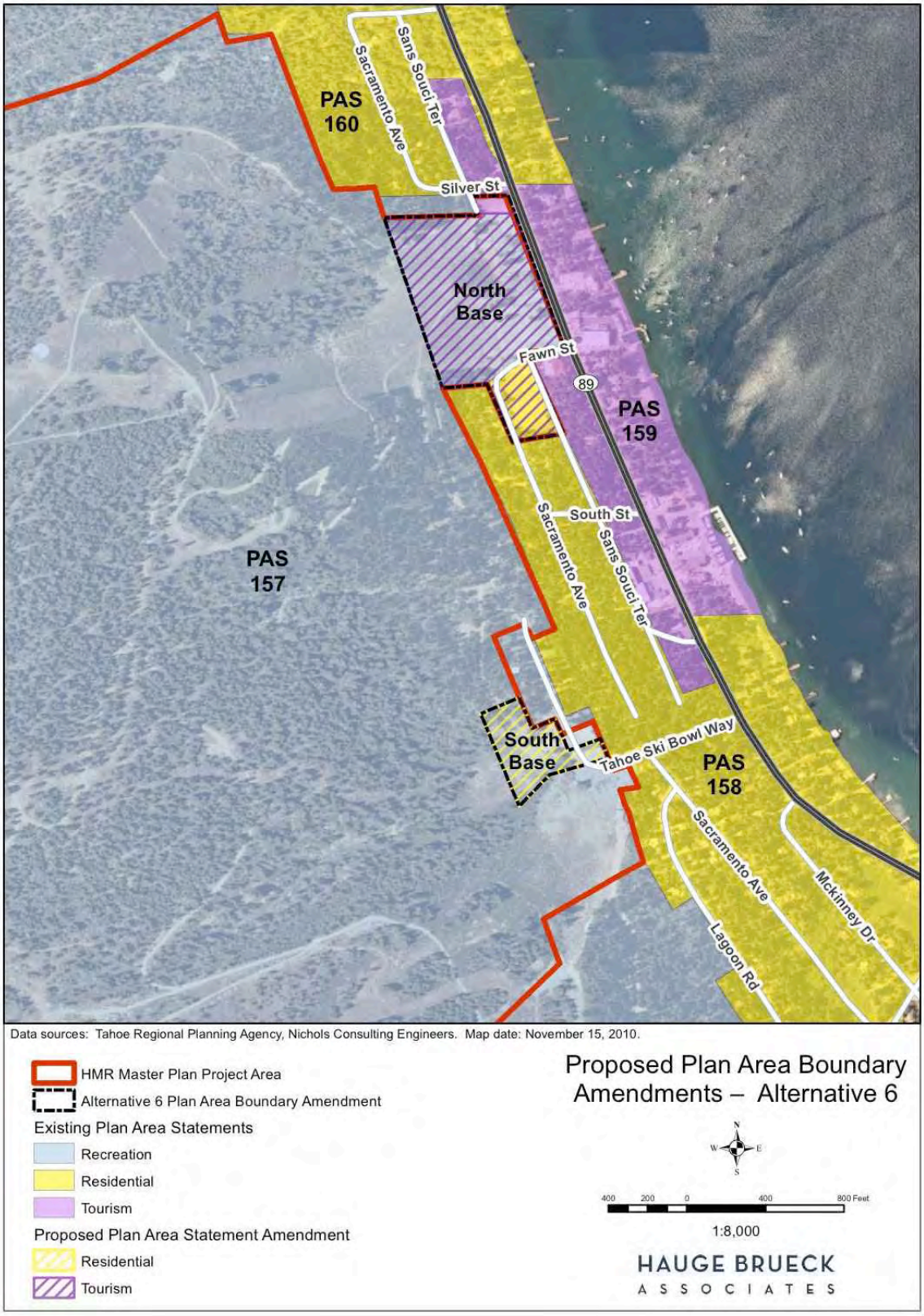
Chapter VII Implementation Element – Amend Development and Implementation Priorities Goal 3, Policy 2.B, to allow for use and distribution of tourist accommodation bonus units in Ski Area Master Plans as well as Community Plans as follows:

> As provided in Goal #2 of this subelement and Goal #2 of the land Use Subelement, up to 400 additional units may be granted as bonus units in conjunction with transfer of development. Ordinances shall establish detailed provisions which shall allow bonuses of varying amounts in relation to a unit transferred, depending on the public benefits being provided by the project. No bonuses shall be allowed for projects outside adopted CPs **or Ski Area Master Plans**. Benefits to consider shall include extent of coverage planned, transportation improvements, water quality improvements, scenic improvements, and accessory services provided.

Amendments to North Tahoe Fire Protection District Boundary (NTFPD)

Amend NTFPD service boundary to include the Mid-Mountain lodge area. This would require an amendment of the NTFPD service boundary through the Local Agency Formation Commission (LAFCO). The California Department of Forestry and Fire Protection (Cal Fire) currently has jurisdiction for the Mid-Mountain lodge area and would be required to approve the service boundary change.

Figure 3-22. Proposed Plan Area Statement Boundary Amendments – Alternative 6



3.11 INTENDED USES OF THE EIR/EIS

Placer County and TRPA will use this EIR/EIS to disclose potential environmental effects, and mitigation measures and alternatives that may reduce the significance of potential effects, when considering the Project and alternatives for approval. State responsible and trustee agencies and federal cooperating agencies may use this EIR/EIS, as needed, for subsequent discretionary actions. Information provided in the EIR/EIS will be used by agencies in their permitting process, including but not limited to: TRPA and Placer County land development and construction permits and approvals, Placer County and Caltrans encroachment permits, Lahontan Regional Water Quality Control Board (Lahontan) National Pollutant Discharge Elimination System (NPDES) and Clean Water Act §401 water quality certification permits, California Department of Fish and Game (CDFG) Streambed Alteration Agreements (Fish & Game Code §1602), and U.S. Army Corps of Engineers (USACE) Clean Water Act §404 wetland permits.

3.12 REGULATORY COMPLIANCE MEASURES

Regulatory compliance measures are included in the description of the Project to minimize potentially significant environmental impacts. Regulatory compliance measures include measures such as installation of BMPs for Lahontan and the TRPA, agency permit requirements, and air quality protection measures and are considered part of the HMR Ski Area Master Plan Project under TRPA and CEQA processes because compliance is required to construct and operate the Project. The EIR/EIS identifies additional mitigation measures when compliance with codified regulation is determined to be inadequate to eliminate potential environmental impacts. Where necessary, resource impact analyses identify the required compliance measures as linked to a potential impact with a clear description of why and how the compliance measure will reduce the impact to a less than significant level. Regulatory compliance measures of the Project are discussed in the sub-sections below.

3.12.1 Provide for Employee/Workforce Housing

The Project shall provide for employee/workforce housing in compliance with Placer County Housing Element Policies B-15, C-2, and other applicable policies in the Housing Element and 1998 West Shore Area General Plan, which requires the applicant to accommodate at least 50 percent of the housing demand generated by the Project. Employee housing shall be provided for in one of the following ways:

- Development of new on-site employee/workforce housing;
- Development/renovation of off-site employee/workforce housing;
- Dedication of sufficient land for needed units; and/or
- Payment of an in-lieu fee.

3.12.2 Implement BMPs to Reduce Air Pollutant Emissions

Construction is subject to Placer County Air Pollution Control District (PCAPCD) Rules, and the Project Applicant shall complete a Construction Emission/Dust Control Plan and other BMPs to comply with PCAPCD Rules. The Project Applicant shall not break ground prior to receiving PCAPCD approval of the Construction Emission/Dust Control Plan. The Dust Control Plan must address the minimum Administrative Requirements found in section 300 and 400 of APCD Rule 228, Fugitive Dust. The purpose of Rule 228 is to reduce the amount of particulate matter entrained and discharged into the air by requiring actions to prevent, reduce, or minimize fugitive dust emissions. The specifics of an approved

Fugitive Dust Control Plan will be based on the final of the alternative selected. Such plans normally include use of on-site watering trucks for fugitive dust control and washing of truck wheels and undercarriages to reduce trackout onto area streets to avoid reentrainment of roadway dust. These measures typically reduce fugitive dust emissions by up to 50%. Upon approval by the Air Pollution Control Officer, the fugitive dust control actions specified in the plan will be implemented as specified. Other BMPs to be reviewed and approved by the PCAPCD include:

Equipment Inventory - Provide a comprehensive inventory (i.e. make, model, year, emission rating) of heavy-duty off-road equipment (50 horsepower of greater) that will be used an aggregate of 40 or more hours for the construction project.

Enforcement Plan - An Enforcement Plan shall be established to evaluate Project-related heavy-duty vehicle engine emission opacities, using standards as defined in 13 CCR §2180 - 2194.

Compliance with Rule 202 - Construction equipment exhaust emissions shall not exceed PCAPCD Rule 202 Visible Emission limitations.

Compliance with Rule 228 - Grading operations will be suspended if fugitive dust exceeds PCAPCD Rule 228 (Fugitive Dust) limitations. Operational water truck(s) shall be onsite to control fugitive dust and prevent offsite impacts. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked off-site.

Pre-Construction Meeting - If required by the Department of Engineering and Surveying and/or the Department of Public Works, the Project Applicant shall have a pre-construction meeting for grading activities. The Project Applicant shall invite the PCAPCD to the pre-construction meeting to discuss the Construction Emission/Dust Control Plan with employees and/or contractors.

Maintenance of Public Thoroughfares - The Project Applicant shall be responsible for keeping adjacent public thoroughfares clean of silt, dirt, mud, and debris, and shall “wet broom” the streets if silt, dirt, mud or debris is carried over to adjacent public thoroughfares. Dry mechanical sweeping is prohibited.

Traffic Limits - Traffic speeds on unpaved surfaces shall be limited to 15 miles per hour or less.

Wind Restrictions - Grading operations shall be suspended when wind speeds (including instantaneous gusts) exceed 25 miles per hour and dust is impacting adjacent properties.

Idling Restrictions - Limit idling time to a maximum of 5 minutes for diesel-powered equipment.

Open Burning Restrictions - No open burning of removed vegetation shall be allowed during construction. Removed vegetative material shall be either chipped on site or taken to an appropriate disposal site.

Ultra-Low Sulfur Diesel Fuel - ARB ultra-low sulfur diesel fuel shall be used for diesel–powered equipment. Low sulfur fuel shall be utilized for stationary equipment.

Clean Power Sources - Where available, existing power sources (e.g., power poles) or clean fuel generators shall be used rather than temporary diesel-powered generators.

Compliance with PCAPCD Permit Regulations - On-site stationary equipment 50 hp or greater shall either obtain a State-issued portable equipment permit or a PCAPCD issued portable equipment permit. Pursuant to the PCAPCD Rule 501, General Permit Requirements, the Project Applicant may need a permit prior to construction. In general, any engine greater than 50 brake horsepower or any boiler with heat greater than 1,000,000 Btu per hour requires a PCAPCD permit.

Compliance with NESHAPs - The demolition or remodeling of any structure may be subject to the National Emission Standard for Hazardous Air Pollutants (NESHAPs) for Asbestos. This may require that a structure to be demolished be inspected for the presence of asbestos by a certified asbestos inspector, and that asbestos materials are removed prior to demolition.

Traffic Plans - If a Traffic Plan is required elsewhere within these conditions of approval, the PCAPCD shall also receive a copy of the plan for review. PCAPCD recommendations within the plan may include, but not be limited to use of public transportation and satellite parking areas with a shuttle service.

Landscaping Plan - The Project Applicant shall provide a landscaping plan for review and approval by the Design/Site Review Committee. Landscaping shall include native drought-resistant species (plants, trees and bushes) to reduce demand for irrigation and gas powered landscape maintenance equipment. A maximum of 25% lawn area is allowed on site. Irrigation systems must efficiently utilize water with soil moisture-based irrigation controls, rain “shut off” valves, or other devices as reviewed and approved by the Design Site Review Committee.

3.12.3 TRPA Traffic and Air Quality Mitigation Program Fees

The Project Applicant shall pay the appropriate air quality mitigation fee in accordance with Chapter 93—Traffic and Air Quality Mitigation Program of the TRPA Code of Ordinances. The TRPA adopted this program as a means of generating the revenue necessary to address air quality impacts associated with Vehicle Miles Traveled (VMT). By contributing to the Mitigation Program, the Project reduces air quality emissions generated by increased traffic related to Project operation. Specific regional and local VMT reduction strategies covered by the fee include, but are not limited to:

- Expansion of existing transit facilities;
- Addition of bicycle lanes;
- Transportation Systems Management measures, including, but not limited to, bicycle facilities, pedestrian facilities, and use of alternative fuels in fleet vehicles; or
- Provision of connectivity between multiuse paths for bicycles and pedestrians.

A traffic control plan will be developed in coordination with TRPA and Placer County and implemented during construction to reduce construction-related effects on roadways and circulation patterns within the construction corridor. The traffic control plan will include, but not be limited to, the following:

- Coordination with affected jurisdictions regarding construction hours and lane closures;
- Emergency service consultation and implementation of an emergency access plan;
- Implementation of TRPA guidelines for construction-related road closures;

- Lane closure and truck hauling limits during peak commute hours to the extent possible;
- Provision of alternate bicycle and pedestrian routes;
- Provision of alternate parking;
- Location of truck haul routes;
- Traffic control devices;
- Construction signage and road closure notification in the vicinity of the construction corridor;
- Monitoring of in-place traffic control methods and devices for revision implementation;
- Driveway access maintenance;
- Business notification and coordination; and,
- Onsite circulation and staging areas.

3.12.4 Time of Day Construction Restrictions

This compliance measure restricts construction activities to between the hours of 8:00 AM and 6:30 PM to minimize noise impacts to sensitive receptors. Construction is exempt from TRPA's Code of Ordinances Noise Limitations (Chapter 23, §23.8) if the activities occur between the hours 8:00 AM and 6:30 PM. Placer County's Noise Ordinance §9.36.030 exempts construction noise 6:00 AM and 8:00 PM Monday through Friday, and 8:00 AM and 8:00 PM Saturdays and Sundays. Construction activities before or after the time restriction may occur, but must be consistent with CNEL limits imposed for the applicable TRPA Plan Area and Placer County's noise ordinance. The Project area is located in TRPA Plan Areas 157, 158, and 159. The noise thresholds for these Plan Areas are 55 dB CNEL, 55 dB CNEL and 60 dB CNEL, respectively.

3.12.5 Construction Equipment Muffling

This compliance measure requires shrouding or shielding of impact tools and muffling or shielding intake and exhaust ports on construction equipment.

3.12.6 Emergency Vehicle Access During Construction

The Project Applicant shall coordinate with the Placer County Sheriff's Department (PCSD), North Tahoe Fire Protection District (NTFPD), utility companies, businesses, and residents within the construction corridor prior to and during construction activities to ensure affected parties are informed of the construction schedule and to develop actions to maintain access and service in the Project area.

Law Enforcement and Fire Protection

An accurate schedule outlining the location of construction, types of activities, and the location of anticipated traffic delays or hazards will be provided to the PCSD and NTFPD on a weekly basis. A point of contact within the construction team will be established for emergency actions within or near construction. Traffic control measures to be used near construction will be reviewed and approved by the PCSD and NTFPD.

Residents

Neighborhood residents will be notified so that they can prepare for delays or plan routes to avoid heavy traffic. Construction signage will be placed along the roadways during each phase of construction notifying the public of potential delays and hazards.

Businesses

Coordination will occur prior to construction with roadside businesses to identify alternative parking areas and appropriate signage and notification for business patrons. There may be hours or days when construction is optimal for these businesses (when patronage is lowest). Construction will be coordinated with these times, as feasible, to result in the least impact. Outreach efforts will include meetings with affected businesses or facilities, mailed notifications, and a construction hotline number where a construction coordinator can be reached. Coordination will include signage and traffic control measures. Signage will alert patrons of detours, alternate parking areas, alternate entrances, and any other temporary access changes. The signage will indicate the expected duration of construction and contact information for Project or construction inquiries. Signage will be inspected daily to ensure proper location and information.

3.12.7 Utility Relocation and Construction Avoidance

Coordination will occur with utility providers prior to construction regarding the exact location of each underground utility line known to occur on the site. Utility service providers include the Tahoe City Public Utilities District (TCPUD), Madden Creek Water Company (MCWC), NV Energy, Southwest Gas Corporation, and AT&T. Underground and overhead lines will be shown on project construction specifications within the civil engineering plans.

The Project Applicant shall coordinate with utilities to relocate overhead or underground lines prior to construction. The Project Applicant will coordinate with NV Energy and communications companies prior to final project design to determine if existing overhead lines can be relocated underground. Undergrounding will be funded through the Project.

Construction contractors will contact Underground Service Alert (USA 811/1-800-227-2600) to ensure buried lines are properly marked and located. Utility companies will be provided with an accurate schedule noting when construction occurs near their facilities. Utility facilities will be identified on construction specifications. If grading or excavation is needed in these areas, the Project engineer will work with the utility companies to identify depth to conduit, pipeline, or other facility.

The Project Applicant shall prepare an action plan should infrastructure be damaged during construction. The action plan will identify points of contact for the contractor and the utility companies and measures, specific to each utility, to be taken to rectify damage. If service is interrupted due to damage, construction will cease in the vicinity of the incident, and work will begin immediately to repair the damage at the contractor's expense. If damage occurs to infrastructure that does not affect service levels, the infrastructure will be repaired following construction.

3.12.8 Water Supply Assessment and Infrastructure Fees

The Project Applicant shall prepare a final WSA as required under SB 610 to identify the quantity and source of domestic and raw water to serve the Project. The WSA shall demonstrate that Project infrastructure for water delivery volume, rate, pressure, and schedule meets the snowmaking demand of

HMR. The Project may obtain water from a combination of TCPUD, MCWC, and on-site groundwater wells and surface water. HMR owns an existing right to divert 673 gallons per minute (1.5 cubic feet per second) from streams on-site. With each water supply source identified, the Project Applicant shall determine the location and designs of infrastructure necessary to meet peak demand and overall quantity in the Project area for domestic use and snowmaking.

The Project Applicant will be responsible for construction of infrastructure to connect to the established water system. TCPUD has established connection fees consisting of two components: 1) a Water and Sewer Connection Fee (Ordinance 259a), and 2) and User Fees and Service Fees (Ordinance 295b). These fees provide for the water system improvements necessary to accommodate additional development in the TCPUD service area. The Project will be required to pay both components of this new connection fee.

MCWC has similar requirements for connection and service fees, and the applicant will be required to construct the appropriate infrastructure to utilize MCWC water supply (Marr 2009).

During the design phase of new water supply infrastructure, the lead and responsible agencies will determine if additional environmental review will be required for the construction and operation of the new facilities.

3.12.9 Fire Suppression and Management Plan

A fire suppression and management plan will be developed and implemented in consultation with NTFPD in Local Responsibility Areas, Calfire in State Responsibility Areas, and the US LTBMU in Federal Responsibility Areas. The plan will include fire precaution, pre-suppression, and suppression measures. Construction sites and major equipment will be outfitted with fire protection devices and spark arrestors as appropriate. The plan will include a flow chart of actions during a fire event, with points of contact and responsible persons identified. A copy of the plan will be located at the construction site and copies will be submitted to the NTFPD, Calfire, and LTBMU.

3.12.10 Impact Fees and Design Approval and Annexation

Prior to issuing Building Permits for the Project, Placer County shall require the Project Applicant to pay appropriate fair share development impact fees for Project review and to maintain existing levels of fire protection service in the NTFPD service area. The NTFPD shall review and approve, fire protection systems in buildings, fire flows to hydrants and the snowmaking system, and emergency vehicle access routes in the HMR Project area.

The TRPA, NTFPD, and Calfire shall review building designs, building materials, landscaping, and vegetation clearance for compliance with TRPA Code of Ordinances (2004), Section IX, Chapter 75, §75.3 PRC §4291 and CCR, Title 24, Part 2, known as the 2007 California Building Code (CBC), §701A.3.2 New Buildings Located in Any Fire Hazard Severity Zone.

Prior to occupancy, the NTFPD shall annex the Project area to provide for fire protection. The NTFPD shall enter into mutual aid agreements for wildfire suppression with the LTBMU and Calfire, and coordinate with these agencies on developing and implementing wildland fuel reduction measures as needed in the Project area and vicinity.

3.12.11 Recreation Plans and Fees

The Project Applicant shall be required to pay applicable Quimby Act (California Government Code §66477 and Placer County Code §16.08.100) fees at the final map recording and an AB 1600 (Placer County Code §15.34.010) fee at the building permit stage. The Placer County Department of Facilities Services, Parks and Grounds Division shall review and approve additional facilities as required under Placer County Zoning Ordinance §17.54.100(D). Residential planned development projects are required to provide in-tract neighborhood recreational facilities to residents of the Planned Development in excess of the 5 acres per 1,000 residents are required by County Code §16.08.100 and Recreational Facilities Fee Ordinance (Chapter 15, Placer County Code).

3.12.12 TRPA Erosion and Sediment Control Plan

The Project Applicant will prepare a site-specific Erosion and Sediment Control Plan that will be based on the selected alternative to further define and map temporary BMPs for the control of erosion and runoff from ground disturbing activities. BMPs will be installed in accordance with Chapter 25 of the TRPA Code of Ordinances and are considered part of the Project. An Erosion and Sediment Control Plan is required by TRPA and Placer County for project permitting. TRPA's BMP requirements are outlined in the Handbook of Best Management Practices (TRPA 1988) and for Placer County, BMPs must be designed according to the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development/Redevelopment, and/or for Industrial and Commercial, and/or other similar source.

3.12.13 Stormwater Pollution Prevention Plan

Ground disturbance within the Project area will exceed one acre and is subject to the construction stormwater quality permit requirements of the NPDES program. The Project Applicant must obtain this permit from Lahontan and provide evidence of a state-issued WDID number or filing of a Notice of Intent (NOI) and fees prior to start of construction.

A SWPPP is required under Board Order No. R6T-2005-007 (General Permit No. CAG616002) for discharges of stormwater runoff associated with construction activity involving land disturbance in the Lake Tahoe hydrologic unit. The SWPPP will be designed to address the following objectives:

1. All pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled;
2. Where not otherwise required to be under a Lahontan permit, all non-storm water discharges are identified and either eliminated, controlled, or treated;
3. Site BMPs are effective and result in the reduction or elimination of pollutants in storm water discharges and authorized non-storm water discharges from construction activity to the Best Available Technology Economically Achievable (BAT)/Best Conventional Pollutant Control Technology (BCT) standard;
4. Calculations and design details as well as BMP controls for site run-on are complete and correct, and
5. Stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

6. To demonstrate compliance with requirements of the NPDES permit, the Qualified SWPPP Developer will include information in the SWPPP that supports the conclusions, selections, use, and maintenance of BMPs.
7. The discharger will make the SWPPP available at the construction site during working hours while construction is occurring and shall be made available upon request by a State or Municipal inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, current copies of the BMPs and map/drawing will be left with the field crew and the original SWPPP shall be made available via a request by radio/telephone.

3.12.14 Minimize Offsite Light and Glare

The Project Design plans shall comply with TRPA Design Guidelines (TRPA 1989b) and Code Chapter 30 and Placer County West Shore Area General Plan Standards (County of Placer 1998) to minimize night lighting and glare onto adjacent parcels. Specifically, final designs shall be consistent with TRPA Code Sections 30.6 (Building Design Standards) and 30.8 (Exterior Lighting Standards) and Chapter 4 (Lighting) of the Placer County Design Standards and Guidelines for West Shore General Plan of Placer County.

3.12.15 Environmental Review and Approval

The HMR Ski Area Master Plan Project EIR/EIS is prepared for the environmental review process and will lead to rejection or approval of the Proposed Project or an Alternative. Conformance with TRPA Plan Area Statements, TRPA Design Standards, and Placer County Land Development Manual Standards and Stormwater Management Manual Standards will result. Public meetings and findings will occur under the environmental review process. For TRPA and Placer County, a public meeting will be held with conditions and findings prepared prior to project approval.

3.13 REQUIRED PERMITS AND APPROVALS

This document must be certified by the lead agencies: Placer County (EIR) and TRPA (EIS). The Project is analyzed for consistency with the codes, regulations and policies that include, but are not limited to the following list:

Tahoe Regional Planning Agency

- TRPA Project Permit;
- Tahoe Regional Planning Compact (PL 96-551 94 Statute 3233); and
- Regional Plan for the Lake Tahoe Basin;
  - Goals and Policies;
  - Code of Ordinances (Code);
  - Rules of Procedure;
  - Plan Area Statements;
  - Bi-State 208 Water Quality Plan; and
  - Handbook of Best Management Practices;
- Scenic Quality Improvement Program;
- Community Enhancement Program Resolution; and
- Land Capability Verifications.

Federal

- Endangered Species Act- United States Fish and Wildlife Service;
- Clean Water Act- Environmental Protection Agency;
- Clean Air Act; and
- National Historic Preservation Act.

State of California

- Water Quality Control Plan for the Lahontan Region (Basin Plan);
- California Endangered Species Act (CESA);
- California Department of Forestry and Fire Protection
- Caltrans Traffic Control Requirements;
- Worker Safety Rules and Standards;
- State Vehicle Emissions Controls; and
- State Historic Preservation Act.

Placer County

- Placer County General Plan;
- West Shore Area General Plan;
- Placer County Code;
- Placer County Air Pollution Control District (PCAPCD) Regulations;
- Standards and Guidelines for Signage, Parking and Design;
- Placer County Stormwater Management Manual;
- Placer County Flood Damage Prevention Ordinance
- Health Department Regulations;
- California Building Codes (International Building Codes 2006, amended locally);
- Environmental Review Ordinance;
- Grading, Erosion, and Sediment Control Ordinance;
- Placer County Land Development Manual;
- Placer County Street Improvements Ordinance;
- Placer County Land Division Ordinance;
- Placer County Zoning Ordinance;
- Tree Ordinance;
- Placer County Site-Specific Studies;
- Acoustical Analysis;
- Biological Study;
- Cultural Resources Pedestrian Survey;
- Cultural Resources Records Search;
- Visual Impact Analysis;
- Preliminary and Final Grading Plans;
- Preliminary and Final Geotechnical Reports;
- Preliminary and Final Drainage Report;
- Stormwater and Surface Water Quality BMP Plan; and
- Traffic Study.

Permits and Approvals

- California Regional Water Quality Control Board-Lahontan Region, NPDES permit;
- Occupational Safety and Health Administration (OSHA);
- California Occupational Safety and Health Administration (Cal-OSHA);
- Federal Emergency Management Agency;
- Clean Water Act §401 Certification;
- Clean Water Act §404 Nationwide or Individual Permit- United States Army Corps of Engineers (Corps);
- California Department of Fish and Game (CDFG) Lake or Stream Bed Alteration Agreement (LSAA);
- Placer County General Plan Amendment (e.g., add multi-family dwelling, increase residential density, expand Plan Area boundary);
- Placer County Encroachment Permit;
- Placer County Conditional Use Permit (e.g., alpine ski facility, employee/workforce housing, hotel, motel and other transient dwelling units, outdoor concert events, single-family dwelling/condo, timeshare development and Planned Residential Development);
- Placer County Master Plan Adoption (e.g., Development standards such as parking, setbacks, signage and Development Agreements between the County and applicant to identify requirements beyond those identified in the mitigation measures and Conditions of Approval);
- Placer County Improvement Plans for Each Project Phase and Approval;
- Placer County Facilities Services Encroachment Permit;
- Placer County Highway Easement Abandonment (Tahoe Ski Bowl Way at South Base area);
- Tentative Map Approval;
- Final Map Approval;
- Water Service District Annexation;
- California Department of Transportation Encroachment Permit;
- LAFCO Amendment to NTFPD Service Boundary;
- TRPA Regional Plan Amendment (Plan Areas, Code of Ordinances, and Goals and Policies);
- TRPA Ski Area Master Plan Adoption; and
- TRPA Construction Permit.

3.14 SUMMARY OF ALTERNATIVES

Table 3-11 provides a summary of the components of the Proposed Project (Alternative 1) No Project (Alternative 2) and Alternatives 3, 4, 5 and 6. Table 3-12 provides a comparison of these six alternatives that are studied in the environmental analyses included in Chapters 6 through 19.

Table 3-11

Homewood Mountain Resort Ski Area Master Plan Alternatives Unit Count

	Alt 1 Proposed Project	Alt 2 No Project (Existing Conditions)	Alt 3 No Code Amend for Building Height	Alt 4 Close Ski Resort – Estate Lots	Alt 5 Compact Project Area	Alt 6 Reduced Project
NORTH BASE AREA						
Hotel						
Rooms	75	0	75	0	75	50
Condo/Hotel Units	40*	0	40*	0	0	25
Penthouse Condos	30	0	30	0	0	0
Residential Condos	36	0	36	0	225	145
Fractional Condos	20	0	20	0	0	0
Townhouses	16	0	16	0	0	0
Residential Lots	0	0	0	8	0	0
Workforce (Employee) Housing	13	0	13	0	12	12
Commercial	25,000 sf	0	25,000 sf	1 lot (15,000 sf)	25,000 sf	25,000 sf
Skier Services	30,000 sf	13,943 sf	30,000 sf	0	30,000 sf	20,000 sf
Parking spaces						
Day skier structure	272	0	272	0	156	156
Surface parking	47	700 280 (street)	47	700	80	80
Underground	410	0	410	0	410	410
Total Parking	*729***	980	*729***	*700*	*646*	*646*
SOUTH BASE AREA						
Residential Condos	99	0	99	0	0	50
Maintenance	0	3,884 sf	0	0	0	0
Parking spaces	117**	242	117**	0	0	65
Residential Lots	0	0	0	8	16	14
Skier Services	2,000 sf	7,300 sf	2,000 sf	0	2,000 sf	2,000 sf

Table 3-11

Homewood Mountain Resort Ski Area Master Plan Alternatives Unit Count

	Alt 1 Proposed Project	Alt 2 No Project (Existing Conditions)	Alt 3 No Code Amend for Building Height	Alt 4 Close Ski Resort – Estate Lots	Alt 5 Compact Project Area	Alt 6 Reduced Project
MID-MOUNTAIN AREA						
Day Lodge	15,000 sf	Temporary structure	15,000 sf	0	15,000 sf	15,000 sf
Gondola terminal	18,000 sf	0	18,000 sf	0	18,000 sf	18,000 sf
Maintenance facility	15,000 sf	0	15,000 sf	0	15,000 sf	15,000 sf
Water Tanks (250,000 gallons each)	2	0	2	0	2	2

Source: Homewood Mountain Resort, 2010

Notes:

* 20 of these condo/hotel units will include lock-offs that allow the units to be rented as two units rather than one. Therefore, each lock-off unit requires two TAU allocations.

** Alternatives 1 and 3 propose up to 770 parking spaces at the North Base area (including up to 450 underground) and 150 parking spaces at the South Base area. Numbers included in this Table are taken from the current HMR schematic design plans.

Table 3-12

Homewood Mountain Resort Ski Area Master Plan Alternatives Comparison

	Alt 1 Proposed Project	Alt 2 No Project (Existing Conditions)	Alt 3 No Code Amend for Building Height	Alt 4 Close Ski Resort – Estate Lots	Alt 5 Compact Project Area	Alt 6 Reduced Project
Developed Base Area Project areas	NB-16.4 Acres SB-6.6 Acres	N/A	NB-20.4 Acres SB-10.1 Acres	NB-14.1 Acres (comm. lot)	NB-14.1 Acres SB-6 Acres	NB-14.1 Acres SB-6.6 Acres
Plan Area 158 Boundary Amendment Area	SB-6.6 Acres	N/A	SB-10.1 Acres	N/A	N/A	SB-3.6 Acres
Plan Area 159 Boundary Amendment Area	NB-16.4 Acres	N/A	NB-20.4 Acres	N/A	NB-5.1 Acres	NB-14.1 Acres

Table 3-12

Homewood Mountain Resort Ski Area Master Plan Alternatives Comparison

	Alt 1 Proposed Project	Alt 2 No Project (Existing Conditions)	Alt 3 No Code Amend for Building Height	Alt 4 Close Ski Resort – Estate Lots	Alt 5 Compact Project Area	Alt 6 Reduced Project
Multi-Family Residential Units	NB-82 Units SB-99 Units	0 Units	NB-82 Units SB-99 Units	16 Units	NB-225 Units SB-0 Units	NB-145 Units SB-50 Units
Single Family Residential Units	0 Units	0 Units	0 Units	16 Units	SB-16 Units	SB-14 Units
North Base Employee/Workforce Multi-Family Residential Units	13 Onsite Units	0 Units	13 Onsite Units	0 Units	12 Onsite Units	12 Onsite Units
North Base Tourist Accommodation Units	155 Units	0 Units	155 Units	0 Units	75 Units	75 Units
Commercial Floor Area (CFA)	25,000 sf	N/A	25,000 sf	15,000 sf	25,000 sf	25,000 sf
Accessory Floor Area (Skier Services)	30,000 sf	N/A	30,000 sf	N/A	30,000 sf	20,000 sf
Maximum Building Height*	NB - 47 feet SB – 49 feet	N/A	NB - 40 feet SB – 38 feet	N/A	NB - 54 feet SB – N/A	NB - 47 feet SB – 49 feet
Maximum Multi-Family Residential Density	NB - 15 du/ac SB – 15 du/ac	N/A	NB - 15 du/ac SB – 15 du/ac	1 du/parcel	NB - 45 du/ac SB -1 du/parcel	NB - 15 du/ac SB – 15 du/ac
Total Land Coverage	1,531,020 sf	1,761,337 sf	1,626,558 sf	1,516,699 sf	1,364,565 sf	1,404,134 sf
Total Parking Spaces (does not include parking for Townhome/single family units)	846 spaces total** (527 underground)	1,222 spaces total (280 street)	846 spaces total** (527 underground)	700 spaces (NB) total (all surface)	646 spaces total (410 underground)	711 spaces total (475 underground)

Source: HMR, 2010 and Hauge Brueck Associates, 2010

Notes:

* For Alternatives 1, 5, and 6, a Code Chapter 22 amendment is proposed that would change how height is calculated. Under these alternatives, building height measurement uses average grade rather than lowest grade. Under Alternative 3, no Code Chapter 22 amendment is proposed and height is calculated using existing methods.

** Alternatives 1 and 3 propose up to 770 parking spaces at the North Base area (including up to 450 underground) and 150 parking spaces at the South Base area. Numbers included in this Table are taken from the current HMR schematic design plans.

4 RELATIONSHIP TO EXISTING LAND USE PLANS, POLICIES, AND REGULATIONS

The Homewood Mountain Resort (HMR) Ski Area Master Plan Project (Proposed Project) falls under the jurisdiction of the Tahoe Regional Planning Agency (TRPA) and Placer County. Other agencies with jurisdiction over resources in the Tahoe Basin or parcels in the Project Area will require permits and/or approvals for the Proposed Project and Alternatives. These agencies include: California Department of Transportation (Caltrans), California Regional Water Quality Board - Lahontan Region (Lahontan), California State Historic Preservation Office (CASHPO), California Department of Fish and Game (CDFG), Placer County Public Works and Building and Safety Departments, the California Department of Forestry and Fire Protection (Calfire), and the North Tahoe Fire Protection District (NTFPD). Section 3.13, Required Permits and Approvals, lists each permitting agency's responsibility relative to the Project. This chapter identifies the goals, policies, and standards in the TRPA Regional Plan, Placer County General Plan, and West Shore Area General Plan with which the Proposed Project and Alternatives must demonstrate compliance.

4.1 FEDERAL

Federal regulations that apply to the Proposed Project and Alternatives are associated with the preservation of resources such as wetlands, special-status species, cultural resources, and health and safety on private lands. Various agencies of the State of California and the TRPA are authorized to enforce many of the federal regulations for these resources. For example, TRPA is the designated Regional Transportation Planning Agency (RTPA) for transportation and air quality planning and is charged with the responsibility for implementing federal programs in the Region. TRPA implements the water quality control plan required by Clean Water Act §208 under delegation from the California State Water Resources Control Board (State Board), Nevada Division of Environmental Protection (NDEP), and U.S. Environmental Protection Agency (USEPA).

Some federal agencies have direct permitting authority over resources potentially affected by the Proposed Project and Alternatives. The U.S. Fish and Wildlife Service (USFWS) is responsible for the protection of federally listed threatened and endangered species and species that are proposed for listing under the Federal Endangered Species Act (FESA). Any action that may adversely affect a federally listed or proposed species must be permitted under Section 7 or 10(a) of the FESA. The USFWS regulates the take (loss of habitat or individuals) of bird species protected by the Migratory Bird Treaty Act (MBTA). Candidate or listed species under the ESA or MBTA may have potential to occur in the Project Area and could be affected by development construction and operations under the Proposed Project or Alternatives (see Chapter 8-Biological Resources). The U.S. Army Corps of Engineers (USACE) regulates excavation in and discharge of material into wetlands, lakes, streams, and other jurisdictional waters of the U.S. under Clean Water Act §404. Several jurisdictional lakes, streams, and wetlands occur within the Project Area and vicinity and have the potential to be affected by construction and operations under the Proposed Project or Alternatives (see Chapter 8 – Biological Resources).

4.2 REGIONAL - TAHOE REGIONAL PLANNING AGENCY

The TRPA is a bi-state planning agency with the authority to regulate growth and development within the Lake Tahoe Region. TRPA implements that authority through the Regional Plan for the Lake Tahoe Basin (Regional Plan). The Regional Plan is composed of numerous documents. The following

components of the Regional Plan are relevant to the Proposed Project and Alternatives and are described below:

- Environmental Threshold Carrying Capacities (1982);
- Goals and Policies (September, 1986 as amended);
- Code of Ordinances (May, 1987 as amended);
- Plan Area Statements (August, 1987 as amended);
- Regional Transportation Plan and Air Quality Plan (1992);
- Water Quality Management Plan (1988);
- Scenic Quality Improvement Program (1989); and
- Ski Area Master Plan Guidelines (1990)

4.2.1 Environmental Threshold Carrying Capacities

The Environmental Threshold Carrying Capacities (ETCCs) were established for the Lake Tahoe Region to provide a standard for which projects and activities would be measured to achieve goals established in the TRPA Compact. Attainment and maintenance of the ETCCs is required for TRPA and in some cases requires restoration of existing Project Area conditions. An impact that is considered significant based upon ETCC criteria must either be mitigated by avoidance, modification, or removal of the identified project component that would create the threshold-related impact. TRPA ETCCs criteria are identified for environmental resources analyzed in the individual resource chapters of this EIR/EIS, and are incorporated into the criteria of significance for evaluating impacts.

4.2.2 Goals and Policies

The TRPA Goals and Policies establish an overall framework for development and environmental conservation in the Lake Tahoe Region. The Goals and Policies include elements on Land Use, Transportation, Conservation, Recreation, Public Services and Facilities, and Implementation. Table 4.2-1 analyzes the consistency between the Proposed Project and Alternatives and the Goals and Policies in the TRPA Regional Plan.

4.2.3 Code of Ordinances

The TRPA Code of Ordinances (Code) contains development standards. The Code is intended to implement the Goals and Policies in a manner that attains and/or maintains the ETCCs. Many Code sections pertain to the Proposed Project and Alternatives. The sections relevant to this environmental review are referenced within individual resource sections of the EIR/EIS. These resource sections include: 6-Land Use; 7-Population, Employment, and Housing; 8-Biological Resources; 9-Cultural Resources; 10-Scenic Resources; 11-Transportation and Circulation; 12-Air Quality; 13-Noise; 14-Soils, Geology, and Seismicity; 15-Hydrology, Water Rights, Surface Quality, and Groundwater; 16-Public Services and Utilities; and 18-Recreation.

4.2.4 Plan Area Statements

TRPA Plan Area Statements (PAS) tier from the Goals and Policies and provide specific policy and land use direction for smaller geographical areas within the Lake Tahoe Region. The Region is divided into

175 separate plan area statements that provides specific goals and policies, a list of permissible uses, maximum allowable densities, eligibility for bonus programs, recreational or commercial use allocations, and maximum acceptable noise levels. The HMR Ski Area Master Plan Project is situated in PAS 157 (Homewood/Ski Homewood Area), 158 (McKinney Tract), and 159 (Homewood/Commercial). The PASs are described in detail in Chapter 6 – Land Use. Table 4.2-2 analyzes consistency between the Proposed Project and Alternatives and the Special Policies in the applicable PAS. Special policies are included to PASs to provide more definitive direction for certain areas in the Basin.

4.2.5 Regional Transportation Plan/Air Quality Plan

The purpose of the integrated TRPA Regional Transportation Plan/Air Quality Plan (RTP/AQP) is to attain and maintain the ETCCs established by TRPA in 1982 and applicable federal, state, and local standards for transportation and air quality. The RTP/AQP establishes goals and policies to direct future transportation-related decisions. In addition, the RTP/AQP includes an action element with a list of proposed programs, capital improvements, and a financing strategy to construct or operate these improvements. The TRPA Environmental Improvement Program (EIP) also addresses programs, capital improvements and strategies to finance the improvements. The TRPA Code of Ordinances, Chapter 91, establishes Air Quality Control Regulations.

4.2.6 Water Quality Management Plan

The TRPA Water Quality Management Plan (208 Plan) for the Lake Tahoe Region fulfills TRPA's responsibilities under Clean Water Act §208 as delegated by the States of California and Nevada and the USEPA. Those parts of the 208 Plan that are enacted as part of TRPA's Regional Plan package include: the Water Quality Management Plan; Handbook of Best Management Practices; Stream Environment Zone Protection and Restoration Program; and the Capital Improvements Program for Erosion and Runoff Control, which is commonly referred to as the Environmental Improvement Program (EIP). The EIP also include improvements identified for all other threshold categories. The 208 Plan identifies water quality objectives and sets water quality standards.

4.2.7 Scenic Quality Improvement Program

The TRPA Scenic Quality Improvement Program (SQIP) presents prescriptions for scenic restoration required to attain and maintain the scenic quality thresholds. The sections relevant to the Project are referenced in Chapter 10-Scenic Resources. The SQIP includes design review guidelines and development standards for different visual environments, assigns implementation responsibilities, and identifies potential funding sources.

Table 4.2-1

TRPA Regional Plan Goals and Policies Consistency Analysis

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
Land Use Element	
Land Use	
Goal #1. Restore, maintain, and improve the quality of the Lake Tahoe Region for the visitors and residents of the Region.	
Policy 1. The primary function of the Region shall be as a mountain recreation area with outstanding scenic and natural values.	Inconsistent – Alternatives 2 and 4. Existing development at HMR is compliant with TRPA and Lahontan BMPs. Circulation and urban design features do not meet current standards, and would not be corrected under Alternatives 2 and 4. Inconsistent –Alternative 5. Although this alternative maintains mountain recreation, the visual impact of the high-density residential structures along SR 89 does not promote outstanding scenic values. In addition, the South Base area SEZ will not be restored. Consistent – Alternatives 1, 3, and 6. Redevelopment would restore the SEZ and promote recreational/tourist development through continued operation of the ski resort.
Policy 2. The Regional Plan gives a high priority to correcting past deficiencies in land use. The Plan shall encourage a redirection strategy for substantially and adversely altered areas, wherever feasible.	Consistent –Alternatives 1, 3, 4 and 6. Alternatives 1, 3, 4 and 6 include land use changes in an area with a "redirection" mitigation strategy. The uses proposed are either consistent with the "redirection" plan area or promote appropriate development within the plan area with amendment. Inconsistent – Alternatives 2 and 5. Alternative 2 does not result in changes to existing conditions. The visual impact of the high-density residential structure and the substantial density (45 DUA) proposed in Alternative 5 does not support redirection.
Policy 3. The Plan shall seek to maintain a balance between economic health and the environment.	Inconsistent – Alternatives 2, 4, and 5. Without redevelopment of the existing Project area (Alternative 2), the resort would continue to operate at a loss according to HMR and may close resulting in significant economic and recreational loss in the West Shore. Alternative 4 would close the resort, resulting in a long-term economic loss for the West Shore. Although Alternative 5 proposes a new mix of uses, the density of use would result in land uses that are not reflective of the community and that do not enhance existing scenic quality. Consistent – Alternatives 1, 3 and 6. Redevelopment would restore portions of the disturbed SEZ, reduce coverage, reduce fuels and rehabilitate disturbed areas on the mountain, improve the quality of stormwater runoff, enhance the scenic character and promote recreational/tourist development.

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
Goal #2. Direct the amount and location of new land uses in conformance with the environmental threshold carrying capacities and the other goals of the Tahoe Regional Planning Compact.	
Policy 1. The total population permitted in the region at one time shall be a function of the constraints of the Regional Plan and the Environmental Threshold Carrying Capacities.	Consistent – All Alternatives. Alternative 2 does not change existing population. Alternative 4 will increase the population, but not substantially and would not adversely affect carrying capacities. Population increases under Alternatives 1, 3, 5 and 6 are primarily transient tourist populations, although some increase in resident populations will occur. Transfer units and development rights have been purchased or requested (bonus units) to accommodate the additional tourist accommodation and second home users as well as full time population in the initial phase of MP development.
Policy 2. Specific land use policies shall be implemented through the use of Planning Area Statements for each of the Planning Areas identified in the map included in this Plan. Areas of similar use and character have been mapped and categorized within one or more of the following five land use classifications: Conservation, Recreation, Residential, Commercial and Public Service, and Tourist. These land use classifications shall dictate allowable land uses. More detailed plans, called Community Plans, may be developed for designated commercial areas. Other detailed plans, such as the Airport Master Plan, Ski Area Master Plans, and Redevelopment Plans, may also be developed. These detailed Plans may combine two of more of the five land use classifications.	Consistent –Alternatives 1, 2, 3, and 6. The Project develops a Ski Area Master Plan for HMR. Alternative 2 does not change the PAS. Alternatives 1, 3, and 6 result in changes to the PAS; however, these changes (including multi-family housing) are consistent with the existing land use classifications and the land uses proposed support existing policies in the PAS. Inconsistent – Alternatives 4 and 5. Alternative 4 changes the land use classification for PAS 157 from recreation to residential and eliminates the primary use for this area. Alternative 5 proposes to amend the PAS to include multi-family dwellings at a density of 45 DUA (in order to place all residential uses in existing parking lots), which does not reflect densities planned for in the region and would not be consistent.
Policy 3. The Planning Area Statements shall also identify the management theme for each Planning Area by designating each area for (1) maximum regulation, (2) development with mitigation, or (3) redirection of development. These designations shall provide additional policy direction for regulating land use.	Consistent – All Alternatives. Alternatives 2 and 4 do not change the PAS. Alternatives 1, 3, 5 and 6 result in changes to the PAS; however, these changes are consistent with the existing management themes.
Policy 4. The Planning Area Statements set forth special policy direction to respond to the particular needs, problems, and future development of a specific area. Each planning area statement may vary in detail or specificity depending on the nature of the area and the detail of specificity of related local jurisdiction plans.	Inconsistent – Alternatives 2 and 4. These alternatives do not comply with special policies 2, 4, 5, 6, 7, or 8, which are related to redevelopment and continued operation of the ski resort. Consistent with Amendment – Alternatives 1, 3, 5, and 6. These alternatives will comply with policies 2, 4, 5, 6, 7, and 8, with proposed amendments to plan area boundaries. However, under current PAS direction, several PAS 157 policies require the preparation of a Community Plan to allow additional development at the base areas.
Policy 5. All Plan Area Statements, Community Plans, or other specific plans adopted by the agency shall specify the total additional development which may be permitted within the Region, not the exceed the limitations set forth in A, B, C, D and E, below [Policy 6]. Reconstruction and relocation of existing development are not considered additional development (See Development and Implementation Priorities Subelement for growth management and transfer of	Consistent – Alternatives 2 and 4. Alternative 2 would not result in increased development. HMR has obtained sufficient development rights and transfer units for Alternative 4. Consistent with Mitigation – Alternatives 1, 3, 5, and 6. Transfer units and development rights have been purchased or requested (bonus units) to accommodate additional population. Additional units will need to be obtained to meet the total proposed unit numbers for

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
development provisions.)	Phase II development in Alternatives 1 and 3 and a portion of Phase I development in Alternatives 5 and 6.
Policy 7. No new divisions of land shall be permitted within the Region which would create new development potential inconsistent with the goals and policies of this Plan.	Consistent – All Alternatives. No land divisions that would create new development potential beyond that proposed by each alternative would occur.
Policy 10. Uses, legally existing as of the effective date of this Plan, but which are now prohibited, are considered nonconforming and subject to the following policies: A. Nonconforming uses may continue as they exist except where specifically subject to a program of removal or modification. B. Nonconforming uses may not be modified, expanded, or intensified, nor resumed following a significant interruption without the approval of TRPA. Such approval shall be based on criteria set forth in ordinances to ensure that: i. The activity shall not increase the extent of nonconformity. ii. The activity shall not make it more difficult to attain and maintain environmental threshold carrying capacities. iii. The use is otherwise consistent with applicable Plan Area Statements and Community Plans. C. Additional rules regarding excess land coverage are set forth in this land use subelement Goal #3, Policy 3.	Consistent – All Alternatives. There are no existing nonconforming uses within the Project area.
Policy 11. Uses of the bodies of water within the Region shall be limited to outdoor water-dependent uses required to satisfy the goals and policies of this Plan.	Consistent – All Alternatives. Alternatives 2 and 4 do not propose water body uses. Alternatives 1, 3, 5, and 6 propose water taxi service, which is a water dependent alternative transportation use.
Policy 12. Restoration and rehabilitation shall be a high priority for improving environmental quality and community character of areas designated for redirection but not included in a redevelopment plan.	Inconsistent – Alternatives 2, 4 and 5. Alternatives 2 and 4 do not include new improvements to environmental quality or community character. Alternative 5 includes 4-story structures immediately adjacent to SR 89 that do not reflect community character or scenic quality improvement. Consistent – Alternatives 1, 3, and 6. These alternatives include environmental improvements as listed in Table 6-2 (Chapter 6 of this EIR/EIS) including extensive restoration of disturbed area and dirt roads on the mountain and over 400 acres of fuel reduction treatments. Architecturally appropriate structures and landscaping improve the overall community character.
Policy 13. Redevelopment shall be encouraged in areas designated for redirection to improve environmental quality and community character.	Consistent – All Alternatives. Alternatives 2 and 4 do not propose development within an area designated for redirection. Alternatives 1, 3, 5, and 6 result in new commercial and tourist uses within the expanded boundary of PAS 159. Placement of new structures that support other existing tourist and recreation uses in PAS 159, environmental improvements, and improvements to

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
	the community character through improved architecture and landscaping support this designation.
Goal #3. All new development shall conform to the Coefficients of Allowable Land Coverage as set forth in "The Land Capability Classification of the Lake Tahoe Basin, California-Nevada, A Guide for Planning, Bailey, 1974."	
Policy 1. Allowed base land coverage for all new projects and activities shall be calculated by applying the Bailey coefficients, to the applicable area within the parcel boundary, or as otherwise set forth in A, B, and C of this policy.	Inconsistent – Alternatives 2 and 4. Alternatives 2 and 4 maintain land coverage that exceed allowable limits for land capability districts (LCD) 1a, 1b, and 5; however this land coverage is legally existing and not new coverage. Consistent –Alternatives 1, 3, 5 and 6. Alternatives 1, 3, 5, and 6 each reduce legally existing land coverage and relocate it to higher capability lands located at the base areas.
Policy 3. Rehabilitation, reconstruction, and upgrading of the existing inventory of structures or other forms of coverage in the Tahoe region are high priorities of the Regional Plan. To encourage rehabilitation and upgrading of structures, the following policies shall apply: B. Reconstruction, rehabilitation, modification, relocation, or major repair of structures or coverage other than as specified in A above may be allowed, provided such use is allowed under the Land Use Subelement, Goal #2, Policies 8, 9 and 10. For parcels with existing coverage in excess of the Bailey Coefficients, a land coverage mitigation program shall be set by ordinance, which shall provide for the reduction of coverage in an amount proportional to the cost of the repair, reconstruction, relocation, rehabilitation, or modification, and to the extent of excess coverage. C. Existing coverage may be relocated within a parcel provided it is relocated to areas of equal or superior environmental capability consistent with B above. D. In establishing the rehabilitation fee schedule(s) provided for in (3.B.iii), above, the procedures outlined in items i through iv shall be followed. E. In approving repair, reconstruction, rehabilitation, modification, or relocation of structures or other coverage, the Agency shall also apply other relevant standards, including installation of Best Management practices or compliance with the design review guidelines.	Inconsistent – Alternative 2. Alternative 2 will not rehabilitate or upgrade the existing structures at HMR. This is inconsistent with both Policy 3 and the policies for PAS 157. The existing structures are primarily base facilities for the ski resort operation that are not suitable for rehabilitation. Consistent – Alternatives 1, 3, 4, 5, and 6. These alternatives will result in the removal of existing structures and replacement with new structures. Total land coverage will be reduced within the Project area. For Alternatives 1, 3, 5, and 6, the Project area beyond the base areas will be deed restricted from future non-recreational development.
Goal #4. Provide to the greatest extent possible, within the constraints of the environmental threshold carrying capacities, a distribution of land use that ensures the social, environmental, and economic well-being of the Region.	
Policy 1. All persons shall have the opportunity to utilize and enjoy the Region's natural resources and	Consistent –Alternatives 1, 2, 3, 5 and 6. Alternative 2 does not redevelop the Project area and does not alter the

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
amenities.	existing use as to prevent people from utilizing HMR as a ski area. Alternatives 1, 3, 5, and 6 provide for a greater mix of land uses because they include the addition of commercial uses as well as community serving uses including concert venues and outdoor gathering areas. Inconsistent – Alternative 4. Alternative 4 will close HMR and will construct commercial uses and single-family houses. This will eliminate a publicly accessible amenity (the ski resort) and will reduce the recreational opportunities in the Region.
Policy 2. No person or persons shall develop property so as to endanger the public health, safety, and welfare.	Consistent – All Alternatives. Alternative 2 will not result in development change. Alternatives 1, 3, 4, 5, and 6 include water quality improvements. Public health, safety, and welfare would not be endangered by these alternatives.
Goal #5. Coordinate the regulation of land uses within the Region with the land uses surrounding the Region.	
Policy 1. The Regional Plan shall attempt to mitigate adverse impacts generated by the Plan within the Region, and not export the impacts to surrounding areas.	Consistent – All Alternatives. Appropriate mitigation is included in the EIR/EIS to address adverse impacts.
Policy 2. The Agency shall develop joint review agreements with public entities adjoining the region to consider acts of development or impacts of development that cross jurisdictional boundaries.	Consistent – All Alternatives. The TRPA and Placer County are coordinating the environmental review.
Housing	
Goal #1. To the extent possible, affordable housing will be provided in suitable locations for the residents of the region.	
Policy 1. Special incentives, such as bonus development units, will be given to promote affordable or government-assisted housing for lower income households (80% of respective County's median income) and for very low income households (50% of respective County's median income). Each County's median income will be determined according to the income limits published annually by the department of housing and urban development.	Inconsistent – Alternatives 2 and 4. Alternative 4 proposes to increase density and local employment opportunities (Alternative 4 during construction only), but does not provide affordable housing units. Alternative 2 would not provide affordable housing for existing winter day use recreation work force. Consistent – Alternatives 1, 3 and 5. Alternatives 1 and 3 will provide 13 workforce/affordable housing units close to the North Base commercial/tourist area. Alternatives 5 and 6 would provide 12 units.
Policy 2. Local governments will be encouraged to assume their "fair share" of the responsibility to provide lower and very low income housing.	Inconsistent – Alternatives 2 and 4. Alternatives 2 and 4 do not provide affordable housing units. Consistent – Alternatives 1, 3, 5 and 6. Alternatives 1, 3, 5 and 6 would provide up to 13 workforce/affordable housing units to house up to 50 employees close to the North Base commercial/tourist area.
Policy 3. Facilities shall be designed and occupied in accordance with local, regional, state, and federal standards for the assistance of households with low and very low incomes. Such housing units shall be made available for rental or sale at a cost to such persons that	Consistent – Alternatives 2 and 4. Alternatives 2 and 4 do not provide affordable housing units or generate a need for new affordable housing, so this policy is not applicable. Consistent – Alternatives 1, 3, 5 and 6. Alternatives 1, 3,

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
would not exceed the recommended state and federal standards.	5 and 6 would provide up to 13 workforce/affordable housing units close to the North Base commercial/tourist area. These units will be deed restricted to ensure they remain affordable/employee units.
Policy 4. Affordable or government assisted housing for lower income households should be located in close proximity to employment centers, government services, and transit facilities. Such housing must be compatible with the scale and density of the surrounding neighborhood.	Consistent – Alternatives 2 and 4. Alternatives 2 and 4 do not provide affordable housing units, and this policy is not applicable. Consistent – Alternatives 1, 3, 5 and 6. Alternatives 1, 3, 5 and 6 would provide up 13 workforce/affordable housing units within the North Base commercial/tourist area.
Goal #2. To the extent feasible, without compromising the growth management provisions of the Regional Plan, the attainment of threshold goals, and affordable housing incentive programs, moderate income housing will be encouraged in suitable locations for the residents of the Region.	
Policy 1. Special incentives, such as bonus development units, will be made available to promote housing for moderate income households (120% of respective County's median income). Such incentives shall be made available within jurisdictions that develop housing programs that are substantially consistent with and complimentary to the Regional Plan.	Consistent – All Alternatives. None of the alternatives propose moderate-income housing (they do propose low income housing) utilizing special incentives; therefore, this policy is not applicable.
Policy 2. Residential units developed using moderate income housing incentives shall be used to provide housing for full-time residents of the Tahoe Basin. Such units shall not be used for vacation rental purposes.	Consistent – All Alternatives. None of the alternatives propose moderate-income housing utilizing special incentives; this policy is not applicable.
Policy 3. Residential units developed using moderate income housing incentives shall remain permanently within the program.	Consistent – All Alternatives. None of the alternatives propose moderate-income housing utilizing special incentives; this policy is not applicable.
Noise	
Goal #1. Single event noise standards shall be attained and maintained.	
Policy 3. Motor vehicles and motorcycles shall comply with the appropriate noise thresholds.	Consistent – All Alternatives. Proposed construction would be consistent with noise standards through implementation of construction noise-reducing practices and observation of 8 a.m. to 6:30 p.m. (TRPA Code Section 23.8) limits of activities that would potentially violate normal noise standards.
Policy 4. Off-road vehicle use is prohibited in the Lake Tahoe Region except on specified roads, trails, or designated areas where impacts can be mitigated.	Consistent – All Alternatives. No recreational off-road vehicle use is proposed. Off-road vehicle use is not proposed outside the construction corridor.
Policy 5. The use of snowmobiles will be restricted to designated areas.	Consistent – All Alternatives. No recreational snowmobile trails or rentals are proposed under the alternatives.
Policy 6. The Plan will permit uses only if they are consistent with the noise standards. Sound proofing practices may be required on all structures containing uses that would otherwise adversely impact prescribed	Consistent – Alternatives 2 and 4. Alternatives 2 and 4 will not result in uses that increase noise levels. Consistent with Mitigation – Alternatives 1, 2, 3, 5 and 6. Existing snowmaking noise currently exceeds thresholds

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
noise levels.	in the Project area. These alternatives either maintain existing snowmaking or propose additional snowmaking devices and therefore may increase existing noise levels. Mitigation measures have been proposed to control noise levels to ensure they do not increase at noise sensitive land uses.
Goal #2. Community noise equivalent levels shall be attained and maintained.	
Policy 1. Transmission of noise from the transportation corridors shall be reduced.	Consistent with Mitigation – All Alternatives. The Project area is currently not in attainment for noise. Mitigation measures are proposed to reduce noise level increases associated with the Project within the vicinity of the Project area.
Natural Hazards	
Goal #1. Risks from natural hazards (e.g., flood, fire, avalanche, earthquake) will be minimized.	
Policy 1. Development shall be regulated in identified avalanche or mass instability hazard areas.	Consistent – All Alternatives. Alternative 2 does not propose new structures. Structures proposed under Alternatives 1, 3, 4, 5 and 6 are not located within the avalanche path area.
Policy 2. Prohibit construction, grading, and filling of lands within the 100-year flood plain and in the area of wave run-up except as necessary to implement the goals and policies of the Plan. Require all public utilities, transportation facilities, and other necessary public uses located in the 100-year flood plain and area of wave run-up to be constructed or maintained to prevent damage from flooding and to not cause flooding.	Consistent – All Alternatives. Alternative 2 includes existing buildings within the floodplain but proposes no new structures or ground disturbing activity. Alternatives 1, 3, 4, 5 and 6 include removing structures from the 100-year floodplain located along Homewood Creek through the South Base area.
Policy 3. Inform residents and visitors of the wildfire hazard associated with occupancy in the Basin. Encourage use of fire resistant materials and fire preventative techniques when constructing structures, especially in the highest fire hazard areas. Manage forest fuels to be consistent with state laws and other goals and policies of this Plan.	Consistent – All Alternatives. Alternative 2 does not propose new structures. Under Alternatives 1, 3, 4, 5 and 6 include new structures that will be equipped with appropriate fire protection devices such as sprinklers and extinguishers as required by Placer County Building Codes. Fuel reduction and forest management will continue to occur under Alternatives 1, 3, 5 and 6.
Air Quality	
See: Volume II of the Regional Transportation Plan - Air Quality Plan for standards	Consistent – Alternative 2. Alternative 2 will not result in changes to existing conditions. Consistent with Mitigation – Alternatives 1, 3, 4, 5 and 6. These alternatives include ground disturbance and potential increases in operational pollutants; however, implementation of the mitigation measures outlined in Chapter 12 of the EIR/EIS will result in compliance with air quality policies.

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Water Quality	
TRPA §208 Water Quality Control Plan Standards	
Pelagic Lake Tahoe 1. NUMERICAL STANDARD: Reduce dissolved inorganic nitrogen (N) loading from all sources by 25% of the 1973-81 annual average. Achieve the following long term water quality standards: - Annual mean phytoplankton primary productivity: 52gmC/m2/yr. - Winter (December - March) mean Secchi disk transparency: 33.4m. 2. POLICY: This threshold is currently being exceeded and will likely continue to be exceeded until some time after full implementation of the loading reductions prescribed by the thresholds. 3. MANAGEMENT STANDARD: Reduce the loading of dissolved phosphorus, iron, and other algal nutrients from all sources as required to achieve ambient standards for primary productivity and transparency. 4. Reduce dissolved inorganic nitrogen loads from surface runoff by approximately 50%, from groundwater approximately 30%, and from atmospheric sources approximately 20% of the 1973-81 annual average. This threshold relies on predicted reductions in pollutant loadings from out-of-basin sources as part of the total pollutant loading reduction necessary to attain environmental standards, even though the Agency has no direct control over out-of-basin sources. The cooperation of the states of California and Nevada will be required to control sources of air pollution which contribute nitrogen loadings to the Lake Tahoe Region.	Consistent – All Alternatives. In the North and South Base areas, stormwater treatment systems and water quality BMPs were installed in 2006 and improved snow management implemented in 2007. Alternative 2 will maintain existing systems, BMPs and snow management. To reduce pollutant loading, Alternatives 1, 3, 4, 5 and 6 will install new stormwater treatment systems designed to meet minimum TRPA standards (and achieve 50 year/1 hour standards for Alts 1, 3, 5 and 6), low impact development (LID) strategies and water quality BMPs, improve SEZ setbacks and remove and restore land coverage.
Littoral Lake Tahoe 1. NUMERICAL STANDARD: Reduce dissolved inorganic nitrogen loading to Lake Tahoe from all sources by 25% of the 1973-81 annual average. 2. MANAGEMENT STANDARD: Reduce dissolved inorganic nitrogen loads from surface runoff by approximately 50%, from groundwater approximately 30%, and from atmospheric sources approximately 20% of the 1973-81 annual average. This threshold relies on predicted reductions in pollutant loadings from out-of-basin sources as part of the total pollutant loading reduction necessary to attain environmental standards, even though the Agency has no direct control over out of Basin sources. The cooperation of the states of California and Nevada will be required to control sources of air pollution which contribute nitrogen loadings to the Lake Tahoe Region. 3. NUMERICAL STANDARD: Decrease sediment load as required to attain turbidity values not to exceed three NTU. In addition, turbidity shall not exceed one	Consistent – All Alternatives. In the North and South Base areas, stormwater treatment systems and water quality BMPs were installed in 2006 and improved snow management implemented in 2007. Alternative 2 will maintain existing systems, BMPs and snow management. To reduce pollutant loading, Alternatives 1, 3, 4, 5 and 6 will install new stormwater treatment systems to meet minimum TRPA standards (and achieve 50 year/1 hour standards for Alts 1, 3, 5 and 6), low impact development (LID) strategies and water quality BMPs, improve SEZ setbacks and remove and restore land coverage.

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NTU in shallow waters of the Lake not directly influenced by stream discharges. 4. Reduce the loading of dissolved inorganic nitrogen, dissolved phosphorus, iron, and other algal nutrients from all sources to meet the 1967-71 mean values for phytoplankton primary productivity and periphyton biomass in the littoral zone.	
Tributaries 1. NUMERICAL STANDARD: Attain applicable state standards for concentrations of dissolved in organic nitrogen, dissolved phosphorus, and dissolved iron. Attain a 90 percentile value for suspended sediment concentration of 60 mg/1. 2. MANAGEMENT STANDARD: Reduce total annual nutrient and suspended sediment load to achieve loading thresholds for littoral and pelagic Lake Tahoe.	Inconsistent – Alternative 2. No restoration of the Homewood Creek SEZ would occur and existing impacts to the Homewood Creek alignment and channel stability would persist. Consistent with Mitigation – Alternatives 4, 5 and 6. These alternatives do not propose to restore the Homewood Creek SEZ; however, the implementation of SEZ protection and restoration mitigation would result in compliance. Consistent – Alternatives 1 and 3. Alternatives 1 and 3 include the removal of an existing culvert on Homewood Creek and restoring SEZ in the North and South Base areas.
Surface Runoff 1. NUMERICAL STANDARD: Achieve a 90 percentile concentration value for dissolved inorganic nitrogen of 0.5 mg/1, for dissolved phosphorus of 0.1 mg/1, and for dissolved iron of 0.5 mg/1 in surface runoff directly discharged to a surface water body in the Basin. 2. Achieve a 90 percentile concentration value for suspended sediment of 250 mg/1. 3. MANAGEMENT STANDARD: Reduce total annual nutrient and suspended sediment loads as necessary to achieve loading thresholds for tributaries and littoral and pelagic Lake Tahoe.	Consistent – All Alternatives. In the North and South Base areas, stormwater treatment systems and water quality BMPs were installed in 2006 and improved snow management implemented in 2007. Alternative 2 will maintain existing systems, BMPs and snow management. To reduce pollutant loading, Alternatives 1, 3, 4, 5 and 6 will install new stormwater treatment systems, low impact development (LID) strategies and water quality BMPs, improve SEZ setbacks and remove and restore land coverage.
Groundwater 1. MANAGEMENT STANDARD: Surface runoff infiltration into the groundwater shall comply with the uniform Regional Runoff Quality Guidelines as set forth in Table 4-12 of the *Draft Environmental Threshold Carrying Capacity Study Report*, May, 1982. 2. Where there is a direct and immediate hydraulic connection between ground and surface waters, discharges to groundwater shall meet the guidelines for surface discharges, and the *Uniform Regional Runoff Quality Guidelines* shall be amended accordingly.	Consistent – Alternatives 2 and 4. No new underground structures or excavations are proposed. Consistent with Mitigation – Alternatives 1, 3, 5 and 6. Excavation and fill activities for underground parking will encounter groundwater. Implementation of groundwater mitigation measures to properly collect and infiltrate intercepted groundwater would result in compliance.
Goal #1. Reduce loads of sediment and algal nutrients to Lake Tahoe; meet sediment and nutrient objectives for tributary streams, surface runoff, and sub-surface runoff, and restore 80% of the disturbed lands.	
Policy 1. Discharge of municipal or industrial wastewater to Lake Tahoe, its tributaries, or the groundwaters of the Tahoe Region is prohibited, except for existing development operating under approved alternative plans for wastewater disposal, and	Consistent – All Alternatives. Wastewater will be disposed of through local sewer service facilities. No wastewater will be discharged to waterways.

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catastrophic wildfire protection to prevent the imminent destruction of the Luther Pass Pump Station.	
Policy 2. All persons who own land and all public agencies which manage public lands in the Lake Tahoe Region shall put Best Management Practices (BMPs) in place; maintain their BMPs; protect vegetation on their land from unnecessary damage; and restore the disturbed soils on their land.	Consistent – All Alternatives. Alternative 2 implemented BMPs in 2006/2007 and includes ongoing site maintenance. Alternatives 1, 3, 4, and 5 include new BMPs, landscaping, restoration, and/or stormwater treatment systems.
Policy 3. Application of BMPs to projects shall be required as a condition of approval for all projects.	Consistent – All Alternatives. Alternative 2 implemented BMPs in 2006/2007 and includes ongoing site maintenance. Alternatives 1, 3, 4, 5, and 6 include new BMPs, landscaping, restoration, and/or stormwater treatment systems.
Policy 4. Restore at least 80% of the disturbed lands within the region.	Inconsistent – Alternative 2. Land restoration would not occur for this alternative. Consistent – Alternatives 1, 3, 4, 5, and 6. Existing disturbed land would be restored at various amounts under each alternative.
Policy 5. Restore 25% of the SEZ lands that have been disturbed, developed, or subdivided in accordance with the CIP.	Inconsistent – Alternatives 2. SEZ restoration is not proposed under Alternative 2. Consistent – Alternatives 1, 3, 4, 5 and 6. SEZ restoration at Homewood Creek is proposed for Alternatives 1 and 3. Alternatives 4, 5 and 6 do not propose to restore the Homewood Creek SEZ; however, the implementation of SEZ protection and restoration mitigation would result in compliance. These alternatives would remove land coverage from the SEZ located at the North Base area gravel parking lot.
Policy 6. The use of fertilizer within the Tahoe Region shall be restricted to uses, areas, and practices, identified in the *Handbook of Best Management Practices*. Fertilizers shall not be used in or near stream and drainage channels or in stream environment zones, including setbacks, and in shorezone areas. Fertilizer use for maintenance of preexisting landscaping shall be minimized in stream environment zones and adjusted or prohibited if found, through evaluation of continuing monitoring results, to be in violation of applicable water quality discharge and receiving water standards.	Consistent – Alternative 2. This alternative does not propose landscaping or a change in the use of fertilizer. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives include landscaping that may require fertilizer. Mitigation for these alternatives will be implemented, requiring a landscape and fertilizer management plan approved by TRPA and Placer County.
Policy 7. Off road vehicle use is prohibited in the Lake Tahoe Region except on specified roads, trails, or designated areas where the impacts can be mitigated.	Consistent – All Alternatives. None of the alternatives include off-road vehicle use outside the construction area or during operations.
Policy 8. Transportation and air quality measures aimed at reducing airborne emissions of oxides of nitrogen shall be carried out.	Consistent with Mitigation– All Alternatives. Alternative 2 would not result in new transportation-related air emissions. Alternative 4 results in less vehicle traffic than existing conditions. Alternative 1, 3, 5, and 6 include measures that minimize trips and VMT, including alternative transportation and roadway improvements.

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	Mitigation measures may include implementation or participation in implementation of transportation and roadway improvements and/or payment into the traffic and air quality mitigation program.
Goal #2. Reduce or eliminate the addition of other pollutants which affect, or potentially affect, water quality in the Tahoe Basin.	
Policy 1. All persons engaging in public snow disposal operations in the Tahoe Region shall dispose of snow in accordance with site criteria and management standards in *The Handbook of Best Management Practices*.	Consistent – All Alternatives. Snow will be stockpiled and treated onsite in accordance with management standards.
Policy 2. Discharges of sewage to Lake Tahoe, its tributaries, or the groundwaters of the Lake Tahoe Region are prohibited. Sewage collection, conveyance and treatment districts shall have approved spill contingency, prevention, and detection plans.	Consistent – All Alternatives. The alternatives include permitted sewage collection systems.
Policy 3. All institutional users of road salt in the Lake Tahoe Region shall keep records showing the time, rate, and location of salt application. Storage of road salt shall be in accordance with *The Handbook of Best Management Practices*.	Consistent – All Alternatives. HMR does not propose the use of road salt within the North and South Base areas.
Policy 4. Underground storage tanks for sewage, fuel, or other potentially harmful substances shall meet standards set forth in TRPA ordinances, and shall be installed, maintained, and monitored in accordance with *The Handbook of Best Management Practices*.	Consistent – All Alternatives. Fuel storage is not needed for Alternative 4. Above ground fuel storage is an existing use at the South Base area that will be relocated to the Mid-Mountain area for tracked vehicles under Alternatives 1, 3, 5 and 6. Placement and use of these tanks will be above ground in accordance with the Handbook of Best Management Practices.
Policy 5. No person shall dispose of solid wastes in the Lake Tahoe Region by depositing them on or in the land, except as provided by TRPA ordinance.	Consistent – All Alternatives. None of the alternatives propose to dispose of solid waste on the Project area.
Community Design	
Goal #1. Insure preservation and enhancement of the natural features and qualities of the region, provide public access to scenic views, and enhance the quality of the built environment.	
Policy 1. The scenic quality ratings established by the environmental thresholds shall be maintained or improved.	Inconsistent – Alternatives 2, 4 and 5. Alternative 2 would maintain existing structures that are not consistent with design guidelines and would not improve scenic quality. Alternative 4 would not increase public access to scenic views, as it would limit mountain access to private property owners. For Alternative 5, the visual impact of the high-density residential area adjacent to SR 89 does not maintain scenic quality ratings. Consistent – Alternatives 1, 3 and 6. Alternatives 1, 3, and 6 would improve scenic quality ratings by improving the layout and visual characteristics of the North Base and South Base areas.
Policy 2. Restoration programs based on incentives will be implemented in those areas designated in need	Inconsistent – Alternative 2. This alternative does not include restoration programs.

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of scenic restoration to achieve the recommended rating.	Inconsistent – Alternative 5. The visual impact of the high-density residential area adjacent to SR 89 does not improve scenic quality ratings. Consistent – Alternatives 1, 3, 4, and 6. Each of these alternatives includes the construction of new buildings and landscaping that would improve the scenic quality ratings. Alternatives 1 and 3 include participation in EIP projects that improve the visual quality, such as landscape improvements and utility undergrounding.
Goal #2. Regional building and community design criteria shall be established to ensure attainment of the scenic thresholds, maintenance of desired community character, compatibility of land uses, and coordinated project review.	
Policy 1. Regional design review shall include the following to be used in evaluating projects throughout the Region. This review may entail additional requirements or special requirements not listed below. A. Site Design: All new development shall consider site design which includes, at a minimum: 1) Existing natural features to be retained and incorporated into the site design. 2) Building placement and design to be compatible with adjacent properties and consideration of solar exposure, climate, noise, safety, fire protection, and privacy. 3) Site planning to include a drainage, infiltration, and grading plan meeting BMP standards. 4) Access, parking, and circulation to be logical, safe, and meet the requirements of the transportation element. B. Building Height, Bulk and Scale: Standards shall be adopted to ensure attractive and compatible development. The following shall be considered: 1) Building height shall be limited to two stories except that provisions for additional height requirements shall be provided for unique situations such as lighting towers, ski towers, steep sites, redevelopment projects and tourist accommodation facilities. 2) Building height limits shall be established to ensure that buildings do not project above the forest canopy, ridge lines, or otherwise detract from the viewshed. 3) Buffer requirements shall be established for noise, snow removal, aesthetic, and environmental purposes. 4) The scale of structures should be consistent with surrounding uses. 5) Viewshed should be considered in all new construction. Emphasis should be placed on lake views from major transportation corridors. C. Landscaping: The following should be considered with respect to this design component of a project:	Inconsistent – Alternative 2. Alternative 2 does not propose new structures, but the lack of appropriate screening and landscaping make this alternative inconsistent. Inconsistent – Alternative 5. The visual impact from the four-story, high-density residential structure does not promote scenic quality ratings or consistency with the scale of surrounding buildings. Consistent – Alternatives 1, 3, 4 and 6. Alternatives 1 and 6 include a new height amendment that would allow for additional height within the Project area. The analysis concludes that additional height can be provided and improve existing scenic quality ratings. Alternatives 1, 3 and 6 include new buildings with an Old Tahoe architectural style that includes substantial landscaping and buffering, installation of BMPs, appropriate placement per land use, underground parking, appropriate lighting and signage (to be compliant as stated in mitigation), and incorporation of natural features to buffer views of buildings. Alternative 4 would include new commercial buildings at the North Base area with layout and landscaping/buffering improvements. Although the structures are not yet fully designed, they must be designed in compliance with height, bulk, and scale, lighting, and signage limits.

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1) Native vegetation should be utilized whenever possible. 2) Vegetation should be used to screen parking and to alleviate long strips of parking space. 3) Plants should be used to give privacy, reduce glare and heat, deflect wind, muffle noise, prevent erosion, and soften the line of architecture. D. Lighting: Lighting increases the operational efficiency of a site. In determining the lighting for a project, the following should be considered: 1) Exterior lighting should be minimized with an emphasis on safety and should be consistent with the architectural design. 2) Overall levels should be compatible with the neighborhood light level. Emphasis should be placed on a few, well placed, low intensity lights. 3) Lights should not blink, flash, or change intensity. E. Signing: In determining sign design, the following should be considered: 1) Off premise signs are prohibited. 2) Signs should be incorporated into building design. 3) When possible, signs should be consolidated into clusters to avoid clutter. 4) Signage should be attached to buildings when possible. 5) Standards for height, lighting, and square footage for on premise signs shall be formulated and shall be consistent with the land uses permitted in each district.	
Policy 2. Local jurisdictions are encouraged to adopt design guidelines consistent with the Regional Plan.	Consistent – All Alternatives. Since no TRPA Community Plan was developed, there are no additional TRPA design guidelines for the Project area.
Transportation Element	
Goal #1. It is the goal of the Regional Transportation Plan to fulfill the requirements of the Tahoe Regional Planning Compact.	
Goal #2. It is the goal of the Regional Transportation Plan to attain and maintain the Environmental Threshold Carrying Capacities and federal, state, and local transportation standards.	
Goal #3. It is the goal of the Regional Transportation Plan to establish a safe, efficient, and integrated transportation system which reduces reliance on the private automobile, provides for alternative modes of transportation, and serves the basic transportation needs of the citizens of the Tahoe Region, supports the economic base of the Region in the movement of goods and people, and minimizes adverse impacts on man and the environment.	
Policy 2. Plan for and promote land use changes and development patterns which will encourage the use of alternative transportation modes and minimize impacts on the existing transportation system. A. Community Plans shall promote land use development patterns and designs which will increase the ability to use public transportation,	Inconsistent – Alternative 2. Alternative 2 does not include infill or new alternative transportation options. Consistent with Mitigation – Alternatives 1, 3, 4, 5 and 6. A Community Plan has not been developed for this area; however Alternatives 1, 3, 5 and 6 include improvements to public transit systems and the addition of new water-taxi, shuttle, bicycle, and pedestrian facilities.

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waterborne, bicycle and pedestrian facilities. B. Community Plans shall promote the development of neighborhood commercial areas which will reduce travel distances. C. Development patterns shall provide for the in-fill of existing areas, making use of existing transportation facilities and promoting the use of alternative transportation modes. D. New, expanded or revised developments and land uses shall fully mitigate their regional and cumulative traffic impacts. E. Parking for residential usage shall meet TRPA standards and shall be provided on-site. F. Parking for non-residential uses shall be the minimum/maximum required to meet the demand for parking generated by the use, except as may be offset by reducing parking demand through parking management and trip reduction programs. G. Driveways shall be designed and sited to minimize impacts on public transportation, adjacent roadways and intersections, bicycle and pedestrian facilities. H. Public land management agencies shall develop transit services that manage access.	Alternatives 1, 3, 4, and 5 include neighborhood commercial uses in the base area. Alternatives 1, 3, and 5 include mixed-use development that attracts and keeps tourism onsite with the addition of summer recreation and other amenities. Alternatives 1, 3, 5, and 6 include traffic mitigation measures that will be implemented. Alternatives 1, 3, and 4 include parking mitigation to meet Placer County requirements. Alternatives 1, 3, 5, and 6 include winter ticket sales limits with only those arriving via transit or shuttle obtaining tickets once the parking lots are full. Provision of onsite hotel and timeshare units will reduce the number of day-use vehicles.
Policy 3. Actively pursue programs that promote the use of mass transit as an alternative to the automobile. A. Expansion of transit services shall be provided to residential areas of the Region with the system being appropriate for the area to be served, and shall be consistent with the Action element of the TRPA Regional Transportation Plan. B. Public or private transit services shall be given preference in mitigating traffic and transportation related impacts due to new, expanded or revised development or land use activities. C. Transit facilities shall be provided which encourage the use of public transit services, with new or revised developments incorporating transit facilities into their designs or plans. E. Bus lanes with preferential signal controls should be implemented along U.S. 50, California 89 and California/Nevada 28. F. Alternative transit modes including fixed guideway systems should be implemented. G. Multi-modal transfer facilities shall be located in activity centers in both the North and South Shore areas. H. Transit shelters shall be provided at major transit stops. I. Transit services shall be provided to connect the North and South Shore areas of the Tahoe Region. J. Transit services shall be provided to beaches, campgrounds and other summer-time recreational areas.	<u>Consistent – All Alternatives</u>. Alternative 2 does not propose new mass transit facilities but would retain the existing transit stops onsite. Alternative 4 will maintain the transit stops onsite, but would not expand alternative transportation options. Alternatives 1, 3, 5, and 6 include transit shelters, dial-a-ride, shuttle, and water taxi services as well as a free bicycle fleet service and a hybrid electric rental car fleet for HMR guests. These alternatives will result in the extension of the West Shore Bike Trail through the North Base area.

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K. Transit excursion services should be provided in the Region.	
Policy 4. Develop and encourage the use of pedestrian and bicycle facilities as a safe and viable alternative to automobile use. A. There shall be a high priority on constructing pedestrian and bicycle facilities in urbanized areas of the Region and where reductions in congestion will result. B. Pedestrian and bicycle facilities shall be constructed, or upgraded, and maintained along major travel routes. C. Where it is not feasible to construct or maintain Class I bicycle paths along the Region's major travel routes, Class II bicycle lanes should be provided on roadway shoulders. D. Bicycle racks or storage facilities shall be provided at non-residential developments, transit stops, and on transit vehicles. E. Bicycle and pedestrian linkages shall be provided between residential and non-residential areas. F. Bicycle and pedestrian facilities in urbanized areas and along transportation routes used for commuting should be maintained to allow year-around use of the facilities.	Inconsistent – Alternatives 2 and 4. These alternatives do not include construction of bike trails or pedestrian paths. Consistent – Alternatives 1, 3, 5, and 6. These alternatives include an extension of the West Shore Bike Trail, pedestrian pathways through the base areas, and 5 miles of public hiking trails that are accessible from the base areas. They include a free bike-share program for resort guests.
Policy 5. Implement transportation demand management (TDM) measures to reduce the number of vehicle trips on the Region's highways. A. Transit fare reductions, including free fares, should be used to encourage transit use. B. Employers shall implement vehicle trip reduction programs, including carpool and vanpool matching programs, employee shuttles, flexible work hours, and transit use incentives. C. Public and private employers shall develop parking management programs including preferential parking and reduced parking rates for carpools and vanpools, parking charges for employee parking and paid patron parking. D. Condominiums, timeshares, hotels and motels shall participate in public transit and private shuttle programs, and provide transit information and incentives to their guests and residents. E. Commercial interests providing gaming, recreational activities, or excursion services shall provide or participate in joint shuttle services or provide transit use incentives to their guests or patrons. F. Park-and-Ride facilities shall be provided by local jurisdictions to encourage ridesharing. H. Ski areas and other recreational activity areas shall control the rate of departure of patrons from parking areas to minimize the impact on congested transportation facilities.	Inconsistent – Alternatives 2 and 4. Transportation demand management measures are not proposed under these alternatives. Consistent – Alternatives 1, 3, 5, and 6. These alternatives include employee shuttles, employee transit fares, onsite daycare, onsite employee housing (Alternatives 1 and 3 only), scheduled shuttle service, north to south base shuttles, dial-a-ride services, and water taxis. In addition, lift ticket sales will be limited to persons arriving via transit once parking lots are full. A sign at the Tahoe City 'wye' will relay this information to prevent unnecessary vehicle trips. In general, the variety of amenities at the site, housing and tourist accommodation options, and mixed-uses will keep guests and residents onsite to reduce overall vehicle trips.

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Policy 6. Transportation System Management (TSM) measures shall be used to improve the efficiency of the existing transportation system. A. High occupancy and reversible vehicle lanes should be considered in high traffic demand areas, provided existing roadway capacities can be maintained. B. Traffic conflicts should be reduced by limiting or controlling access to major regional travel routes and major local road ways. C. Intersection improvements required to upgrade existing levels of service including lane restriping, turn lanes, channelization and traffic signals should be implemented when warranted. D. Roadway designs shall accommodate bicycle lanes and transit stops and reduce conflicts between vehicles and bicycle and pedestrians. E. New on-street parking shall be prohibited along major regional travel routes and existing parking should be discouraged along major regional travel routes and local roads. F. View turn-outs should be provided along scenic highways. G. Left-turn lanes and right-turn lanes shall be provided to reduce turning conflicts along major travel routes. H. Utilization of Intelligent Transportation Systems (ITS) technology shall be implemented consistent with the Tahoe Metropolitan Planning Organization (TMPO) Tahoe Basin ITS Strategic Plan.	Consistent – Alternatives 2 and 4. Although these alternatives do not include TSM measures, they do not place additional burden on the transportation system because they do not expand uses over existing development levels. Consistent with Mitigation – Alternatives 1, 3, 5, and 6. These alternatives include mitigation measures to improve the SR 89/Granlibakken Rd. intersection. Parking along SR 89 is not proposed. The project participates in EIP Project #855 to improve the Y at Tahoe City.
Policy 7. Limit improvements to the regional highway system to those necessary to meet the Goals and Policies of the Regional Plan. A. The construction of roadways to freeway design standards is inappropriate in the Tahoe Region. However, grade separations may be appropriate at locations where traffic volumes exceed the capability of intersection improvements and local trip reduction measures to meet LOS criteria. B. Highway design criteria shall be developed for the Tahoe Region which minimizes the environmental impact of highway projects while providing for the needs of the traveling public. C. New roadways or projects which expand the capacity of existing roadways shall be consistent with traffic and circulation elements of TRPA adopted redevelopment plans or community plans. D. Local roadways connecting residential areas, and connecting residential areas with non-residential areas, may be constructed provided these roadways are designed to improve local circulation and will not induce through traffic. E. Roadway projects designed to correct hazardous roadway conditions shall be encouraged provided	Consistent – Alternatives 2 and 4. Although these alternatives do result in highway system improvements they do not place additional burden on the transportation system. The new neighborhood road proposed to serve the single-family lots under Alternative 4 will not connect to other neighborhood roadways to avoid increased traffic on these roads. Consistent with Mitigation – Alternatives 1, 3, 5, and 6. These alternatives include mitigation measures to improve the SR 89/Granlibakken Rd. intersection. Project area roadways will not induce through traffic through existing neighborhoods. Alternatives 1, 3, 5, and 6 participate in EIP Project #855 to improve the “wye” at Tahoe City.

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these projects are limited to needed safety improvements. F. Level of service (LOS) criteria for the Region's highway system and signalized intersections during peak periods shall be: ♦ "C" on rural recreational/scenic roads. ♦ "D" on rural developed area roads. ♦ "D" on urban developed area roads. ♦ "D" for signalized intersections. ♦ "E" may be acceptable during peak periods in urban areas, not to exceed four hours per day.	
Policy 9. Encourage waterborne transportation systems as an alternative to automobile travel within the Region. A. Waterborne point-to-point services are encouraged. B. Waterborne excursion services are encouraged. C. Waterborne services shall coordinate with, and provide access to, other public and private transportation systems.	Inconsistent – Alternatives 2 and 4. Waterborne transportation is not proposed under these alternatives. Consistent – Alternatives 1, 3, 5, and 6. These alternatives include waterborne taxi service during the summer.
Policy 10. Improve the mobility of the elderly, handicapped and other transit-dependent groups. A. Provide specialized public transportation services with subsidized fare programs for transit, taxi, demand responsive, and accessible van services. B. Ensure access to the public transportation system by providing and maintaining sidewalks with curb cuts and ramps. C. Provide and maintain accessible transit stops and shelters with ramps and paved areas. D. Provide and maintain accessible transportation vehicles with adequate lifts and ramps and wheelchair tiedowns.	Consistent – All Alternatives. Existing transit service to the Project area includes accessible transportation vehicles. The shuttle services provided under Alternatives 1, 3, 5, and 6 will include an accessible vehicle. Pedestrian pathways will be wheelchair accessible, as will the transit stops and shelters.
Policy 11. Postal Carrier service shall be provided Region wide, with the U.S. Postal Service Tahoe Regional Master Plan identifying priority areas and a timeframe for implementation. The following Regional Goals establish the objectives of the U.S. Postal Service, and the TRPA concerning mail service. A. The U.S. Postal Service shall provide mail service for areas not currently served in the Tahoe Region that encourages residents to drive fewer miles for the service. U.S. Postal Service facilities and operations shall maximize reductions in vehicle miles traveled by postal customers to the extent practicable. B. In fulfillment of its national environmental values, the U.S. Postal Service will develop future facilities and implement future operations in ways that meet its desire to protect and preserve the environment. C. Locating new or expanded U.S. Postal Service facilities near population and commercial	Consistent – All Alternatives. None of the alternatives include a U.S. Post Office on site, although postal service will continue to serve the area. A post office is located near HMR at 5375 West Lake Blvd. Street delivery service does not occur and mail will be picked up from post office boxes.

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concentrations is a priority for both the U.S. Postal Service and the TRPA. D. Many existing U.S. Postal Service facilities require replacement and/or renovation to meet minimum health, safety, operational, environmental, and business requirements. Many elements of the Tahoe Regional Master Plan, such as new services, cannot be realized without improvements in facilities. E. U.S. Postal Service facilities and operations that can meet multiple goals require a partnership between the USPS, TRPA, local and regional agencies, and individual and community groups. These groups should work in partnership to conduct collaborative planning, to identify the appropriate organization to undertake the leadership role on specific issues, and to facilitate project approval. F. To maximize benefit from available financial resources, new facilities and operations shall be prioritized in large measure based on their contribution to overall Master Plan goals. G. U.S. Postal Service facilities and operations that implement TRPA RTP/AQP control strategies (including carrier service) shall receive credit for impact fees equal to the financial contribution. Future consideration may be given to provision of alternative fuel fleet vehicles. H. The U.S. Postal Service and TRPA will diligently pursue Master Plan implementation within the constraints of future available resources.	
Policy 12. Increase the use of alternative fuel vehicles within the Lake Tahoe Basin. A. Future public transit vehicles purchased for operations in the Lake Tahoe Basin shall be alternative fuel powered. B. When considering new or replacement vehicles for public and private fleets alternative fuel vehicles should be purchased. C. TRPA shall phase in alternative fuel vehicle requirements for public and private fleet purchases above 15 vehicles in size.	Consistent – All Alternatives. Alternatives 2 and 4 do not propose alternative fuel vehicle services; however, they do not prevent Tahoe Area Transit Service from utilizing alternative fuel vehicles. Alternatives 1, 3, 5, and 6 offer hybrid/electric vehicles for rent by resort guests.
Conservation Element	
Vegetation	
Common Vegetation MANAGEMENT STANDARD: Increase plant and structural diversity of forest communities through appropriate management practices as measured by diversity indices of species richness, relative abundance, and pattern. • Maintain the existing species richness of the Basin by providing for the perpetuation of the following	Consistent – All Alternatives. Alternative 2 will not result in increase or decrease in plant diversity. Alternatives 1 and 3 result in SEZ restoration, which increases species richness and diversity. Alternatives 1, 3, 4, 5, and 6 include trail and road restoration, which increases species numbers on the site. Alternatives 1, 3, 5 and 6 would deed restrict the area beyond the base areas from further non-recreational development, which will help maintain plant diversity.

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plant associations: Yellow Pine Forest: Jeffrey pine, White fir, Incense cedar, Sugar pine. Red Fir Forest: Red fir, Jeffrey pine, Lodgepole pine, Western white pine, Mountain hemlock, Western juniper. Subalpine Forest: Whitebark pine, Mountain hemlock, Mountain mahogany. Shrub Association: Greenleaf and Pinemat manzanita, Tobacco brush, Sierra chinquapin, Huckleberry oak, Mountain whitethorn. Sagebrush Scrub Vegetation: Basin sagebrush, Bitterbrush, Douglas chaenactis. Deciduous Riparian: Quaking aspen, Mountain alder, Black cottonwood, Willow. Meadow Associations (Wet and Dry Meadow): Mountain squirrel tail, Alpine gentian, Whorled penstemon, Asters, Fescues, Mountain brome, Corn lilies, Mountain bentgrass, Hairgrass, Marsh marigold, Elephant heads, Tinker's penney, Mountain Timothy, Sedges, Rushes, Buttercups. Wetland Associations (Marsh Vegetation): Pond lilies, Buckbean, Mare's tail, Pondweed, Common bladderwort, Bottle sedge, Common spikerush. Cushion Plant Association (Alpine Scrub): Alpine phlox, Dwarf ragwort, Draba. • Relative Abundance -- of the total amount of undisturbed vegetation in the Tahoe Basin: 1. Maintain at least 4% meadow and wetland vegetation. 2. Maintain at least 4% deciduous riparian vegetation. 3. Maintain no more than 25% dominant shrub association vegetation. 4. Maintain 15-25% of the Yellow Pine Forest in seral stages other than mature. 5. Maintain 15-25% of the Red Fir Forest in seral stages other than mature. • Pattern -- Provide for the proper juxtaposition of vegetation communities and age classes by: 1. Limiting acreage size of new forest openings to no more than eight acres. 2. Adjacent openings shall not be of the same relative age class or successional stage to avoid uniformity in stand composition and age. A nondegradation standard to preserve plant communities shall apply to native deciduous trees, wetlands, and meadows while providing for opportunities to increase the acreage of such riparian associations to be consistent with the SEZ threshold. Native vegetation shall be maintained at a maximum	

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
level to be consistent with the limits defined in the *Land Capability Classification of the Lake Tahoe Basin, California- Nevada, A Guide For Planning*, Bailey, 1974, for allowable impervious cover and permanent site disturbance. POLICY STATEMENT: It shall be a policy of the TRPA Governing Board that a nondegradation standard shall permit appropriate management practices.	
Late Seral and Old Growth Forest Ecosystems NUMERICAL STANDARD: Attain and maintain a minimum percentage of 55% by area of forested lands within the Tahoe Region in a late seral or old growth condition, and distributed across elevation zones. To achieve the 55%, the elevation zones shall contribute as follows: • The Subalpine zone (greater than 8,500 feet elevation) will contribute 5% (7,600 acres) of the forested lands; • The Upper Montane zone (between 7,000 and 8,500 feet elevation) will contribute 30% (45,900 acres) of forested lands; • The Montane zone (lower than 7,000 feet elevation) will contribute 20% (30,600 acres) of forested lands. Forested lands within TRPA designated urban areas are excluded in the calculation for threshold attainment. Areas of the montane zone within 1,250 feet of urban areas may be included in the calculation for threshold attainment if the area is actively being managed for late seral and old growth conditions and has been mapped by TRPA. A maximum value of 40% of the lands within 1,250 feet of urban areas may be included in the calculation. Because of these restrictions the following percentage of each elevation zone must be attained to achieve this threshold: • 61% of the Subalpine zone must be in a late seral or old growth condition; • 60% of the Upper Montane zone must be in a late seral or old growth condition; • 48% of the Montane zone must be in a late seral or old growth condition;	Consistent – All Alternatives. None of the development areas are considered late seral/old growth.
Uncommon Plant Communities NUMERICAL STANDARD: Provide for the nondegradation of the natural qualities of any plant community that is uncommon to the Basin or of exceptional scientific, ecological, or scenic value. This threshold shall apply but not be limited to (1) the deepwater plants of Lake Tahoe, (2) Grass Lake (sphagnum bog), (3) Osgood swamp, and (4) the Freel Peak Cushion Plant community.	Consistent – All Alternatives. None of the Alternatives are located in the listed threshold areas. There are no sensitive plant communities within the project area.

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Sensitive Plants NUMERICAL STANDARD: Maintain a minimum number of population sites for each of five sensitive plant species: Species - Number of Population Sites *Carex paucifructus* - 1 *Lewisia pygmaea longipetala* - 2 *Draba asterophora* v. *macrocarpa* - 2 *Draba asterophora* v. *asterophora* - 5 *Rorippa subumbellata* -26	Consistent – All Alternatives. There are no known sensitive plant communities within the project area.
Goal #1. Provide for a wide mix and increased diversity of plant communities in the Tahoe Basin.	
Policy 1. Forest management practices shall be allowed when consistent with acceptable strategies for the maintenance of forest health and diversity, prevention of fire, protection of water quality, and enhancement of wildlife habitats.	Consistent – All Alternatives. HMR has treated over 400 acres of forested areas to reduce the threat of catastrophic fire. There is a plan to continue the forest thinning/fuels management for forested areas within the 1,253-acre resort as needed. The fuels management program utilizes chipped wood material tilled into and spread onto the forest floor, which helps to reduce storm water runoff and maintain a healthier forest floor.
Policy 2. Opportunities to improve the age structure of the pine and fir plant communities shall be encouraged when consistent with other environmental considerations	Consistent – All Alternatives. Fuels management is implemented for all alternatives. Alternatives 1, 3, 5 and 6 would deed restrict the mountain area outside the base areas from future non-recreational development. This may allow future opportunities to improve the age structure. Project mitigation includes the preparation of a Forest Plan to identify treatments to improve forest health.
Policy 3. Forest pattern shall be manipulated whenever appropriate as guided by the size and distribution of forest openings.	Consistent – All Alternatives. Alternative 2 does not result in changes to forest openings. Alternatives 1, 3, 4, 5, and 6 include mitigation for the preparation of a Forest Plan to identify treatments to improve forest health.
Policy 4. Edge zones between adjacent plant communities will be maximized and treated for their special value relative to plant diversity and wildlife habitat.	Inconsistent – Alternatives 2 and 4. These alternatives do not propose SEZ restoration located at the South Base. Consistent with Mitigation – Alternatives 1, and 3. Alternatives 1 and 3 include SEZ restoration, which will improve plant diversity and increase the quality of wildlife habitat in the riparian area located at the South Base. Alternatives 5 and 6 will require SEZ restoration as mitigation for development. Each of these Alternatives includes restoration of existing disturbance of mapped SEZ at the North Base area in the gravel parking lot.
Policy 5. Permanent disturbance or unnecessary alteration of natural vegetation associated with development activities shall not exceed the approved boundaries (or footprints) of the building, driveway, or parking structures, or that which is necessary to reduce the risk of fire or erosion.	Consistent – All Alternatives. Alternative 2 does not include new disturbance. The action alternatives propose developments that are limited to building footprints and the surrounding fire suppression area. Existing disturbed roads and trails are being restored to reduce existing disturbance.
Policy 6. The management of vegetation in urban areas shall be in accordance with the policies of this Plan and shall include provisions that allow for the perpetuation	Consistent – All Alternatives. Alternative 2 does not include new vegetation. The action alternatives include fuels management, SEZ restoration and/or landscaping.

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
of the natural-appearing landscape.	Landscaping will reflect the surrounding natural environment while improving the overall visual character.
Policy 7. Disturbance or removal of forest litter should be avoided to promote the natural catchment of nutrients.	Consistent – All Alternatives. HMR has treated over 400 acres of forested areas to reduce the threat of catastrophic fire. There is a plan to continue the forest thinning/fuels management for forested areas within the 1,253-acre resort. The fuels management program utilizes chipped wood material tilled into and spread onto the forest floor, which helps to reduce storm water runoff and maintain a healthier forest floor.
Policy 8. Revegetation of disturbed sites shall require the use of species approved by the Agency. TRPA shall prepare specific policies designed to avoid the unnecessary use of landscaping which requires long-term irrigation and fertilizer use.	Consistent with Mitigation–Alternatives 1, 3, 4, 5, and 6. Revegetation of unneeded trails and roads reflect the surrounding plant mixture with approved species. A landscape and fertilizer management plan is proposed mitigation to ensure landscape areas do not use high maintenance and fertilizer reliant species. Consistent – Alternative 2. This alternative does not include landscaping. Revegetated areas have used TRPA approved species.
Policy 9. All proposed actions shall consider the cumulative impact of vegetation removal with respect to plant diversity and abundance, wildlife habitat and movement, soil productivity and stability, and water quality and quantity.	Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives include mitigation to protect nesting raptors, forest health (Forest Plan), and landscape and fertilizer management. Consistent – Alternative 2. This alternative does not propose vegetation removal.
Goal #2. Provide for the maintenance and restoration of such unique ecosystems as wetlands, meadows, and other riparian vegetation.	
Policy 1. Riparian plant communities shall be managed for the beneficial uses of passive recreation, groundwater recharge, and nutrient catchment, and as wildlife habitats.	Inconsistent – Alternative 2. This alternative does not include Homewood Creek restoration or protection or SEZ improvements at Homewood Creek. Consistent – Alternatives 1 and 3. These alternatives include stream restoration on Homewood Creek and SEZ improvements in this area. Consistent with Mitigation – Alternatives 4, 5 and 6. These alternatives include mitigation that requires SEZ improvements at Homewood Creek.
Policy 2. Riparian plant communities shall be restored or expanded whenever and wherever possible.	Inconsistent – Alternative 2. This alternative does not include Homewood Creek restoration or protection or SEZ improvements at Homewood Creek. Consistent – Alternatives 1 and 3. These alternatives include stream restoration on Homewood Creek and SEZ improvements in this area. Consistent with Mitigation – Alternatives 4, 5 and 6. These alternatives include mitigation that requires SEZ improvements at Homewood Creek.

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
Goal #3. Conserve threatened, endangered, and sensitive plant species and uncommon plant communities of the Lake Tahoe Basin.	
Policy 1. Uncommon plant communities shall be identified and protected for their natural values.	Consistent – All Alternatives. As analyzed in Chapter 8 of this EIR/EIS, no sensitive plant communities are identified in the project area.
Policy 2. The population sites and critical habitat of all sensitive plant species in the Lake Tahoe Basin shall be identified and preserved.	Consistent – All Alternatives. As analyzed in Chapter 8 of this EIR/EIS, no sensitive plant communities are identified in the project area.
Policy 3. The conservation strategy of Tahoe yellow cress in the Lake Tahoe Basin shall foster stewardship for this species.	Consistent – All Alternatives. As analyzed in Chapter 8 of this EIR/EIS, no sensitive plant communities are identified in the project area.
Goal #4. Provide for and increase the amount of late seral/old growth stands in the Lake Tahoe Basin.	
Policy 1. Stands exhibiting late seral/old growth characteristics shall be managed to allow these stands to sustain these conditions.	Consistent – All Alternatives. As analyzed in Chapter 8 of this EIR/EIS, no late seral/old growth stands are identified in the project area.
Policy 2. Stands not exhibiting late seral/old growth characteristics shall be managed to progress towards late seral/old growth	Consistent – All Alternatives. As analyzed in Chapter 8 of this EIR/EIS, no late seral/old growth stands are identified in the project area.
Policy 3. Prescriptions for treating these stands will be prepared on stand-by-stand basis. Each prescription will demonstrate/explain how it will promote late seral or old growth characteristics prior to applying any mechanical treatment or prescribed fire. Stand-specific prescriptions will be developed using the best available forest and ecosystem management science, strategies, standards, and guidelines.	Consistent – All Alternatives. As analyzed in Chapter 8 of this EIR/EIS, no late seral/old growth stands are identified in the project area.
Goal #5. The appropriate stocking level and distribution of snags and coarse woody debris shall be retained in the Regions forests to provide habitat for organisms that depend on such features and to perpetuate natural ecological processes.	
Policy 1. Allow for a sufficient number and appropriate distribution of snags throughout the Region's forests to provide and maintain habitat for species dependent on such features.	Consistent – Alternative 2. No changes to existing snag distribution would occur. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives include mitigation to ensure removed trees/snags are not utilized by nesting raptors. The forest management plan required to be prepared for these alternatives will determine the appropriate number of snags to be retained.
Policy 2. Allow for an appropriate amount, level, and distribution of coarse woody debris (downed woody material) throughout the Region's forests to maintain biological integrity, to stabilize soil, and to afford a reasonable level of fire safety.	Consistent – All Alternatives. The fuels management program utilizes chipped wood material tilled into and spread onto the forest floor, which helps to reduce storm water runoff and maintain a healthier forest floor.

<table>
<tr><th>Regional Plan Goals and Policies</th><th>HMR Ski Area Master Plan Consistency Analysis</th></tr>
<tr><td colspan="2">Wildlife</td></tr>
<tr><td>Special Interest Species
NUMERICAL STANDARD: Provide a minimum number of population sites and disturbance zones for the following species:
<table>
<tr><th>Species of interest</th><th>Population sites</th><th>Disturbance zone (mi.)</th><th>Influence zone (mi.)</th></tr>
<tr><td>Goshawk</td><td>12</td><td>0.50</td><td>3.50</td></tr>
<tr><td>Osprey</td><td>4</td><td>0.25</td><td>0.60</td></tr>
<tr><td>Bald Eagle (Winter)</td><td>2</td><td>Mapped areas</td><td>Mapped areas</td></tr>
<tr><td>Bald Eagle (Nesting)</td><td>1</td><td>0.50</td><td>Variable</td></tr>
<tr><td>Golden Eagle</td><td>4</td><td>0.25</td><td>9.0</td></tr>
<tr><td>Peregrine</td><td>2</td><td>0.25</td><td>7.6</td></tr>
<tr><td>Waterfowl</td><td>18</td><td>Mapped areas</td><td>Mapped areas</td></tr>
<tr><td>Deer</td><td>-</td><td>Meadows</td><td>Mapped areas</td></tr>
</table></td><td>Consistent with Mitigation –Alternatives1, 3, 4, 5, and 6. The project area does not include known populations of these species; however, osprey are known to occur within the vicinity. Mitigation to protect this species includes surveys for nesting raptors and protection of discovered nests during construction.

Consistent – Alternative 2. No changes will occur under this alternative.</td></tr>
<tr><td>Habitats of Special Significance
MANAGEMENT STANDARD: A nondegradation standard shall apply to significant wildlife habitat consisting of deciduous trees, wetlands, and meadows while providing for opportunities to increase the acreage of such riparian associations.</td><td>Inconsistent – Alternative 2. This alternative would not protect Homewood Creek or improve the associated SEZ area.

Consistent – Alternatives 1 and 3. These alternatives day light the Homewood Creek stream channel and improve the associated SEZ.

Consistent with Mitigation – Alternatives 4, 5 and 6. These alternatives include mitigation that requires SEZ improvements at Homewood Creek.</td></tr>
<tr><td colspan="2">Goal #1. Maintain suitable habitats for all indigenous species of wildlife without preference to game or non-game species through maintenance of habitat diversity.</td></tr>
<tr><td>Policy 1. All proposed actions shall consider impacts to wildlife.</td><td>Consistent: All Alternatives. This EIR/EIS describes and analyzes potential impacts to wildlife species.</td></tr>
<tr><td>Policy 2. Riparian vegetation shall be protected and managed for wildlife.</td><td>Inconsistent – Alternative 2. This alternative does not include Homewood Creek restoration or protection or SEZ improvements at Homewood Creek.

Consistent – Alternatives 1 and 3. These alternatives include stream restoration on Homewood Creek and SEZ improvements in this area.

Consistent with Mitigation – Alternatives 4, 5 and 6. These alternatives include mitigation that requires SEZ improvements at Homewood Creek.</td></tr>
<tr><td>Policy 3. Non-native wildlife and exotic species shall be controlled and release of such animals into the wild is forbidden.</td><td>Consistent – All Alternatives. No Alternative directly or indirectly involves the release or propagation of non-native wildlife species.</td></tr>
<tr><td>Policy 4. Domestic animals and pets shall be controlled and appropriately contained.</td><td>Consistent – All Alternatives. No Alternative directly or indirectly involves the release or propagation of pets.</td></tr>
<tr><td colspan="2">Goal #2. Preserve, enhance, and where feasible, expand habitats essential for threatened, endangered, rare, or sensitive species found in the Basin.</td></tr>
<tr><td>Policy 1. Endangered, threatened, rare, and special interest species shall be protected and buffered against</td><td>Consistent – Alternative 2. No new land uses are proposed.</td></tr>
</table>

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
conflicting land uses.	Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. Listed species potentially occurring onsite may be affected during construction. Implementation of raptor and migratory bird nest protection during construction is proposed.
Fisheries	
Stream Habitat NUMERICAL STANDARD: Maintain the 75 miles of excellent, 105 miles of good, and 38 miles of marginal stream habitat as indicated by the Stream Habitat Quality Overlay map, as amended May 1997, based upon the re-rated stream scores set forth in Appendix C-1 of the 1996 Evaluation Report.	Inconsistent – Alternative 2. This alternative does not include Homewood Creek restoration or protection or SEZ improvements at Homewood Creek. Consistent – Alternatives 1 and 3. These alternatives include stream restoration on Homewood Creek and SEZ improvements in this area. Consistent with Mitigation – Alternatives 4, 5 and 6. These alternatives include mitigation that requires SEZ improvements at Homewood Creek.
Instream Flows MANAGEMENT STANDARD: Until instream flow standards are established in the Regional Plan to protect fishery values, a nondegradation standard shall apply to instream flows. POLICY STATEMENT: It shall be a policy of the TRPA Governing Board to seek transfers of existing points of water diversion from streams to Lake Tahoe.	Consistent – All Alternatives. The alternatives do not propose to affect instream flows.
Lahontan Cutthroat Trout POLICY STATEMENT: It shall be the policy of the TRPA Governing Board to support, in response to justifiable evidence, state and federal efforts to reintroduce Lahontan cutthroat trout.	Consistent – All Alternatives. The alternatives do not prevent reintroduction of Lahontan cutthroat trout.
Lake Habitat MANAGEMENT STANDARD: A nondegradation standard shall apply to fish habitat in Lake Tahoe. Achieve the equivalent of 5,948 total acres of excellent habitat as indicated by the Prime Fish Habitat Overlay Map dated 5/19/97 as may be amended from time to time.	Consistent – All Alternatives. The alternatives do not include changes to the flow in creeks or degradation of surrounding vegetation.
Goal #1. Improve aquatic habitat essential for the growth, reproduction, and perpetuation of existing and threatened fish resources in the Lake Tahoe Basin.	
Policy 1. Development proposals affecting streams, lakes and adjacent lands shall evaluate impacts to the fishery.	Consistent – All Alternatives. Development will not occur within stream channels. BMPs and stormwater improvements will improve water quality.
Policy 2. Unnatural blockages and other impediments to fish movement will be prohibited and removed wherever possible.	Consistent –Alternatives 1 and 3. Culvert removal within the Homewood Creek channel at the South Base is proposed. Inconsistent – Alternatives 2, 4, 5, and 6. Culvert removal within the Homewood Creek channel at the South Base is not proposed.
Policy 3. An instream maintenance program should be developed and implemented.	Inconsistent – Alternative 2. This alternative does not include Homewood Creek restoration or protection or

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
	SEZ improvements at Homewood Creek. Consistent – Alternatives 1 and 3. These alternatives include stream restoration on Homewood Creek and SEZ improvements in this area. Consistent with Mitigation – Alternatives 4, 5 and 6. These alternatives include mitigation that requires SEZ improvements at Homewood Creek.
Policy 5. Habitat improvement projects are acceptable practices in streams and lakes.	Consistent – All Alternatives. The only projects proposed within stream areas are channel and vegetation restoration and protection.
Policy 6. Instream flows shall be regulated, when feasible, to maintain fishery values.	Consistent – All Alternatives. The alternatives do not include changes to the flow in creeks or degradation of surrounding vegetation. The State Board water rights database identifies six points of diversion within the project area. The project or alternatives do not include actions to develop these points of diversion. Any future diversions would require subsequent environmental analysis.
Policy 7. Existing points of water diversion from streams shall be transferred to the Lake, whenever feasible, to help protect instream beneficial uses.	Consistent – All Alternatives. The alternatives do not propose water diversions from streams.
Policy 8. Support, in response to justifiable evidence, state and federal efforts to reintroduce Lahontan cutthroat trout in appropriate remote locations.	Consistent – All Alternatives. The alternatives do not prevent reintroduction of Lahontan cutthroat trout.
Soils	
Impervious Cover MANAGEMENT STANDARD: Impervious cover shall comply with the *Land-Capability Classification of the Lake Tahoe Basin, California-Nevada, A Guide For Planning*, Bailey, 1974.	
Stream Environment Zones NUMERICAL STANDARD: Preserve existing naturally functioning SEZ lands in their natural hydrologic condition, restore all disturbed SEZ lands in undeveloped, unsubdivided lands, and restore 25% of the SEZ lands that have been identified as disturbed, developed or subdivided, to attain a 5% total increase in the area of naturally functioning SEZ lands.	Inconsistent – Alternatives 2. This alternative does not include Homewood Creek restoration or protection or SEZ improvements at Homewood Creek. Consistent – Alternatives 1 and 3. These alternatives include stream restoration on Homewood Creek and SEZ improvements in this area. Consistent with Mitigation – Alternatives 4, 5 and 6. These alternatives include mitigation that requires SEZ improvements at Homewood Creek.
Goal #1. Minimize soil erosion and the loss of productivity.	
Policy 1. Allowable impervious land coverage shall be consistent with the threshold for impervious land coverage.	Inconsistent – Alternatives 2 and 4. The existing land coverage under these alternatives exceed coverage limits within Class 1a, 1b, and 5 lands; and will not be removed and restored. Consistent– Alternatives 1, 3, 5 and 6. Existing coverage over base allowable limits will be removed and restored or mitigated with payment of excess land coverage

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	mitigation fees.
Policy 2. No new land coverage or other permanent disturbance shall be permitted in land capability districts 1-3 except for those uses as noted in A, B and C below: A. Single family dwellings may be permitted in land capability districts 1-3 when reviewed and approved pursuant to the individual parcel evaluation system (IPES). (See Goal #1, Policy 2, Development and Implementation Subelement). B. Public outdoor recreation facilities may be permitted in land capability districts 1-3 under certain conditions (1 through 6). To the fullest extent possible, recreation facilities must be sited outside of Land Capability Districts 1-3. However, the six-part test established by the policy allows encroachment of these lands where such encroachment is essential for public outdoor recreation, and precautions are taken to ensure that such lands are protected to the fullest extent possible. The restoration requirements of this policy can be accomplished on-site or off-site, and shall be in lieu of any coverage transfer or coverage mitigation provisions else where in this Plan.	Inconsistent – Alternatives 2 and 4. The existing land coverage under these alternatives exceed coverage limits within Class 1a and 1b lands; and will not be removed and restored. Consistent– Alternatives 1, 3, 5 and 6. Land coverage in districts 1-3 will be relocated within the Project area and restored as required by TRPA Codes.
Policy 4. TRPA shall develop specific policies to limit land disturbance and reduce soil and water quality impacts of disturbed areas.	Consistent – All Alternatives. Analysis of each of the alternatives includes land disturbance (Chapter 14). BMPs are being installed for all alternatives to reduce erosion and improve water quality.
Policy 6. Grading, filling, clearing of vegetation (which disturbed soil), or other disturbances of the soil are prohibited during inclement weather and for the resulting period of time when the site is covered with snow or is in a saturated, muddy, or unstable condition. Special regulations and construction techniques will apply to all construction activities occurring between October 15 and May 1.	Consistent – All Alternatives. Ground disturbing construction activities are not proposed during the winter season. Appropriate construction techniques will be used and BMPs in place to maintain water quality.
Policy 7. All existing natural functioning SEZs shall be retained as such and disturbed SEZs shall be restored whenever possible.	Inconsistent – Alternatives 2. This alternative does not include Homewood Creek restoration or protection or SEZ improvements at Homewood Creek. Consistent – Alternatives 1 and 3. These alternatives include stream restoration on Homewood Creek and SEZ improvements in this area. Consistent with Mitigation – Alternatives 4, 5 and 6. These alternatives include mitigation that requires SEZ improvements at Homewood Creek.
Scenic	
Roadway and Shoreline Units. NUMERICAL STANDARD: Maintain or improve the	Inconsistent – Alternative 2. Alternative 2 does not result in changes to the existing conditions and will maintain

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
numerical rating assigned each unit, including the scenic quality rating of the individual resources within each unit, as recorded in the Scenic Resources Inventory and shown in Tables 13-3, 13-5, 13-8 and 13-9 of the Draft Study Report. Maintain the 1982 ratings for all roadway and shoreline units as shown in Tables 13-6 and 13-7 of the Draft Study Report. Restore scenic quality in roadway units rated 15 or below and shoreline units rated 7 or below.	existing scenic quality ratings, which are not in attainment. Consistent with Mitigation – Alternatives 1, 3 and 6. New structures and landscaping along SR 89 will improve the roadway unit rating. Although the mid-mountain lodge is not visible from the road, it will be partially visible from the lake. Implementation of mitigation as proposed in Chapter 10 will maintain the shoreline rating. Consistent with Mitigation – Alternative 4. The new structures and landscaping along SR 89 will improve the roadway unit rating with removal of existing structures and surface parking. Since no home designs are available, it is unknown whether units will be visible from the lake. Implementation of the proposed mitigation measure will ensure the shoreline ratings are maintained. Inconsistent – Alternative 5. The height and massing of the 4-story residential structures adjacent to SR 89 would be highly visible and would have a negative impact on scenic quality ratings.
Other Areas. NUMERICAL STANDARD: Maintain or improve the numerical rating assigned to each identified scenic resource, including individual subcomponent numerical ratings, for views from bike paths and other recreation areas open to the general public as recorded in the *1993 Lake Tahoe Basin Scenic Resource Evaluation*.	Consistent – Alternative 2. Alternative 2 will maintain existing conditions. Consistent – Alternatives 1, 3, and 6. These alternatives will result in improvements of the slopes through revegetation and erosion control measures and will improve views from the mountain by developing the mid-mountain lodge and expanding hiking trails on the mountain. This will allow non-skiers to enjoy views. Inconsistent – Alternative 4. With the removal of the ski facilities, the recreation area will be closed and views from the mountain will be lost. Inconsistent – Alternative 5. The height of the 4-story multi-family unit structure would be highly visible as viewed from SR 89 and uncharacteristic of the area.
Goal #1. Maintain and restore the scenic qualities of the natural appearing landscape.	
Policy 1. All proposed developments shall examine impacts to the identified landscape views from roadways, bikepaths, public recreation areas, and Lake Tahoe.	Consistent – All Alternatives. An analysis of landscape views of each alternative is included in Chapter 10 of the EIR/EIS.
Policy 2. Any development proposed in areas targeted for scenic restoration or within a unit highly sensitive to change shall demonstrate the effect of the project on the 1982 travel route ratings and scenic thresholds.	Consistent – All Alternatives. An analysis of each alternative's effect on travel route ratings and thresholds is included in Chapter 10 of the EIR/EIS.
Policy 3. The factors or conditions that contribute to scenic degradation in identified areas need to be recognized and appropriately considered in restoration programs to improve scenic quality.	Consistent – All Alternatives. Alternative 2 does not include a restoration program. Each of the action alternatives includes actions that improve the scenic quality from SR 89, which is an area containing features that contribute to scenic degradation though lack of landscaping, poor architecture, and overhead utilities.

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Open Space	
Goal #1. Manage areas of open space to promote conservation of vegetation and protection of watersheds.	
Policy 1. Management practices in open space that provide for the long term health and protection of the resource(s) shall be permitted when consistent with other goals and policies of this Plan.	Consistent – All Alternatives. The Project area is a recreation area and not an open space area. Alternatives 1 and 3 will deed restrict future development on the mountain to only recreational uses.
Policy 2. The beneficial uses of open space shall be protected by regulating uses and restricting access as necessary to maintain soil productivity and acceptable vegetative cover.	Consistent – All Alternatives. The Project area is a recreation area and not an open space area. Alternatives 1 and 3 will deed restrict future development on the mountain.
Stream Environment Zone	
Goal #1. Provide for the long-term preservation and restoration of stream environment zones.	
Policy 1. Restore all disturbed stream environment zone lands in undeveloped, unsubdivided lands, and restore 25% of the SEZ lands that have been disturbed, developed, or subdivided.	Inconsistent – Alternative 2. This alternative does not include Homewood Creek restoration or protection or SEZ improvements at Homewood Creek. Consistent – Alternatives 1 and 3. These alternatives include stream restoration on Homewood Creek and SEZ improvements in this area. Consistent with Mitigation – Alternatives 4, 5 and 6. These alternatives include mitigation that requires SEZ improvements at Homewood Creek.
Policy 2. SEZ lands shall be protected and managed for their natural values.	Inconsistent – Alternative 2. This alternative does not include Homewood Creek restoration or protection or SEZ improvements at Homewood Creek. Consistent – Alternatives 1 and 3. These alternatives include stream restoration on Homewood Creek and SEZ improvements in this area. Consistent with Mitigation – Alternatives 4, 5 and 6. These alternatives include mitigation that requires SEZ improvements at Homewood Creek.
Policy 3. Groundwater development in SEZ lands shall be discouraged when such development could possibly impact associated plant communities or instream flows.	Consistent – All Alternatives. Groundwater development is not proposed in the SEZ.
Policy 5. No new land coverage or other permanent land disturbance shall be permitted in stream environment zones except for those uses as noted in A, B, C, D, and E.	Consistent – All Alternatives. No new land coverage is proposed in the SEZ.
Policy 6. Replacement of existing coverage in stream environment zones may be permitted where the project will reduce impacts on stream environment zones and will not impede restoration efforts.	Consistent – All Alternatives. Replacement of existing coverage is not proposed in the SEZ, although some coverage will be relocated to construct the bridge span proposed under Alternatives 1 and 3.
Cultural	
Goal #1. Identify and preserve sites of historical, cultural and architectural significance within the Region.	
Policy 1. Historical or culturally significant landmarks in the Basin shall be identified and protected from indiscriminate damage or alteration.	Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. Although known historical or culturally significant landmarks do not occur on the Project area, excavation

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
	has the potential to encounter unknown resources. Mitigation proposed in Chapter 9 of this EIR/EIS ensure such resources are protected. Consistent – Alternative 2. This alternative would not result in new disturbance.
Policy 2. Sites and structures designated as historically, culturally, or archaeologically significant shall be given special incentives and exemptions to promote the preservation and restoration of such structures and sites.	Consistent – All Alternatives. Historical or culturally significant sites and structures are not identified on the site.
Energy	
Goal #1. Promote energy conservation programs and development of alternative energy sources to lessen dependence on scarce and high-cost energy supplies.	
Policy 1. All new development shall comply with state and federal energy efficiency standards.	Consistent – All Alternatives. No new development is proposed under Alternative 2. Each of the development alternatives will comply with minimum energy efficiency standards. Alternatives 1, 3, 5, and 6 are designed to meet LEED silver certification.
Policy 3. Development of alternative energy sources should be encouraged when such development is both technologically and environmentally feasible.	Consistent – All Alternatives. No new development is proposed under Alternative 2. No designs are developed for Alternative 4, but alternative energy may be included. Alternatives 1, 3, 5, and 6 are designed to meet minimum LEED silver certification
Policy 4. Environmental impacts to the fishery, instream flows, and scenic quality of all proposed hydroelectric project sites shall be considered together with other environmental considerations.	Consistent – All Alternatives. None of the alternatives propose hydroelectric projects.
Recreation Element	
Dispersed Recreation	
Goal #1. Encourage opportunities for dispersed recreation when consistent with environmental values and protection of the natural resources.	
Policy 1. Low density recreational experiences shall be provided along undeveloped shorelines and other natural areas, consistent with the tolerance capabilities and character of such areas.	Consistent –Alternatives 1, 2, 3, 5, and 6. None of the alternatives include shoreline areas. Alternatives 1, 2, 3, 5, and 6 include a ski facility and hiking trails (informal hiking/mountain biking under Alternative 2). Inconsistent– Alternative 4. Alternative 4 does not maintain recreation and would preclude public access on the mountain.
Policy 2. Areas selected for nature study and wildlife observation shall be appropriately regulated to prevent unacceptable disturbance of the habitat and wildlife.	Consistent –Alternatives1, 3, 4, 5, and 6. Alternative 4 does not include nature study areas. For alternatives that include trails, interpretation kiosks will inform hikers to stay on trails to reduce disturbance. Regular site maintenance will manage habitat areas and provide maintenance as needed. Inconsistent – Alternative 2. The existing hiking trails on the mountain are on private land and informally used, but

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	there is a lack of informational guides to ensure disturbance is limited.
Policy 3. Trail systems linking hiking and horseback riding shall be expanded to accommodate projected demands and provide a link with major regional or interstate trails.	Inconsistent – Alternatives 2 and 4. No new trail systems would occur under these alternatives. The existing trails under Alternative 2 are informal and do not link to other trails. Consistent – Alternatives 1, 3, 5, and 6. These alternatives expand the hiking trail system and link the trails to the base areas that are accessible via the West Shore Bike Trail, which will be expanded.
Policy 4. Existing trails that are either underutilized or located in environmentally sensitive areas shall be relocated to enhance their use and to protect natural resources.	Consistent – All Alternatives. Existing roadways or informal trails that are not needed are restored to protect the natural environment.
Policy 5. Off-road vehicle use is prohibited in the Lake Tahoe Basin except on specified roads, trails, or designated areas where the impacts can be mitigated.	Consistent – All Alternatives. Off-road vehicle use is not proposed except for facility maintenance or emergencies in which vehicles utilize access roads on the mountain. During construction, vehicles will be limited to the construction corridor and immediate area of construction and will utilize existing roadways as much as possible.
Goal #2. Provide high-quality recreational opportunities.	
Policy 1. Wilderness and other undeveloped and unroaded areas shall be managed for low-density use.	Consistent – All Alternatives. Wilderness areas are not included in the project as the site is currently an operating ski resort.
Policy 2. Separate use areas shall be established for the dispersed winter activities of snowmobiling, cross-country skiing and snowshoeing when conflicts of use exist.	Consistent – All Alternatives. Snowmobiling is not proposed under of the alternatives. Cross-country skiing is an associated use of the ski resort.
Developed Recreation	
Goal #1. Provide a fair share of the total basin capacity for outdoor recreation	
Policy 1. All existing reservations of services for outdoor recreation shall continue to be committed for such purposes.	Inconsistent – Alternative 4. This alternative would eliminate the ski facilities and would not utilize the existing outdoor recreation reservations. Consistent – Alternatives 1, 2, 3, 5, and 6. These alternatives maintain the existing reservations for outdoor recreation.
Policy 2. Provisions shall be made for additional developed outdoor recreation facilities capable of accommodating 6,114 PAOT in overnight facilities and 6,761 PAOT in summer day use facilities and 12,400 PAOT in winter day-use facilities.	Inconsistent – Alternative 4. This alternative would eliminate the ski facilities and would not utilize additional reservations. Consistent – Alternatives 1, 2, 3, 5, and 6. These alternatives maintain the existing reservations for outdoor recreation.
Goal #2. Provide for the appropriate type, location, and rate of development of outdoor recreational uses.	
Policy 1. Expansion of recreational facilities and opportunities should be in response to demand.	Inconsistent – Alternative 4. This alternative would eliminate the ski facilities and would not serve existing demand.

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	Consistent – Alternatives 1, 2, 3, 5, and 6. These alternatives maintain or improve ski facilities. Alternatives 1 and 3 include a community swimming pool, which is not currently available in this area, mini-golf, and an ice rink.
Policy 2. Bike trails shall be expanded to provide alternatives for travel in conjunction with transportation systems.	Inconsistent –Alternatives 2 and 4. Bike trail expansion would not occur under these alternatives. Consistent – Alternatives 1, 3, 5, and 6. The West Shore Bike Trail would be expanded within the Project area.
Policy 7. Development of day-use facilities shall be encouraged in or near established urban areas, whenever practical.	Inconsistent –Alternative 4. Recreation facilities would not be available under this alternative. Consistent – Alternatives 1, 2, 3, 5, and 6. These alternatives maintain or improve ski facilities. Alternatives 1 and 3 include a swimming pool, ice rink, and mini-golf within an established community.
Policy 9. Parking along scenic corridors shall be restricted to protect roadway views and roadside vegetation.	Inconsistent – Alternative 2. The existing parking lot is located adjacent to SR 89 and lacks landscaping or other shielding methods. Consistent – Alternatives 1, 3, 4, 5, and 6. Parking for Alternatives 1, 3, and 5 will be located in below ground parking structures or within the interior of the site so that it is not visible from the roadway. These alternatives include landscaping to buffer views of the site from the roadway.
Policy 10. Transit operations, including shuttle-type boat service, should serve major recreation facilities and attractions.	Consistent – All Alternatives. Transit service is currently available at the site. Alternatives 1, 3, and 5 will expand transit service by offering shuttles, improved transit shelters, and waterborne taxi service.
Policy 11. Expansion of existing ski facilities may be permitted based on a master plan for the entire ski area. The plan must demonstrate (1) consistency with other goals and policies of this Plan and the requirements of the compact, (2) that the expansion is consistent with the availability of accommodations and infrastructures to support visitors when they are off the ski area, and (3) expansion of existing parking facilities for day use does not occur.	Inconsistent – Alternative 4. This alternative proposes to eliminate existing ski facilities. Consistent – Alternatives 1, 2, 3, 5, and 6. Alternative 2 maintains existing ski facilities. Alternatives 1, 3, 5, and 6 propose improved ski facilities within the Master Plan, but do not include an expansion of ski facilities.
Goal #3. Protect natural resources from overuse and rectify incompatibility between uses.	
Policy 1. Recreation development in the Tahoe Basin shall be consistent with the special resources of the area.	Inconsistent – Alternative 4. This alternative proposes to eliminate existing ski facilities, which is a compatible and planned use. Inconsistent – Alternative 2. Although the ski facilities are a compatible use, this alternative does not include restoration activities that would protect Homewood Creek or the SEZ area. Consistent with Mitigation – Alternatives 5 and 6. Although these alternatives would not restore the Homewood Creek SEZ, the implementation of SEZ

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	protection and restoration mitigation would result in compliance. Consistent – Alternatives 1 and 3. These alternatives include site restoration of Homewood Creek and SEZ, as well as unnecessary roads/trails, with continued use of the ski facilities.
Policy 2. Regulate intensity, timing, type, and location of use to protect resources and separate incompatible uses.	Inconsistent – Alternative 4. This alternative proposes to eliminate existing ski facilities, which is a compatible and planned use. Inconsistent – Alternative 2. Although the ski facilities are a compatible use, this alternative does not include restoration activities that would protect Homewood Creek or the SEZ area. Consistent with Mitigation – Alternatives 5 and 6. Although these alternatives would not restore the Homewood Creek SEZ, the implementation of SEZ protection and restoration mitigation would result in compliance. Consistent – Alternatives 1 and 3. These alternatives include site restoration of Homewood Creek and SEZ, as well as unnecessary roads/trails, with continued use of the ski facilities.
Goal #4. Provide for the efficient use of outdoor recreation resources.	
Policy 1. Promote the use of underutilized recreation areas through programs that improve the public awareness of recreation opportunities and through an expanded water and inland transit system.	Inconsistent –Alternatives 2 and 4. Alternative 2 would not change existing conditions. Alternative 4 would eliminate ski facilities. Consistent – Alternatives 1, 3, 5, and 6. These alternatives improve ski facilities and provide a swimming pool as well as water-taxi service and improved alternative transportation systems (transit, shuttles, bike systems). Alternatives 1 and 3 include an ice rink and mini-golf at the North Base area.
Policy 2. Seasonal facilities should provide opportunities for alternative uses in the off-season, wherever appropriate.	Inconsistent –Alternatives 2 and 4. Alternative 2 would not change existing conditions. Alternative 4 would eliminate ski facilities. Consistent – Alternatives 1, 3, 5, and 6. These alternatives improve ski facilities and provide a swimming pool as well as water-taxi service and improved alternative transportation systems (transit, shuttles, bike systems). Alternatives 1 and 3 include an ice rink and mini-golf at the North Base area.
Urban Recreation	
Goal #1. Provide sufficient capacity for local-oriented forms of outdoor and indoor recreation in urban areas.	
Policy 1. Reserve sufficient public service and facility capacity to accommodate all forms of urban recreation.	Inconsistent –Alternatives 2 and 4. Alternative 2 would not change existing conditions. Alternative 4 would eliminate ski facilities.

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	Consistent – Alternatives 1, 3, 5, and 6. These alternatives improve ski facilities and provide a swimming pool as well as water-taxi service and improved alternative transportation systems (transit, shuttles, bike systems). Alternatives 1 and 3 include an ice rink and mini-golf at the North Base area. The pool will be locally accessible, serving an existing need in the west shore community.
Policy 2. Urban outdoor recreational facilities located in sensitive areas should be encouraged to relocate to other suitable sites.	Consistent – All Alternatives. There are no existing urban recreation facilities onsite. Proposed facilities are not located in sensitive areas.
Public Services and Facilities Element	
Goal #1. Public services and facilities should be allowed to upgrade and expand to support existing and new development consistent with the Regional Plan.	
Policy 1. Public services and facilities should be allowed to upgrade and expand consistent with the Land Use Element of the Regional Plan and federal, state, and local standards.	Consistent – All Alternatives. Existing public services are adequate for the development. Expansion of public services and facilities is not proposed beyond the expansion needed to connect to elements of each alternative. Appropriate fees will be paid to each service provider. No expansion is proposed for Alternative 2.
Policy 2. Expansion of public services and facilities should be phased in to meet the needs of new development without creating inefficiencies from overexpansion or under-expansion.	Consistent – Alternative 2. This alternative does not propose an expansion of services. Consistent with Mitigation – Alternatives 1, 3, 4, 5 and 6. Services will be expanded to serve the new uses. Expanded services and facilities will be sized to only meet the needs of the selected alternative. Mitigation to meet this policy includes new water and sewer infrastructure and payment of development impact fees.
Policy 3. All new development shall employ appropriate devices to conserve water and reduce water consumption. Existing development shall be retrofitted with water conservation devices on a voluntary basis in conjunction with a public education program operated by the utility districts.	Consistent – All Alternatives. New facilities will include water conservation devices, particularly under Alternatives 1, 3, 5, and 6, which will pursue minimum LEED silver certification. Alternative 2 may include water conservation devices on faucets not already utilizing such devices.
Goal #2. Consider the existence of adequate and reliable public services and facilities in approving new development under the Plan.	
Policy 1. No development requiring water should be allowed in any area unless it can be demonstrated that there is adequate water supply within an existing water right.	Consistent – Alternative 2. This alternative does not propose additional water use. Consistent with Mitigation – Alternatives 1, 3, 4, 5 and 6. Water services will be expanded to serve the new uses. Mitigation to meet this policy includes a water supply assessment.
Policy 3. No development requiring water should be allowed in any area unless it can be demonstrated that there exists adequate storage and distribution systems to deliver an adequate quantity and quality of water for domestic consumption and fire protection.	Consistent – Alternative 2. This alternative does not propose additional water use. Consistent with Mitigation – Alternatives 1, 3, 4, 5 and 6. Water services will be expanded to serve the new uses. Mitigation to meet this policy includes a water supply

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
	assessment.
Goal #3. Prevent liquid and solid wastes from degrading Lake Tahoe and surface and groundwaters of the Region.	
Policy 1. The discharge of municipal or industrial wastewaters to the surface and groundwaters of the Tahoe Region is prohibited, except for the existing development discharging wastewaters under a state- or TRPA-approved disposal plan.	Consistent – Alternative 2. This alternative does not propose additional wastewater production. Consistent with Mitigation – Alternatives 1, 3, 4, 5 and 6. Sewer services will be expanded to serve the new uses. Mitigation to meet this policy includes new sewer infrastructure and payment of development impact fees.
Policy 2. All solid wastes shall be exported from the Region. Consolidation and transfer methods shall be developed to achieve a reduction in the volume of wastes being transported to landfills.	Consistent – All Alternatives. Alternative 2 will not result in additional solid waste disposal needs beyond existing conditions. The action alternatives result in additional solid waste production that will be handled by Tahoe-Truckee Sierra Disposal Company, which currently serves the area and has the capacity to serve the new facilities.
Policy 3. Garbage pick-up service shall be mandatory throughout the Region, and will be so structured as to encourage clean-ups and recycling.	Consistent – All Alternatives. Alternative 2 will not result in additional solid waste disposal needs beyond existing conditions. The action alternatives result in additional solid waste and recyclable production that will be handled by Tahoe-Truckee Sierra Disposal Company, which currently serves the area and has the capacity to serve the new facilities.
Goal #4. To ensure protection of the public health, safety and general welfare of the Region, educational and public safety services should be sized to be consistent with the projected growth levels in this Plan.	
Policy 1. The impact on educational and public safety services shall be considered when reviewing projects and Plan amendments proposed within the Region. To the extent feasible, adverse impacts should be mitigated as part of the review process.	Consistent – Alternative 2. This alternative will not require additional educational or public safety services. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives will not impact school capacity, but may impact law enforcement services through population increases. These alternatives are required to pay development impact fees to the County to offset the additional demand.
Policy 2. Educational and emergency service organizations should anticipate and plan for projected demands and needs consistent with the Regional Plan and are encouraged to advise the Agency when development potentials exceed current or anticipated service capabilities or capacities.	Consistent – Alternative 2. This alternative will not require additional educational or public safety services. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives will not impact school capacity, but may impact law enforcement services through population increases. These alternatives are required to pay development impact fees to the County to offset the additional demand.
Implementation Element	
Institutional	
Goal #1. Coordinate all planning and development review activities with the affected jurisdictions and agencies.	
Policy 1. All projects proposed in the Region [other	Consistent – All Alternatives. The EIR/EIS is developed

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than those to be reviewed and approved under special provisions of the Compact relating to gaming] shall obtain the review and approval of the agency.	as part of the project review process.
Policy 2. No project may be approved unless it is found to comply with the Regional Plan and with any ordinances, rules, and regulations enacted to effectuate the Regional Plan.	Consistent – Alternatives 1 and 3. This table analyzes consistency with the TRPA Regional Plan. Alternatives 1 and 3 are consistent with inclusion of recommended mitigation measures and adoption of proposed plan amendments. Inconsistent – Alternatives 2, 4, 5, and 6. This table shows these alternatives are not always consistent with the Regional Plan.
Development and Implementation Priorities	
Goal #2. Manage the growth of development consistent with progress toward meeting environmental thresholds	
Policy 2. A maximum of 2,000 additional residential units may be authorized to receive permits for construction during the first 6 years of the Plan, except that this limitation shall not apply to affordable housing units as described in the Housing Subelement. Subject to the provisions below, any allocations which are not utilized may be reallocated by the local jurisdiction. The allocation of these permits shall be made as follows: F. A total of 1,400 additional multi-residential units shall be available for the 20 year life of this Plan as bonus units in conjunction with transfer of development rights or other Agency incentive programs designed to attain the goals and objectives of this Plan. Except for affordable housing as defined in the Housing Subelement, these multi-density residential units shall be included in the allocation limitations above (see Land Use Subelement, Goal #2, Policy 5).	Consistent – All Alternatives. Only Alternatives 1, 3, 5 and 6 request MRBU for employee housing. Other residential units are obtained through purchase of existing ERU or development rights, and allocations from Placer County.
Policy 3. A maximum of 200 additional tourist accommodation bonus units may be permitted (See Policy 9 for 200 additional tourist accommodation unit allocations).	Consistent – All Alternatives. None of the alternatives request more than 50 bonus units and would not exceed available supplies.
Policy 4. A maximum of 400,000 sf of additional gross commercial floor area may be permitted. (See Policy 8 for additional commercial floor area allocations.) Development of additional commercial floor area shall be allocated as follows: Commercial development poses a particularly difficult problem in terms of demands on transportation systems. Controlling the rate of new commercial development will minimize these impacts and provide an opportunity for transportation systems to keep pace.	Consistent – All Alternatives. None of the alternatives request more than 25,000 square feet of CFA. The request is made as part of the CEP and has been adjusted to equal availability.
Policy 5. The development of additional outdoor recreational uses shall be pursuant to short- and long-range programs. Criteria for inclusion in these	Consistent – All Alternatives. Alternatives 2 and 4 do not propose additional recreational uses. Alternatives 1, 3, 5, and 6 include development of a swimming pool, ice rink,

Regional Plan Goals and Policies	HMR Ski Area Master Plan Consistency Analysis
programs shall be developed by ordinance.	mini-golf, hiking trails, and an extension of the bike trail, all of which support the recreation land use classification (PAS 157) and the needs of the community.
Policy 8. A maximum of 400,000 sf of additional gross commercial floor area may be permitted after 1997. Development of additional commercial floor area shall be allocated as follows: The commercial floor area allocations after 1997 shall focus on the implementation of projects listed in the Environmental Improvement Program (EIP) and promotion of the transfer and rehabilitation of substandard development. A. A maximum of 100,000 sf of commercial floor area may be permitted in adopted community plans. A portion of this allocation may also be permitted outside community plans when used to replace commercial allocations used in the first ten years for outside community plans and if it is linked to environmental improvements. B. A maximum of 150,000 sf may be allocated to special projects in community plan areas or adopted master plan areas. These projects shall be evaluated on their implementation of environmental improvement projects. C. A maximum of 150,000 sf of commercial floor area may be allocated after 2002. 50,000 sf may be allocated to projects within adopted community plans. A maximum of 100,000 sf of commercial floor area allocation shall be allocated to Special Projects pursuant to "B" above.	Consistent – All Alternatives. Alternative 2 does not propose additional CFA. Alternatives 1, 3, 4, 5, and 6 require additional floor area; however the additional CFA requested complies with available supply.
Policy 9. A maximum of 200 additional tourist accommodation units may be permitted after 1997 for special projects that retire tourist units from sensitive lands.	Consistent – All Alternatives. Alternatives 2 and 4 do not propose TAUs. Alternatives 1, 3, 5, and 6 include TAUs, some of which are from restored SEZ areas. The alternatives will not exceed the limit.
Policy 11. From January 1, 2007, the maximum additional residential units that may be authorized is equal to the number of units in the allocation pool carried over from 2006 plus the 236 unused prior to 1996 allocations that shall be added to the pool. This limitation shall not apply to affordable housing units described in the Housing Subelement. All unused distributed allocations as of January 1 of each year shall be reassigned to the allocation pool administered by the TRPA. The allocation pool shall be used to allow property owners who retire sensitive parcels to receive an allocation, applicants for moderate housing units under the moderate housing program, to receive allocations, and for local jurisdictions to earn allocations for each annual distribution. Allocations assigned yearly to each jurisdiction shall be linked to the local jurisdiction's performance on permit compliance, implementation of water quality and air quality improvements and monitoring, and increased	Consistent – All Alternatives. Alternative 2 does not propose residential units. Alternatives 1, 3, 4, 5, and 6 include residential units, but only Alternatives 1 and 3 request multi-residential bonus units (MRBU), which is used for employee housing. The residential units needed for these action alternatives have been or will be obtained/purchased by HMR from existing transfer units.

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transit operations. The allocation and distribution of allocations each year for local jurisdictions shall not exceed the following: Placer County: 66 maximum yearly allocations.	
Goal #3. Encourage consolidation of development through separate transfer of development rights and transfer of land coverage programs.	
Policy 1. Transfers of residential development rights to parcels in areas designated as receiving areas in plan area statements may be permitted. The number of development rights that may be transferred is limited to one unit for undeveloped parcels, or to the number of residential units existing on a developed parcel.	Consistent – All Alternatives. Alternative 2 does not include transfers. Alternatives 1, 3, 5, and 6 include the transfer of rights onto land that permits such uses and include PAS amendments to allow transfer of development rights.
Policy 2. Transfers of existing tourist accommodation units into designated areas may be permitted.	Consistent – All Alternatives. Alternatives 2 and 4 do not include TAU transfers. Alternatives 1, 3, 5 and 6 include the transfer of TAUs onto land that permits such uses and include PAS amendments to ensure the types of uses utilizing the TAUs are allowed.
Policy 3. Land coverage may be transferred as set forth in Goal #3, Policy 2, of the Land Use Subelement, within the related hydrologic area, provided the coverage limits set forth in the Land Use Subelement are not exceeded.	Consistent – All Alternatives. No land coverage transfers are proposed.
Policy 4. The residential permit allocation system shall permit the transfer of building allocations from parcels located on sensitive lands to more suitable parcels.	Consistent – All Alternatives. Alternative 2 does not change existing conditions. Alternatives 1, 3, 4, 5, and 6 include the transfer of existing units of use from sensitive lands.
Policy 5. Before transfer of any development right or land coverage under this goal is effective, the transferor lot shall be appropriately restricted or retired. In the case where an allocation has been transferred, or all the development rights or coverage has been transferred off a parcel deemed inappropriate for future development, the entire parcel shall be retired.	Consistent – All Alternatives. Alternative 2 does not include transfers. Alternatives 1, 3, 4, 5, and 6 include the transfer of development rights that will be completed in accordance with the Code of Ordinances. The sending sites will be appropriately restored and restricted.
Policy 6. Transfers of development rights, other than land coverage, shall be limited to equivalent uses with no increase in the parameters by which the uses are measured by this Plan (e.g., floor area, units, PAOT). Equivalent uses shall be defined by ordinance. Development impacts due to the resulting projects shall be addressed as part of the project review process.	Consistent – All Alternatives. Alternative 2 does not include transfers. Alternatives 1, 3, 4, 5, and 6 include the transfer of development rights that will be completed in accordance with the Code of Ordinances. Development impacts are addressed in this EIR/EIS.
Goal #4. Condition approvals for new development in the Tahoe Region on positive improvements in off-site erosion and runoff control and air quality.	
Policy 1. New residential, commercial and public projects shall completely offset their water quality impacts through one of the following methods: A. Implementing off-site erosion and runoff control projects as a condition of project approval and subject to Agency concurrence as to effectiveness, or B. Contributing to a fund established by the Agency for implementing off-site erosion and runoff control projects. The amount of such contributions is established by Agency ordinance.	Consistent – Alternatives 1, 2, 3, 5 and 6. Alternative 2 does not result in new development. Alternatives 1, 3, 5 and 6 include new onsite erosion and runoff control devices as well as participation in off-site EIP projects that address erosion/runoff. Inconsistent – Alternative 4. Alternative 4 does not include participation in EIP projects or other off-site projects.

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Policy 2. All projects shall offset the transportation and air quality impacts of their development.	Consistent – Alternative 2. This alternative does not result in changes to existing conditions. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives are consistent with implementation of mitigation that reduces and/or offsets impacts.

Source: HBA, 2010

Table 4.2-2

TRPA Plan Area Statement Consistency Analysis

TRPA Plan Area Statements	HMR Ski Area Master Plan Consistency Analysis
PAS 157: Homewood/Tahoe Ski Bowl	
Plan Designation: Land Use Classification: Recreation Management Strategy: Mitigation Special Designation: Scenic Restoration Area	Consistent – Alternatives 1, 2, 3, 5, and 6. These alternatives maintain ski facilities and classification as a recreation area. Site improvements promote the mitigation management strategy as well as improve the scenic character. Alternatives 1, 3, 5, and 6 would amend the Special Designation to include "TDR Receiving Area for Existing Development (commercial) to newly created Special Area 1", which would allow the transfer of CFA. Inconsistent – Alternative 4. This alternative converts the ski facilities to a commercial structure and 16 single-family residential lots. This does not support the recreation land use classification as it would eliminate recreation in the PAS 157.
Planning Statement: This area should continue to provide opportunities for downhill skiing within guidelines prepared through ski area master plans and scenic restoration plans.	Consistent – Alternatives 1, 2, 3, 5, and 6. These alternatives maintain ski facilities and classification as a recreation area. Site improvements promote the mitigation management strategy as well as improve the scenic character. Inconsistent – Alternative 4. This alternative converts the ski facilities to a commercial structure and 16 single-family residential lots. This does not support the recreation land use classification as it would eliminate recreation in the PAS 157.
Special Policies:	
1. A coordinated Homewood Community Plan should include this Plan Area as well as Plan Area 159	Consistent – All Alternatives. None of the alternatives propose a Community Plan. A Ski Resort Master Plan is proposed. Alternative 2 does not propose changes to existing conditions. Alternative 4 places commercial uses roadside in coordination with existing commercial uses along SR 89 in PAS 159. Alternatives 1, 3, 5, and 6 include a portion of PAS 159 within the Project area
2. All affected parties should coordinate planning to assess the feasibility and demand for expanded ski facilities.	Consistent – Alternatives 1, 3, 5, and 6. Although there is no expansion of ski capacity, aging facilities will be improved, including replacement of the Madden triple chair at the north base with an 8-passenger gondola, and

TRPA Plan Area Statements	HMR Ski Area Master Plan Consistency Analysis
	upgrade of the Ellis Chair with a detachable quad chair to improve the recreational experience. In addition, the new recreation (swimming pool, ice skating) and tourist facilities provide a coordinated benefit with the surrounding community. Inconsistent – Alternatives 2 and 4. These alternatives do not establish a ski area master plan. Under Alternative 2, existing conditions persist and under Alternative 4, the ski area is eliminated and replaced with commercial uses and single-family housing.
3. The water in Quail Lake should be used to provide minimum instream flows for Quail Creek.	Consistent – All Alternatives. None of the alternatives result in changes to Quail Lake.
4. Multi-use of ski area base facilities is encouraged, especially joint use agreements between the ski area and local marinas to share parking space.	Consistent – Alternatives 1, 3, 5, and 6. These alternatives expand the base facilities to provide a greater range of tourist accommodations, residences, and commercial uses. The swimming pool would be accessible to area residents. Alternative transportation efforts, including transit and shuttle service would improve access between the resort and local marinas. Inconsistent – Alternatives 2 and 4. Under Alternative 2, existing conditions persist and under Alternative 4, the ski area is eliminated and replaced with commercial uses and single-family housing.
5. Common management and consolidation of the two ski areas is encouraged.	Consistent – Alternatives 1, 2, 3, 5, and 6. These alternatives result in the continued operation of the ski resort. Both the Homewood and Tahoe Ski Bowl areas are managed as one ski facility and the two areas have been combined into the Homewood Mountain Resort. Inconsistent – Alternative 4. This alternative proposes to close the ski resort. While this is common management (closure) it does not support the continued use of the ski facilities.
6. Upgrading and redevelopment of the Homewood ski base facilities should be encouraged.	Consistent – Alternatives 1, 3, 5, and 6. These alternatives upgrade and redevelop the base facilities by providing a mixed-use development that includes landscaping, BMPs, and other environmental benefits. Inconsistent – Alternatives 2 and 4. Under Alternative 2, existing conditions persist and under Alternative 4, the ski area is eliminated and replaced with commercial uses and single-family housing.
7. New commercial facilities are limited to the base areas of the existing facilities.	Consistent –Alternatives 2 and 4. Alternative 2 does not propose new facilities. Alternative 4 proposes commercial uses only at the North Base area. Consistent with Amendment –Alternatives 1, 3, 5, and 6. These alternatives propose commercial uses at the North Base area, but also include limited commercial uses at proposed "Special Area 1" at the Mid Mountain as necessary to support year round resort facilities (which may not be accessory to the existing winter day use). The proposed PAS amendment would allow for TRPA defined commercial uses at the Mid Mountain lodge consistent with TRPA goals to encourage year round use of recreational facilities.

TRPA Plan Area Statements	HMR Ski Area Master Plan Consistency Analysis
8. Access for cross country skiing should be improved.	Inconsistent – Alternatives 2 and 4. Cross-country skiing opportunities or improved access would not be pursued under these alternatives. Consistent – Alternatives 1, 3, 5, and 6. Cross county ski trails, utilizing connections to the 1960 vintage Olympic ski courses, would occur under these alternatives.
9. Any new or additional commercial uses shall be permitted only pursuant to an adopted Community Plan.	Consistent – Alternative 2. This alternative does not propose new commercial uses. Consistent with Amendment – Alternatives 1,3, 4, 5, and 6. These alternatives propose new commercial uses; however an amendment to this special policy is proposed to allow new commercial uses pursuant to an adopted Ski Area Master Plan.
Permissible Uses: Allowed (A) and considered under special use provisions (S).	
Residential: Employee housing (S) and single-family dwellings (S).	Consistent – Alternatives 2 and 4. Alternative 2 does not propose new uses. The single-family dwellings proposed for Alternative 4 are allowed as a special use; however, as a special use, TRPA may not approve the special use at the expense of the ski facility closure. Consistent – Alternatives 1, 3, and 6. These alternatives propose employee housing and for sale multi-family housing; however this use would be located outside of PAS 157 through amendments to PAS 158 and 159. Inconsistent – Alternative 5. Alternative 5 proposes single-family dwellings and multi-family housing in PAS 159 (North Base area); however the density of the multi-family housing exceeds density limits and findings cannot be made for the higher density 45 dwelling units per acre (DUA).
Tourist Accommodations: Bed and breakfast facilities (S) and hotels, motels, and other transient dwelling units (S).	Consistent – Alternatives 2 and 4. These alternatives do not propose these uses or non-permissible related uses. Consistent – Alternatives 1, 3, 5, and 6. These alternatives propose hotel units. Alternatives 1 and 3 propose timeshare units; however this use would be located outside of PAS 157 through amendment to PAS 159.
Commercial: Eating and drinking places (A), food and beverage retail sales (A), general merchandise stores (A), outdoor retail sales (S), amusements and recreation services (S), and secondary storage (S).	Consistent – Alternatives 2 and 4. Alternative 2 does not result in new uses or development. Alternative 4 proposes neighborhood commercial uses. These uses will need to be compliant with the permissible uses list of PAS 157. Consistent with Amendment– Alternatives 1, 3, 5, and 6. These alternatives propose an amendment to include personal services (S). Approval of this amendment and approval of the use to support the tourist and neighborhood commercial uses result in consistency.
Public Service: Pipelines and power transmission (S), public safety facilities (S), public utility centers (S), transmission and receiving facilities (S), transportation routes (S), government offices (S), and transit stations and terminals (S).	Consistent – All Alternatives. None of the alternatives propose public services beyond transit stops, which already exist onsite.
Recreation: Cross country skiing courses (S), day use areas (A), outdoor recreation concessions (A),	Consistent – Alternatives 2 and 4. Alternative 2 does not result in new uses or development. Alternative 4 does not

TRPA Plan Area Statements	HMR Ski Area Master Plan Consistency Analysis
riding and hiking trails (A), skiing facilities (S) and snow mobile courses (S).	propose recreation uses. Consistent with Amendment– Alternatives 1, 3, 5, and 6. These alternatives propose an amendment to include participant sports facilities (S) to allow the proposed pool at the Mid Mountain area. Approval of this amendment and approval of the use to support the tourist and neighborhood commercial uses result in consistency.
Resource Management: reforestation (A), regneration harvest (A), sanitation salvage cut (A), special cut (A), thinning (A), timber stand improvement (A), tree farms (S), early successional stage vegetation management (A), nonstructural fish habitat management (A), nonstructural wildlife habitat management (A), structural fish habitat management (A), structural wildlife habitat management (A), farm/ranch accessory structures (S), grazing (S), range pasture management (S), range improvement (S), fire detection and suppression (A), fuels treatment (A), insect and disease suppression (A), prescribed fire management (A), sensitive plant management (A), uncommon plant community management (A), erosion control (A), runoff control (A), and SEZ restoration (A).	Consistent – All Alternatives. Proposed uses under each alternative are consistent with these resource management uses. No new resource management uses are proposed.
Maximum Densities: Residential: Single family dwelling – 1 unit /parcel Employee housing (multi-family) – 15 DUA. Tourist Accommodation: Bed and Breakfast – 10 units/ac. Hotel, motel, and other transient units – 20 units/ac.	Consistent – Alternatives 1, 2, 3, 4 and 6. None of the alternatives propose changes to or conflict with these densities with the proposed PAS amendments. Inconsistent – Alternative 5. Alternative 5 would exceed maximum allowable density (e.g., more than 15 dwelling units per acre) for multi-family residential at the North Base area.
Developed Outdoor Recreation: Summer day uses – 0 PAOT Winter Day Use – 1,100 PAOT Overnight Uses – 280 PAOT	Consistent – Alternatives 1, 2, 3, 5, and 6. These alternatives will maintain the existing PAOT. Inconsistent – Alternative 4. This alternative will eliminate outdoor recreation from the PAS, resulting in substantially underutilized PAOT.
Other: 5 miles of hiking trails	Inconsistent – Alternatives 2 and 4. These alternatives do not include 5 miles of hiking trails Consistent – Alternatives 1, 3, 5, and 6. These alternatives propose 5 miles of hiking trails, directional signage, and linkages to the base area pedestrian paths.
PAS 158: McKinney Tract	
Plan Designation: Land Use Classification: Residential Management Strategy: Mitigation Special Designation: Scenic Restoration Area	Consistent – All Alternatives (Alts 1 and 3 as amended). Alternatives 2, 4 and 5 do not propose development in this area. Alternatives 1, 3 and 6 propose residential condominiums in this area through a PAS boundary amendment, consistent with the residential land use classification. Improvements to the SEZ area and scenic character as proposed by these alternatives supports the management strategy and special designation. They also propose to amend the PAS by applying the special designation of TDR Receiving Area for 1) existing development, and 2) multi-residential units to the newly

TRPA Plan Area Statements	HMR Ski Area Master Plan Consistency Analysis
	created "Special Area".
Planning Statement: This area should remain residential with a density of one single-family dwelling per parcel.	Consistent – Alternatives 2, 4 and 5. These alternatives do not propose development in this area. Consistent with Amendment – Alternatives 1, 3 and 6. These alternatives result in the area remaining residential, but the density would increase to allow 15 multi-family units per acre within a newly created special district for the South Base area where condominiums are proposed. With the proposed amendment adoption, these alternatives will be consistent.
Special Policies:	
1. The Scenic Roadway and Shoreline Unit should be reevaluated for attainment in this area.	Consistent with Mitigation – Alternatives 1, 3, 4, and 6. These alternatives will result in improvements to the roadway unit and maintenance of the shoreline unit with mitigation. Alternatives 1 and 3 include mitigation to better integrate the mid-mountain lodge from shoreline views. Alternative 4 includes mitigation for site design to ensure consistency with TRPA design guidelines. Inconsistent – Alternatives 2 and 5. Alternative 2 does not result in improvements to the scenic quality ratings and does not promote attainment. Alternative 5 includes a 4-story structure highly visible from SR 89 on the site. Mitigation is not feasible to reduce the massing of the structure. Despite landscaping and other visual improvements proposed by Alternative 5, the inability to mitigate the visibility of the structure results in an adverse impact to the roadway unit rating.
Permissible Uses: Allowed (A) and considered under special use provisions (S).	
Residential: Single-family dwelling (A).	Consistent – Alternatives 2, 4 and 5. These alternatives do not propose development in this Plan Area. Consistent with Amendment – Alternatives 1, 3 and 6. These alternatives propose to amend PAS 158 to include multi-family dwellings (S) within a new "Special Area". This will result in consistency by allowing residential condominiums, but only in a limited location at the existing South Base area.
Public Service: Local public health and safety facilities (S), transit stations and terminals (S), pipelines and power transmission (S), transmission and receiving facilities (S), transportation routes (S), public utility center (S), and local post offices (S) and day care centers/pre-schools (S).	Consistent – All Alternatives. These uses are not proposed by the alternatives.
Recreation: Participant sports facilities (S), day use areas (A), riding and hiking trails (A), and beach recreation (A).	Consistent – Alternatives 2, 4, 5, and 6. These alternatives do not propose development in this PAS. Consistent with Amendment – Alternatives 1 and 3. These alternatives propose to amend PAS 158 to include Skiing Facilities (A) within a new "Special Area". This will result in consistency to reflect the maintenance of existing ski facilities, but only in a limited location for local serving use.
Resource Management: Reforestation (A), sanitation salvage cut (A), special cut (A), thinning (A), early successional stage vegetation management (A),	Consistent – All Alternatives. Activities proposed in this area are permissible.

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structural and nonstructural fish/wildlife habitat management (A), fire detection and suppression (A), fuels treatmen/management (A), insect and disease suppression (A), sensitive plant management (A), uncommon plant community management (A), erosion control (A), runoff control (A), and SEZ restoration (A).	
Shorezone: The following structures may be permitted in the shorezone as an allowed (A) or special (S) use only if they are accessory to an existing, allowed use located on the same or adjoining littoral parcel: **Tolerance District 7:** Primary Uses: Beach recreation (A), and salvage (A). Accessory Structures: Mooring buoys (A), piers (A), fences (S), boat ramps (S), breakwaters or jetties (S), floating platforms (A), shoreline protective structures (A), and water intake lines (S).	Consistent- All Alternatives. None of the alternatives are located within this area.
Maximum Densities: Residential: Single-family dwelling – 1 unit/parcel.	Consistent – Alternatives 2, 4 and 5. These alternatives do not propose development within this PAS. Consistent with Amendment – Alternatives 1, 3 and 6. These alternatives propose residential condominiums and an amendment to the Plan to include maximum densities for multi-family dwellings at 15 units per acre within the "Special Area". Adoption of the amendment results in consistency.
159 – Homewood/Commercial	
Plan Designation: Land Use Classification: Tourist Management Strategy: Redirection Special Designation: Preliminary Community Plan Area TDR Receiving Area for: 1. Existing Development; Scenic Restoration Area	Consistent – Alternatives 2 and 4. These alternatives do not propose development in this area. Consistent – Alternatives 1, 3 and 6. These alternatives propose new tourist, commercial and some higher density residential uses at the North Base area, which correspond to the Tourist land use classification. Site improvements including substantial visual quality improvements through architecture, landscaping and utility undergrounding, water quality improvements, erosion control, and expansion of commercial and tourist uses within the development corridor along SR 89 promote redirection and scenic restoration. Inconsistent – Alternative 5. Alternative 5 proposes multi-family housing at the North Base area; however the 4-story structure does not support scenic restoration and findings cannot be made for the higher density 45 dwelling units per acre (DUA) or required height amendment.
Planning Statement: This area should continue to be a tourist commercial area. However, there is a need for rehabilitation while maintaining the scale and character of the west shore.	Consistent – Alternatives 2 and 4. These alternatives do not propose development in this area. Consistent – Alternatives 1, 3, and 6. These alternatives support this planning statement by providing a mixed commercial and residential area that combines tourist and recreational uses at an appropriate scale and within a "Special Area" so that this type of mixed use is appropriately located along the SR 89 corridor. Inconsistent – Alternative 5. Alternative 5 proposes

TRPA Plan Area Statements	HMR Ski Area Master Plan Consistency Analysis
	mixed use; however the density of the multi-family housing (45 DUA) conflicts with adjoining uses and findings cannot be made to support densities at this level.
Special Policies:	
1. Community planning for development of this area should include consideration of the adjoining ski areas in PAS 157.	Consistent – All Alternatives. Alternatives 2 and 4 do not include this area. Alternatives 1, 3, 5, and 6 result in joining the ski area with PAS 159 by providing a mixed-use area beneficial to both PAS 157 and 159.
2. The Community Plan or the Homewood Marina Master Plan should consider the sea plane base and establish a noise corridor for the sea plane base.	Consistent – All Alternatives. This policy is proposed to be eliminated since the sea plane base no longer exists.
3. This area should be considered for a major water borne transit stop.	Consistent – All Alternatives. Alternatives 2 and 4 do not include this area. Alternatives 1, 3, 5, and 6 include water taxi service.
4. The marina facilities should be expanded and upgraded to accommodate increasing boating needs.	Consistent – All Alternatives. The alternatives do not include marina facilities. However, the proposed parking structure is being designed to accommodate boat trailer parking in the summer to remove the trailers off the SR 89 ROW and to improve scenic quality.
5. Tourism and recreation compatible with the west shore scale of development should be encouraged in this Plan Area.	Consistent –Alternatives 1, 2, 3, 4, and 6. Alternatives 2 and 4 do not include this area. Alternatives 1, 3, and 6 result in joining the ski area with PAS 159 by providing a mixed-use area beneficial to both PAS 157 and 159, including tourist accommodations, new recreation opportunities, transit service in the area, and expansion of the bike path to connect to other area recreation and tourism features. Onsite tourist uses reduce the need for winter guests to drive in and out of the project area on a daily basis. Inconsistent – Alternative 5. Alternative 5 proposes new tourism and recreation; however the multi-family 4-story structures located immediately adjacent to SR 89 are not compatible with the west shore scale of development as the height of the structure significantly exceeds surrounding height levels and the dwelling density is significantly higher than the surrounding residential densities (45 DUA).
Permissible Uses: Allowed (A) and considered under special use provisions (S).	
Residential: Employee housing (S) and single-family dwelling (S).	Consistent – Alternatives 2 and 4. No residential uses are proposed in this area for these alternatives. Consistent with Amendment – Alternatives 1, 3, and 6. These alternatives propose employee housing, multi-family dwellings and single family dwellings (condominiums through a two step subdivision). Multi-family dwellings will be added through amendment as a special use within a newly created "Special District". This will result in consistency and will limit multi-family units to the area so as not to affect the permissible uses and mix of residential units elsewhere in the area. Inconsistent – Alternative 5. This alternative proposes multi family housing, but the proposed housing density of 45 DUA is not complimentary to the surrounding land uses and an amendment allowing such density is not

TRPA Plan Area Statements	HMR Ski Area Master Plan Consistency Analysis
	feasible.
Tourist Accommodations: Bed and breakfast facilities (A), hotels, motels, and other transient dwelling units (A), timeshare (hotel/motel design) (S), and timeshare (residential design) (S).	Consistent – All Alternatives. No development is proposed in this area for Alternatives 2 and 4. Alternatives 1, 3, 5, and 6 propose various tourist accommodations including hotel and timeshare units, which are permissible uses.
Commercial: Auto, mobile home and vehicle dealers (S), building materials and hardware (S), eating and drinking places (A), food and beverage retail sales (A), furniture, home furnishings and equipment (S), general merchandise stores (A), mail order and vending (A), nursery (A), outdoor retail sales (S), service stations (A), amusements and recreation services (S), outdoor amusements (S), animal husbandry services (S), auto repair and service (S), broadcasting studios (A), business support services (A), contract construction services (S), financial services (A), healthcare services (A), personal services (A), professional offices (A), repair services (A), secondary storage (S), small scale manufacturing (S), storage yards (S), vehicle storage and parking (S), warehousing (S).	Consistent – Alternatives 2 and 4. No residential uses are proposed in this area for these alternatives. Consistent with Amendment – Alternatives 1, 3, 5, and 6. Alternatives 1, 3, 5, and 6 propose to amend the list of permissible uses by adding "Privately Owned Assembly and Entertainment" as a special use within the Special Area to allow the amphitheater use at the North Base area. This will result in consistency and will limit development of this type of use to the north base area of the resort where it is most appropriately located and already occurs as a temporary use.
Public Service: Churches (A), cultural facilities (A), day care centers/preschools (A), government offices (S), local assembly and entertainment (A), local post office (A), local public health and safety facilities (A), membership organizations (A), public utility centers (S), schools – kindergarten through secondary (A), social service organizations (A), pipelines and power transmission (S), transit stations and terminals (S), transportation routes (S) and transmission and receiving facilities (S).	Consistent – All Alternatives. No development is proposed in this area for Alternatives 2 and 4. Public service uses proposed under Alternatives 1, 3, 5, and 6 are permissible uses.
Recreation: Day use areas (A), recreation center (S) participant sports facilities (S), beach recreation (A), boat launching facilities (S), cross-country skiing courses (S), outdoor recreation concessions (A), marinas (S), riding and hiking trails (S), skiing facilities (S), snow mobile courses (S), and visitor information center (S).	Consistent – All Alternatives. No development is proposed in this area for Alternatives 2 and 4. Recreation uses proposed under Alternatives 1, 3, 5, and 6, such as cross-country skiing and bicycle trails are permissible uses.
Resource Management: Reforestation (A), sanitation salvage cut (A), special cut (A), thinning (A), timber stand improvement (A), tree farms (S), early successional stage vegetation management (A), nonstructural fish habitat management (A), nonstructural wildlife habitat management (A), structural fish habitat management (A), structural wildlife habitat management (A), fire detection and suppression (A), fuels treatment (A), insect and disease suppression (A), sensitive plant management (A), uncommon plant community management (A), erosion control (A), runoff control (A), and SEZ restoration (A).	Consistent – All Alternatives. Proposed resource management efforts are permitted in this area.
Maximum Densities: Residential:	Consistent – Alternatives 2 and 4. These alternatives do not propose development in this area.

TRPA Plan Area Statements	HMR Ski Area Master Plan Consistency Analysis
Single family dwelling – 1 unit /parcel. Multi family dwelling – 8 units/acre. Employee housing – 8 units/acre. Tourist Accommodation: Bed and Breakfast – 10 units/ac. Hotel, motel, and other transient units: Kitchens in <10% of units – 20 units/ac. Kitchens in ≥10% of units – 15 units/ac. Timeshare – as per the limitations set forth in this table Shorezone: Piers in Visually Dominated Character Unit – Avg. 1 pier/100 linear ft. Piers in Visually Modified Character Unit – Avg. 1 pier/100 linear ft.	Consistent with Amendment – Alternatives 1, 3, and 6. These alternatives propose to amend the multi-family housing density from 8 units per acre to 15 units per acre within the new "Special Area". This will accommodate the proposed employee housing and multi-family units, but will limit this higher density to the North Base area to avoid alterations to the overall residential density in PAS 159. Inconsistent – Alternative 5. The proposed multi family density of 45 DUA is not complimentary to the surrounding land uses and findings cannot be made to support an amendment allowing such density.

Source: HBA 2010

4.3 PLACER COUNTY

4.3.1 West Shore Area General Plan

The Placer County West Shore Area General Plan, adopted by Placer County, California in 1998, contains goals, policies, and development standards applicable the Project Area and vicinity in the unincorporated Placer County areas along the West Shore of Lake Tahoe. The goals and policies in Table 4.3-1 are applicable to the HMR Ski Area Master Plan and provide a framework for future direction and development of the area. Table 4.3-1 includes an analysis of the consistency between the West Shore Area General Plan and the Project and Alternatives.

Table 4.3-1

HMR Consistency Analysis with the 1998 West Shore Area General Plan Goals, Policies, and Development Standards

West Shore Goals, Policies, and Development Standards	HMR Ski Area Master Plan Consistency Analysis
II. Community Development/Land Use Element	
A. Housing Goals and Policies	
1. Continue to administer the TRPA residential allocation program in a fair and efficient fashion for prospective home builders.	Consistent – All Alternatives. Alternative 2 does not propose new homes. Alternatives 1, 3, 4, 5, and 6 follow the TRPA allocation program.
2. Provide opportunities for affordable housing, including affordable senior housing in appropriate areas where public transportation is easily available, close to neighborhood serving retail facilities, and where such development will be compatible with surrounding uses.	Inconsistent – Alternatives 2 and 4. Alternative 4 proposes to increase density and local employment opportunities (Alternative 4 during construction only), but does not provide affordable housing units. Consistent – Alternatives 1, 3 5, and 6. Alternatives 1, 3, 5 and 6 would provide up to 13 workforce/affordable housing units with up to 50 beds close to the North Base commercial/tourist area.
3. Provide for employee housing in appropriate areas, through the use of the affordable housing pool, conversion of existing tourist accommodation multiple unit structures (consistent with density limitations), as a requirement of project approval for large-scale projects, and through other appropriate means.	Inconsistent – Alternatives 2 and 4. Alternative 4 proposes to increase density and local employment opportunities (Alternative 4 during construction only), but does not provide affordable housing units. Consistent – Alternatives 1, 3 5, and 6. Alternatives 1, 3, 5 and 6 would provide up to 13 workforce/affordable housing units close to the North Base commercial/tourist area.
C. Recreation Land Use Objectives and Policies	
2. The recreation plans of the Tahoe City P.U.D. are to be used as a guide for evaluating future recreational development in the Plan Area.	Consistent – All Alternatives. The TCPUD recreation plans were consulted to evaluate recreation-related impacts in Chapter 18-Recreation of this EIR/EIS.
3. The recreation plans of the U.S. Forest Service are similarly to be used as a guide for evaluating future recreational development on federal property under their jurisdiction.	Consistent – All Alternatives. The USFS LTBMU recreation plans were consulted to evaluate recreation-related impacts in Chapter 18-Recreation of this EIR/EIS.

West Shore Goals, Policies, and Development Standards	HMR Ski Area Master Plan Consistency Analysis
4. The targeted allocations for "Persons at one time" (PAOTS) within the geographic area of this Plan are intended to be consistent with the recreation programs of the TRPA.	Consistent – Alternatives 1, 2, 3, 5, and 6. The Project does not increase PAOTs beyond existing capacity. Inconsistent – Alternative 4. Alternative 4 decreases the PAOT to zero for PAS 157 resulting in a substantial deficit in reaching the targeted allocation.
III. Circulation Element	
B. Transportation/Circulation Objectives and Policies	
Goal 1. Provide a safe and efficient transportation system for the residents and visitors of the West Shore Plan Area.	
A. Strive to maintain a LOS D or better conditions on the Plan Area roadways. Due to the high degree of peak recreation travel through the area, LOS E may be acceptable during peak periods, not to exceed 4 hours per day.	Inconsistent – Alternatives 2 and 4. A LOS F exists at SR 89/Granlibakken Rd., which will not be improved through these alternatives. Consistent with Mitigation – Alternatives 1, 3, 5, and 6. Implementation of mitigation to improve Granlibakken Rd/SR 89 to LOS E will result in consistency.
D. Implement appropriate traffic control to discourage use of residential roads as an alternative to SR 89.	Consistent – All Alternatives. The existing or proposed facilities are appropriately located so that facilities can't be accessed by residential roads outside the Project area.
E. Require parking management strategies which provides adequate parking, limits traffic conflicts, consider connections between parking lots and encourage community parking lots.	Consistent – Alternatives 2, 4, 5 and 6. Alternative 2 will keep the existing parking lot, which is used for community events in the off-season and provides adequate parking year-round. Alternative 4 will maintain a parking lot adjacent to SR 89 for the commercial structure. Adequate parking will be provided in this lot as well as for each residence. Alternatives 5 and 6 include adequate parking in underground parking garages. Consistent with Mitigation – Alternatives 1 and 3. While these alternatives include underground parking, there is an excess number of spaces at the North Base and a deficient number of spaces at the South Base per Placer County standards. Implementation of mitigation proposed in Chapter 11 of the EIR/EIS provides consistency with County standards.
Goal 2. Provide funding to finance project and programs to meet the objectives of the Transportation/Circulation element.	
A. Require development to mitigate their impacts on the transportation system. The appropriate level of mitigation shall be determined through project and environmental review pursuant to Chapter 93 of the TRPA Code of Ordinances.	Consistent – Alternatives 1, 3, 4, 5, and 6. Chapter 11-Transportation and Circulation of this EIR/EIS provides an environmental review of the impacts to the transportation system by the Project and Alternatives, and identifies mitigation measures, consistent with Chapter 93 of the TRPA Code of Ordinances. Consistent – Alternative 2. This alternative does not propose new development.
B. Require development to mitigate their regional traffic impacts by paying the appropriate fee as provided in the Countywide traffic fee program.	Consistent – Alternatives 1, 3, 4, 5, and 6. New development in the Project Area would mitigate regional traffic impacts through payment of the appropriate fee in the Countywide traffic fee program.
C. All projects shall be subject to the TRPA traffic/air quality mitigation fee program (Chapter 93).	Consistent – Alternatives 1, 3, 4, 5, and 6. New development in the Project Area would be required to pay the appropriate fee under the TRPA traffic/air

West Shore Goals, Policies, and Development Standards	HMR Ski Area Master Plan Consistency Analysis
	quality mitigation fee program (Chapter 93). Consistent – Alternative 2. This alternative does not propose new development.
Goal 3. Pedestrian and bicycle facilities/amenities shall be encouraged where appropriate.	
A. Continue to provide for and expand the availability of bike racks on the public transit system.	Consistent – All Alternatives. None of the alternatives expressly place bike racks on transit vehicles, they do not prevent the placement of bike racks on transit vehicles and they maintain or expand transit service to the site.
B. Maximize the visibility of bike/pedestrian and vehicle conflict areas through increased signage.	Inconsistent – Alternatives 2 and 4. No new bike or pedestrian facilities are included in these alternatives. Consistent – Alternatives 1, 3, 5, and 6. These alternatives expand the West Shore Bike Trail within the Project area. Directional signage for the trail and the hiking trail access points are included within the base area.
C. Construct pedestrian facilities to serve new development.	Inconsistent – Alternatives 2 and 4. These alternatives do not include new pedestrian facilities. Consistent – Alternatives 1, 3, 5, and 6. These alternatives include pedestrian facilities throughout the north and south base areas.
Goal 4. Implement transportation demand management (TDM) measures to reduce the number of vehicles traveling within the community plan area.	
A. Work with the public transit providers in structuring fare rates and schedules aimed at optimizing ridership.	Consistent – All Alternatives. There are currently two TART stops in the Project area that would remain in operation. Alternatives 1, 3, 5, and 6 include transit stop improvements, resort shuttle service, transit passes for employees, dial-a-ride services and water taxi services, among others, that would optimize ridership.
B. Encourage tourist-related uses to provide incentives to encourage public and private transit use to their guests (e.g., transit information, discount coupons, etc.)	Consistent – All Alternatives. There are currently two TART stops in the Project area that would remain in operation. Alternatives 1, 3, 5, and 6 include transit stop improvements, resort shuttle service, transit passes for employees, dial-a-ride services and water taxi services, among others, that would optimize ridership.
C. Examine the potential for home mail delivery throughout the Community Plan Area.	Consistent – All Alternatives. A Community Plan has not been prepared.
D. Examine potential for water taxi service between Tahoe City and West Shore.	Inconsistent – Alternatives 2 and 4. These alternatives do not propose water taxi service. Consistent – Alternatives 1, 3, 5 and 6. These alternatives propose a water taxi service.
IV. Conservation Element	
Air Quality	
Goal 1. Attain and maintain State and Federal Ambient Air Quality Standards for the Plan Area.	
Goal 2. Minimize public exposure to air quality that exceeds adopted standards.	
1. Implement the programs and strategies proposed by the TRPA Goals and Policies Plan and the District's 1991 Air Quality Attainment Plan (where appropriate for the LTAB) for achieving air quality standards.	Consistent – Alternative 2. No changes to existing conditions would occur, including no increase in pollutants and continued TART service to the site. Consistent with Mitigation – Alternatives 1, 3, 4, 5. and 6. The action alternatives include ground disturbance and operational pollutants that do not help to achieve air

West Shore Goals, Policies, and Development Standards	HMR Ski Area Master Plan Consistency Analysis
	quality standards. Implementation of mitigation to reduce emissions will help achieve air quality standards. In addition, the alternative transportation and public transit features of alternatives 1, 3, and 5 will further help to reduce operations emissions by reducing vehicle trips.
3. Encourage the use of alternative modes of transportation by incorporating public transit, bicycle, and pedestrian travel amenities in public and private transportation projects.	Consistent – All Alternatives. There are currently two TART stops in the Project area that would remain in operation. Alternatives 1, 3, 5, and 6 include transit stop improvements, resort shuttle service, transit passes for employees, dial-a-ride services and water taxi services, among others, that would optimize ridership. In addition, expansion of the bike trail and pedestrian paths through the site, as well as the free bike fleet for resort guests will reduce vehicle trips.
4. Secure adequate funding for transit services so that transit is a viable transportation alternative.	Consistent – All Alternatives. There are currently two TART stops in the Project area that would remain in operation. Alternatives 1, 3, 5, and 6 include transit stop improvements, resort shuttle service, transit passes for employees, dial-a-ride services and water taxi services, among others, that would optimize ridership. In addition, expansion of the bike trail and pedestrian paths through the site, as well as the free bike fleet for resort guests will reduce vehicle trips.
V. Open Space Element	
Goal 1. Maintain and increase the inventory of open space properties in the Plan Area.	
3. Implement the "Parks and Recreation Master Plan" of the Tahoe City PUD as the recreation element of this Plan, along with the planning programs of the California State Parks Department, and the "Forest Plan" of the U.S. Forest Service.	Consistent – All Alternatives. None of the alternatives involves the alteration of dedicated open space. Alternative 4 will result in the loss of the ski resort; however, this is not dedicated open space. Alternative 2 will maintain existing conditions. Alternatives 1, 3, 5 and 6 will continue to provide recreational opportunities to the site, including hiking trails, and will deed restrict the remainder of the mountain from further development.
VI. Safety Element	
Goal 1. To protect the lives and property of the citizens of the West Shore Area General Plan from unacceptable risks associated with seismic, flooding, or wildfire hazards.	
1. Maintain strict enforcement of seismic safety standards for new construction contained in the Uniform Building Code.	Consistent – Alternatives 1, 3, 4, 5, and 6. New construction under Alternatives 1, 3, 4, 5, and 6 would meet or exceed UBC and CBC standards for seismic safety. Consistent – Alternative 2. This alternative does not propose new development.
2. Initiate and active program to eliminate unsafe and hazardous structures through a comprehensive survey of building to determine susceptibility to seismic damage.	Consistent – Alternatives 1, 3, 4, 5, and 6. Redevelopment under Alternatives 1, 3, 4, 5, and 6 would construct new buildings that meet or exceed UBC and CBC standards for seismic safety. Consistent – Alternative 2. Although the existing buildings may not conform to current California

West Shore Goals, Policies, and Development Standards	HMR Ski Area Master Plan Consistency Analysis
	Building Code, the structures have not been deemed hazardous or unsafe.
3. Review future development using all available seismic data and taking into account recommendations from the seismic safety element.	Consistent – Alternatives 1, 3, 4, and 5. New construction under Alternatives 1, 3, 4, 5, and 6 would meet or exceed UBC and CBC standards for seismic safety. Consistent – Alternative 2. This alternative does not propose new development.
4. Prohibit construction, grading, and filling of lands within the 100-year flood plain and in the area of wave run-up except as necessary to implement the goals and policies of the plan. Require all public utilities, transportation facilities, and other necessary public uses located in the 100-year flood plain and area of wave run-up to be constructed or maintained to prevent dame from flooding and to not cause flooding. Apply the stream setback provisions of the Placer County General Plan (Section 6/Natural Resources).	Consistent – Alternatives 1, 3, 4, 5, and 6. Redevelopment under Alternatives 1, 3, 4, 5, and 6 would remove existing structures from 100-year floodplains, and construct new buildings outside of floodplains. Alternatives 1 and 3 include the ecological restoration of SEZs where existing construction, grading or fill occurs in floodplains. Consistent – Alternative 2. This alternative does not propose new development.
5. Continue to implement land development policies which minimize potential loss of property and threat to human life caused by flooding.	Consistent – Alternatives 1, 3, 4, 5, and 6. Redevelopment under Alternatives 1, 3, 4, and 5 would remove existing structures from 100-year floodplains, and construct new buildings outside of floodplains. Consistent – Alternative 2. This alternative does not propose new development.
6. Ensure that all proposed developments are reviewed for fire safety standards by all local fire agencies responsible for its protection, including providing adequate water supplies and ingress and egress.	Consistent – Alternatives 1, 3, 4, 5, and 6. The NLTFD will be required to approve plans prior to the County issuing a Building Permit. The NLTFD will review plans for emergency vehicle access, evacuation routes, and fire flows (water supply, pressure, and hydrant locations) in local responsibility areas (LRAs). Consistent – Alternative 2. This alternative does not propose new development.
7. Maintain strict enforcement of the Uniform Building Code and the Uniform Fire Code.	Consistent – Alternatives 1, 3, 4, 5, and 6. New construction under Alternatives 1, 3, 4, 5, and 6 would meet or exceed standards in the UBC, CBC, and UFC. Consistent – Alternative 2. This alternative does not propose new development.
8. Inform residents and visitors of the wildfire hazard associated with occupancy in the basin. Encourage use of fire resistant materials and fire preventative techniques when constructing structures, especially in the highest fire hazard areas. Manage forest fuels to be consistent with state laws and other goals and policies of this Plan.	Consistent – Alternatives 1, 3, 4, 5, and 6. New construction under Alternatives 1, 3, 4, 5, and 6 would use fire resistant materials and fire preventative techniques that meet or exceed CBC standards. Snow making systems and fuels reduction programs will substantially reduce the wildfire potential threat to the community under Alternatives 1, 3, 5, and 6. Consistent – Alternative 2. This alternative does not propose new development that would increase wildfire hazard.

<table>
<tr><th>West Shore Goals, Policies, and Development Standards</th><th>HMR Ski Area Master Plan Consistency Analysis</th></tr>
<tr><td colspan="2">VII. Noise Element.</td></tr>
<tr><td colspan="2">Goal 1. The adopted CNEL standards are to be observed [as identified in Goal 3, Noise Threshold Levels by Land Use District].</td></tr>
<tr><td>Goal 2. The Mitigation Measures identified in the environmental document for the Plan shall be observed. These Measures are as follows:
a. To adopt specific policies and an implementation program which require effective noise mitigation measures in the design of the new noise-generating and new noise-sensitive land uses.
b. To provide sufficient noise exposure information so that the land use planning and project review process may effectively address existing and potential noise impacts.
c. To protect areas where the present noise environment is within acceptable limits.</td><td><u>Consistent – All Alternatives.</u> The Project area currently exceeds CNEL limits and the area is in non-attainment. The existing and proposed noise levels are discussed in Chapter 13 of the EIR/EIS. Mitigation to shield sensitive uses from noise and building placement to avoid locating sensitive uses near noise-producing uses is proposed as feasible.</td></tr>
<tr><td colspan="2">Goal 3. The CNEL for SR 89 is established at 55 dB, measured 300 feet from the edge of the right-of-way.</td></tr>
<tr><td>Noise Threshold Levels by Land Use District
<table>
<tr><th>Land Use Category</th><th>Average Noise Level or CNEL Range (dBA)</th></tr>
<tr><td>High density residential areas</td><td>55</td></tr>
<tr><td>Low density residential areas</td><td>50</td></tr>
<tr><td>Hotel/motel facilities</td><td>55</td></tr>
<tr><td>Commercial Areas</td><td>65</td></tr>
<tr><td>Urban outdoor recreation areas</td><td>55</td></tr>
<tr><td>Rural outdoor recreation areas</td><td>50</td></tr>
<tr><td>Wilderness and roadless areas</td><td>25</td></tr>
<tr><td>Critical habitat areas</td><td>25</td></tr>
</table></td><td><u>Consistent with Mitigation – All Alternatives.</u> The Project area is currently not in attainment for transportation corridor noise levels. Mitigation measures have been proposed to reduce project generated noise levels in the vicinity of the Project area.</td></tr>
<tr><td colspan="2">PAS 157: Homewood/Ski Homewood Area</td></tr>
<tr><td><u>Plan Designation:</u>
Land Use Classification: Recreation
Management Strategy: Mitigation
Special Designation: Scenic Restoration Area</td><td><u>Consistent – Alternatives 1, 2, 3, 5, and 6.</u> These alternatives maintain ski facilities and classification as a recreation area. Site improvements promote the mitigation management strategy as well as improve the scenic character. Alternatives 1, 3, 5, and 6 would amend the Special Designation to include “TDR Receiving Area for Existing Development (commercial) to newly created Special Area 1”, which would allow the transfer of CFA.
<u>Inconsistent – Alternative 4</u>. This alternative converts the ski facilities to a commercial structure and 16 single-family residential lots. This does not support the recreation land use classification as it would eliminate recreation in the PAS.</td></tr>
<tr><td><u>Planning Statement:</u> This area should continue to provide opportunities for downhill skiing within guidelines prepared through ski area master plans and scenic restoration plans for the west shore.</td><td><u>Consistent – Alternatives 1, 2, 3, 5, and 6.</u> These alternatives maintain ski facilities and classification as a recreation area. Site improvements promote the mitigation management strategy as well as improve the scenic character.
<u>Inconsistent – Alternative 4</u>. This alternative converts the ski facilities to a commercial structure and 16 single-</td></tr>
</table>

West Shore Goals, Policies, and Development Standards	HMR Ski Area Master Plan Consistency Analysis
	family residential lots. This does not support the recreation land use classification as it would eliminate recreation in the PAS.
Special Policies:	
1. All affected parties should coordinate planning to assess the feasibility and demand for expanded ski facilities under a ski area master plan.	Consistent – Alternatives 1, 3, 5, and 6. Although there is no expansion of ski capacity, aging facilities will be improved, including replacement of the Madden triple chair at the north base with an 8-passenger gondola, and upgrade of the Ellis Chair with a detachable quad chair to improve the recreational experience. In addition, the new recreation (swimming pool, ice skating), amphitheater, and tourist facilities provide a coordinated benefit with the surrounding community. Inconsistent – Alternatives 2 and 4. These alternatives do not establish a ski area master plan. Under Alternative 2, existing conditions persist and under Alternative 4, the ski area is eliminated and replaced with commercial uses and single-family housing.
2. Multi-use of ski area base facilities is encouraged, especially joint use agreements between the ski area and local marinas to share parking space. Further partnerships between the public and private sector should be developed to address transportation needs.	Consistent – Alternatives 1, 3, 5, and 6. These alternatives expand the base facilities to provide a greater range of tourist accommodations, residences, and commercial uses. The swimming pool would be accessible to area residents. The amphitheater would provide a home for local cultural events. Alternative transportation efforts, including transit and shuttle service would improve access between the resort and local marinas. Inconsistent – Alternatives 2 and 4. Under Alternative 2, existing conditions persist and under Alternative 4, the ski area is eliminated and replaced with commercial uses and single-family housing.
3. Upgrading and redevelopment of the Homewood ski base facilities should be encouraged, including landscaping, installation of best management practices (BMP) and upgrading of the lodge facilities.	Consistent – Alternatives 1, 3, 5, and 6. These alternatives upgrade and redevelop the base facilities by providing a mixed-use development that includes landscaping, BMPs, and other environmental benefits. Inconsistent – Alternatives 2 and 4. Under Alternative 2, existing conditions persist and under Alternative 4, the ski area is eliminated and replaced with commercial uses and single-family housing.
4. New commercial facilities are limited to the base areas of the existing facilities, although accessory facilities may be allowed on the mid or upper mountain.	Consistent – All Alternatives. Alternatives 1, 3, 5, and 6 limit new commercial to the base areas and allow accessory uses at the mid-mountain lodge. Alternative 2 does not propose new facilities. Alternative 4 proposes commercial uses only at the base area.
5. Opportunities exist for development of cross-country skiing on properties of the Tahoe City PUD and access for cross-country skiing should be improved.	Inconsistent – Alternatives 2 and 4. Cross-country skiing opportunities or improved access would not be pursued under these alternatives. Consistent – Alternatives 1, 3, 5, and 6. Cross county ski trails, utilizing connections to the 1960 vintage Olympic ski course, would occur under these alternatives.

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Permissible Uses: Allowed (A) and considered under special use provisions (S).	
Residential: Employee housing (S) and single-family dwellings (S).	Consistent – Alternatives 2 and 4. Alternative 2 does not propose new uses. The single-family dwellings proposed for Alternative 4 are acceptable as a special use; but would result in the ski resort closure. Consistent – Alternatives 1, 3, and 6. These alternatives propose employee housing, but not single-family dwellings. Alternatives 1, 3, and 6 propose multi-family housing and single family housing in condominiums via a two step subdivision process; however this use would be located outside of PAS 157 through amendments to PAS 158 and 159. Inconsistent – Alternative 5. Alternative 5 proposes single-family dwellings and multi-family housing; however the density of the multi-family housing exceeds density limits and findings cannot be made for the high density (45 DUA).
Tourist Accommodations: Bed and breakfast facilities (S) and hotels, motels, and other transient dwelling units (S).	Consistent – Alternatives 2 and 4. These alternatives do not propose these uses or non-permissible related uses. Consistent – Alternatives 1, 3, 5, and 6. These alternatives propose hotels. Alternatives 1 and 3 propose timeshare units; however this use would be located outside of PAS 157 through amendments to PAS 159.
Commercial: Eating and drinking places (A), food and beverage retail sales (A), general merchandise stores (A), outdoor retail sales (S), amusements and recreation services (S), secondary storage (S), outdoor concert events (S), vehicle storage (A) and parking (A).	Consistent – Alternatives 2 and 4. Alternative 2 does not result in new uses or development. Alternative 4 proposes neighborhood commercial uses. These uses will need to be compliant with the permissible uses list Consistent with Amendment– Alternatives 1, 3, 5, and 6. These alternatives propose an amendment to include personal services (S) to permit weddings and related activities. Approval of this amendment and approval of the use to support the tourist and neighborhood commercial uses result in consistency.
Public Service: Pipelines and power transmission (S/CUP), public safety facilities (S), public utility centers (S), transmission and receiving facilities (S), and transit stations and terminals (S).	Consistent – All Alternatives. None of the alternatives propose public services beyond transit stops, which already exist onsite.
Recreation: Day use areas (A), recreation center (S) participant sports facilities (S), group facilities (S), outdoor recreation concessions (S) and visitor information center (S), cross country skiing courses (S), riding and hiking trails (A), Alpine ski facilities (S) and snow mobile courses (S).	Consistent – Alternatives 2 and 4. Alternative 2 does not result in new uses or development. Alternative 4 does not propose recreation uses. Consistent – Alternatives 1, 3, 5, and 6. The County includes participant sports facilities (S) to allow the swimming pool (unlike the TRPA PAS 157 that requires this to be added via amendment)
Resource Management: Forest management practices (A), erosion control (A), runoff control (A), and SEZ restoration (A).	Consistent – All Alternatives. Proposed uses under each of the alternatives is consistent with these resource management uses. No new resource management uses are proposed.
Maximum Densities: Residential: Single family dwelling – 1 unit /parcel	Consistent – Alternatives 1, 2, 3, 4, and 6 with Amendment. Alternatives 2 and 4 maintain existing densities. Alternatives 1, 3 and 6 propose to add multi-

West Shore Goals, Policies, and Development Standards	HMR Ski Area Master Plan Consistency Analysis
Employee housing (multi-family) – 15 DUA. Tourist Accommodation: Bed and Breakfast – 10 units/ac. Hotel, motel, and other transient units – 20 units/ac.	family housing at a density of 15 DUA, which is considered to be consistent with adjacent uses. Inconsistent – Alternative 5. This alternative will require multi-family residential density at 45 DUA which is not consistent with adjacent uses.
Developed Outdoor Recreation: Summer day uses – 500 PAOT Winter Day Use – 1,150 PAOT Overnight Uses – 0	Consistent – Alternatives 1, 2, 3, 5, and 6. These alternatives will maintain the existing PAOT. Inconsistent – Alternative 4. This alternative will eliminate outdoor recreation from the PAS, resulting in substantially underutilized PAOT.
Commercial Floor Area Allocation: Future commercial development may be considered, based on the preparation of a Ski Area Master Plan and subject to further environmental documentation.	Consistent – Alternatives 1, 2, 3, 5, and 6. These alternatives either do not propose new commercial development (Alternative 2) or propose new commercial development through the Ski Area Master Plan as analyzed in this EIR/EIS. Inconsistent – Alternative 4. This alternative proposes a new commercial structure in the existing parking lot area; however, this alternative eliminates the ski facilities.
Other: 5 miles of hiking trails	Inconsistent – Alternatives 2 and 4. These alternatives do not include 5 miles of hiking trails Consistent – Alternatives 1, 3, 5, and 6. These alternatives propose 5 miles of hiking trails, directional signage, and linkages to the base area pedestrian paths.
Parking Requirements: a. Single-family dwelling: usable and accessible space for two (2) vehicles located entirely on-site. b. Other uses: refer to *Parking Standards*.	Consistent – Alternatives 2, 4, 5, and 6. Alternative 2 will keep the existing parking lot, which is used for community events in the off-season and provides adequate parking year-round. Alternative 4 will maintain a parking lot adjacent to SR 89 for the commercial structure. Adequate parking will be provided in this lot as well as for each residence. Alternatives 5 and 6 include adequate parking in underground parking garages. Consistent with Mitigation – Alternatives 1 and 3. While these alternatives include underground parking, there is an excess number of spaces at the North Base and a deficient number of spaces at the South Base per Placer County standards. Implementation of mitigation proposed in Chapter 11 of the EIR/EIS provides consistency with County standards.
Height Restrictions: Established in TRPA Code Chapter 22.	Consistent – Alternatives 2, 3, and 4. Alternative 2 does not propose new development. The buildings proposed for Alternatives 3 and 4 meet existing height standards and additional height allowances. Consistent with Amendment– Alternatives 1 and 6. These alternatives propose an amendment to the Chapter 22 to allow additional height on the Project area. The amendments to Chapter 22 would also change the method of measuring height within an adopted Ski Area Master Plan. Adoption of the amendment results in consistency. Inconsistent – Alternative 5. Alternative 5 proposes a

West Shore Goals, Policies, and Development Standards	HMR Ski Area Master Plan Consistency Analysis
	height amendment; however the heights proposed and the mass of the structure (4-story multi-family structure) adjacent to SR 89 are not compatible with the surrounding community and do not support visual improvements. Findings for an Alternative 5 height amendment cannot be made.
Setbacks: a. The minimum front setback shall be 45 ft. from the centerline of the abutting traveled way, or 20 ft. from the property line, or as required by the TRPA, whichever is more restrictive. b. Side setbacks: a total of 15 ft., with a 5 ft. minimum, or as required by TRPA, whichever is more restrictive. c. Rear setback: 10 ft., or as required by TRPA, whichever is more restrictive.	Consistent – All Alternatives. Existing buildings are consistent. Proposed buildings will be consistent with setback requirements.
Minimum Building Site: The minimum building site size shall be 10,000 sf.	Consistent – All Alternatives. All alternatives are consistent.
PAS 158: McKinney Tract	
Plan Designation: Land Use Classification: Residential Management Strategy: Mitigation Special Designation: Scenic Restoration Area	Consistent – All Alternatives. Alternatives 2, 4 and 5 do not propose non-single family residential development in this area. Alternatives 1, 3 and 6 propose residential condominiums in this area, consistent with the residential land use classification. Improvements to the SEZ area and scenic character as proposed by these alternatives supports the management strategy and special designation. The plan is proposed to be amended by applying the special designation of TDR Receiving Area for 1) Existing Development, and 2) Multi-Residential Units to the newly created "Special Area".
Planning Statement: This area should remain residential, with a density of one single-family dwelling per parcel.	Consistent – Alternatives 2, 4, and 5. These alternatives do not propose development in this area. Consistent with Amendment – Alternatives 1, 3 and 5. These alternatives result in the area remaining residential, but the density changes to allow 15 multi-family units per acre within a newly created special district. With amendment adoption, these alternatives will be consistent.
Permissible Uses: Allowed (A) and considered under special use provisions (S).	
Residential: Single-family dwellings (S).	Consistent – Alternatives 2, 4 and 5. These alternatives do not propose non-single family residential uses in this PAS. Consistent with Amendment – Alternatives 1, 3 and 6. These alternatives propose to amend PAS 158 to include multi-family dwellings (S) within a new "Special Area". This will result in consistency by allowing residential condominiums, but only in a limited location.
Public Service: Local public health and safety facilities (S), transit stations and terminals (S), transmission and receiving facilities (S), transportation routes (S/CUP), public utility center (S), and local post	Consistent – All Alternatives. These uses are not proposed by the alternatives.

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offices (S) and day care centers (S).	
Recreation: Participant sports facilities (S), day use areas (A), riding and hiking trails (A), and each recreation (A).	Consistent – Alternatives 2, 4, 5, and 6. These alternatives do not propose recreation uses in this PAS. Consistent with Amendment – Alternatives 1 and 3. These alternatives propose to amend PAS 158 to include Skiing Facilities (A) within a new "Special Area". This will result in consistency to reflect the ski facilities, but only in a limited location.
Resource Management: Forest management practices (A), erosion control (A), SEZ restoration (A), and runoff control (A).	Consistent – All Alternatives. Activities proposed in this area are permissible.
Shorezone: The following structures may be permitted in the shorezone as an allowed (A) or special (S) use only if they are accessory to an existing, allowed use located on the same or adjoining littoral parcel: **Tolerance District 7:** Primary Uses: Beach recreation (A), safety and navigational devices (A) and salvage operations (A). Accessory Structures: Buoys (A), fences (S), boat ramps (S), breakwaters or jetties (S), floating docks and platforms (A), shoreline protective structures (S), and water intake lines (S).	Consistent- All Alternatives. None of the alternatives are located within this area.
Maximum Densities: Residential: Single-family dwelling – 1 unit/parcel.	Consistent – Alternatives 2, 4 and 5. These alternatives do not propose development within this PAS. Consistent with Amendment – Alternatives 1, 3 and 6. These alternatives propose residential condominiums and an amendment to the Plan to include maximum densities for multi-family dwellings at 15 units per acre within the "Special Area". Adoption of the amendment results in consistency.
Parking Requirements: a. Single-family dwelling: usable and accessible space for two (2) vehicles located entirely on-site. b. Other uses: refer to *Parking Standards*.	Consistent – Alternatives 2, 4 and 5. These Alternatives do not propose activity in this PAS. Consistent with Mitigation – Alternatives 1, 3 and 6. While these alternatives include underground parking, there is an excess number of spaces at the North Base and a deficient number of spaces at the South Base per Placer County standards. Implementation of mitigation proposed in Chapter 11 of the EIR/EIS provides consistency with County standards.
Height Restrictions: Established in TRPA Code Chapter 22.	Consistent – Alternatives 2, 4 and 5. These Alternatives do not propose new development in this area. Consistent with Amendment– Alternative 1, 3 and 6. Alternatives 1 and 6 propose an amendment to Code Chapter 22 to allow additional height on the Project area. Adoption of the amendment results in consistency. Consistent – Alternative 3. Alternative 3 is consistent with Code Chapter 22 standards.
Setbacks: a. The minimum front setback shall be 45 ft. from the centerline of the abutting traveled way, or 20 ft. from the property line, or as required by the TRPA, whichever is more restrictive.	Consistent – Alternatives 2, 4 and 5. These alternatives do not propose new development in this area. Consistent – Alternatives 1, 3 and 6. New development at the south base is designed to meet setback requirements.

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b. Side setbacks: a total of 15 ft., with a 5 ft. minimum, or as required by TRPA, whichever is more restrictive. c. Rear setback: 10 ft., or as required by TRPA, whichever is more restrictive.	
Minimum Building Site: The minimum building site size shall be 10,000 sf.	Consistent – All Alternatives. All alternatives are consistent.
159 – Homewood/Commercial	
Plan Designation: Land Use Classification: Commercial/Tourist Management Strategy: Redirection Special Designation: Preliminary Community Plan Area TDR Receiving Area for: 1. Existing Development; Scenic Restoration Area	Consistent – Alternatives 2 and 4. These alternatives do not propose development in this area. Consistent – Alternatives 1, 3, and 6. These alternatives propose new tourist, commercial and some higher density residential uses, which correspond to the Commercial/Tourist land use classification. Site improvements including substantial visual quality improvements through architecture, landscaping and utility undergrounding, water quality improvements, erosion control, and expansion of commercial and tourist uses within the development corridor along SR 89 promote redirection and scenic restoration. Inconsistent – Alternative 5. Alternative 5 proposes multi-family housing; however the 4-story structure does not support scenic restoration and findings cannot be made for the high density (45 DUA) or required height amendment.
Planning Statement: This area should continue to be a mixed residential and commercial area. However, there is a need for rehabilitation while maintaining the scale and character of the west shore. Because of the historic development of the area, for example, residential uses interspersed with commercial, the boundaries of this plan are not contiguous. Special Areas have been created with limitation on permissible uses to minimize conflicts with adjoining land uses.	Consistent – Alternatives 2 and 4. These alternatives do not propose development in this area. Consistent – Alternatives 1, 3 and 6. These alternatives support this planning statement by providing a mixed commercial and residential area that combines tourist and recreational uses at an appropriate scale and within a "Special Area" so that this type of mixed use is appropriately located along the SR 89 corridor. Inconsistent – Alternative 5. Alternative 5 proposes mixed use; however the density of the multi-family housing (45 DUA) conflicts with adjoining uses and findings cannot be made to support densities at this level.
Special Policies:	
1. Planning for development of this area should include consideration of the adjoining ski areas in PAS 157, as well as marina master planning.	Consistent – All Alternatives. Alternatives 2 and 4 do not include development in this area. Alternatives 1, 3, 5, and 6 result in joining the ski area with PAS 159 by providing a mixed-use area beneficial to both PAS 157 and 159.
2. This area should be considered for a major water borne transit stop.	Consistent – All Alternatives. Alternatives 2 and 4 do not include development in this area. Alternatives 1, 3, 5, and 6 include water taxi service.
3. The marina facilities should be expanded and upgraded to accommodate increasing boating needs.	Consistent – All Alternatives. The alternatives do not include marina facilities. Proposal to allow boat trailer parking in the North Base parking structure will support the boating needs of the public while removing the boat

West Shore Goals, Policies, and Development Standards	HMR Ski Area Master Plan Consistency Analysis
	trailers from along the roadway.
4. Tourism and recreation compatible with the historic nature development should be encouraged in this Plan Area.	Consistent – All Alternatives. Alternatives 2 and 4 do not include development in this area. Alternatives 1, 3, 5, and 6 result in joining the ski area with PAS 159 by providing a mixed-use area beneficial to both PAS 157 and 159, including tourist accommodations, new recreation opportunities, transit service in the area, and expansion of the bike path to connect to other area recreation and tourism features.
5. Outdoor seasonal events shall be regulated in a manner to reduce conflicts with neighboring residential uses and to minimize environmental impacts.	Consistent – All Alternatives. Alternatives 2 and 4 do not include development in this area. Alternatives 1, 3, 5, and 6 include outdoor seasonal events and concerts within an outdoor amphitheater. The amphitheater is designed to move noise up the mountain and away from adjacent land uses. Use of the amphitheater will be regulated to reduce disturbances.
6. The parcels located south of Silver Avenue and east of SR 89 are included in Plan Area 159 (commercial), although some lots have entitlements for development of single-family dwellings. Those lots that developed as homesites may be more appropriate in a residential land use classification in the future.	Consistent – All Alternatives. Alternatives 2 and 4 do not include development in this area. Alternatives 1, 3, 5, and 6 do not prevent the movement of single-family entitlements to more appropriate locations.
Permissible Uses: Allowed (A) and considered under special use provisions (S).	
Residential: Employee housing (S) and single-family dwellings (S).	Consistent – Alternatives 2 and 4. No residential uses are proposed in this area for these alternatives. Consistent with Amendment – Alternatives 1, 3, and 6. These alternatives propose employee housing and multi-family dwellings. Multi-family dwellings will be added through amendment as a special use within a newly created "Special District". This will result in consistency and will limit multi-family units to the designated area so as not to affect the permissible uses and mix of residential units elsewhere in the area. Inconsistent – Alternative 5. The proposed housing density of 45 DUA is not complimentary to the surrounding land uses and an amendment allowing such density is not feasible.
Tourist Accommodations: Bed and breakfast facilities (A) and hotels, motels, and other transient dwelling units (A) up to 20 units, more than 20 units (S), timeshare (hotel/motel design) (S), and timeshare (residential design) (S).	Consistent – All Alternatives. No development is proposed in this area for Alternatives 2 and 4. Alternatives 1, 3, 5, and 6 propose various tourist accommodations including hotel and timeshare units, which are permissible uses.
Commercial: Auto, mobile home and vehicle dealers (S), boat dealers (S), building materials and hardware (conducted within a building) (A), (outside of a building) (S), eating and drinking places (A), food and beverage retail sales (A), furniture, home furnishings and equipment (S), general merchandise stores (A), mail order and vending (A), nursery (A), outdoor retail sales (S), service stations (S), amusements and recreation services (S), outdoor amusements (S), outdoor concert events (more than	Consistent – Alternatives 2 and 4. No residential uses are proposed in this area for these alternatives. Consistent with Amendment – Alternatives 1, 3, and 5. Alternatives 1, 3, 5, and 6 propose to amend the list of permissible uses by adding "Privately Owned Assembly and Entertainment" as a special use within the Special Area. This will result in consistency and will limit development of this type of use to the north base area of the resort where it is most appropriately located.

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one) (S), animal husbandry services (S), auto repair and service (S), broadcasting studios (A), business support services (A), healthcare services (A), personal services (A), professional offices (A), repair services (A), schools – pre-schools (A), secondary storage (S), fuel and ice dealers (S), small scale manufacturing (S), storage yards (S), vehicle storage and parking (S), warehousing (S).	
Public Service: Airfields, landing strips and heliports (new non-emergency sites prohibited) (S), churches (S), cultural facilities (A), day care centers (A), government offices (S), local assembly and entertainment (A), local post office (A), local public health and safety facilities (A), membership organizations (A), public utility centers (S), regional public health and safety facilities (S), schools – kindergarten through secondary (A), social service organizations (A), pipelines and power transmission (S/CUP), transit stations and terminals (S), transportation routes (S/CUP) and transmission and receiving facilities (S).	Consistent – All Alternatives. No development is proposed in this area for Alternatives 2 and 4. Public service uses proposed under Alternatives 1, 3, 5, and 6 are permissible uses.
Recreation: Day use areas (A), recreation center (S) participant sports facilities (S), beach recreation (A), boat launching facilities (S), cross-country skiing courses (S), outdoor recreation concessions (A), marinas (S/CUP), riding and hiking trails (S), skiing facilities (S), snow mobile courses (S), and visitor information center (S).	Consistent – All Alternatives. No development is proposed in this area for Alternatives 2 and 4. Recreation uses proposed under Alternatives 1, 3, 5, and 6, such as cross-country skiing and hiking/bicycle trails are permissible uses.
Resource Management: Forest management practices (A), erosion control (A), runoff control (A), and SEZ restoration (A).	Consistent – All Alternatives. No development is proposed in this area for Alternatives 2 or 4. Proposed resource management efforts are permitted in this area.
Special Area 1 Permissible Uses: Residential – single-family dwelling (A) Tourist Accommodation – Bed and breakfast facilities (S), but for APN# 97-121-09 new development is restricted to the structure of the size of that existed as of July, 1998.	Consistent- All Alternatives. None of the alternatives are located within this area.
Special Area 2 Permissible Uses: Residential – single-family dwelling (A), multi-family residences (S), employee housing (S). Tourist Accommodation – Bed and breakfast facility (S), timeshare (S), hotels, motels and other transient dwelling units, less than 20 units (A) more than 20 units (S). Commercial – Sports equipment sales and rentals (A), eating and drinking places (S), general merchandise stores (S), nursery (S), business support services (S), healthcare services (S), personnel services (S), professional offices (A).	Consistent- All Alternatives. None of the alternatives are located within this area.
Special Area 3 Permissible Uses: Residential – single family dwelling (A), hotel motel, and other transient dwellings (A), up to 20 units,	Consistent- All Alternatives. None of the alternatives are located within this area.

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more than 20 units (S), eating and drinking establishments (A).	
Special Area 4 Permissible Uses: Residential – Employee housing (S) and single family dwelling (A). Tourist Accommodation – Bed and breakfast facilities (A), hotels, motels and other transient dwelling units, (A) up to 20 units, more than 20 units (S), timeshare (hotel/motel design) (S) and timeshare (residential design) (S). Commercial: Auto, mobile home and vehicle dealers (S), boat dealers (S), building materials and hardware (conducted within a building) (A), (outside of a building) (S), eating and drinking places (A), food and beverage retail sales (S), furniture, home furnishings and equipment (S), general merchandise stores (S), mail order and vending (S), nursery (S), outdoor retail sales (S), service stations (S), amusements and recreation services (S), outdoor amusements (S), outdoor concert events (more than one) (S), animal husbandry services (S), auto repair and service (S), broadcasting studios (A), business support services (S), healthcare services (S), personal services (S), professional offices (S), repair services (S), schools – pre-schools (S), secondary storage (S), fuel and ice dealers (S), small scale manufacturing (S), storage yards (S), vehicle storage and parking (S), warehousing (S). Public Service: Airfields, landing strips and heliports (new non-emergency sites prohibited) (S), churches (S), cultural facilities (S), day care centers (S), government offices (S), local assembly and entertainment (S), local post office (S), local public health and safety facilities (S), membership organizations (S), public utility centers (S), regional public health and safety facilities (S), schools – kindergarten through secondary (S), social service organizations (S), pipelines and power transmission (S/CUP), transit stations and terminals (S), transportation routes (S/CUP) and transmission and receiving facilities (S). Recreation: Day use areas (S), recreation center (S), participant sports facilities (S), beach recreation (S), boat launching facilities (S), cross-country skiing courses (S), outdoor recreation concessions (S), marinas (S/CUP), riding and hiking trails (S), skiing facilities (S), snow mobile courses (S), and visitor information center. Resource Management: Forest management practices (A), erosion control (A), and SEZ restoration (A).	Consistent- All Alternatives. None of the alternatives are located within this area.
Maximum Densities: Residential: Single family dwelling – 1 unit /parcel.	Consistent – Alternatives 2 and 4. These alternatives do not propose development in this area. Consistent with Amendment – Alternatives 1, 3 and 6.

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Multi family housing – 8 DUA. Employee housing (multi-family) – 8 DUA. Tourist Accommodation: Bed and Breakfast – 10 units/ac. Hotel, motel, and other transient units: Kitchens in <10% of units – 20 units/ac. Kitchens in >10% of units – 15 units/ac.	These alternatives propose to amend the multi-family housing density from 8 units per acre to 15 units per acre within the new "Special Area". This will accommodate the proposed employee housing and multi-family units, but will limit this higher density to the North Base area to avoid alterations to the overall residential density in PAS 159. Inconsistent – Alternative 5. The proposed housing density of 45 DUA is not complimentary to the surrounding land uses and findings cannot be made to support an amendment allowing such density.
Parking Requirements: a. Single-family dwelling: usable and accessible space for two (2) vehicles located entirely on-site. b. Other uses: refer to *Parking Standards*.	Consistent – Alternatives 2, 4, 5, and 6. Alternatives 2 and 4 do not affect this PAS. Alternatives 5 and 6 include adequate parking in underground parking garages. Consistent with Mitigation – Alternatives 1 and 3. While these alternatives include underground parking, there is an excess number of spaces at the North Base and a deficient number of spaces at the South Base per Placer County standards. Implementation of mitigation proposed in Chapter 11 of the EIR/EIS provides consistency with County standards.
Height Restrictions: Established in TRPA Code Chapter 22.	Consistent – Alternatives 2, 3, and 4. Alternative 2 does not propose new development. The buildings proposed for Alternatives 3 and 4 will meet existing height standards and additional height allowances. Consistent with Amendment– Alternatives 1 and 6. These alternatives propose an amendment to Chapter 22 to allow additional height on the Project area. Adoption of the amendment results in consistency. Inconsistent – Alternative 5. Due to the increased visibility of the proposed 4-story structures along SR 89, findings cannot be made to support a structure of this size and visibility in this location.
Setbacks: a. The minimum front setback shall be 45 ft. from the centerline of the abutting traveled way, or 20 ft. from the property line, or as required by the TRPA, whichever is more restrictive. b. Side setbacks: a total of 15 ft., with a 5 ft. minimum, or as required by TRPA, whichever is more restrictive. c. Rear setback: 10 ft., or as required by TRPA, whichever is more restrictive.	Consistent – All Alternatives. Each of the various building layouts for each alternative comply with minimum setback requirements.
Minimum Building Site: The minimum building site size shall be 10,000 sf.	Consistent – All Alternatives. All alternatives are consistent.
Tourist Accommodation Bonus Units: 50 units.	Consistent – All Alternatives. Alternatives 2 and 4 do not require bonus units. Alternatives 1, 3, 5, and 6 have requested 50 bonus units.
Commercial Floor Area Allocation: The maximum amount of commercial floor area which may be allocated for new development in the Plan Area,	Consistent – Alternatives 2 and 4. These alternatives do not propose development in this area. Consistent – Alternatives 1, 3, 5, and 6. These

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predicted on an assignment of such commercial allocation by the TRPA, is 15,000 sf for the 10 year period after plan adoption. The addition of an allocation of 5,000 sf is proposed for use in addition to existing commercial development. Future commercial development associated with alpine skiing or marina development may be considered, based on the preparation of a Ski Area Master Plan, or Marina Master Plan, and subject to further environmental documentation.	alternatives propose an additional 25,000 sf (approximately as each alternative varies) of additional CFA under the Master Plan. Since this development is associated with the Ski Area Master Plan, additional CFA may be allocated.

Source: County of Placer. 1998. *West Shore Area General Plan*. Adopted October 19, 1998. Placer County. Auburn, CA, HBA 2010

4.3.2 Placer County General Plan

The Placer County General Plan, adopted by Placer County, California in 1994, contains goals, policies, and development standards applicable to the Project Area and vicinity in Placer County. The goals and policies in Table 4.3-2 are applicable to the HMR Ski Area Master Plan and provide a framework for future direction and development of the area. Table 4.3-2 includes an analysis of the consistency between the Placer County General Plan and the Project and Alternatives.

Table 4.3-2

HMR Consistency Analysis with the 1994 Placer County General Plan Goals, Policies, and Development Standards

Placer County General Plan Goals, Policies, and Development Standards	HMR Ski Area Master Plan Consistency Analysis
Generalized Land Uses, Development Standards, and Zoning Districts	
Urban	
Tourist/Resort Commercial (TC) This designation provides for specialized commercial uses serving tourism and the travelling public. This designation is applied along major transportation corridors and at major recreational destinations such as ski areas and other types of resorts. Typical land uses allowed include: overnight lodging facilities of all types, retail services, food services, motorist and vehicle services, medical facilities, parks, churches, libraries and museums, necessary public utility and safety facilities, and similar and compatible uses. Minimum lot area: 6,000 – 20,000 sf. DUA: 11-21 DUA. Maximum Nonresidential Floor Area Ratio (FAR): 0.80. Proposed Community Plan Land Use Designations: Tourist/Resort Commercial.	Consistent –Alternatives 1, 2, 3, 4 and 6. Alternatives 2 and 4 do not affect PAS 159 (Tourist/Commercial). Alternatives 1, 3 and 6 will place resort and commercial facilities within this area. These alternatives maintain the site use as a resort and add lodging, retail and food services, and other commercial/tourist features that support the resort. Multi-family units would be 15 DUA. Inconsistent – Alternative 5. Alternative 5 proposes multi-family housing at a density of 45 DUA. Findings cannot be made for this density level as it is not complimentary to the surrounding community.

Placer County General Plan Goals, Policies, and Development Standards	HMR Ski Area Master Plan Consistency Analysis
Proposed Consistent Zoning Districts (6,000 to 20,000 sq. ft. min.)*: Highway Service (HS); Motel (MT); Resort (RES).	
Low Density Residential (LDR) This designation is applied to urban or urbanizing areas suitable for single-family residential neighborhoods, with individual homes on lots ranging in area from 10,000 square feet to one acre. Typical land uses allowed include: detached single-family dwellings, secondary dwellings, and residential accessory uses; churches, schools, parks, golf courses, child care facilities; and necessary public utility and safety facilities. Minimum lot area: 10,000af – 1.0 acre. DUA: 1-5 DUA. Maximum Nonresidential Floor Area Ratio (FAR): 0.30. Proposed Community Plan Land Use Designations: Low Density Residential. Proposed Consistent Zoning Districts (6,000 to 20,000 sq. ft. min.)*: Highway Service (HS); Motel (MT); Resort (RES).	Consistent – Alternatives 2, 4 and 5. These alternatives do not affect PAS 158 (Residential). Consistent with Amendment – Alternatives 1, 3 and 6. These alternatives place higher density housing (up to 15 DUA) within an area currently serving single-family units at one dwelling per lot. Amending the West Shore Area General Plan to allow higher density housing within a "Special Area" as discussed above will result in consistency.
High Density Residential (HDR) This designation provides for residential neighborhoods of grouped or clustered single-family dwellings, duplexes, apartments, and other multiple-family attached dwellings such as condominiums. This designation is applied within urban areas where residential development will be near transportation corridors, downtowns, village centers, other major commercial centers, schools and community services. Typical land uses allowed include: detached and attached single-family dwellings, secondary dwellings, all types of multi-family dwellings (e.g., duplexes, apartments, senior housing projects, etc.), and residential accessory uses; churches, schools, parks, golf courses, child care facilities; and necessary public utility and safety facilities. Minimum lot area: 3,500 – 10,000 sf. DUA: 10-21 DUA. Maximum Nonresidential Floor Area Ratio (FAR): 1.05. Proposed Community Plan Land Use Designations: High Density Residential. Proposed Consistent Zoning Districts (6,000 to 20,000 sq. ft. min.)*: Highway Service (HS); Motel (MT); Resort (RES).	Consistent – Alternative 2 and 4. These alternatives do not propose high density residential. Consistent with Amendment – Alternatives 1, 3 and 6. These alternatives propose high density residential in the base areas. Amendments to PASs 158 and 159 are needed to allow such densities in a "Special Area". Inconsistent – Alternative 5. The proposed housing density of 45 DUA is significantly more than currently allowed and findings cannot be made to support an amendment allowing such density.
Rural Residential	
Rural Residential (RR) This designation is applied to areas generally located away from cities and unincorporated community centers, in hilly, mountainous, and/or forested terrain and as a	Consistent – Alternatives 2, 4, and 5. These alternatives do not affect PAS 158 (Residential). Consistent with Amendment – Alternatives 1, 3, and 6. These alternatives place higher density housing (up to 15

Placer County General Plan Goals, Policies, and Development Standards	HMR Ski Area Master Plan Consistency Analysis
buffer zone where dispersed residential development on larger parcels would be appropriate, and compatible with smaller-scale farming and ranching operations. Typical uses allowed include: detached single-family dwellings and secondary dwellings; agricultural uses such as crop production and grazing, equestrian facilities, and limited agricultural support businesses such as roadside stands, farm equipment and supplies sales; resource extraction uses; various facilities and services that support residential neighborhoods, such as churches, schools, libraries, child care and medical facilities; and parks and necessary public utility and safety facilities. Minimum lot area: 1-10 ac. DUA: 1.0 dwelling unit per lot. Maximum Nonresidential Floor Area Ratio (FAR): 0.30. Proposed Community Plan Land Use Designations: Forest Residential, Rural Estate, Rural Residential. Proposed Consistent Zoning Districts (1-10 ac. Minimum lot sizes)*: Farm (F); Residential Agricultural (RA); Residential Forest (RF); Open Space (O).	DUA) within an area currently serving single-family units at one dwelling per lot. Amending the West Shore Area General Plan to allow higher density housing within a "Special Area" as discussed above will result in consistency.
Resource Protection, Greenbelt, Open Space, and Recreation	
Resorts and Recreation (REC) This designation is applied to mountain, water-oriented, and other areas of existing and potential public and commercial recreational use, where such use can occur without conflict with surrounding rural and/or agricultural uses. Typical land uses allowed include: parks, camping facilities, ski and other resort facilities including residential, transient lodging, and commercial uses in support of such facilities, necessary public utility and safety facilities, and similar and compatible uses. Minimum lot area: 1-160 ac. DUA: 1.0 dwelling unit per lot. Maximum Nonresidential Floor Area Ratio (FAR): 0.30. Proposed Community Plan Land Use Designations: Park, Recreation, Ski Area. Proposed Consistent Zoning Districts*: Forestry (FOR); Resort (RES); Residential Single Family (RS); Residential Multi-Family (RM); Open Space (O); Water Influence (W).	Consistent – Alternatives 1, 2, 3, 5, and 6. These alternatives maintain PAS 157 as a resort and support the land use designation of Recreation. Alternative 2 would not result in changes to the existing ski facilities. Alternatives 1, 3, 5, and 6 propose lodging, residential units, commercial uses and new recreational uses that support the resort outside the winter ski season. Since these alternatives propose to place residential uses within PASs 158 and 159, the dwelling unit density applies in these Plan Areas and not PAS 157. Inconsistent – Alternative 4. Alternative 4 proposes to close the ski facilities to construct a commercial lot and single-family residences. Closure of the ski facilities does not support the Recreation land use designation.
*Proposed Consistent Zoning Districts for All General Plan Land Use Designations: • Combining Agriculture (-AG) • Combining Aircraft Overflight (-AO) • Combining Building Site (-B) • Combining Conditional Use Permit (-UP) • Combining Design Review (-Dc, -Ds, -Dh) • Combining Development Reserve (-DR) • Combining Flood Hazard (-FH)	These combining districts are not applied to the Project area as shown on County Zoning Map S7.

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• Combining Geological Hazard (-GH) • Combining Mineral Reserve (-MR) • Combining Planned Residential Development (-PD) • Combining Traffic Management (-TM) • Combining Special Purpose Zone (-SP).	
LAND USE BUFFER ZONE STANDARDS	
PLANNING STANDARDS	
1. Agriculture/Timberland Buffers. These buffer zones are required to separate urban uses (particularly residential) from lands designated Agriculture or Timberland on the Land Use Diagram, where noise from machinery, dust, the use of fertilizers and chemical sprays, and other related agricultural/timber harvesting activities would create problems for nearby residential and other sensitive land uses. These buffers also serve to minimize disturbance of agricultural operations from nearby urban or suburban uses, including trespassing by nearby residents and domestic animals. Figures I-2 and I-3 illustrate how these buffer zones might be used. Timberland Buffer Zone Width: Residential Exclusion Area = 100 ft., residential structures prohibited; non-habitable accessory structures permitted. Buffer Width Range = 100 – 400 ft., required buffer dependent on site or project-specific characteristics as determined through County's specific plan, land use permit, and/or subdivision review process.	Consistent – All Alternatives. While the westernmost portion of the Project area is identified as a timberland production zone no development occurs within this area or near this area. This area remains as ski facilities or undeveloped space.
3. Sensitive Habitat Buffers. These buffer zones are required to separate any type of urban development from such sensitive habitat areas as stream corridors, wetlands, sensitive species habitats, and old growth forests, where the land-altering aspects of development itself, and/or the secondary effects of development (e.g., runoff from pavement carrying pollutants, air pollution emissions, traffic, noise, glare, increased pedestrian access) may degrade important habitat areas. Figure I-5 shows an example of a sensitive habitat buffer. **a. Buffer Dimensions:** Sensitive habitat buffers shall, at a minimum, be measured as follows: 100 feet from the centerline of perennial streams, 50 feet from centerline of intermittent streams, and 50 feet from the edge of the sensitive habitats to be protected. (See also policy 6.A.1.). **b. Uses Allowed in Buffer:** Open space and recreational uses including undeveloped greenbelts, nature preserves, parks, hiking trails and bicycle paths. No land use allowed within the buffer that involves grading or the removal of natural	Consistent – All Alternatives. None of the alternatives propose new structures within the buffer zone of streams. Existing SEZ within the Project area has been developed and the poor quality of the SEZ due to development (parking lots/roads) does not support species habitat. Alternatives 1, 3, 4, 5, and 6 will result in removal of some of these disturbance areas and restoration of the SEZ, which will result in a beneficial impact to support this policy.

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vegetation shall be located any closer than 50 feet to the top of a stream bank or to the outermost extent of riparian vegetation, wetland, or other identified habitat, whichever is greater.	
GENERAL LAND USE	
Goal 1.A: To promote the wise, efficient, and environmentally-sensitive use of Placer County lands to meet the present and future needs of Placer County residents and businesses.	
1.A.1. The County will promote the efficient use of land and natural resources.	Consistent – Alternatives 1, 2, 3, 5 and 6. Alternative 2 does not propose changes to existing conditions. Alternatives 1, 3, 5, and 6 propose dynamic use of the Project area that sustains year-round activity, improves water quality and the scenic character of the area, and serves the community. Inconsistent – Alternative 4. Alternative 4 would close the ski resort and use the land for estate home lots, removing a vital recreational facility currently open to the public.
1.A.2. The County shall permit only low-intensity forms of development in areas with sensitive environmental resources or where natural or human-caused hazards are likely to pose a significant threat to health, safety, or property.	Consistent – All Alternatives. Alternatives 1, 3, 5, and 6 would create a higher density, mixed use village centered on existing developed areas, removing existing structures from flood plains and SEZs. Alternative 4 includes very low density development in the vicinity of sensitive habitats in the ski area. Alternative 2 does not propose new development.
1.A.3. The County shall distinguish among urban, suburban, and rural areas to identify where development will be accommodated and where public infrastructure and services will be provided. This pattern shall promote the maintenance of separate and distinct communities.	Consistent – All Alternatives. The Project area is identified as an area in need of redevelopment and expansion of tourist and recreation facilities.
1.A.4. The County shall promote patterns of development that facilitate the efficient and timely provision of urban infrastructure and services.	Consistent – All Alternatives. Expansion of the resort or reuse of the site includes expansion of urban infrastructure and services at the developer's cost. Infrastructure will be in place prior to operation of new facilities.
1.A.5. The County shall not approve intensive forms of development or land divisions into parcels of 10 acres or less within any city's sphere of influence where that city's general plan calls ultimately for urban development except where the County General Plan or applicable Community Plan designates the area for urban development. The County shall inform cities in a timely manner when applications for development within their sphere of influence are filed with the County and shall consider the city's ultimate plans for the relevant area during project review. In such cases, Policy #16 in Part III shall apply to such development projects.	Consistent – All Alternatives. The Project area is located outside City limits.

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RESIDENTIAL LAND USE	
Goal 1.B: To provide adequate land in a range of residential densities to accommodate the housing needs of all income groups expected to reside in Placer County.	
1.B.1. The County shall promote the concentration of new residential development in higher-density residential areas located along major transportation corridors and transit routes.	Consistent – Alternatives 2 and 4. These alternatives do not propose high-density housing. Consistent with Amendment – Alternatives 1, 3, and 6. These alternatives propose higher density housing within "Special Areas" to limit the extent in which higher density housing may occur. These units are appropriately located along SR 89, a major transportation corridor, and where two transit stops currently exist. Inconsistent – Alternative 5. Alternative 5 proposes multi-family housing along SR 89; however findings cannot be made to support a density of 45 DUA, nor findings be made to support a height amendment for a 4-story structure highly visible from a scenic corridor and uncharacteristic of the surrounding community.
1.B.2. The County shall encourage the concentration of multi-family housing in and near downtowns, village centers, major commercial areas, and neighborhood commercial centers.	Consistent – Alternatives 1, 3, 5, and 6. Alternatives 1, 3, 5, and 6 provide multifamily housing in a mixed-use, village setting adjacent to commercial areas. Inconsistent – Alternative 4. Alternative 4 includes no multifamily housing
1.B.3. The County shall encourage the planning and design of new residential subdivisions to emulate the best characteristics (e.g., form, scale, and general character) of existing, nearby neighborhoods.	Consistent –Alternatives 1, 2, 3, 4, and 6. Alternative 2 does not propose residences. Alternatives 1, 3, 4 and 6 include architecture that reflects the "Old Tahoe" characteristic and use natural elements within the design including rock, exposed timbers, and landscaping. While the density may increase for Alternatives 1 and 3 and the concentration of structures along SR 89 is more prevalent for Alternative 3, the overall design will be characteristic of the West Shore and reflective of the surrounding natural environment. Inconsistent – Alternative 5. Alternative 5 proposes multi-family housing along SR 89; however findings cannot be made to support a height amendment for a 4-story structure highly visible from a scenic corridor and uncharacteristic of the surrounding residential community.
1.B.4. The County shall ensure that residential land uses are separated and buffered from such major facilities as landfills, airports, and sewage treatment plants.	Consistent – All Alternatives 1, 3, 4, 5, and 6. New residential land uses include appropriate buffers from major incompatible facilities.
1.B.5. The County shall require residential project design to reflect and consider natural features, noise exposure of residents, visibility of structures, circulation, access, and the relationship of the project to surrounding uses. Residential densities and lot patterns will be determined by these and other factors. As a result, the maximum density specified by General Plan designations or zoning for a given parcel of land may not be realized.	Consistent – Alternatives 1, 2, 3, 4, and 6. Alternative 2 does not propose new development. Alternatives 1, 3, 4, and 6 include designs that take into consideration and reflect natural features, noise, visibility, circulation, access, and adjacent land uses. Inconsistent – Alternative 5. Alternative 5 proposes multi-family housing along SR 89; however findings cannot be made to support a density of 45 DUA, nor findings be made to support a height amendment for a 4-

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	story structure highly visible from a scenic corridor and uncharacteristic of the surrounding residential community.
1.B.6. The County shall require new subdivided lots to be adequate in size and appropriate in shape for the range of primary and accessory uses designated for the area.	Consistent – All Alternatives. Alternatives 4, 5 and 6 include new lots available for development onsite. The lots would be designated for single-family residences, which is appropriate. The commercial lot for alternative 4 would be located along the SR 89 frontage, which is appropriate.
1.B.7. The County shall require multi-family developments to include private, contiguous, open space for each dwelling.	Consistent – All Alternatives. Alternatives 1, 3, 5, and 6 include multifamily housing that includes private contiguous open space for each dwelling. Alternatives 2 and 4 do not propose multi-family developments.
1.B.8. The County shall require residential subdivisions to be designed to provide well-connected internal and external street and pedestrian systems.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternative 4 proposes new residential lots upslope of the neighborhood commercial lot. A road will connect the residences to SR 89. Alternatives 1, 3, 5, and 6 include residential uses within a mixed-use area. Internal roads and pedestrian paths link the various uses.
1.B.9. The County shall discourage the development of isolated, remote, and/or walled residential projects that do not contribute to the sense of community desired for the area.	Consistent – All Alternatives. The Project area is within an established community. None of the alternatives propose isolated or walled residential projects.
1.B.10. The County shall require that all residential development provide private and/or public open spaces in order to insure that each parcel contributes to the adequate provision of light, air, and open space.	Consistent – Alternatives 1, 2, 3, 5 and 6. The ski facilities will remain in operation under Alternatives 1, 2, 3, 5, and 6. Alternatives 1, 3, 5, and 6 include hiking trails on the mountain for year-round access to undeveloped areas. Inconsistent – Alternative 4. Alternative 4 will result in the closure of the resort and loss of public access to the upper mountain areas.
MIXED USE SPECIFIC PLAN AREA	
COMMERCIAL LAND	
Goal 1.D: To designate adequate commercial land for and promote development of commercial uses to meet the present and future needs of Placer County residents and visitors and maintain economic vitality.	
General Commercial Areas Policies	
1.D.1. The County shall require that new commercial development be designed to encourage and facilitate pedestrian circulation within and between commercial sites and nearby residential areas rather than being designed primarily to serve vehicular circulation.	Consistent – All Alternatives. Alternative 2 does not propose new commercial development. Alternatives 1, 3, 4, 5, and 6 include new commercial development. Under Alternative 4, this development will serve the existing neighborhood and will be located along SR 89 and existing transit stops for access. Commercial uses proposed under Alternatives 1, 3, 5, and 6 include both resort commercial and neighborhood commercial. The commercial uses will be accessible from SR 89, via transit, and through a system of pedestrian paths and a bike trail that link to other commercial uses in the area.
1.D.2. The County shall require new commercial development to be designed to minimize the visual	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 5, and 6

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impact of parking areas on public roadways.	place parking underground. Alternative 4 maintains a portion of the existing parking lot on SR 89, but includes landscaping to buffer views of the parking area from the roadway.
1.D.3. The County shall require that new, urban, community commercial centers locate adjacent to major activity nodes and major transportation corridors. Community commercial centers should provide goods and services that residents have historically had to travel outside of the area to obtain.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 4, 5, and 6 locate commercial uses along SR 89, which is the primary transportation route through the area.
1.D.4. The County shall require that significant new office developments locate near major transportation corridors and concentrations of residential uses. New office development may serve as buffers between residential uses and higher-intensity commercial uses.	Consistent – All Alternatives. No significant office developments are proposed. Proposed commercial uses will be located adjacent to SR 89.
Downtown Areas/Village Centers Policies	
1.D.5. The County shall encourage existing and new downtowns/village centers to provide a variety of goods and services, both public and private.	Consistent – All Alternatives. The project does not propose a new "downtown"; however, Alternatives 1, 3, 5, and 6 include mixed uses that support year-round function of the resort and that support the existing neighborhood.
1.D.6. The County shall promote use of first floor space in new buildings in downtowns/village centers for retail, food service, financial institutions, and other high-volume commercial uses.	Consistent – All Alternatives. The project does not propose a new "downtown"; however, Alternatives 1, 3, 5, and 6 include mixed uses that support year-round function of the resort and that support the existing neighborhood.
1.D.7. The County shall encourage new downtowns/village centers and new commercial projects and areas to be designed to maintain a continuous retail facade on all street frontages, except for public plazas and pedestrian passages between the front and rear of buildings.	Consistent – All Alternatives. The project does not propose a new "downtown"; however, Alternatives 1, 3, 5, and 6 include mixed uses that support year-round function of the resort and that support the existing neighborhood.
1.D.8. The County shall require minimal, or in some cases no, building setbacks for commercial and office uses in new downtowns/village centers.	Consistent – All Alternatives. The project does not propose a new "downtown"; however, Alternatives 1, 3, 5, and 6 include mixed uses that support year-round function of the resort and that support the existing neighborhood.
1.D.9. The County shall encourage parking in downtowns/village centers to be consolidated in well-designed and landscaped lots or in well-located parking structures.	Consistent – All Alternatives. The project does not propose a new "downtown"; however, Alternatives 1, 3, and 5 include mixed uses that support year-round function of the resort and that support the existing neighborhood. Parking will be located in underground garages at each base area.
1.D.10. The County shall encourage the preservation of historic and attractive buildings in existing downtowns/village centers, and encourage new development to enhance the character of downtowns/village centers.	Consistent – All Alternatives. There are no historic or attractive buildings existing onsite.
1.D.11. The County shall require that existing and new downtowns/village centers and development within them be designed to integrate open spaces into the urban fabric where possible, especially taking advantage of	Consistent – All Alternatives. The project does not propose a new "downtown"; however, Alternatives 1, 3, 5, and 6 include mixed uses that support year-round function of the resort and that support the existing

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any natural amenities such as creeks, hillsides, and scenic views.	neighborhood. These alternatives include public spaces within the development.
PUBLIC AND QUASI-PUBLIC FACILITIES, INFRASTRUCTURE	
Goal 1.F: To designate adequately-sized, well-located areas for the development of public facilities to serve both community and regional needs.	
1.F.1. The County will encourage the concentration of public and quasi-public facilities. New and expanded government offices and other professional offices should be encouraged to locate on land near existing government offices.	Consistent – All Alternatives. There are no existing government offices onsite or proposed. Alternatives 1, 3, 5, and 6 include recreation facilities accessible to the public, including a community swimming pool and amphitheater, but no offices are planned.
1.F.2. The County shall seek to locate new public facilities necessary for emergency response, healthcare, and other critical functions outside areas subject to natural or built environment hazards.	Consistent – All Alternatives. Emergency response or healthcare facilities are not proposed.
1.F.3. The County shall require public facilities, such as wells, pumps, tanks, and yards, to be located and designed so that noise, light, odors, and appearance do not adversely affect nearby land uses.	Consistent – All Alternatives. Alternative 2 does not propose changes to existing conditions. Alternative 4 does not propose public facilities. Alternatives 1, 3, 5, and 6 include tanks and maintenance areas that serve the resort and ski facilities. These facilities are located at the mid-mountain lodge to avoid adverse affects on adjacent residential land uses located at the bottom of the resort.
RECREATION LAND USE	
Goal 1.G: To designate land for and promote the development and expansion of public and private recreational facilities to serve the needs of residents and visitors.	
1.G.1. The County will support the expansion of existing winter ski and snow play areas and development of new areas where circulation and transportation system capacity can accommodate such expansions or new uses and where environmental impacts can be adequately mitigated.	Inconsistent – Alternatives 2 and 4. Alternative 2 does not propose the expansion of ski facilities. Alternative 4 proposes to eliminate the existing ski facilities at HMR. Consistent – Alternatives 1, 3, 5, and 6. These alternatives propose expansion of a cross-country ski trail onsite. This trail will restore the 1960 Olympic course and connect it to the Homewood Ski Area Base area and will not result in significant impact.
1.G.2. The County shall strive to have new recreation areas located and designed to encourage and accommodate non-auto mobile access.	Consistent – All Alternatives. Alternatives 2 and 4 do not propose new recreation. Alternatives 1, 3, 5, and 6 propose new recreation uses within an existing recreation area. The proposed tourist and residential uses onsite, as well as pedestrian paths, transit services, and the bike trail extension onsite encourage non-auto access to the resort and recreational uses.
1.G.3. The County shall continue to require the development of new recreational facilities as new residential development occurs.	Consistent – Alternatives 1, 2, 3, 5, and 6. Alternative 2 does not propose new development. Alternatives 1, 3, 5, and 6 propose new recreational facilities and new residential development. New recreation supports the community year-round. Inconsistent – Alternative 4. Alternative 4 proposes new residential development at the expense of existing recreational development. No other recreational development is proposed onsite to offset the loss.

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OPEN SPACE, HABITAT, AND WILDLIFE RESOURCES	
Goal 1.I: To establish and maintain interconnected greenbelts and open spaces for the protection of native vegetation and wildlife and for the community's enjoyment.	
1.I.1. The County shall require that significant natural, open space, and cultural resources be identified in advance of development and incorporated into site-specific development project design. The Planned Residential Developments (PDs) and the Commercial Planned Development (CPD) provisions of the Zoning Ordinance can be used to allow flexibility for this integration with valuable site features.	Consistent – All Alternatives. The Project area does not include existing dedicated or designated open space. Portions of the mountain that area not developed will be deed restricted to prevent future non-recreational development onsite and will result in the preservation of natural landscape on the mountainside.
1.I.2. The County shall require that development be planned and designed to avoid areas rich in wildlife or of a fragile ecological nature (e.g., areas of rare or endangered plant species, riparian areas). Alternatively, where avoidance is infeasible or where equal or greater ecological benefits can be obtained through off-site mitigation, the County shall allow project proponents to contribute to off-site mitigation efforts in lieu of on-site mitigation. [See also policies/programs under Goal 6.B. Wetland and Riparian Areas; Goal 6.C. Fish and Wildlife Habitat; Goal 6.D. Vegetation; and Goal 6.E. Open Space For the Preservation of Natural Resources]	Consistent – All Alternatives. Alternative 2 does not propose new development. The Project area contains existing development. These disturbed areas will be reused or, where SEZ exists, restored at least partially. Water quality improvements will result in benefits both on (Alternatives 1, 3, 4, 5 and 6) and offsite (Alternatives 1 and 3). Sensitive areas, such as Quail Lake would not be developed under any Alternative.
VISUAL AND SCENIC RESOURCES	
Goal 1.K: To protect the visual and scenic resources of Placer County as important quality-of-life amenities for County residents and a principal asset in the promotion of recreation and tourism.	
1.K.1. The County shall require that new development in scenic areas (e.g., river canyons, lake watersheds, scenic highway corridors, ridgelines and steep slopes) is planned and designed in a manner which employs design, construction, and maintenance techniques that: a. Avoids locating structures along ridgelines and steep slopes; b. Incorporates design and screening measures to minimize the visibility of structures and graded areas; c. Maintains the character and visual quality of the area.	Consistent –Alternative 2. Alternative 2 does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, and 6. Alternative 4 includes mitigation to ensure future design maintains the visual quality objectives of the area and includes appropriate architecture and landscaping. Alternatives 1, 3, and 6 include landscaping, placement of the mid-mountain lodge further back from the ridge and mitigation to reduce structural visibility and maintain consistency with design guidelines for the area. Inconsistent – Alternative 5. Alternative 5 proposes multi-family housing along SR 89; however findings cannot be made to support a height amendment for a 4-story structure highly visible from a scenic corridor and uncharacteristic of the surrounding residential community.
1.K.2. The County shall require that new development in scenic areas be designed to utilize natural landforms and vegetation for screening structures, access roads, building foundations, and cut and fill slopes.	Consistent – All Alternatives. New structures will reflect the "Old Tahoe" architectural style that incorporates natural materials in to the design and will maintain large trees along the roadway in addition to new landscaping to screen buildings.
1.K.3. The County shall require that new development in rural areas incorporates landscaping that provides a transition between the vegetation in developed areas and	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 4, 5, and 6 include landscaping to screen structures and integrate

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adjacent open space or undeveloped areas.	them into the surrounding environment.
1.K.4. The County shall require that new development incorporates sound soil conservation practices and minimizes land alterations. Land alterations should comply with the following guidelines: a. Limit cuts and fills; b. Limit grading to the smallest practical area of land; c. Limit land exposure to the shortest practical amount of time; d. Replant graded areas to ensure establishment of plant cover before the next rainy season; and e. Create grading contours that blend with the natural contours on site or with contours on property immediately adjacent to the area of development.	Consistent –Alternative 2. Alternative 2 does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. Cut and fill, grading, and ground disturbance will occur under each of these alternatives. Alternative 3 results in greater ground disturbance than Alternative 1 due to decreased height and larger building footprints. Disturbance will be limited as feasible. Exposed areas will be covered to limit exposure time and BMPs will be utilized to reduce erosion. Exposed areas will be replanted and landscaping may include contours if appropriate at each landscape area. Erosion control devices will be used onsite.
1.K.5. The County shall require that new roads, parking, and utilities be designed to minimize visual impacts. Unless limited by geological or engineering constraints, utilities should be installed underground and roadways and parking areas should be designed to fit the natural terrain.	Consistent – All Alternatives. Alternative 2 does not propose new development. For Alternatives 1, 3, 4, 5, and 6, utilities will be placed underground. A majority of parking for Alternatives 1, 3, 5, and 6 will be placed underground.
1.K.6. The County shall require that new development on hillsides employ design, construction, and maintenance techniques that: a. Ensure that development near or on portions of hillsides do not cause or worsen natural hazards such as erosion, sedimentation, fire, or water quality concerns; b. Include erosion and sediment control measures including temporary vegetation sufficient to stabilize disturbed areas; c. Minimize risk to life and property from slope failure, landslides, and flooding; and d. Maintain the character and visual quality of the hillside.	Consistent –Alternative 2. Alternative 2 does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, and 6. Hillside ground disturbance will occur under each of these alternatives. Alternative 3 results in greater ground disturbance than Alternative 1 due to decreased height and larger building footprints. Disturbance will be limited as feasible. Exposed areas will be covered to limit exposure time and BMPs will be utilized to reduce erosion and control sediment. Exposed areas will be replanted. Development will be clustered at the lower portion of the mountain to maintain community character. Structures will not be placed in flood areas or on unstable slopes. Inconsistent – Alternative 5. Findings cannot be made to support a height amendment for a 4-story structure highly visible from a scenic corridor and uncharacteristic of the surrounding residential community.
SCENIC ROUTES	
Goal 1.L: To develop a system of scenic routes serving the needs of residents and visitors to Placer County and to preserve, enhance, and protect the scenic resources visible from these scenic routes.	
1.L.3. The County shall protect and enhance scenic corridors through such means as design review, sign control, undergrounding utilities, scenic setbacks, density limitations, planned unit developments, grading and tree removal standards, open space easements, and land conservation contracts.	Inconsistent –Alternative 2. Alternative 2 does not propose new development or improvements to the site to reach attainment within the scenic corridor. Consistent with Mitigation – Alternatives 1, 3, 4, and 6. Alternative 4 includes mitigation to ensure future design maintains the visual quality objectives of the area and includes appropriate architecture and landscaping. Alternatives 1, 3, and 6 include landscaping, placement of the mid-mountain lodge further back from the ridge and mitigation to reduce structural visibility and

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	maintain consistency with design guidelines for the area. Inconsistent – Alternative 5. Findings cannot be made to support a height amendment for a 4-story structure highly visible from a scenic corridor and uncharacteristic of the surrounding residential community.
1.L.4. The County shall provide for landscaping and/or landscaped mounding along designated scenic corridors where desirable to maintain and improve scenic qualities and screen unsightly views.	Inconsistent –Alternative 2. Alternative 2 does not propose new development or improvements to the site to reach attainment within the scenic corridor. Consistent – Alternatives 1, 3, 4, and 6. Each of these alternatives includes landscaping along SR 89 to improve the scenic quality of the roadway. Inconsistent – Alternative 5. Although landscaping is proposed, the 4-story structure will remain visible from SR 89 and will not improve the scenic quality of the site. Findings cannot be made to support a height amendment for a 4-story structure highly visible from a scenic corridor and uncharacteristic of the surrounding residential community.
1.L.5. The County shall encourage the development of trails, picnicking, observation points, parks, and roadside rests along scenic highways.	Consistent – Alternatives 1, 2, 3, 5, and 6. These alternatives include the ski resort that is accessible to the public. Alternatives 1, 3, and 5 include hiking trails, the mid-mountain lodge, and bike trail extensions that are open to the public. Inconsistent – Alternative 4. Alternative 4 eliminates the ski facilities and does not include bike trail extension or observation points.
1.L.6. The County shall protect and maintain historical landmarks and historical monuments along scenic routes.	Consistent – All Alternatives. There are no historic landmarks or monuments at the Project area.
1.L.7. The County shall encourage the use of bicycles as an alternative mode of travel for recreational purposes in scenic corridors.	Consistent – All Alternatives. A bike route is located along SR 89 in this location; however, Alternatives 1, 3, 5, and 6 include the extension of the West Shore bike trail through the resort and includes a proposal for a free bike-share program for resort guests.
JOBS-HOUSING BALANCE	
Goal 1.M: To work toward a jobs-housing balance.	
1.M.1. The County shall concentrate most new growth within existing communities emphasizing infill development, intensified use of existing development, and expanded services, so individual communities become more complete, diverse, and balanced.	Consistent – All Alternatives. The Project area is currently developed and located within an existing community. The action alternatives propose reuse or expanded use of the site in ways that serve the existing community.
1.M.2. The County shall encourage large residential projects to be phased or timed to occur simultaneously with development that will provide primary wage-earner jobs.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternative 4 proposes new residential units in conjunction with a new commercial development. Alternatives 1, 3, 5, and 6 include residential development in conjunction with expansion of the ski resort, including new commercial uses. Project phasing develops whole areas of the Project area (North Base vs. South Base) so that there is a balance between housing and jobs. Commercial uses and housing will be developed simultaneously.

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1.M.3. The County shall encourage the creation of primary wage-earner jobs, or housing which meets projected income levels, in those areas of Placer County where an imbalance between jobs and housing exists.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 4, 5, and 6 include new residential uses, many of which will become second homes and not primary residences. Each alternative proposes commercial and/or recreational uses that are viable year-round. While not all residences will be supported by the new jobs, not all residences will be occupied as primary homes.
ECONOMIC DEVELOPMENT	
Goal 1.N: To maintain a healthy and diverse local economy that meets the present and future employment, shopping, recreational, public safety, and service needs of Placer County residents and to expand the economic base to better serve the needs of residents.	
1.N.1. The County shall promote economic expansion based on Placer County's unique recreational opportunities and natural resources.	Consistent – Alternatives 1, 3, 5, and 6. These alternatives propose expanded use of the site and new recreation facilities that make the site economically viable year-round and enhance the resort experience. Inconsistent – Alternatives 2 and 4. These alternatives do not result in economic expansion based on recreational opportunities. Alternative 2 does not change existing conditions and Alternative 4 closes the ski facilities.
1.N.2. The County shall encourage the retention, expansion and development of new businesses, especially those that provide primary wage-earner jobs, by designating adequate land and providing infrastructure in areas where resources and public facilities and services can accommodate employment generators.	Consistent –All Alternatives. The Project area includes a large area with potential for economic growth and that is served by utilities and services.
1.N.3. The County shall endeavor to protect the natural resources upon which the County's basic economy (e.g., recreation, forestry, agriculture, mining, and tourism) is dependent.	Consistent – Alternatives 1, 2, 3, 5, and 6. Each of these alternatives maintains or expands upon an existing recreation resource. Alternatives 1, 3, 5, and 6 expand upon this by encouraging new tourism in the area. Inconsistent – Alternative 4. This alternative closes a significant recreation resource and the potential for tourism, which would be a permanent loss to the County.
1.N.4. The County shall focus economic development efforts on projects that will maximize long-term net revenues to the County.	Consistent – Alternatives 1, 2, 3, and 5. Each of these alternatives maintains or expands upon an existing recreation resource and encourage new tourism in the area for year-round economic viability. Inconsistent – Alternatives 2 and 4. Alternative 2 does not propose changes to maximize revenues. There is a risk that the ski resort will close without expansion of base areas. While Alternative 4 includes a viable, year-round commercial development, it does so at the expense of tourist and recreation facility with greater revenue potential.
1.N.5. The County shall encourage flexibility in development standards to accommodate uses that provide a substantial economic benefit to the community.	Consistent – All Alternatives. As needed, the alternatives propose amendments to land use designations and standards to allow a sustainable mix of development.
1.N.7. The County shall strive to coordinate its	Consistent – All Alternatives. The alternatives support

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economic development efforts with the efforts of cities and other economic development organizations, including local chambers of commerce.	exiting communities and the region by either maintaining a resort, improving a resort, or developing new commercial uses.
High Sierra Policies	
1.N.15. The County shall support development of tourist and recreational facilities that extend the High Sierra's tourist season.	Consistent – Alternatives 1, 3, 5, and 6. These alternatives include mixed-use development, new recreation uses that are viable year-round (swimming pool, hiking trials, etc.) and new tourist accommodations to increase visitor accessibility throughout the year. Inconsistent – Alternatives 2 and 4. Alternative 2 does not propose new facilities to increase year-round visitors. Alternative 4 eliminates the ski facilities and removes a desirable tourism feature.
DEVELOPMENT FORM AND DESIGN	
Goal 1.O: To promote and enhance the quality and aesthetics of development in Placer County.	
1.O.1. The County shall require all new development to be designed in compliance with applicable provisions of the Placer County Design Guidelines Manual.	Consistent –Alternative 2. Alternative 2 does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, and 6. Alternative 4 includes mitigation to ensure future design maintains the visual quality objectives of the area and includes appropriate architecture and landscaping. Alternatives 1, 3, and 6 include landscaping, placement of the mid-mountain lodge further back from the ridge and mitigation to reduce structural visibility and maintain consistency with design guidelines for the area. Inconsistent – Alternative 5. Alternative 5 proposes a 4-story multi-family housing structure along SR 89; however this structure is highly visible from a scenic corridor and uncharacteristic of the surrounding community.
1.O.3. The County shall require that all new development be designed to be compatible with the scale and character of the area. Structures, especially those outside of village, urban, and commercial centers, should be designed and located so that: a. They do not silhouette against the sky above ridgelines or hilltops; b. Roof lines and vertical architectural features blend with and do not detract from the natural background or ridge outline; c. They fit the natural terrain; and d. They utilize building materials, colors, and textures that blend with the natural landscape (e.g., avoid high contrasts).	Consistent –Alternative 2. Alternative 2 does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, and 6. Alternative 4 includes mitigation to ensure future design maintains the visual quality objectives of the area and includes appropriate architecture and landscaping. Alternatives 1, 3, and 6 include landscaping, placement of the mid-mountain lodge further back from the ridge and mitigation to reduce structural visibility and maintain consistency with design guidelines for the area. Inconsistent – Alternative 5. Alternative 5 proposes a highly visible 4-story multi-family housing structure along SR 89. The height and visibility of the structure are incompatible with the surrounding residential community.
1.O.4. The County shall require that new rural and suburban development be designed to preserve and maintain the rural character and quality of the County.	Consistent –Alternative 2. Alternative 2 does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, and 6. Alternative 4 includes mitigation to ensure future design maintains the visual quality objectives of the area and includes appropriate architecture and landscaping.

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	Alternatives 1, 3, and 6 include landscaping, placement of the mid-mountain lodge further back from the ridge and mitigation to reduce structural visibility and maintain consistency with design guidelines for the area. Inconsistent – Alternative 5. Alternative 5 proposes a highly visible 4-story multi-family housing structure along SR 89. The height and visibility of the structure are incompatible with the surrounding residential community.
1.O.5. The County shall require that new development at entrances to rural communities be designed to include elements such as signage, landscaping, and appropriate architectural detailing to help establish distinct identities for such communities.	Consistent – All Alternatives. The Project area is not located within an entrance to a rural community.
1.O.6. Historically or architecturally significant buildings should be preserved and not be substantially changed in exterior appearance in ways that diminish their historical character, unless doing so is necessary to avoid or mitigate hazards, and other means of mitigation are infeasible. Such structures should be preserved and used as focal points of community design.	Consistent – All Alternatives. There are no historically or architecturally significant buildings onsite.
1.O.7. The County shall require that mixed-use areas include community focal points to serve as gathering and/or destination points. Examples of focal points include civic centers, parks, fountains, monuments, and street vistas. On-site natural features, such as wetlands and streams, can also function as focal points.	Consistent – All Alternatives. Alternative 2 does not include mixed-use. Alternatives 1, 3, 4, 5, and 6 include tourist and/or commercial uses along the roadway frontage. This includes pedestrian areas, landscaping, and in general, improvements to the scenic quality.
1.O.8. The County shall, where appropriate, require new development to provide activity pockets along public sidewalks as pedestrian amenities, including such features as benches, sitting ledges, and mini-parks.	Consistent – All Alternatives. Alternative 2 does not include mixed-use. Alternatives 1, 3, 4, 5, and 6 include tourist and/or commercial uses along the roadway frontage. This includes pedestrian areas, landscaping, and in general, improvements to the scenic quality.
1.O.9. The County shall discourage the use of outdoor lighting that shines unnecessarily onto adjacent properties or into the night sky.	Consistent – Alternative 2. This alternative does not include new lighting. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. Lighting designs have not been prepared for these alternatives. Mitigation requires that lighting plans do not affect the night sky and that light is directed downwards and is purposeful.
1.O.10. The County shall require that in downtowns/village centers the tallest buildings be clustered in the core area and that building heights transition down to the scale of buildings in the surrounding area.	Consistent – Alternatives1, 2, 3, 4, and 6. Alternative 2 does not propose new development. Alternatives 1, 3 and 6 place smaller buildings at the roadside and taller buildings clustered and stepped against the mountain slopes to reduce the scale of buildings and visibility. Inconsistent – Alternative 5. Alternative 5 proposes a highly visible 4-story multi-family housing structure at the periphery of the development adjacent to SR 89.

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AFFORDABLE HOUSING SUPPLY	
Goal 2.A: To provide a continuing supply of affordable housing to meet the needs of existing and future Placer County residents in all income categories.	
2.A.5. The County shall encourage "mixed-use" projects where housing is provided in conjunction with compatible non-residential uses.	Consistent – Alternatives 1, 2, 3, 5 and 6. Alternative 2 does not propose new development. Alternatives 1, 3, 5, and 6 include mixed-use development that includes affordable housing. Inconsistent – Alternative 4. Affordable housing is not proposed for this alternative.
2.A.6. The County shall relax or reduce development standards for low-income housing projects as an incentive for developers.	Consistent – All Alternatives. For those alternatives that include affordable housing, development standards will be maintained, although densities will need to be increased.
2.A.11. All new housing projects of 100 or more units on land that has received an increase in allowable density through either a public or privately initiated general plan amendment, community plan amendment, rezoning or specific plan shall be required to provide at least 10% of the units to be affordable to low-income households. The low-income units shall be available concurrently with the market-rate units. All such units shall remain affordable for at least 20 years. In cases where developers actually construct the low-income units, the projects shall be eligible for a 10% density bonus. The Land Use Element and Zoning Ordinance will be amended to avoid potential conflicts with minimum lot size standards in cases where the density bonus option is exercised. In cases where the County determines that it is impractical for the developer to actually construct the units on site, the County may as an alternative allow the dedication of land sufficient to accommodate at least 10% of the units for low-income households and/or the payment of an in-lieu fee. In cases where land dedication is deemed suitable, such land shall be offered in fee to the County or to another public or nonprofit agency approved by the County. The amount of the in-lieu fee shall be determined on a case-by-case basis. The County may require the developer to fund an analysis showing how contributions of in-lieu fees could be best utilized to create the desired number of low-cost units.	Consistent – Alternatives 2 and 4. These alternatives do not propose 100+ unit housing projects. Consistent with Mitigation – Alternatives 1, 3, 5 and 6. Alternatives 1 and 3 propose 181 residential housing units and 13 employee housing units with approximately 50 beds, which is less than 10 % of the total units. These units will be deed restricted as affordable housing; however, a deficit of 5 units remains that will require offsite affordable housing. Alternative 5 proposes 241 housing units and 12 employee housing units. Alternative 6 proposes 195 residential units and 12 employee housing units. Alternatives 5 and 6 will require additional offsite affordable housing units or payment of an in-lieu fee will be required for consistency.
2.A.14. Housing for low-income households that is required in a new residential project shall not be concentrated into a single building or portion of the site but shall be dispersed throughout the project, to the extent practical, given the size of the project and other site constraints.	Consistent – Alternatives 1, 3, 5 and 6. Employee housing under Alternatives 1, 3 and 5 would be concentrated in a single location adjacent to the North Base area; however this area provides the greatest number of transportation oriented development features, including transit service, neighborhood commercial, daycare, and is nearest to existing commercial/service uses in the area. It would not be appropriate to disperse housing up the mountain. Consistent – Alternatives 2 and 4. These alternatives do

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	not propose employee housing.
2.A.16. The County shall require low-income housing units in density bonus projects to be available at the same time as the market-rate units in the project.	Consistent – All Alternatives. For those alternatives that include employee housing, the units would be available in the first phase of development.
2.A.18. The County shall require new resorts in the Sierra Nevada and Lake Tahoe areas to provide for employee housing equal to 50% of the housing demand generated by the project. Employee housing shall be provided for in one of the following ways (in order of preference): • Construction of employee housing onsite. • Construction of employee housing offsite. • Dedication of land for needed units. • Payment of an in-lieu fee.	Consistent – All Alternatives. Workforce housing for at least 50% of new employees (full time equivalent) generated under Alternatives 1, 3, 5 and 6 would be constructed in the North Base area. Workforce housing requirements under Alternative 4 would be through another appropriate means as specified under Policy 2.A.18.
2.A.20. The County will encourage the development of multi-family dwellings in locations where adequate facilities are available and where such development would be consistent with neighborhood character.	Consistent – Alternatives 2 and 4. These alternatives do not propose multi-family dwellings and multi-family dwellings are not a permitted land use in this area. Consistent with Amendment – Alternatives 1, 3 and 6. These alternatives propose multi-family dwellings at the base area to concentrate development along SR 89. Such uses would be permitted through the proposed PAS amendments. Inconsistent – Alternative 5. An amendment is not feasible for this alternative, which would result in 45 DUA. In addition, the height and massing of the structure would not be compatible and unlikely that findings can be made to support an amendment.
Goal 2.B: To promote quality residential development in the County.	
2.B.1. The County encourages residential development of high architectural and physical quality, compatible with neighboring land uses.	Consistent – Alternatives 1, 2, 3, and 6. Alternative 2 does not include new development. Architectural design under Alternatives 1, 3, and 6 reflect the "old Tahoe" architectural style that emphasizes natural materials and the surrounding natural characteristic. Consistent with Mitigation – Alternative 4. No architectural plans are currently available for Alternative 4; however, mitigation for this alternative includes architectural treatments that comply with design guidelines for the area. Inconsistent – Alternative 5. This alternative includes a 4-story structure that would be visually incompatible with the neighborhood, regardless of architectural elements.
ENERGY CONSERVATION	
Goal 2.G: To increase the efficiency of energy use in new and existing homes, with a concurrent reduction in housing costs to Placer County residents.	
2.G.1. All new dwelling units shall be required to meet current state requirements for energy efficiency. The retrofitting of existing units shall be encouraged.	Consistent – All Alternatives. Housing under Alternatives 1, 3, 5, and 6 would meet LEED Certification requirements, which exceeds energy conservation standards under Title 24. Single-family homes under Alternative 4 would be required to meet or exceed current State energy conservation standards

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	under Title 24.
2.G.2. New land use patterns should encourage energy efficiency, to the extent feasible.	Consistent – All Alternatives. Housing under Alternatives 1, 3, 5, and 6 would meet LEED Certification requirements, which exceeds energy conservation standards under Title 24. Multi-family in a mixed use area along SR 89 is expected to conserve energy by being compatible with reducing vehicle trips and encouraging pedestrian, bicycle, and transit trips. By decommissioning the ski area and constructing 16 single-family homes, Alternative 4 is expected to have a next reduction in energy demand.
QUANTIFIED HOUSING OBJECTIVES Very low-income: 1,234 units. Low-income: 918 units. Moderate Income: 1,143 units. Above moderate income: 1,884 units. Total Units: 5,178 units. Tenure: 25% rentals, 75% owner-occupied. Type: 75% single-family detached; 25% multi-family and mobile home.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 4, 5, and 6 include new residential uses of various mixes.
TRANSPORTATION AND CIRCULATION	
STREETS AND HIGHWAYS	
Goal 3.A: To provide for the long-range planning and development of the County's roadway system to ensure the safe and efficient movement of people and goods.	
3.A2. Streets and roads shall be dedicated, widened, and constructed according to the roadway design and access standards generally defined in Section I of this Policy Document and, more specifically, in community plans and the County's Highway Deficiencies Report. Exceptions to these standards may be necessary but should be kept to a minimum and shall be permitted only upon determination by the Public Works Director that safe and adequate public access and circulation are preserved by such exceptions.	Consistent – All Alternatives. For the alternatives that propose roadway improvements through mitigation, the improvements will be in accordance with County standards.
3.A3. The County shall require that roadway rights-of way be wide enough to accommodate the travel lanes needed to carry long-range forecasted traffic volumes (beyond 2010), as well as any planned bikeways and required drainage, utilities, landscaping, and suitable separations. Minimum right-of-way criteria for each class of roadway in the County are specified in Part I of this Policy Document (see page 29).	Consistent – All Alternatives. For the alternatives that propose roadway improvements, landscaping, and drainage improvement, the improvements will be in accordance with County standards.
3.A4. On arterial roadways and thoroughfares, intersection spacing should be maximized. Driveway encroachments along collector and arterial roadways shall be minimized. Access control restrictions for each class of roadway in the County are specified in Part I of this Policy Document (see page 29).	Consistent – All Alternatives. As analyzed in Chapter 11 of this EIR/EIS, intersection improvements are included as mitigation under Alternatives 1, 3, 5, and 6.
3.A5. Through-traffic shall be accommodated in a manner that discourages the use of neighborhood	Consistent – All Alternatives. Existing and proposed facilities are located to avoid access through area

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roadways, particularly local streets. This through-traffic, including through truck traffic, shall be directed to appropriate routes in order to maintain public safety and local quality of life.	neighborhood roadways. Through traffic is directed toward SR 89.
3.A6. The County shall require all new development to provide off-street parking, either on-site or in consolidated lots or structures.	Consistent – Alternatives 2, 5, and 6. No new development is proposed for Alternative 2 and no new parking is required. As discussed in Chapter 11 of this EIR/EIS, Alternatives 5 and 6 provide an adequate number of parking spaces. Consistent with Mitigation – Alternatives 1, 3, and 4. Alternatives 1 and 3 will provide 48 parking spaces at the south base area, which may be taken from the 52 excess parking spaces at the north base. Alternative 4 will provide 66 spaces at the commercial center and 2 off-street parking spaces per residence. These will be implemented through mitigation.
3.A7. The County shall develop and manage its roadway system to maintain the following minimum levels of service (LOS). • LOS "C" on rural roadways, except within one-half mile of state highways where the standard shall be LOS "D". • LOS "C" on urban/suburban roadways except within one-half mile of state highways where the standard shall be LOS "D". The County may allow exceptions to these level of service standards where it finds that the improvements or other measures required to achieve the LOS standards are unacceptable based on established criteria. In allowing any exception to the standards, the County shall consider the following factors: • The number of hours per day that the intersection or roadway segment would operate at conditions worse than the standard. • The ability of the required improvement to significantly reduce peak hour delay and improve traffic operations. • The right-of-way needs and the physical impacts on surrounding properties. • The visual aesthetics of the required improvement and its impact on community identity and character. • Environmental impacts including air quality and noise impacts. • Construction and right-of-way acquisition costs. • The impacts on general safety. • The impacts of the required construction phasing and traffic maintenance. • The impacts on quality of life as perceived by residents. • Consideration of other environmental, social, or economic factors on which the County may base findings to allow an exceedance of the standards.	Consistent – Alternative 2. No changes to the LOS would occur for this alternative. Consistent – Alternative 4. The existing intersection delays would decrease under this alternative during winter conditions. Consistent with Mitigation – Alternatives 1, 3, 5, and 6. These alternatives will result in increased delays, within the same LOS levels. Those intersections that currently operate at unacceptable LOS will receive intersection enhancements to improve the LOS. Participation in EIP Project #855 will improve queuing issues at the Y in Tahoe City.

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Exceptions to the standards will only be allowed after all feasible measures and options are explored, including alternative forms of transportation.	
3.A.12. The County shall require an analysis of the effects of traffic from all land development projects. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. Such improvements may include a fair share of improvements that provide benefits to others.	Consistent – All Alternatives. Traffic is analyzed in Chapter 11 of this EIR/EIS and includes mitigation measures to reduce traffic impacts. In addition, Alternatives 1, 3, 5 and 6 include EIP projects including intersection and traffic flow improvements.
3.A.14. The County shall assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system. Exceptions may be made when new development generates significant public benefits (e.g., low-income housing, needed health facilities) and when alternative sources of funding can be identified to offset foregone revenues.	Consistent – All Alternatives. Alternative 2 will not result in new development. The remaining alternatives would either decrease traffic (Alternative 4) or result in intersection improvements through mitigation and participation in traffic-related EIP projects.
TRANSIT	
Goal 3.B: To promote a safe and efficient mass transit system, including both rail and bus, to reduce congestion, improve the environment, and provide viable non-automotive means of transportation in and through Placer County.	
3.B.3. The County shall consider the need for future transit right-of-way in reviewing and approving plans for development. Rights-of-way may either be exclusive or shared with other vehicles.	Consistent – All Alternatives. Alternative 2 does not include development plans. Existing right of way would remain, although Alternatives 1, 3, 5, and 6 would enhance transit stops and would expand the bike trail through the site.
3.B.9. The County shall require development of transit services by ski resorts and other recreational providers in the Sierra to meet existing and future recreational demand.	Consistent – All Alternatives. Alternative 2 does not propose new transit service, but will not eliminate the existing transit stops at the site. Alternative 4 will eliminate the ski resort, but transit stops will remain. Alternatives 1, 3, 5, and 6 will enhance the transit stops and will offer a variety of alternative transportation options including shuttle service, dial-a-ride, water taxi service, free bike fleet for resort guests, hybrid electric rental vehicles for resort guests, and expansion of the bike trail through the site.
3.B.12. The County shall encourage the development of facilities for convenient transfers between different transportation systems. (e.g., train-to-bus, bus-to-bus).	Consistent – All Alternatives. The Project area does not include transit connection sites other than the existing transit stops; however, alternatives 1, 3, 5, and 6 propose water taxi service, dial-a-ride and other skier shuttle services in addition to the TART system operations.
TRANSPORTATION SYSTEMS MANAGEMENT (TSM)	
Goal 3.C: To maximize the efficient use of transportation facilities so as to: 1) reduce travel demand on the County's roadway system; 2) reduce the amount of investment required in new or expanded facilities; 3) reduce the quantity of emissions of pollutants from automobiles; and 4) increase the energy-efficiency of the transportation system.	
3.C.1. The County shall promote the use of transportation systems management (TSM) programs that divert automobile commute trips to transit, walking,	Inconsistent – Alternatives 2 and 4. Alternative 2 does include new development. Alternative 4 does not include features that divert auto trips to transit, walking,

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and bicycling.	or bicycling. Consistent –Alternatives 1, 3, 5, and 6. Alternatives 1, 3, 5, and 6 will enhance the transit stops and will offer a variety of alternative transportation options including shuttle service, dial-a-ride, water taxi service, free bike fleet for resort guests, hybrid electric rental vehicles for resort guests, and expansion of the bike trail through the site.
3.C.2. The County shall promote the use, by both the public and private sectors, of TSM programs that increase the average occupancy of vehicles.	Consistent – All Alternatives. Alternative 2 does not include new development. Alternative 4 results in reduced vehicle trips from existing conditions. Alternatives 1, 3, 5, and 6 will enhance the transit stops and will offer a variety of alternative transportation options including shuttle service, dial-a-ride, water taxi service, free bike fleet for resort guests, hybrid electric rental vehicles for resort guests, and expansion of the bike trail.
3.C.4. During the development review process, the County shall require that proposed projects meet adopted Trip Reduction Ordinance (TRO) requirements.	Consistent – All Alternatives. Alternative 2 does not include new development. Alternative 4 results in reduced vehicle trips from existing conditions. Alternatives 1, 3, 5, and 6 will enhance the transit stops and will offer a variety of alternative transportation options including shuttle service, dial-a-ride, water taxi service, free bike fleet for resort guests, hybrid electric rental vehicles for resort guests, and expansion of the bike trail.
NON-MOTORIZED TRANSPORTATION	
Goal 3.D: To provide a safe, comprehensive, and integrated system of facilities for non-motorized transportation.	
3.D.1. The County shall promote the development of a comprehensive and safe system of recreational and commuter bicycle routes that provides connections between the County's major employment and housing areas and between its existing and planned bikeways.	Inconsistent – Alternatives 2 and 4. Alternative 2 does not include development plans. Alternative 4 does not include bike trail expansion. Consistent –Alternatives 1, 3, 5, and 6. Existing right of way would remain, although Alternatives 1, 3, 5, and 6 would expand the West Shore Bike Trail through the site.
3.D.2. The County shall work with neighboring jurisdictions to coordinate planning and development of the County's bikeways and multi-purpose trails with those of neighboring jurisdictions.	Inconsistent – Alternatives 2 and 4. Alternative 2 does not include development plans. Alternative 4 does not include bike trail expansion. Consistent –Alternatives 1, 3, 5, and 6. Alternatives 1, 3, 5, and 6 would expand the West Shore Bike Trail through the site. This would expand bike trail availability in the Region.
3.D.3. The County shall pursue all available sources of funding for the development and improvement of trails for non-motorized transportation (bikeways, pedestrian, and equestrian).	Inconsistent – Alternatives 2 and 4. Alternative 2 does not include development plans. Alternative 4 does not include bike trail expansion. Consistent –Alternatives 1, 3, 5, and 6. Existing right of way would remain, although Alternatives 1, 3, 5, and 6 would expand the West Shore Bike Trail through the site.
3.D.4. The County shall promote non-motorized travel	Inconsistent – Alternatives 2 and 4. Alternative 2 does

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(bikeways, pedestrian, and equestrian) through appropriate facilities, programs, and information.	not include development plans. Alternative 4 does not include bike trail expansion. Consistent –Alternatives 1, 3, 5, and 6. Existing right of way would remain, although Alternatives 1, 3, 5, and 6 would expand the West Shore Bike Trail through the site as well as pedestrian paths linking the various uses onsite.
3.D.5. The County shall continue to require developers to finance and install pedestrian walkways, equestrian trails, and multi-purpose paths in new development, as appropriate.	Inconsistent – Alternative 4. Alternative 4 does not include bike trail or pathway expansion. Consistent –Alternatives 1, 2, 3, 5, and 6. Alternative 2 does not include development plans. Existing right of way would remain, although Alternatives 1, 3, 5, and 6 would expand the West Shore Bike Trail through the site.
3.D.6. The County shall support the development of parking areas near access to hiking and equestrian trails.	Consistent – All Alternatives. Alternative 2 does not result in changes from existing conditions. Alternative 4 does not propose hiking or equestrian trails. Alternatives 1, 3, 5, and 6 include hiking trails that are accessible through pedestrian connections in the base areas that contain parking. Directional signage will be appropriately placed so that hikers can identify access routes.
3.D.7. The County shall, where appropriate, require new development to provide sheltered public transit stops, with turnouts. [See also policies/programs under Goal 5.C. Recreational Trails]	Consistent – All Alternatives. Alternative 2 does not include development plans. Alternatives 1, 3, 5, and6 would enhance transit stops with shelters. Alternative 4 would maintain existing conditions within roadway ROW.
PUBLIC FACILITIES AND SERVICES	
GENERAL PUBLIC FACILITIES AND SERVICES	
Goal 4.A: To ensure the timely development of public facilities and the maintenance of specified service levels for these facilities.	
4.A.1. Where new development requires the construction of new public facilities, the new development shall fund its fair share of the construction. The County shall require dedication of land within newly developing areas for public facilities, where necessary.	Consistent – All Alternatives. Alternative 2 does not result in changes to existing conditions. New facilities proposed for Alternatives 1, 3, 4, 5, and 6 will be funded by HMR.
4.A.2. The County shall ensure through the development review process that adequate public facilities and services are available to serve new development. The County shall not approve new development where existing facilities are inadequate unless the following conditions are met: a. The applicant can demonstrate that all necessary public facilities will be installed or adequately financed (through fees or other means); and b. The facilities improvements are consistent with applicable facility plans approved by the County or with agency plans where the County is a participant.	Consistent – All Alternatives. Alternative 2 does not result in changes to existing conditions. New facilities proposed for Alternatives 1, 3, 4, 5, and 6 will be funded by HMR.
4.A.3. The County shall require that new urban	Consistent – All Alternatives. Alternative 2 does not

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development is planned and developed according to urban facility standards.	result in changes to existing conditions. New facilities proposed for Alternatives 1, 3, 4, 5, and 6 will be funded by HMR and will be reviewed by the appropriate service providers.
4.A.4. The County shall require proposed new development in identified underground conversion districts and along scenic corridors to underground utility lines on and adjacent to the site of proposed development or, when this is infeasible, to contribute funding for future undergrounding.	Consistent –Alternatives 1, 2, 3, 5, and 6. Alternative 2 does not result in changes to existing conditions and will not result in new development. Utilities through the Project area will be placed underground under alternatives 1, 3, 5, and 6. Consistent with Mitigation – Alternative 4. Alternative 4 proposes new development. Mitigation for this alternative includes undergrounding utilities where new development would be created at the North Base area.
4.A.5. The County shall ensure that library facilities are provided to current and future residents in the unincorporated area. The County shall also require new development to fund its fair share of library facilities.	Consistent – All Alternatives. Alternative 2 does not result in changes to existing conditions. Appropriate County funding will be provided through the building permit process for Alternatives 1, 3, 4, 5, and 6; however, these alternatives will not negatively affect County libraries.
PUBLIC FACILITIES AND SERVICES FUNDING	
Goal 4.B: To ensure that adopted facility and service standards are achieved and maintained through the use of equitable funding methods.	
4.B.1. The County shall require that new development pay its fair share of the cost of all existing facilities it uses based on the demand for these facilities attributable to the new development; exceptions may be made when new development generates significant public benefits (e.g., low-income housing, needed health facilities) and when alternative sources of funding can be identified to offset foregone revenues.	Consistent – All Alternatives. Alternative 2 does not result in changes to existing conditions. New facilities proposed for Alternatives 1, 3, 4, 5, and 6 will be funded by HMR.
4.B.2. The County shall require that new development pay the cost of upgrading existing public facilities or construction of new facilities that are needed to serve the new development; exceptions may be made when new development generates significant public benefits (e.g., low-income housing, needed health facilities) and when alternative sources of funding can be identified to offset foregone revenues.	Consistent – All Alternatives. Alternative 2 does not result in changes to existing conditions. New facilities proposed for Alternatives 1, 3, 4, 5, and 6 will be funded by HMR.
4.B.3. The County shall require, to the extent legally possible, that new development pay the cost of providing public services that are needed to serve the new development; exceptions may be made when new development generates significant public benefits (e.g., low-income housing, needed health facilities) and when alternative sources of funding can be identified to offset foregone revenues. This includes working with the cities to require new development within city limits to mitigate impacts on Countywide facilities and services.	Consistent – All Alternatives. Alternative 2 does not result in changes to existing conditions. New facilities proposed for Alternatives 1, 3, 4, 5, and 6 will be funded by HMR.
4.B.6. The County shall require the preparation of a fiscal impact analysis for all major land development projects. The analysis will examine the fiscal impacts	Consistent – All Alternatives. Alternative 2 does not result in changes to existing conditions. New facilities proposed for Alternatives 1, 3, 4, 5, and 6 will be funded

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on the County and other service providers which result from large-scale development. A major project is a residential project with 100 or more dwelling units or a commercial, professional office or industrial development on 10 or more acres of land.	by HMR to avoid fiscal impacts on the County.
WATER SUPPLY AND DELIVERY	
Goal 4.C: To ensure the availability of an adequate and safe water supply and the maintenance of high quality water in water bodies and aquifers used as sources of domestic supply.	
4.C.1. The County shall require proponents of new development to demonstrate the availability of a long-term, reliable water supply. The County shall require written certification from the service provider that either existing services are available or needed improvements will be made prior to occupancy. Where the County will approve groundwater as the domestic water source, test wells, appropriate testing, and/or report(s) from qualified professionals will be required substantiating the long-term availability of suitable groundwater.	Consistent – Alternative 2. This alternative does not propose additional water use. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. Water services will be expanded onsite to serve the new uses. Mitigation to meet this policy includes a final water supply assessment.
4.C.2. The County shall approve new development based on the following guidelines for water supply: a. Urban and suburban development should rely on public water systems using surface supply. b. Rural communities should rely on public water systems. In cases where parcels are larger than those defined as suburban and no public water system exists or can be extended to the property, individual wells may be permitted. c. Agricultural areas should rely on public water systems where available, otherwise individual water wells are acceptable.	Consistent – Alternative 2. This alternative does not propose additional water use. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. The Tahoe City Public Utility District (TCPUD) currently serves the site. Water services will be expanded to serve the new uses. Mitigation includes a water supply assessment to ensure adequate supplies have been obtained.
4.C.3. The County shall encourage water purveyors to require that all new water services be metered.	Consistent – All Alternatives. Metering will occur at the discretion of TCPUD.
4.C.4. The County shall require that water supplies serving new development meet state water quality standards.	Consistent – All Alternatives. Water will be supplied by NTPUD, which has water quality standards and treatment in accordance with state standards.
4.C.5. The County shall require that new development adjacent to bodies of water used as domestic water sources adequately mitigate potential water quality impacts on these water bodies.	Consistent – All Alternatives. The project is located near Lake Tahoe and Quail Lake and the area includes Homewood Creek/Madden Creek/Quail Lake Creek. However, it is not immediately adjacent to bodies of water used as domestic water sources. BMPs and sediment treatment are proposed to maintain and improve runoff water quality.
4.C.6. The County shall promote efficient water use and reduced water demand by: a. Requiring water-conserving design and equipment in new construction; b. Encouraging water-conserving landscaping and other conservation measures; c. Encouraging retrofitting existing development with water-conserving devices; and d. Encouraging water-conserving agricultural irrigation	Consistent – All Alternatives. Alternative 2 does not include new development. Structures under the action alternatives are either pursuing LEED certification or at a minimum will comply with County standards for water conserving devices through the permitting process. Mitigation proposed includes metering, water conservation, and appropriate landscaping materials and irrigation.

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practices.	
4.C.9. The County shall support opportunities for groundwater users in problem areas to convert to surface water supplies.	Consistent – All Alternatives. The Project area is served by TCPUD and the MCWC.
4.C.11. The County shall protect the watersheds of all bodies of water associated with the storage and delivery of domestic water by limiting grading, construction of impervious surfaces, application of fertilizers, and development of septic systems within these watersheds.	Consistent – Alternative 2. No new development is proposed. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. Watershed protection occurs through the implementation of BMPs, stormwater control and treatment devices, landscaping, SEZ restoration, and limits on impervious surfaces. Mitigation is required to ensure fertilizer use does not affect the watershed.
4.C.12. The County shall limit the annual rate of growth to 3% in areas where domestic water is supplied by individual or community wells. Where surface water supplies provide domestic water, the amount of growth shall be limited to what can be served by available surface water supplies assuming a 4-year drought period and usage of one acre foot of water per year per household.	Consistent – All Alternatives. The Project area is served by TCPUD and MCWC.
SEWAGE COLLECTION, TREATMENT, AND DISPOSAL	
Goal 4.D: To ensure adequate wastewater collection and treatment and the safe disposal of liquid and solid waste.	
4.D.1. The County shall limit the expansion of urban communities to areas where community wastewater treatment systems can be provided.	Consistent – All Alternatives. Sewer service currently exists in the Project area and is provided by the TCPUD.
4.D.2. The County shall require proponents of new development within a sewer service area to provide written certification from the service provider that either existing services are available or needed improvements will be made prior to occupancy.	Consistent – All Alternatives. Alternative 2 does not propose new development. Adequate sewer capacity exists as discussed in Chapter 16; however HMR will provide new sewer connections and will pay fees to connect to the main. HMR will provide a detailed domestic sewer study engineering report to TCPUD.
4.D.3. The County shall discourage extension of sewer service outside of city spheres of influence and community plan areas, except in limited circumstances to resolve a public health hazard resulting from existing development, or where there is a substantial overriding public benefit.	Consistent – All Alternatives. Sewer service currently exists in the Project area and is provided by the Tahoe City Public Utility District (TCPUD).
4.D.4. The County shall promote efficient water use and reduced wastewater system demand by: a. Requiring water-conserving design and equipment in new construction; b. Encouraging retrofitting with water-conserving devices; and c. Designing wastewater systems to minimize inflow and infiltration to the extent economically feasible.	Consistent – All Alternatives. Alternative 2 does not include new development. Structures under the action alternatives are either pursuing LEED certification or at a minimum will comply with County standards for water conserving devices through the permitting process.

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STORMWATER DRAINAGE	
Goal 4.E: To collect and dispose of stormwater in a manner that least inconveniences the public, reduces potential water-related damage, and enhances the environment.	
4.E.1. The County shall encourage the use of natural stormwater drainage systems to preserve and enhance natural features.	Consistent – Alternatives 1, 3 5, and 6. Alternatives 1 and 3 will restore the SEZ function at the South Base, remove an existing stream culvert, and upgrade stormwater treatment facilities to a treatment level above existing TRPA standards. Alternatives 5 and 6 will upgrade existing stormwater treatment facilities through redevelopment, but do not propose the removal of the existing culvert in the Public ROW. Inconsistent – Alternatives 2 and 4. Alternative 2 does not propose changes to existing conditions. Alternative 4 includes coverage removal in the SEZ, but not the return of SEZ function.
4.E.3. The County shall consider using stormwater of adequate quality to replenish local groundwater basins, restore wetlands and riparian habitat, and irrigate agricultural lands.	Consistent – Alternatives 1, 3, 5, and 6. Stormwater in the Lake Tahoe basin cannot be re-applied to surface lands. However, Alternatives 1 and 3 will restore the SEZ function at the South Base, remove an existing stream culvert, and upgrade stormwater treatment facilities. Alternatives 5 and 6 will upgrade existing stormwater treatment facilities through redevelopment, but do not propose the removal of the existing culvert in the Public ROW. Inconsistent – Alternatives 2 and 4. Alternative 2 does not propose changes to existing conditions. Alternative 4 includes coverage removal in the SEZ, but not the return of SEZ function.
4.E.4. The County shall ensure that new storm drainage systems are designed in conformance with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the County Land Development Manual.	Consistent – All Alternatives. Final design for the selected alternative will be reviewed by County staff to ensure compliance prior to permitting.
4.E.5. The County shall continue to implement and enforce its Grading Ordinance and Flood Damage Prevention Ordinance.	Consistent – All Alternatives. Final design for the selected alternative will be reviewed by County staff to ensure compliance prior to permitting.
4.E.6. The County shall continue to support the programs and policies of the watershed flood control plans developed by the Flood Control and Water Conservation District.	Consistent – All Alternatives. Final design for the selected alternative will be reviewed by County staff to ensure compliance prior to permitting.
4.E.7. The County shall prohibit the use of underground storm drain systems in rural and agricultural areas, unless no other feasible alternatives are available for conveyance of stormwater from new development or when necessary to mitigate flood hazards.	Consistent – Alternatives 2 and 4. No new systems are proposed. Consistent with Mitigation – Alternatives 1, 3, 5, and 6. Underground storm drain systems and groundwater infiltration systems are proposed for the underground parking areas.
4.E.8. The County shall consider recreational opportunities and aesthetics in the design of stormwater ponds and conveyance facilities.	Consistent – Alternatives 2 and 4. No new systems are proposed. Consistent with Mitigation – Alternatives 1, 3, 5, and 6. Recreational areas and landscaping are considered in stormwater conveyance. Restoration of the SEZ

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	(alternatives 1 and 3) and the implementation of erosion control BMPs within the recreational area will reduce runoff.
4.E.9. The County shall encourage good soil conservation practices in agricultural and urban areas and carefully examine the impact of proposed urban developments with regard to drainage courses.	Consistent – Alternatives 1, 3, 5, and 6. These alternatives include SEZ restoration (Alternatives 1 and 3), BMPs, stormwater infiltration galleries, and streambank restoration and protection (Alternatives 1 and 3). Consistent with Mitigation – Alternative 4. This alternative does not include SEZ restoration; however the implementation of SEZ restoration and protection required for redevelopment of base areas would result in consistency. Inconsistent – Alternative 2. Alternative 2 would not require measures to protect streambanks from further erosion.
4.E.10. The County shall strive to improve the quality of runoff from urban and suburban development through use of appropriate and feasible mitigation measures including, but not limited to, artificial wetlands, grassy swales, infiltration/sedimentation basins, riparian setbacks, oil/grit separators, and other best management practices (BMPs).	Consistent – All Alternatives. Alternatives 1 and 3 include SEZ restoration, BMPs, stormwater infiltration galleries, and streambank restoration and protection, as well as offsite stormwater improvements (EIP). Alternatives 2, 4, 5, and 6 include BMPs to improve runoff quality.
4.E.11. The County shall require new development to adequately mitigate increases in stormwater peak flows and/or volume. Mitigation measures should take into consideration impacts on adjoining lands in the unincorporated area and on properties in jurisdictions within and immediately adjacent to Placer County.	Consistent – Alternatives 1, 3, 5, and 6. Alternatives 1 and 3 will restore the SEZ function at the South Base, remove an existing stream culvert, and upgrade stormwater treatment facilities. Alternatives 5 and 6 will upgrade existing stormwater treatment facilities through redevelopment, but do not propose the removal of the existing culvert in the Public ROW. Inconsistent – Alternatives 2 and 4. Alternative 2 does not propose changes to existing conditions. Alternative 4 includes coverage removal in the SEZ, but not the return of SEZ function.
4.E.12. The County shall encourage project designs that minimize drainage concentrations and impervious coverage and maintain, to the extent feasible, natural site drainage conditions.	Consistent – Alternatives 1, 3, 5 and 6. These alternatives include SEZ restoration, BMPs, stormwater infiltration galleries, and streambank restoration and protection. Consistent with Mitigation – Alternative 4. This alternative does not include SEZ restoration; however the implementation of SEZ restoration and protection required for redevelopment of base areas would result in consistency. Inconsistent – Alternative 2. Alternative 2 would not require measures to protect streambanks from further erosion.
4.E.13. The County shall require that new development conforms with the applicable programs, policies, recommendations, and plans of the Placer County Flood Control and Water Conservation District.	Consistent – All Alternatives. Final design for the selected alternative will be reviewed by County staff to ensure compliance prior to permitting.
4.E.14.The County shall require projects that have significant impacts on the quantity and quality of surface	Consistent – All Alternatives. These alternatives include SEZ restoration (Alternatives 1 and 3), BMPs,

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water runoff to allocate land as necessary for the purpose of detaining post-project flows and/or for the incorporation of mitigation measures for water quality impacts related to urban runoff.	stormwater infiltration galleries, and streambank restoration and protection (Alternatives 1 and 3), as well as offsite stormwater improvements (EIP). Alternative 2 would not result in changes to runoff and Alternative 4 would include BMPs to maintain runoff quality.
4.E.15. The County shall identify and coordinate mitigation measures with responsible agencies for the control of storm sewers, monitoring of discharges, and implementation of measures to control pollutant loads in urban storm water runoff (e.g., California Regional Water Quality Control Board, Placer County Division of Environmental Health, Placer County Department of Public Works, Placer County Flood Control and Water Conservation District).	Consistent – All Alternatives. Final design for the selected alternative will be reviewed by County staff to ensure compliance prior to permitting.
4.E.16. The County shall strive to protect domestic water supply canal systems from contamination resulting from spillage or runoff.	Consistent – All Alternatives. There are no water supply canal systems in the Project area.
FLOOD PROTECTION	
Goal 4.F: To protect the lives and property of the citizens of Placer County from hazards associated with development in floodplains and manage floodplains for their natural resource values.	
4.F.1. The County shall require that arterial roadways and expressways, residences, commercial and industrial uses and emergency facilities be protected, at a minimum, from a 100-year storm event.	Consistent – Alternatives 1 and 3. Alternatives 1 and 3 result in the relocation of structures and roads within the 100-year floodplain. Consistent – Alternatives 2, 4, 5, and 6. Alternatives 2 and 4 do not result in any change to the roadway or structures located in the floodplain in the South Base area. Alternatives 5 and 6 will remove buildings from the floodplain at the South Base, but will maintain the existing roadway within the 100-year flood zone. Neither of these Alternatives propose new development in the floodplain.
4.F.2. The County shall recognize floodplains as a potential public resource to be managed and maintained for the public's benefit.	Consistent – Alternatives 1 and 3. Alternatives 1 and 3 result in the relocation of structures and roads within the 100-year floodplain. Consistent – Alternatives 2, 4, 5, and 6. Alternatives 2 and 4 do not result in any change to the roadway or structures located in the floodplain in the South Base area. Alternatives 5 and 6 will remove buildings from the floodplain at the South Base, but will maintain the existing roadway within the 100-year flood zone. Neither of these Alternatives propose new development in the floodplain.
4.F.4. The County shall require evaluation of potential flood hazards prior to approval of development projects. The County shall require proponents of new development to submit accurate topographic and flow characteristics information and depiction of the 100-year floodplain boundaries under fully-developed, unmitigated runoff conditions.	Consistent – All Alternatives. Chapter 15 of the EIR/EIS identifies floodplain areas and evaluates flow characteristics in relation to each alternative.
4.F.5. The County shall attempt to maintain natural conditions within the 100-year floodplain of all rivers	Consistent – Alternatives 1 and 3. Alternatives 1 and 3 result in the relocation of structures and roads within the

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and streams except under the following circumstances: a. Where work is required to manage and maintain the stream's drainage characteristics and where such work is done in accordance with the Placer County Flood Damage Prevention Ordinance, California Department of Fish and Game regulations, and Clean Water Act provisions administered by the U.S. Army Corps of Engineers; or b. When facilities for the treatment of urban runoff can be located in the floodplain, provided that there is no destruction of riparian vegetation.	100-year floodplain and restoration and protection of stream channels, including the removal of an existing culvert. Inconsistent – Alternatives 2, 4, 5, and 6. Alternatives 2, 4, 5, and 6 do not result in the restoration or protection of area streams that experience streambank erosion.
4.F.8. The County shall, where possible, view flood waters as a resource to be used for waterfowl habitat, aquifer recharge, fishery enhancement, agricultural water supply, and other suitable uses.	Consistent – All Alternatives. Floodwaters are not a feasible resource for habitat or other uses at this location.
4.F.9. The County shall continue to implement floodplain zoning and undertake other actions required to comply with state floodplain requirements, and to maintain the County's eligibility under the Federal Flood Insurance Program.	Consistent – Alternatives 1 and 3. Alternatives 1 and 3 result in the relocation of structures and roads within the 100-year floodplain. Consistent – Alternatives 2, 4, 5, and 6. Alternatives 2 and 4 do not result in any change to the roadway or structures located in the floodplain in the South Base area. Alternatives 5 and 6 will remove buildings from the floodplain at the South Base, but will maintain the existing roadway within the 100-year flood zone. Neither of these Alternatives propose new development in the floodplain.
4.F.10. The County shall preserve or enhance the aesthetic qualities of natural drainage courses in their natural or improved state compatible with flood control requirements and economic, environmental, and ecological factors.	Consistent – Alternatives 1 and 3. Alternatives 1 and 3 result in the relocation of structures and roads within the 100-year floodplain and restoration and protection of stream channels, including the removal of an existing culvert. Inconsistent – Alternatives 2, 4, 5, and 6. Alternatives 2, 4, 5 and 6 do not result in the restoration or protection of area streams that experience streambank erosion.
4.F.12. The County shall promote the use of natural or non-structural flood control facilities, including off-stream flood control basins, to preserve and enhance creek corridors.	Consistent – Alternatives 1 and 3. Alternatives 1 and 3 result in the relocation of structures and roads within the 100-year floodplain and restoration and protection of stream channels, including the removal of an existing culvert. While off-stream flood control basins are not feasible on the mountain slopes, infiltration basins are proposed to treat runoff and avoid damage to stream channels. Inconsistent – Alternatives 2, 4, 5, and 6. Alternatives 2, 4, 5, and 6 do not result in the restoration or protection of area streams that experience streambank erosion.
4.F.13. The County shall continue to implement and enforce its Grading Ordinance and Flood Damage Prevention Ordinance.	Consistent – All Alternatives. Final design for the selected alternative will be reviewed by County staff to ensure compliance prior to permitting.
4.F.14. The County shall ensure that new storm drainage systems are designed in conformance with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the	Consistent – All Alternatives. Final design for the selected alternative will be reviewed by County staff to ensure compliance prior to permitting.

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County's Land Development Manual. [See also policies/programs under Goal 8.B. Flood Hazards.]	
LANDFILLS, TRANSFER STATIONS, AND SOLID WASTE RECYCLING	
Goal 4.G: To ensure the safe and efficient disposal or recycling of solid waste generated in Placer County.	
4.G.1. The County shall require waste collection in all new urban and suburban development.	Consistent – All Alternatives. Solid waste collection is currently provided by and will continue to be provided by Tahoe Truckee Sierra Disposal (TTSD).
4.G.2. The County shall promote maximum use of solid waste source reduction, recycling, composting, and environmentally-safe transformation of wastes.	Consistent – All Alternatives. At a minimum, each of the alternatives includes recycling collection. Structures under LEED certification (alternatives 1 and 3) will include the use of recycled materials.
4.G.7. The County shall require that all new development complies with applicable provisions of the Placer County Integrated Waste Management Plan.	Consistent – All Alternatives. Alternative 2 does not include new development. Alternatives 1, 3, 4, 5, and 6 will comply with the County Integrated Waste Management Plan.
4.G.9. The County shall encourage businesses to use recycled products in their manufacturing processes and consumers to buy recycled products.	Consistent – All Alternatives. As feasible, recreational and commercial businesses use recycled products and encourage recycling of these materials by their patrons.
LAW ENFORCEMENT	
Goal 4.H. To provide adequate sheriff's services to deter crime and to meet the growing demand for services associated with increasing population and commercial/industrial development in the County.	
4.H.1. Within the County's overall budgetary constraints, the County shall strive to maintain the following staffing ratios (expressed as the ratio of officers to population): a. 1:1,000 for unincorporated areas, b. 1:7 for jail population, c. 1:16,000 total County population for court and civil officers.	Consistent – Alternative 2. No new development is proposed for Alternative 2. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives will contribute to population increases. Since development fees do not include law enforcement, mitigation includes a fair share payment for law enforcement services.
4.H.2. The County Sheriff shall strive to maintain the following average response times for emergency calls for service: a. 6 minutes in urban areas, b. 8 minutes in suburban areas, c. 15 minutes in rural areas, d. 20 minutes in remote rural areas.	Consistent – Alternative 2. No new development is proposed for Alternative 2. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives will contribute to population increases. Since development fees do not include law enforcement, mitigation includes a fair share payment for law enforcement services.
4.H.4. The County shall require new development to develop or fund sheriff facilities that, at a minimum, maintain the above standards.	Consistent – Alternative 2. No new development is proposed for Alternative 2. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives will contribute to population increases. Since development fees do not include law enforcement, mitigation includes a fair share payment for law enforcement services.
4.H.5. The County shall consider public safety issues in all aspects of commercial and residential project design, including crime prevention through environmental design.	Consistent – All Alternatives. Alternative 2 does not include new development. Alternatives 1, 3, 4, 5, and 6 include design that promotes public activity. Alternative 4 places commercial uses roadside with high visibility and the commercial uses will support the existing neighborhood. Alternatives 1, 3, 5, and 6 include an emphasis on pedestrian design, appropriate mix of

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	buildings, appropriate safety devices (surveillance, lighting, and security services).
FIRE PROTECTION SERVICES	
Goal 4.I: To protect residents of and visitors to Placer County from injury and loss of life and to protect property and watershed resources from fires.	
4.I.1. The County shall encourage local fire protection agencies in Placer County to maintain the following minimum fire protection standards (expressed as Insurance Service Organization (ISO) ratings): a. ISO 4 in urban areas, b. ISO 6 in suburban areas, c. ISO 8 in rural areas.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 4, 5, and 6 include new development and development fees for fire protection. These alternatives include new hydrants, fire protection devices in each structure (extinguishers, sprinklers, etc.) and clusters the development near SR 89 for easier access. By treating the forested areas of the site for fuels reduction, the project reduces the threat of wildfire in the area and may qualify for an "in lieu of" reduction in development mitigation fees.
4.I.2. The County shall encourage local fire protection agencies in the County to maintain the following standards (expressed as average response times to emergency calls): a. 4 minutes in urban areas, b. 6 minutes in suburban areas, c. 10 minutes in rural areas.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 4, 5, and 6 include new development and development fees for fire protection. These alternatives include new hydrants, fire protection devices in each structure (extinguishers, sprinklers, etc.) and clusters the development near SR 89 for easier access.
4.I.3. The County shall require new development to develop or fund fire protection facilities, personnel, and operations and maintenance that, at a minimum, maintains the above service level standards.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 4, 5, and 6 include new development and development fees for fire protection. These alternatives include new hydrants, fire protection devices in each structure (extinguishers, sprinklers, etc.), and clusters the development near SR 89 for easier access.
4.I.9. The County shall ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the Uniform Fire Code and other County and local ordinances.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 4, 5, and 6 include new development and development fees for fire protection. These alternatives include new hydrants, fire protection devices in each structure (extinguishers, sprinklers, etc.) and clusters the development near SR 89 for easier access. Final design placement of fire protection devices will be reviewed by the North Tahoe Fire Protection District.
SCHOOLS	
Goal 4.J: To provide for the educational needs of Placer County residents.	
Planning for School Sites/Facilities Policies	
4.J.3. The County shall work cooperatively with school districts in monitoring housing, population, and school enrollment trends and in planning for future school facility needs, and shall assist school districts in locating appropriate sites for new schools.	Consistent – All Alternatives. Alternative 2 does not propose new development. There is sufficient existing school capacity to address the population increase that may occur under Alternatives 1, 3, 4, 5, and 6.
4.J.4. The County's land use planning should be coordinated with the planning of school facilities and should involve school districts in the early stages of the land use planning process.	Consistent – All Alternatives. Alternative 2 does not propose new development. There is sufficient existing school capacity to address the population increase that may occur under Alternatives 1, 3, 4, 5, and 6.

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4.J.5. The County should plan and approve residential uses in those areas that are most accessible to school sites in order to enhance neighborhoods, minimize transportation requirements and costs, and minimize safety problems.	Consistent – All Alternatives. Alternative 2 does not propose new development. There is sufficient existing school capacity to address the population increase that may occur under Alternatives 1, 3, 4, 5, and 6.
4.J.6. The County should include schools among those public facilities and services that are considered an essential part of the infrastructure that should be in place as development occurs.	Consistent – All Alternatives. Alternative 2 does not propose new development. There is sufficient existing school capacity to address the population increase that may occur under Alternatives 1, 3, 4, 5, and 6.
Facility Needs/Funding	
4.J.10. The provision of adequate school facilities is a community priority. The County and school districts will work closely to secure adequate funding for new school facilities and, where legally feasible, the County shall provide a mechanism which, along with state and local sources, requires development projects to satisfy an individual school district's financing program based upon their impaction.	Consistent – All Alternatives. Alternative 2 does not propose new development. There is sufficient existing school capacity to address the population increase that may occur under Alternatives 1, 3, 4, 5, and 6.
4.J.11. The County and residential developers should coordinate with the school districts to ensure that needed school facilities are available for use in a timely manner. The County, to the extent possible, shall require that new school facilities are constructed and operating prior to the occupation of the residences which the schools are intended to serve.	Consistent – All Alternatives. Alternative 2 does not propose new development. There is sufficient existing school capacity to address the population increase that may occur under Alternatives 1, 3, 4, 5, and 6.
4.J.13. Before a residential development, which includes a proposed general plan amendment, rezoning or other legislative review can be approved by the Planning Commission or Board of Supervisors, it shall be demonstrated to the satisfaction of the hearing body that adequate school facilities shall be provided when the need is generated by the proposed development.	Consistent – All Alternatives. Alternative 2 does not propose new development. There is sufficient existing school capacity to address the population increase that may occur under Alternatives 1, 3, 4, 5, and 6.
RECREATIONAL AND CULTURAL RESOURCES	
PUBLIC RECREATION AND PARKS	
Goal 5.A: To develop and maintain a system of conveniently-located, properly-designed parks and recreational facilities to serve the needs of present and future residents, employees, and visitors.	
5.A.1. The County shall strive to achieve and maintain a standard of 5 acres of improved parkland and 5 acres of passive recreation area or open space per 1,000 population.	Consistent – Alternative 2. This alternative does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives do not propose new park areas or open space, but do propose new residential units. The development of the swimming pool, skating rink hiking trails, mini-golf course, amphitheater and bike trail will help to meet this standard for Alternatives 1, 3, 5, and 6. Mitigation may require the payment of equivalent fees if necessary to achieve consistency.
5.A.2. The County shall strive to achieve the following park facility standards: a. 1 tot lot per 1,000 residents, b. 1 playground per 3,000 residents,	Consistent – Alternative 2. This alternative does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives do not propose new park areas or

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c. 1 tennis court per 6,000 residents, d. 1 basketball court per 6,000 residents, e. 1 hardball diamond per 3,000 residents, f. 1 softball/little league diamond per 3,000 residents, g. 1 mile of recreation trail per 1,000 residents, h. 1 youth soccer field per 2,000 residents, i. 1 adult field per 2,000 residents, j. 1 golf course per 50,000 residents.	open space, but do propose new residential units. The development of the swimming pool, skating rink hiking trails, mini-golf course, amphitheater and bike trail will help to meet this standard for Alternatives 1, 3, 5, and 6. Mitigation requiring the payment of equivalent fees will result in consistency.
5.A.3. The County shall require new development to provide a minimum of 5 acres of improved parkland and 5 acres of passive recreation area or open space for every 1,000 new residents of the area covered by the development. The park classification system shown in Table 5-1 should be used as a guide to the type of the facilities to be developed in achieving these standards.	Consistent – Alternative 2. This alternative does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives do not propose new park areas or open space, but do propose new residential units. The development of the swimming pool, skating rink hiking trails, mini-golf course, amphitheater and bike trail will help to meet this standard for Alternatives 1, 3, and 5. Mitigation requiring the payment of equivalent fees will result in consistency.
5.A.4. The County shall consider the use of the following open space areas as passive parks to be applied to the requirement for 5 acres of passive park area for every 1,000 residents. a. Floodways, b. Protected riparian corridors and stream environment zones, c. Protected wildlife corridors, d. Greenways with the potential for trail development, e. Open water (e.g., ponds, lakes, and reservoirs), f. Protected woodland areas, g. Protected sensitive habitat areas providing that interpretive displays are provided (e.g., wetlands and habitat for rare, threatened or endangered species). Buffer areas are not considered as passive park areas if such areas are delineated by setbacks within private property. Where such areas are delineated by public easements or are held as common areas with homeowner/property owner access or public access, they will be considered as passive park areas provided that there are opportunities for passive recreational use.	Consistent – Alternative 2. This alternative does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives do not propose new park areas or open space, but do propose new residential units. Alternatives 1, 3, 5, and 6 will maintain the ski resort and Alternative 4 will maintain a portion of the mountain for public access. Mitigation requiring the provision of park facilities or payment of equivalent fees will result in consistency.
5.A.5. The County shall require the dedication of land and/or payment of fees, in accordance with state law (Quimby Act) to ensure funding for the acquisition and development of public recreation facilities. The fees are to be set and adjusted as necessary to provide for a level of funding that meets the actual cost to provide for all of the public parkland and park development needs generated by new development.	Consistent – Alternative 2. This alternative does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives do not propose new park areas or open space, but do propose new residential units. The development of the swimming pool, skating rink hiking trails, mini-golf course, amphitheater and bike trail will help to meet this standard for Alternatives 1, 3, 5, and 6. Mitigation requiring the provision of park facilities or payment of equivalent fees will result in consistency.
5.A.8. The County shall strive to maintain a well-balanced distribution of local parks, considering the	Consistent – Alternative 2. This alternative does not propose new development.

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character and intensity of present and planned development and future recreation needs.	Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives do not propose new park areas or open space, but do propose new residential units. The development of the swimming pool, skating rink hiking trails, mini-golf course, amphitheater and bike trail will help to meet this standard for Alternatives 1, 3, 5, and 6. Mitigation requiring the provision of park facilities or payment of equivalent fees will result in consistency.
5.A.11. Regional and local recreation facilities should reflect the character of the area and the existing and anticipated demand for such facilities.	Consistent – Alternative 2. This alternative does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives do not propose new park areas or open space, but do propose new residential units. The development of the swimming pool, skating rink hiking trails, mini-golf course, amphitheater and bike trail will help to meet this standard for Alternatives 1, 3, 5, and 6. Mitigation requiring the provision of park facilities or payment of equivalent fees will result in consistency.
5.A.12. The County shall encourage recreational development that complements the natural features of the area, including the topography, waterways, vegetation, and soil characteristics.	Consistent – Alternative 2. This alternative does not propose new development. Consistent– Alternatives 1, 3, 4, 5, and 6. Alternatives 1, 3, 5, and 6 will maintain the ski resort and will develop hiking trails, a bike path, amphitheater, swimming pool and ice rink. Inconsistent - Alternative 4. Alternative 4 will close the mountain to public access.
5.A.13. The County shall ensure that recreational activity is distributed and managed according to an area's carrying capacity, with special emphasis on controlling adverse environmental impacts, conflict between uses, and trespass. At the same time, the regional importance of each area's recreation resources shall be recognized.	Consistent – Alternative 2. This alternative does not propose new development. Consistent– Alternatives 1, 3, 4, 5, and 6. Alternatives 1, 3, 5, and 6 will maintain the ski resort and will develop hiking trails, a bike path, amphitheater, swimming pool and ice rink. Inconsistent - Alternative 4. Alternative 4 will close the mountain to public access.
5.A.19. The County shall encourage the development of parks near public facilities such as schools, community halls, libraries, museums, prehistoric or historic sites, and open space areas and shall encourage joint-use agreements whenever possible.	Consistent – All Alternatives. The Project area is not located near a school, library, historic site, or open space. It is located near a museum and the presence of the ski resort, proposed new recreational uses, and tourist facilities will enhance this.
5.A.22. The County shall encourage compatible recreational use of riparian areas along streams and creeks where public access can be balanced with environmental values and private property rights.	Consistent – All Alternatives. Recreational uses are not proposed within riparian areas to protect environmental values, skiing and hiking may occur near such areas, but the area creeks do not support significant recreational use.
5.A.23. The County shall require that park and recreation facilities required in conjunction with new development be developed in a timely manner so that such facilities are available concurrently with new development.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternative 4 would not result in the need for new recreational facilities for new residents. Alternatives 1, 3, 5, and 6 would maintain the ski facilities and develop new recreation concurrently.
5.A.24. The County shall encourage public and private park and recreation agencies to acknowledge the natural resource values present at park sites during the design of	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 5, and 6 maintain the ski facilities and expand upon new passive

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a new facility.	and developed recreation uses. Developed recreation is located within the resort (base area and mid-mountain lodge) while passive recreation is dispersed through the site. Inconsistent – Alternative 4. Alternative 4 will eliminate the ski facilities and will not provide new recreational facilities.
PRIVATE RECREATIONAL FACILITIES AND OPPORTUNITIES	
Goal 5.B: To encourage development of private recreational facilities.	
5.B.1. The County shall encourage development of private recreation facilities to reduce demands on public agencies.	Consistent – Alternatives 1, 2, 3, 5, and 6. These alternatives maintain existing ski facilities or expand on them and add new recreational services (swimming pool, ice skating, mini golf, hiking trails). Inconsistent – Alternative 4. Alternative 4 will eliminate the ski facilities and will not provide new recreational facilities.
RECREATIONAL TRAILS	
Goal 5.C: To develop a system of interconnected hiking, riding, and bicycling trails and paths suitable for active recreation and transportation and circulation.	
5.C.1. The County shall support development of a Countywide trail system designed to achieve the following objectives: a. Provide safe, pleasant, and convenient travel by foot, horse, or bicycle; b. Link residential areas, schools, community buildings, parks, and other community facilities within residential developments. Whenever possible, trails should connect to the Countywide trail system, regional trails, and the trail or bikeways plans of cities; c. Provide access to recreation areas, major waterways, and vista points; d. Provide for multiple uses (i.e., pedestrian, equestrian, bicycle); e. Use public utility corridors such as power transmission line easements, railroad rights-of-way, irrigation district easements, and roadways; f. Whenever feasible, be designed to separate equestrian trails from cycling paths, and to separate trails from the roadway by the use of curbs, fences, landscape buffering, and/or spatial distance; g. Connect commercial areas, major employment centers, institutional uses, public facilities, and recreational areas with residential areas; and h. Protect sensitive open space and natural resources.	Consistent – Alternatives 1, 3, 5, and 6. These alternatives include the extension of the West Shore bike trail through the site as well as 5 miles of hiking trails accessible from the base area. The pedestrian trails and bike trail connect the community with onsite commercial uses and transit stops. Inconsistent – Alternatives 2 and 4. These alternatives do not propose new hiking or bike trails. The existing bike route would continue, but no dedicated, or mixed-use trails would be provided to encourage pedestrian/bike use.
5.C.3. The County shall work with other public agencies to coordinate the development of equestrian, pedestrian, and bicycle trails.	Consistent – Alternatives 1, 3, 5, and 6. These alternatives include the extension of the West Shore bike trail through the site as well as 5 miles of hiking trails accessible from the base area. Inconsistent – Alternatives 2 and 4. These alternatives do not propose new hiking or bike trails.
5.C.5. The County shall encourage the preservation of linear open space along rail corridors and other public	Consistent – All Alternatives. There are no rail corridors within the Project area.

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easements for future use as trails. [See also policies/programs under Goal 3.D., Non-Motorized Transportation.]	
CULTURAL RESOURCES	
Goal 5.D: To identify, protect, and enhance Placer County's important historical, archaeological, paleontological, and cultural sites and their contributing environment.	
5.D.6. The County shall require that discretionary development projects identify and protect from damage, destruction, and abuse, important historical, archaeological, paleontological, and cultural sites and their contributing environment. Such assessments shall be incorporated into a Countywide cultural resource data base, to be maintained by the Department of Museums.	Consistent – Alternative 2. Alternative 2 does not propose new development or land disturbance. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. Cultural resources and their protection if encountered during excavation are discussed in Chapter 9 of this EIR/EIS.
5.D.7. The County shall require that discretionary development projects are designed to avoid potential impacts to significant paleontological or cultural resources whenever possible. Unavoidable impacts, whenever possible, shall be reduced to a less than significant level and/or shall be mitigated by extracting maximum recoverable data. Determinations of impacts, significance, and mitigation shall be made by qualified archaeological (in consultation with recognized local Native American groups), historical, or paleontological consultants, depending on the type of resource in question.	Consistent – Alternative 2. Alternative 2 does not propose new development or land disturbance. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. Cultural resources and their protection if encountered during excavation are discussed in Chapter 9 of this EIR/EIS.
NATURAL RESOURCES	
WATER RESOURCES	
Goal 6.A: To protect and enhance the natural qualities of Placer County's streams, creeks and groundwater.	
6.A.1. The County shall require the provision of sensitive habitat buffers which shall, at a minimum, be measured as follows: 100 feet from the centerline of perennial streams, 50 feet from centerline of intermittent streams, and 50 feet from the edge of sensitive habitats to be protected including riparian zones, wetlands, old growth woodlands, and the habitat of rare, threatened or endangered species (see discussion of sensitive habitat buffers in Part I of this Policy Document). Based on more detailed information supplied as a part of the review for a specific project, the County may determine that such setbacks are not applicable in a particular instance or should be modified based on the new information provided. The County may, however, allow exceptions, such as in the following cases: a. Reasonable use of the property would otherwise be denied; b. The location is necessary to avoid or mitigate hazards to the public; c. The location is necessary for the repair of roads, bridges, trails, or similar infrastructure; or d. The location is necessary for the construction of new	Consistent – All Alternatives. No new structures will be placed within the buffer zone of streams or sensitive habitat. Structures and coverage will be removed from these areas (culvert – Alternatives 1 and 3, and SEZ coverage removal – Alternatives 1, 3, 4, 5, and 6).

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roads, bridges, trails, or similar infrastructure where the County determines there is no feasible alternative and the project has minimized environmental impacts through project design and infrastructure placement.	
6.A.2. The County shall require all development in the 100-year floodplain to comply with the provisions of the Placer County Flood Damage Prevention Ordinance.	Consistent – All Alternatives. Alternatives 1 and 3 result in the relocation of structures and roads within the 100-year floodplain. Alternatives 5 and 6 result in the removal of structures within the floodplain. No new structures are proposed within the floodplain and uses within this area will comply with County ordinance.
6.A.3. The County shall require development projects proposing to encroach into a creek corridor or creek setback to do one or more of the following, in descending order of desirability: a. Avoid the disturbance of riparian vegetation; b. Replace riparian vegetation (on-site, in-kind); c. Restore another section of creek (in-kind); and/or d. Pay a mitigation fee for restoration elsewhere (e.g., wetland mitigation banking program).	Consistent – All Alternatives. Each development alternative results in some degree of coverage reduction in the SEZ. Alternatives 1 and 3 include streambank restoration, culvert removal, and SEZ function restoration in Homewood Creek. New structures will not encroach into a creek. Alternative 2 does not propose development.
6.A.4. Where creek protection is required or proposed, the County should require public and private development to: a. Preserve creek corridors and creek setback areas through easements or dedications. Parcel lines (in the case of a subdivision) or easements (in the case of a subdivision or other development) shall be located to optimize resource protection. If a creek is proposed to be included within an open space parcel or easement, allowed uses and maintenance responsibilities within that parcel or easement should be clearly defined and conditioned prior to map or project approval; b. Designate such easement or dedication areas (as described in a. above) as open space; c. Protect creek corridors and their habitat value by actions such as: 1) providing an adequate creek setback, 2) maintaining creek corridors in an essentially natural state, 3) employing creek restoration techniques where restoration is needed to achieve a natural creek corridor, 4) utilizing riparian vegetation within creek corridors, and where possible, within creek setback areas, 5) prohibiting the planting of invasive, non-native plants (such as vinca major and eucalyptus) within creek corridors or creek setbacks, and 6) avoiding tree removal within creek corridors; d. Provide recreation and public access near creeks consistent with other General Plan policies; e. Use design, construction, and maintenance techniques that ensure development near a creek will not cause or worsen natural hazards (such as erosion, sedimentation, flooding, or water pollution) and will include erosion and sediment control practices such as: 1) turbidity screens and other management practices, which shall be used as necessary to minimize siltation, sedimentation,	Consistent – All Alternatives. Alternatives 2, 4, 5, and 6 do not propose creek protection. Creek protection is proposed for Alternatives 1 and 3, which includes culvert removal and day lighting of the stream which restores natural function. The creek is located within a recreation use area accessible by the public.

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and erosion, and shall be left in place until disturbed areas; and/or are stabilized with permanent vegetation that will prevent the transport of sediment off site; and 2) temporary vegetation sufficient to stabilize disturbed areas. f. Provide for long-term creek corridor maintenance by providing a guaranteed financial commitment to the County which accounts for all anticipated maintenance activities.	
6.A.5. The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff and to encourage the use of BMPs for agricultural activities.	Consistent – All Alternatives. All of the alternatives include the implementation of BMPs.
6.A.6. The County shall require that natural watercourses are integrated into new development in such a way that they are accessible to the public and provide a positive visual element.	Consistent – All Alternatives. Onsite creeks will remain accessible to the public.
6.A.7. The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.	Consistent – All Alternatives. Grading will not occur during the rainy season and BMPs will be located to avoid sedimentation.
6.A.8. Where the stream environment zone has previously been modified by channelization, fill, or other human activity, the County shall require project proponents to restore such areas by means of landscaping, revegetation, or similar stabilization techniques as a part of development activities.	Consistent –Alternatives 1, 3, 4, 5, and 6. These alternatives result in the removal of SEZ coverage; however, only Alternatives 1 and 3 restore SEZ function. Inconsistent – Alternative 2. This alternative does not remove SEZ coverage.
6.A.9. The County shall require that newly-created parcels include adequate space outside of watercourses' setback areas to ensure that property owners will not place improvements (e.g., pools, patios, and appurtenant structures), within areas that require protection.	Consistent – All Alternatives. No new structures will be placed within the buffer zone of streams or sensitive habitat. Structures and coverage will be removed from these areas (culvert – Alternatives 1 and 3, and SEZ coverage removal – Alternatives 1, 3, 4, 5, and 6).
6.A.12. The County shall encourage the protection of floodplain lands and where appropriate, acquire public easements for purposes of flood protection, public safety, wildlife preservation, groundwater recharge, access and recreation.	Consistent – Alternatives 1 and 3. These alternatives remove existing structures from the floodplain. Inconsistent – Alternatives 2, 4, 5, and 6. These alternatives maintain some structures or roadways within the floodplain.
WETLAND AND RIPARIAN AREAS	
Goal 6.B: To protect wetland communities and related riparian areas throughout Placer County as valuable resources.	
6.B.1. The County shall support the "no net loss" policy for wetland areas regulated by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.	Consistent – All Alternatives. None of the alternatives propose new coverage of wetland areas. Alternatives 1, 3, 4, 5, and 6 include removal of SEZ coverage.
6.B.2. The County shall require new development to mitigate wetland loss in both regulated and nonregulated wetlands to achieve "no net loss" through any	Consistent – All Alternatives. None of the alternatives propose new coverage of wetland areas. Alternatives 1, 3, 4, 5, and 6 include removal of SEZ coverage.

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combination of the following, in descending order of desirability: (1) avoidance; (2) where avoidance is not possible, minimization of impacts on the resource; or (3) compensation, including use of a mitigation banking program that provides the opportunity to mitigate impacts to rare, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas.	
6.B.3. The County shall discourage direct runoff of pollutants and siltation into wetland areas from outfalls serving nearby urban development. Development shall be designed in such a manner that pollutants and siltation will not significantly adversely affect the value or function of wetlands.	Consistent – All Alternatives. Each of the alternatives include BMPs to improve runoff quality. Alternatives 1 and 3 include infiltration galleries to improve stormwater treatment..
6.B.4. The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetlands and riparian areas that are critical to the survival and nesting of wetland and riparian species.	Consistent – All Alternatives. No new wetland coverage would occur and the areas surrounding the creeks that are not already disturbed would not be further disturbed. Ongoing restoration of disturbed areas on the mountain will also include some additional SEZ restoration efforts. Alternatives 1 and 3 include actions to restore such areas.
6.B.5. The County shall require development that may affect a wetland to employ avoidance, minimization, and/or compensatory mitigation techniques. In evaluating the level of compensation to be required with respect to any given project, (a) on-site mitigation shall be preferred to off-site, and in-kind mitigation shall be preferred to out-of-kind; (b) functional replacement ratios may vary to the extent necessary to incorporate a margin of safety reflecting the expected degree of success associated with the mitigation plan; and (c) acreage replacement ratios may vary depending on the relative functions and values of those wetlands being lost and those being supplied, including compensation for temporal losses. The County shall continue to implement and refine criteria for determining when an alteration to a wetland is considered a less-than-significant impact under CEQA.	Consistent – All Alternatives. None of the alternatives propose new coverage of wetland areas. Alternatives 1, 3, 4, 5, and 6 include removal of SEZ coverage.
FISH AND WILDLIFE HABITAT	
Goal 6.C: To protect, restore, and enhance habitats that support fish and wildlife species so as to maintain populations at viable levels.	
6.C.1. The County shall identify and protect significant ecological resource areas and other unique wildlife habitats critical to protecting and sustaining wildlife populations. Significant ecological resource areas include the following: a. Wetland areas including vernal pools. b. Stream environment zones. c. Any habitat for rare, threatened or endangered animals or plants. d. Critical deer winter ranges (winter and summer),	Consistent – Alternatives 1, 3, 4, 5, and 6. Each of these alternatives reduces coverage in the SEZ. Alternatives 1 and 3 restore the Homewood Creek stream channel. There are no migratory routes on site. Restoration of SEZ function under Alternatives 1 and 3 may increase use of the area for wildlife travel. Inconsistent – Alternative 2. Alternative 2 does not change existing conditions and maintains coverage in sensitive habitat areas.

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migratory routes and fawning habitat. e. Large areas of non-fragmented natural habitat, including Blue Oak Woodlands, Valley Foothill Riparian, vernal pool habitat. f. Identifiable wildlife movement zones, including but not limited to, non-fragmented stream environment zones, avian and mammalian migratory routes, and known concentration areas of waterfowl within the Pacific Flyway. g. Important spawning areas for anadromous fish.	
6.C.2. The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the reasonable value of the habitat for wildlife is maintained.	Consistent – All Alternatives. The Project area is not known to have a particular value for wildlife other than it provides general habitat. The value of the habitat would not require additional planning, particularly since the site is currently an active ski facility.
6.C.3. The County shall encourage the control of residual pesticides to prevent potential damage to water quality, vegetation, and wildlife.	Consistent – Alternative 2. This alternative would not alter existing conditions. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives may use fertilizers within landscaped areas. To protect water quality mitigation is proposed to manage the use and distribution of fertilizers.
6.C.4. The County shall encourage private landowners to adopt sound wildlife habitat management practices, as recommended by California Department of Fish and Game officials, the U.S. Fish and Wildlife Service, and the Placer County Resource Conservation District.	Consistent – All Alternatives. Wildlife will be managed, as, needed, in accordance with local, state, and federal regulations.
6.C.5. The County shall require mitigation for development projects where isolated segments of stream habitat are unavoidably altered. Such impacts should be mitigated on-site with in-kind habitat replacement or elsewhere in the stream system through stream or riparian habitat restoration work.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 4, 5, and 6 do not place new structures within the stream system. Alternatives 1 and 3 include actions to restore the stream channel.
6.C.6. The County shall support preservation of the habitats of rare, threatened, endangered, and/or other special status species. Federal and state agencies, as well as other resource conservation organizations, shall be encouraged to acquire and manage endangered species' habitats.	Consistent – All Alternatives. There are no listed species associated with the Project area. Migratory and nesting birds will be protected from impacts due to tree removal through implementation of mitigation that ensures construction does not disturb occupied trees.
6.C.7. The County shall support the maintenance of suitable habitats for all indigenous species of wildlife, without preference to game or non-game species, through maintenance of habitat diversity.	Consistent – All Alternatives. Each of the alternatives maintains portions of the site for ski facilities or public land that may support native species.
6.C.8. The County shall support the preservation or reestablishment of fisheries in the rivers and streams within the County, whenever possible.	Consistent – Alternatives 1 and 3. These alternatives eliminate the existing culvert and day light the stream channel to support stream habitat. Inconsistent – Alternatives 2, 4, 5, and 6. These alternatives do not improve stream channels or vegetation and maintain channel disturbance.
6.C.9. The County shall require new private or public developments to preserve and enhance existing native riparian habitat unless public safety concerns require	Consistent – Alternatives 1 and 3. These alternatives eliminate the existing culvert and day light the stream channel to support stream habitat.

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removal of habitat for flood control or other public purposes. In cases where new private or public development results in modification or destruction of riparian habitat for purposes of flood control, the developers shall be responsible for acquiring, restoring, and enhancing at least an equivalent amount of like habitat within or near the Project area.	Consistent – Alternative 2. This alternative does not propose new development. Inconsistent – Alternatives 4, 5, and 6. These alternatives do not improve the stream channels or vegetation and maintain channel disturbance.
6.C.10. The County will use the California Wildlife Habitat Relationships (WHR) system as a standard descriptive tool and guide for environmental assessment in the absence of a more detailed site-specific system.	Consistent – All Alternatives. Chapter 8 of the EIR/EIS includes a biological resources assessment.
6.C.11. Prior to approval of discretionary development permits involving parcels within a significant ecological resource area, the County shall require, as part of the environmental review process, a biotic resources evaluation of the sites by a wildlife biologist, the evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of rare, threatened, or endangered species of plants or animals. Such evaluation will consider the potential for significant impact on these resources, and will identify feasible measures to mitigate such impacts or indicate why mitigation is not feasible. In approving any such discretionary development permit, the decision-making body shall determine the feasibility of the identified mitigation measures. Significant ecological resource areas shall, at a minimum, include the following: a. Wetland areas including vernal pools. b. Stream environment zones. c. Any habitat for rare, threatened or endangered animals or plants. d. Critical deer winter ranges (winter and summer), migratory routes and fawning habitat. e. Large areas of non-fragmented natural habitat, including Blue Oak Woodlands, Valley Foothill Riparian, vernal pool habitat. f. Identifiable wildlife movement zones, including but not limited to, non-fragmented stream environment zones, avian and mammalian migratory routes, and known concentration areas of waterfowl within the Pacific Flyway. g. Important spawning areas for anadromous fish.	Consistent – All Alternatives. Chapter 8 of the EIR/EIS includes a biological resources assessment. Field reconnaissance and surveys were conducted in 2007 and 2008. Listed species were not identified within the Project area.
6.C.13. The County shall support and cooperate with efforts of other local, state, and federal agencies and private entities engaged in the preservation and protection of significant biological resources from incompatible land uses and development. Significant biological resources include endangered, threatened, or rare species and their habitats, wetland habitats, wildlife	Consistent – All Alternatives. Local, state, and federal preservation or protection efforts are not present onsite. The development alternatives include SEZ coverage reduction and restoration (Alternatives 1 and 3).

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migration corridors, and locally-important species/communities.	
6.C.14. The County shall support the management efforts of the California Department of Fish and Game to maintain and enhance the productivity of important fish and game species (such as the Blue Canyon and Loyalton Truckee deer herds) by protecting identified critical habitat for these species from incompatible suburban, rural residential, or recreational development.	Consistent – All Alternatives. Critical habitat is not located onsite.
VEGETATION	
Goal 6.D: To preserve and protect the valuable vegetation resources of Placer County.	
6.D.1. The County shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually-sensitive areas such as hillsides, ridges, and along important transportation corridors.	Consistent – All Alternatives. The Project area is currently disturbed and holds little natural vegetation value for the visual environment. Areas further up the mountain provide more visual quality through natural vegetation and these areas will be maintained as part of the ski facilities or as natural screening of homesites. The landscape plans for the base areas include native and adapted species for stabilization of disturbed areas and to provide screening of buildings and parking from view along SR 89.
6.D.2. The County shall require developers to use native and compatible non-native species, especially drought-resistant species, to the extent possible in fulfilling landscaping requirements imposed as conditions of discretionary permits or for project mitigation.	Consistent – Alternative 2. This alternative does not include landscaping. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6 include landscaping utilizing native and adapted species. Mitigation for these alternatives includes the elimination of high-water use plants and alternative irrigation methods.
6.D.3. The County shall support the preservation of outstanding areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.	Consistent – All Alternatives. Since the site contains high levels of disturbance, it is not considered an outstanding area of natural vegetation. Continued operation of the ski resort will maintain vegetation on the slopes.
6.D.4. The County shall ensure that landmark trees and major groves of native trees are preserved and protected. In order to maintain these areas in perpetuity, protected areas shall also include younger vegetation with suitable space for growth and reproduction.	Consistent – All Alternatives. Large trees along the roadside are protected. Some large trees onsite will be removed; however none of the trees onsite represent old growth stands.
6.D.5. The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects.	Consistent – All Alternatives. The 2007 reconnaissance survey for listed plant species did not identify listed species onsite.
6.D.6. The County shall ensure the conservation of sufficiently large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife.	Consistent –All Alternatives. The existing ski facilities will continue under Alternatives 1, 2, 3, 5, and 6, maintaining large expanses of undeveloped areas. Alternative 4 will convert forested ski resort area to private estate home sites, effectively maintaining the forested conditions.
6.D.7. The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient catchment, and wildlife habitats. Such communities shall be	Consistent – Alternatives 1 and 3. These alternatives restore the SEZ function onsite as well as riparian vegetation within the restored stream channel. Consistent with Mitigation – Alternatives 5 and 6.

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restored or expanded, where possible.	These alternatives restore SEZ function but do not remove the existing culvert at the South Base area. Inconsistent – Alternatives 2 and 4. These Alternatives do not restore SEZ function or channel vegetation.
6.D.8. The County shall require that new development preserve natural woodlands to the maximum extent possible.	Consistent – All Alternatives. Forest areas are preserved in their current state to various degrees under each alternative.
6.D.9. The County shall require that development on hillsides be limited to maintain valuable natural vegetation, especially forests and open grasslands, and to control erosion.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 4, 5, and 6 include development on the lower portion of the hillside, stepping structures upslope. Erosion control devices will be utilized.
6.D.10. The County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained.	Consistent with Mitigation –Alternatives 1, 3, 4, 5, and 6. Each of these alternatives includes irrigation. Restoration areas will include appropriate native plant species. Mitigation proposes to use native and adapted species of plants that are not heavily reliant on water or fertilizer. Inconsistent – Alternative 2. Native plantings are not proposed and the existing landscape will persist.
6.D.12. The County shall support the retention of heavily vegetated corridors along circulation corridors to preserve their rural character.	Consistent – All Alternatives. The area closest to SR 89 is primarily a parking lot with little vegetation.
6.D.13. The County shall support the preservation of native trees and the use of native, drought-tolerant plant materials in all revegetation/landscaping projects.	Consistent – All Alternatives. Alternative 2 does not propose landscaping. Alternatives 1, 3, 4, 5, and 6 include landscaping with plants that are not heavily reliant on irrigation. Native trees will be preserved where possible; however trees will be removed to allow for new development.
6.D.14. The County shall require that new development avoid, as much as possible, ecologically-fragile areas (e.g., areas of rare or endangered species of plants, riparian areas). Where feasible, these areas should be protected through public acquisition of fee title or conservation easements to ensure protection.	Consistent – All Alternatives. Alternative 2 does not propose new development. Structures proposed under Alternatives 1, 3, 4, 5, and 6 will avoid sensitive habitat areas.
OPEN SPACE FOR THE PRESERVATION OF NATURAL RESOURCES	
Goal 6.E: To preserve and enhance open space lands to maintain the natural resources of the County.	
6.E.1. The County shall support the preservation and enhancement of natural land forms, natural vegetation, and natural resources as open space to the maximum extent feasible. The County shall permanently protect, as open space, areas of natural resource value, including wetlands preserves, riparian corridors, woodlands, and floodplains.	Consistent – All Alternatives. The site is currently used as a publicly accessible ski facility. This would be maintained through Alternatives 1, 2, 3, 5, and 6, with the majority of the Project area used for ski facilities. Alternative 4 would close the ski facilities, but would only develop a portion of the mountain, leaving large areas open but unavailable for public use. Dedicated open space is not proposed nor is the property designated as open space.
6.E.2. The County shall require that new development be designed and constructed to preserve the following types of areas and features as open space to the maximum extent feasible: a. High erosion hazard areas;	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 4, 5, and 6 avoid new development within streams, SEZ areas, and hazard areas. BMPs are proposed to reduce erosion onsite. SEZ coverage will be reduced. Development

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b. Scenic and trail corridors; c. Streams, streamside vegetation; d. Wetlands; e. Other significant stands of vegetation; f. Wildlife corridors; and g. Any areas of special ecological significance.	along the roadway corridor will improve the scenic quality. Alternatives 1, 3, 5, and 6 include newly designated public hiking trails to increase year-round scenic views of the area.
6.E.3. The County shall support the maintenance of open space and natural areas that are interconnected and of sufficient size to protect biodiversity, accommodate wildlife movement, and sustain ecosystems.	Consistent – All Alternatives. Public open space does not currently exist onsite and is not proposed. Each of the alternatives would maintain the undeveloped areas or portions of the ski facilities to maintain the landscape.
AIR QUALITY—GENERAL	
Goal 6.F: To protect and improve air quality in Placer County	
6.F.5. The County shall encourage project proponents to consult early in the planning process with the County regarding the applicability of Countywide indirect and area-wide source programs and transportation control measures (TCM) programs. Project review shall also address energy-efficient building and site designs and proper storage, use, and disposal of hazardous materials.	Consistent – All Alternatives. Alternative 2 does not propose new development. Each alternative is analyzed for transportation control, energy efficiency, and hazardous materials use and storage in the EIR/EIS. Each alternative includes transit stops. Alternatives 1, 3, 5, and 6 include alternative transportation and hazardous materials storage. Alternatives 1, 3, 5, and 6 include LEED certification and EIP projects that improve traffic flow.
6.F.6. The County shall require project-level environmental review to include identification of potential air quality impacts and designation of design and other appropriate mitigation measures or offset fees to reduce impacts. The County shall dedicate staff to work with project proponents and other agencies in identifying, ensuring the implementation of, and monitoring the success of mitigation measures.	Consistent –All Alternatives. Air quality analysis for each alternative is found in Chapter 12 of the EIR/EIS, including mitigation for construction and operations.
6.F.7. The County shall encourage development to be located and designed to minimize direct and indirect air pollutants.	Consistent – Alternative 2. Alternative 2 does not result in new air pollutant emissions. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. These alternatives will emit pollutants during construction; however implementation of County construction BMPs will result in compliance. In addition, operations may result in increased pollutants generated by traffic; however, alternative transportation features combined with payment of emissions offset fees will minimize the impact. Alternatives 1, 3, 5, and 6 participate in offsite EIP projects that improve traffic flow, which results in fewer traffic emissions in the region. It should be noted that Alternative 4 results in fewer traffic-related emissions as the traffic levels decrease from existing conditions for this alternative.
6.F.8. The County shall submit development proposals to the PCAPCD for review and comment in compliance with CEQA prior to consideration by the appropriate decision-making body.	Consistent – All Alternatives. Alternative 2 does not propose new development. Development proposals will be provided to the PCAPCD for each development alternative.
6.F.9. In reviewing project applications, the County shall consider alternatives or amendments that reduce emissions of air pollutants.	Consistent – All Alternatives. Each of the alternatives and associated mitigation will be considered by the County through the review process.

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6.F.10. The County may require new development projects to submit an air quality analysis for review and approval. Based on this analysis, the County shall require appropriate mitigation measures consistent with the PCAPCD's 1991 Air Quality Attainment Plan (or updated edition).	Consistent –All Alternatives. Air quality analysis for each alternative is found in Chapter 12 of the EIR/EIS, including mitigation for construction and operations.
AIR QUALITY--TRANSPORTATION/CIRCULATION	
Goal 6.G: To integrate air quality planning with the land use and transportation planning process.	
6.G.1. The County shall require new development to be planned to result in smooth flowing traffic conditions for major roadways. This includes traffic signals and traffic signal coordination, parallel roadways, and intra- and inter-neighborhood connections where significant reductions in overall emissions can be achieved.	Consistent – Alternatives 2 and 4. Alternative 2 does not propose new development. Alternative 4 results in fewer vehicle trips than existing conditions and therefore fewer traffic-related air emissions. Consistent with Mitigation – Alternatives 1, 3, 5, and 6. These alternatives will result in more vehicle trips despite proposed alternative transportation features. Mitigation is proposed to improve the intersection of SR 89 and Granlibakken Road to reduce traffic emissions. In addition, offset fees shall be paid. These Alternatives include EIP projects that improve traffic flow in Tahoe City, which will reduce emissions in the region.
6.G.3. The County shall encourage the use of alternative modes of transportation by incorporating public transit, bicycle, and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities.	Consistent – Alternatives 1, 3, 5, and 5. These alternatives include public transit, pedestrian paths, vehicle sharing, bike share programs, shuttle services, and dial-a-ride services to the community. Alternatives 1, 3, 5, and 6 extend the West Shore bike trail through the site. Inconsistent – Alternative 4. Although Alternatives 2 and 4 include the two existing transit stops, they do not include bike trail extensions or pedestrian facilities that connect adjacent land uses.
6.G.6. The County shall require large new developments to dedicate land for and construct appropriate improvements for park-and-ride lots, if suitably located.	Consistent – All Alternatives. The Project area does not connect to mass transit stations. Park-and-ride lots are not suitable at this location. It should be noted that transit service is provided to the Project area under all alternatives, and Alternatives 1, 3, 5, and 6 include shuttle services, dial-a-ride, vehicle sharing programs, water taxi service, and other alternative transportation modes.
FOREST RESOURCES	
Goal 7.E: To conserve Placer County's forest resources, enhance the quality and diversity of forest ecosystems, reduce conflicts between forestry and other uses, and encourage a sustained yield of forest products.	
7.E.1. The County shall encourage the sustained productive use of forest land as a means of providing open space and conserving other natural resources.	Consistent – All Alternatives. The alternatives do not conflict with timberland management. The development alternatives include fuels management activities to improve forest health.
7.E.2. The County shall discourage development that conflicts with timberland management.	Consistent – All Alternatives. The alternatives do not conflict with timberland management. The development alternatives include fuels management activities to improve forest health.
7.E.3. The County shall work closely and coordinate	Consistent – All Alternatives. The alternatives do not

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with agencies involved in the regulation of timber harvest operations to ensure that County conservation goals are achieved.	conflict with timberland management. The development alternatives include fuels management activities to improve forest health.
7.E.4. The County shall encourage qualified landowners to enroll in the Timberland Production Zone (TPZ) program.	Consistent – All Alternatives. The development area is located outside the TPZ.
7.E.5. The County shall review all proposed timber harvest plans (THPs) and shall request that the California Department of Forestry and Fire Protection (CDF) amend THPs to address public safety concerns, such as requiring alternate haul routes if use of proposed haul routes would jeopardize public health and safety or result in damage to public or private roads.	Consistent with Mitigation – All Alternatives. A forest plan is propose mitigation to ensure tree removal and thinning practices are consistent with policies regarding forest health and timber harvest.
7.E.6. The County shall encourage and promote the productive use of wood waste generated in the County.	Consistent with Mitigation – All Alternatives. A forest plan is propose mitigation to ensure tree removal and thinning practices are consistent with policies regarding forest health and timber harvest.
HEALTH AND SAFETY	
SEISMIC AND GEOLOGICAL HAZARDS	
Goal 8.A: To minimize the loss of life, injury, and property damage due to seismic and geological hazards.	
8.A.1. The County shall require the preparation of a soils engineering and geologic-seismic analysis prior to permitting development in areas prone to geological or seismic hazards (i.e., groundshaking, landslides, liquefaction, critically expansive soils, avalanche).	Consistent –All Alternatives. Kleinfelder has prepared preliminary reports in 2007 and subsequent reports are due in 2010. These reports will be provided to the County and additional engineering that may be required (potentially only at the South Base) will be provided to the County for review.
8.A.2. The County shall require submission of a preliminary soils report, prepared by a registered civil engineer and based upon adequate test borings, for every major subdivision and for each individual lot where critically expansive soils have been identified or are expected to exist.	Consistent –All Alternatives. Kleinfelder has prepared preliminary reports in 2007 and subsequent reports are due in 2010. These reports will be provided to the County and additional engineering that may be required (potentially only at the South Base) will be provided to the County for review.
8.A.3. The County shall prohibit the placement of habitable structures or individual sewage disposal systems on or in critically expansive soils unless suitable mitigation measures are incorporated to prevent the potential risks of these conditions.	Consistent –All Alternatives. Kleinfelder has prepared preliminary reports in 2007 and subsequent reports are due in 2010. These reports will be provided to the County and additional engineering that may be required (potentially only at the South Base) will be provided to the County for review.
8.A.4. The County shall ensure that areas of slope instability are adequately investigated and that any development in these areas incorporates appropriate design provisions to prevent landsliding.	Consistent –All Alternatives. Kleinfelder has prepared preliminary reports in 2007 and subsequent reports are due in 2010. These reports will be provided to the County and additional engineering that may be required (potentially only at the South Base) will be provided to the County for review. Structures are not located on areas of high landslide or rock fall risk.
8.A.5. In landslide hazard areas, the County shall prohibit avoidable alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation, or septic systems; removal of vegetative cover; and steepening of slopes and undercutting the bases of slopes.	Consistent –All Alternatives. Kleinfelder has prepared preliminary reports in 2007 and subsequent reports are due in 2010. These reports will be provided to the County and additional engineering that may be required (potentially only at the South Base) will be provided to the County for review. Structures are not located on

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	areas of high landslide or rock fall risk. Groundwater interception devices will be used to protect the underground parking garages from damage by subsurface groundwater.
8.A.6. The County shall require the preparation of drainage plans for development in hillside areas that direct runoff and drainage away from unstable slopes.	Consistent –All Alternatives. Kleinfelder has prepared preliminary reports in 2007 and subsequent reports are due in 2010. These reports will be provided to the County and additional engineering that may be required (potentially only at the South Base) will be provided to the County for review. Structures are not located on areas of high landslide or rock fall risk. Groundwater interception devices will be used to protect the underground parking garages from damage by subsurface groundwater.
8.A.7. In areas subject to severe groundshaking, the County shall require that new structures intended for human occupancy be designed and constructed to minimize risk to the safety of occupants.	Consistent –All Alternatives. New structures are engineered to minimize safety risk during severe groundshaking.
8.A.8. County shall continue to support scientific geologic investigations which refine, enlarge, and improve the body of knowledge on active fault zones, unstable areas, severe groundshaking, avalanche potential, and other hazardous conditions in Placer County.	Consistent –All Alternatives. Kleinfelder has prepared preliminary reports in 2007 and subsequent reports are due in 2010. These reports will be provided to the County.
8.A.9. The County shall require that the location and/or design of any new buildings, facilities, or other development in areas subject to earthquake activity minimize exposure to danger from fault rupture or creep.	Consistent –All Alternatives. As discussed in Chapter 14 of the EIR/EIS, risks associated with earthquake activity is low, particularly with appropriate structural engineering.
8.A.10. The County shall require that new structures permitted in areas of high liquefaction potential be sited, designed, and constructed to minimize the dangers from damage due to earthquake-induced liquefaction.	Consistent –All Alternatives. Kleinfelder has prepared preliminary reports in 2007 and subsequent reports are due in 2010. These reports will be provided to the County and additional engineering that may be required (potentially only at the South Base) will be provided to the County for review.
8.A.11. The County shall limit development in areas of steep or unstable slopes to minimize hazards caused by landslides or liquefaction.	Consistent –All Alternatives. New structures are engineered to minimize safety risk. Structures are located outside unstable slope areas.
8.A.12. The County shall not issue permits for new development in potential avalanche hazard areas (PAHA) as designated in the Placer County Avalanche Management Ordinance unless project proponents can demonstrate that such development will be safe under anticipated snow loads and conditions of an avalanche.	Consistent – All Alternatives. None of the proposed or existing structures are within the avalanche hazard zone.
FLOOD HAZARDS	
Goal 8.B: To minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from flood hazards.	
8.B.1. The County shall promote flood control measures that maintain natural conditions within the 100- year floodplain of rivers and streams.	Consistent – Alternatives 1 and 3. These alternatives remove structures and roads from the floodplain. They remove a culvert from the stream channel and restore the SEZ and stream channels Inconsistent – Alternatives 2, 4, 5, and 6. These alternatives do not remove roads within the floodplain

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	and Alternative 2 maintains structures in the floodplain. These alternatives do not restore SEZ function or the existing culvert in the stream channel.
8.B.2. The County shall continue to participate in the Federal Flood Insurance Program.	Consistent – All Alternatives. Participation will continue under each alternative, as required.
8.B.3. The County shall require flood-proofing of structures in areas subject to flooding.	Consistent – Alternatives 1 and 3. These alternatives remove structures and roads from the floodplain. Inconsistent – Alternatives 2, 4, 5, and 6. These alternatives do not remove roads within the floodplain and Alternative 2 maintains structures in the floodplain.
8.B.5. The County shall coordinate with neighboring jurisdictions to mitigate the impacts of new development in Placer County that could increase or potentially affect runoff onto parcels downstream in a neighboring jurisdiction.	Consistent – All Alternatives. Alternative 2 does not propose changes to existing conditions and the current stormwater system is adequate for the site. Alternatives 1, 3, 4, 5, and 6 result in a coverage reduction. Alternatives 1, 3, 5, and 6 include stormwater infiltration galleries to improve runoff quality. All alternatives include BMPs to address runoff.
8.B.6. The County shall prohibit the construction of facilities essential for emergencies and large public assembly in the 100-year floodplain, unless the structure and access to the structure are free from flood inundation.	Consistent – All Alternatives. New structures are not proposed within the floodplain.
8.B.7. The County shall require flood control structures, facilities, and improvements to be designed to conserve resources, incorporate and preserve scenic values, and to incorporate opportunities for recreation, where appropriate.	Consistent – All Alternatives. Alternative 2 does not propose changes to existing conditions and the current stormwater system is adequate for the site. Alternatives 1, 3, 4, 5, and 6 result in a coverage reduction. Alternatives 1, 3, 5, and 6 include stormwater infiltration galleries to improve runoff quality. All alternatives include BMPs to address runoff.
FIRE HAZARDS	
Goal 8.C: To minimize the risk of loss of life, injury, and damage to property and watershed resources resulting from unwanted fires.	
8.C.1. The County shall ensure that development in high-fire-hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards and meets all applicable state and County fire standards.	Consistent – Alternative 2. Alternative 2 does not propose new development. Consistent with Mitigation –Alternatives 1, 3, 4, 5, and 6. Each of the proposed structures includes fire protection measures such as sprinklers and extinguishers and fuels reduction will occur within the Project area. Placement and types of fire protection devices as well as fire protection plans will be reviewed by the North Tahoe Fire Protection District during final design of the selected alternative.
8.C.2. The County shall require that discretionary permits for new development in fire hazard areas be conditioned to include requirements for fire-resistant vegetation, cleared fire-breaks, or a long-term comprehensive fuel management program. Fire hazard reduction measures shall be incorporated into the design of development projects in fire hazard areas.	Consistent – Alternative 2. Alternative 2 does not propose new development. Consistent with Mitigation –Alternatives 1, 3, 4, 5, and 6. Fuels reduction will occur during development. Fuels management programs will be reviewed by the North Tahoe Fire Protection District.
8.C.3. The County shall require that new development meets state, County, and local fire district standards for fire protection.	Consistent – Alternative 2. Alternative 2 does not propose new development. Consistent with Mitigation –Alternatives 1, 3, 4, 5, and

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	6. Each of the proposed structures include fire protection measures such as sprinklers and extinguishers. Forest fuel reduction efforts throughout the resort also contribute to a substantial reduction in the potential threat of wildfire to the project and surrounding areas. Placement and types of fire protection devices will be reviewed by the North Tahoe Fire Protection District during final design of the selected alternative.
8.C.4. The County shall refer development proposals in the unincorporated County to the appropriate local fire agencies for review for compliance with fire safety standards. If dual responsibility exists, then both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall be applied.	Consistent – Alternative 2. Alternative 2 does not propose new development. Consistent with Mitigation –Alternatives 1, 3, 4, 5, and 6. Each of the proposed structures include fire protection measures such as sprinklers and extinguishers. Forest fuel reduction efforts throughout the resort also contribute to a substantial reduction in the potential threat of wildfire to the project and surrounding areas. Placement and types of fire protection devices will be reviewed by the North Tahoe Fire Protection District during final design of the selected alternative.
8.C.5. The County shall ensure that existing and new buildings of public assembly incorporate adequate fire protection measures to reduce the potential loss of life and property in accordance with state and local codes and ordinances.	Consistent with Mitigation – All Alternatives. Each of the proposed structures include fire protection measures such as sprinklers and extinguishers. Forest fuel reduction efforts throughout the resort also contribute to a substantial reduction in the potential threat of wildfire to the project and surrounding areas. Placement and types of fire protection devices will be reviewed by the North Tahoe Fire Protection District during final design of the selected alternative.
8.C.10. The County shall continue to implement state fire safety standards through enforcement of the applicable standards contained in the Placer County Land Development Manual.	Consistent with Mitigation – All Alternatives. Each of the proposed structures include fire protection measures such as sprinklers and extinguishers. Forest fuel reduction efforts throughout the resort also contribute to a substantial reduction in the potential threat of wildfire to the project and surrounding areas. Placement and types of fire protection devices will be reviewed by the North Tahoe Fire Protection District during final design of the selected alternative.
8.C.12. The County shall support annexations and consolidations of fire districts and services to improve service delivery to the public. [See also policies/programs under Goal 4.1, Fire Protection Services.]	Consistent – Alternative 2. Alternative 2 does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. Mitigation for these alternatives includes annexation of the Project area by the North Tahoe Fire Protection District.
HAZARDOUS MATERIALS	
Goal 8.G: To minimize the risk of loss of life, injury, serious illness, damage to property, and economic and social dislocations resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous materials wastes.	
8.G.1. The County shall ensure that the use and disposal of hazardous materials in the County complies with local, state, and federal safety standards.	Consistent – All Alternatives. All alternatives will dispose of hazardous materials, if used, in accordance with local, state, and federal requirements.
8.G.2. The County shall discourage the development of residences or schools near known hazardous waste	Consistent - All Alternatives. There are no hazardous water disposal or handling facilities within the Project

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disposal or handling facilities.	area.
8.G.3. The County shall review all proposed development projects that manufacture, use, or transport hazardous materials for compliance with the County's Hazardous Waste Management Plan (CHWMP).	Consistent – All Alternatives. Hazardous materials used during construction (fuels) will be handled in accordance with County requirements. County review will occur for the alternative.
8.G.5. The County shall strictly regulate the storage of hazardous materials and wastes.	Consistent – All Alternatives. Fuels will be stored in tanks at the mid-mountain lodge. Storage will be in accordance with local, state, and federal law.
8.G.6. The County shall require secondary containment and periodic examination for all storage of toxic materials.	Consistent – All Alternatives. Fuels will be stored in tanks at the mid-mountain lodge. Storage will be in accordance with local, state, and federal law.
8.G.9. The County shall require that applications for discretionary development projects that will generate hazardous wastes or utilize hazardous materials include detailed information on hazardous waste reduction, recycling, and storage.	Consistent – All Alternatives. Hazardous material generation is not proposed or anticipated. Hazardous materials may be used during construction and chlorine will be used for the pool at the mid-mountain lodge. Development application for the selected alternative will include material handling information and hazardous event response plans.
AVALANCHE HAZARDS	
Goal 8.H: To minimize the risk of loss of life, injury, and damage to property due to avalanche.	
8.H.2. The County shall require new development in areas of avalanche hazard to be sited, designed, and constructed to minimize avalanche hazards.	Consistent – All Alternatives. Development is not proposed within the avalanche zone.
NOISE	
Goal 9.A: To protect County residents from the harmful and annoying effects of exposure to excessive noise.	
9.A.1. The County shall not allow development of new noise-sensitive uses where the noise level due to non-transportation noise sources will exceed the noise level standards of Table 9-1 as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated into the development design to achieve the standards specified in Table 9-1 (Table 13-8 in this EIR/EIS).	Consistent – Alternatives 2 and 4. Alternative 2 does not propose new development. With the removal of snow-making guns under Alternative 4, non-transportation noise does not exceed noise levels. Consistent with Mitigation – Alternatives 1, 3, 5, and 6. These alternatives propose new lodging and residential uses in an area where snowmaking occurs. Noise from snowmaking currently exceeds threshold levels. Mitigation includes acoustical insulation and noise reducing design of lodging and residential units
9.A.2. The County shall require that noise created by new non-transportation noise sources be mitigated so as not to exceed the noise level standards of Table 9-1 as measured immediately within the property line of lands designated for noise-sensitive uses.	Consistent – Alternative 4. Alternative 4 eliminates snowmaking and therefore results in a noise level decrease. Consistent with Mitigation – Alternatives 1, 2, 3, 5, and 6. Existing snowmaking operations currently exceed noise thresholds in the Project area. These alternatives either maintain existing snowmaking or propose additional snowmaking devices that may increase existing noise levels. Mitigation measures have been proposed to control noise levels to ensure they do not increase at noise sensitive land uses.
9.A.3. The County shall continue to enforce the State Noise Insulation Standards (California Code of Regulations, Title 24) and Chapter 35 of the Uniform Building Code (UBC).	Consistent – All Alternatives. Alternative 2 does not propose new development. New structures proposed for Alternatives 1, 3, 4, 5, and 6 will comply with noise insulation standards.
9.A.4. Impulsive noise produced by blasting should not be subject to the criteria listed in Table 9-1. Single	Consistent – Alternatives 2 and 4. These alternatives do not propose blasting.

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event impulsive noise levels produced by gunshots or blasting shall not exceed a peak linear overpressure of 122 db, or a C-weighted Sound Exposure Level (SEL) of 98 dBC. The cumulative noise level from impulsive sounds such as gunshots and blasting shall not exceed 60 dB LCdn or $CNEL_C$ on any given day. These standards shall be applied at the property line of a receiving land use.	Consistent with Mitigation –Alternatives 1, 3, 5, and 6. Blasting, if needed, would only occur during construction and will be carefully planned and controlled with mitigation such as noise barriers and covers to reduce noise levels.
9.A.5. Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 9-1 at existing or planned noise-sensitive uses, the County shall require submission of an acoustical analysis as part of the environmental review process so that noise mitigation may be included in the project design. The requirements for the content of an acoustical analysis are listed in General Plan Table 9-2.	Consistent – All Alternatives. An acoustical analysis for each alternative is included in Chapter 13 of the EIR/EIS.
9.A.6. The feasibility of proposed projects with respect to existing and future transportation noise levels shall be evaluated by comparison to Figure 9-1.	Consistent – All Alternatives. Potential noise levels are evaluated in Chapter 13.
9.A.8. New development of noise-sensitive land uses shall not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources, including airports, which exceed the levels specified in Table 9-3 (Table 13-9 of this EIR/EIS), unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to the levels specified in Table 9-3.	Consistent – Alternatives 2 and 4. Alternative 2 does not propose new development. Alternative 4, reduces transportation noise levels. Consistent with Mitigation – Alternatives 1, 3, 5, and 6. These alternatives propose new lodging and residential uses in an area where snowmaking occurs. Noise from traffic and snowmaking operations currently exceeds threshold levels. Mitigation includes acoustical insulation and noise reducing design of lodging and residential units
9.A.9. Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 9-3 at outdoor activity areas or interior spaces of existing noise-sensitive land uses.	Consistent – Alternatives 2 and 4. Alternative 2 does not propose changes from existing conditions. Alternative 4 results in a traffic reduction and therefore a reduction in transportation noise. Consistent with Mitigation – Alternatives 1, 3, 5, and 6. Existing traffic noise currently exceeds thresholds in the Project area. These alternatives would add 1.2 dBA of traffic noise. Mitigation measures are included to reduce traffic noise on adjacent local streets.
9.A.10. Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 9-3 or the performance standards of Table 9-1, the County shall require submission of an acoustical analysis as part of the environmental review process so that noise mitigation may be included in the project design. At the discretion of the County, the requirement for an acoustical analysis may be waived provided that all of the following conditions are satisfied: a. The development is for less than five single-family dwellings or less than 10,000 square feet of total gross floor area for office buildings, churches, or meeting halls;	Consistent – All Alternatives. An acoustical analysis for each alternative is included in Chapter 13 of the EIR/EIS.

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b. The noise source in question consists of a single roadway or railroad for which up-to-date noise exposure information is available. An acoustical analysis will be required when the noise source in question is a stationary noise source or airport, or when the noise source consists of multiple transportation noise sources; c. The existing or projected future noise exposure at the exterior of buildings which will contain noise-sensitive uses or within proposed outdoor activity areas (other than outdoor sports and recreation areas) does not exceed 65 dB Ldn (or CNEL) prior to mitigation. For outdoor sports and recreation areas, the existing or projected future noise exposure may not exceed 75 dB Ldn (or CNEL) prior to mitigation; d. The topography in the Project area is essentially flat; that is, noise source and receiving land use are at the same grade; and e. Effective noise mitigation, as determined by the County, is incorporated into the project design to reduce noise exposure to the levels specified in Table 9-1 or 9-3. Such measures may include the use of building setbacks, building orientation, noise barriers, and the standard noise mitigations contained in the Placer County Acoustical Design Manual. If closed windows are required for compliance with interior noise level standards, air conditioning or a mechanical ventilation system will be required.	
9.A.11. The County shall implement one or more of the following mitigation measures where existing noise levels significantly impact existing noise-sensitive land uses, or where the cumulative increase in noise levels resulting from new development significantly impacts noise-sensitive land uses: a. Rerouting traffic onto streets that have available traffic capacity and that do not adjoin noise sensitive land uses; b. Lowering speed limits, if feasible and practical; c. Programs to pay for noise mitigation such as low cost loans to owners of noise-impacted property or establishment of developer fees; d. Acoustical treatment of buildings; or e. Construction of noise barriers.	<u>Consistent – Alternatives 2 and 4</u>. Alternative 2 does not alter existing noise levels or land uses. Alternative 4 reduces transportation and operational noise levels. <u>Consistent with Mitigation – Alternatives 1, 3, 5, and 6.</u> Noise levels from existing snowmaking operations and baseline traffic exceed threshold levels. Mitigation measures have been proposed that include acoustical treatment of buildings; no increase of existing snowmaking noise levels at the Base areas; and requirements to reduce noise levels on local streets within the vicinity of the Project area.
9.A.12. Where noise mitigation measures are required to achieve the standards of Tables 9-1 and 9-3, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered as a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.	<u>Consistent – All Alternatives</u>. Alternatives 2 and 4 do not require mitigation. Mitigation proposed for Alternatives 1, 3, 5, and 6 emphasizes site planning and acoustical treatment of proposed structures.

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Goal 9.B: To ensure that areas designated for industrial uses pursuant to Goal 1.E. and Policy 1.E.1. are protected from encroachment by noise-sensitive land uses.	
9.B.1. The County shall require that new noise-sensitive land uses established next to existing industrial areas be responsible for self-mitigating noise impacts from industrial activities.	Consistent – Alternatives 2 and 4. Alternative 2 does not propose new development. Alternative 4 reduces noise levels. Consistent with Mitigation – Alternatives 1, 3, 5, and 6. These alternatives propose new lodging and residential uses in an area where snowmaking occurs. Noise from traffic noise exceeds threshold levels. Mitigation includes acoustical insulation and noise reducing design of lodging and residential units
9.B.2. The County shall apply noise standards in a manner consistent with encouraging the retention, expansion, and development of new businesses pursuant to Goal 1.N. and Policy 1.N.2.	Consistent – Alternatives 2 and 4. Alternative 2 does not propose new development. Alternative 4 reduces noise levels. Consistent with Mitigation – Alternatives 1, 3, 5, and 6. These alternatives propose new lodging and residential uses in an area where snowmaking occurs. Noise from traffic noise exceeds threshold levels. Mitigation includes acoustical insulation and noise reducing design of lodging and residential units
9.B.3. Because many industrial activities and processes necessarily produce noise which will likely be objectionable to nearby non-industrial land uses, existing and potential future industrial noise emissions shall be accommodated in all land use decisions.	Consistent – All Alternatives. Alternative 2 does not propose changes to existing conditions. Alternative 4 reduces existing noise levels. Alternatives 1, 3, 5, and 6 utilize snowmaking devices that can affect adjacent sensitive land uses; however, such devices are necessary for the continued operation of the ski facilities.
9.B.4. Whenever noise exposure standards herein fall subject to interpretation relative to industrial activities, the benefit of the doubt shall be afforded to the industrial use.	Consistent – All Alternatives. Alternative 2 does not propose changes to existing conditions. Alternative 4 reduces existing noise levels. Alternatives 1, 3, 5, and 6 utilize snowmaking devices that can affect adjacent sensitive land uses; however, such devices are necessary for the continued operation of the ski facilities.
General Plan Amendments	
Any proposal for a General Plan Amendment (GPA) and designation of areas for significant new growth must include a discussion of how the project will meet the following standards and requirements.	
Standards and Requirements	
1. The County shall consider GPAs that designate areas for significant new growth only when they can be comprehensively planned as single units according to an adopted specific plan that complies with these standards and requirements.	Consistent – Alternatives 1, 2, 3, 4, and 6. Alternatives 2 and 4 do not propose General Plan Amendments. Alternatives 1, 3, and 6 propose amendments in support of the Ski Area Master Plan. In addition, the proposed amendments are consistent with area planning or limit the changes to "Special Areas" within the Project area. Inconsistent – Alternative 5. This alternative proposes General Plan Amendments; however the proposed amendments include residential densities that are significantly greater than existing high-density limits and findings cannot be made to support an amendment.
3. The County shall consider GPAs that designate areas for significant new growth where the planning and design carries out the following objectives: a. Concentrate higher-density residential uses and	Consistent – Alternatives 1, 2, 3, 4, and 6. Alternative 2 does not propose new growth and Alternative 4 does not propose significant growth. New growth under Alternative 4 is proposed along the SR 89 corridor

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appropriate support services along segments of the transportation system with good road and transit connections to the remainder of the region; b. Support concentrations of medium and high-density residential uses and higher intensities of nonresidential uses within one-quarter mile of transit stops along trunk lines of major transportation systems; c. Support the development of integrated mixed-use areas by mixing residential, retail, office, open space, and public uses while making it possible to travel by transit, bicycle, or foot, as well as by automobile; d. Provide buffers between residential and incompatible non-residential land uses; e. Enhance community identity by creating retail/office commercial centers that also serve as cultural and activity centers for communities; f. Provide a bicycle path and pedestrian walkway network to link public facilities, housing, and commercial centers; g. Provide buffers for major public facilities such as landfills, airports and sewage treatment plants; and h. Provide buffers which create distinct, separate urban communities.	Alternatives 1, 3, and 6 propose new mixed-use growth along SR 89 where transit service exists. These alternatives propose alternative transportation (bike trails and bike sharing programs, pedestrian paths, water taxi) and shuttle services. Design intermixes uses, but concentrates use types to buffer different land uses. Base areas include gathering spaces, such as the amphitheater at the north base. Pedestrian paths would be located throughout the site and the West Shore bike trail would be extended through the site. <u>Inconsistent – Alternative 5</u>. This alternative proposes General Plan Amendments; however the proposed amendments include residential densities that are significantly greater than existing high-density limits and findings cannot be made to support an amendment.
4. Prior to consideration of such GPAs the following should have occurred or been demonstrated: a. There is a market demand for additional urban or suburban development within the regional analysis area of the County proposed for such development, following an examination of current growth projections, available land, and existing development. b. It has been positively demonstrated that the legal, financial and practical ability to provide a full range of public services exists. c. It has been positively demonstrated that adequate surface water, sewer capacity, and the necessary distribution and collection systems exist or can be built to serve the area proposed for development.	<u>Consistent – Alternatives 1, 2, 3, 4, and 6</u>. Alternative 2 does not propose new growth and Alternative 4 does not propose significant growth. Alternatives 1, 3, and 6 propose new mixed-use growth along SR 89 through the Master Plan. Enhancement of the resort and mixed-use development is encouraged in the PAS. Feasibility is demonstrated through the Master Plan submittal. <u>Inconsistent – Alternative 5</u>. This alternative proposes General Plan Amendments; however the proposed amendments include residential densities that are significantly greater than existing high-density limits and findings cannot be made to support an amendment.
5. New development areas will be expected to provide a balanced complement of land use types, including residential (very low, low, and moderate cost), commercial, industrial, office, recreational, public, institutional, and open space. Mixed use projects, including residential uses, will be considered where they support the provision of infrastructure and development of industrial uses.	<u>Consistent – All Alternatives</u>. Alternative 2 does not propose new development. Alternative 4 proposes residences and commercial uses. Alternatives 1, 3, 5, and 6 include residential, tourist, commercial, and recreational uses on a site that currently provides recreational uses. Industrial uses beyond those that support the ski facilities are not appropriate at this location.
6. New development areas shall provide a range of housing types to serve all income groups in the county, and shall stage development such that a balance of housing types is maintained over time, consistent with the housing goals, objectives, policies and programs of the General Plan.	<u>Consistent – Alternatives 1, 2, 3 5, and 6.</u> Alternative 2 does not propose new development. Alternatives 1, 3, 5, and 6 include employee housing and multi-family units. The employee housing will be deed restricted to ensure it's continued use in that capacity. <u>Inconsistent – Alternative 4</u>. Alternative 4 does not provide a range of housing.

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7. New development areas proposed for urban densities shall be designed to achieve, or shall have a goal of achieving, a jobs-housing balance.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 4, 5, and 6 include new residential uses, many of which will become second homes and not primary residences. Each alternative proposes commercial and/or recreational uses that are viable year-round. While not all residences will be supported by the new jobs, not all residences will be occupied as primary homes.
8. New development areas must include appropriate buffer zones to provide separation between potential incompatible land uses, consistent with the standards for buffer zones specified in Part I of this Policy Document. The size of the buffer zone is to be proportionate to the total project size and proposed uses. The location of the buffer will depend upon the location of the proposed development relative to other sensitive land uses and/or environmental features.	Consistent –Alternatives 1, 2, 3, 4, and 6. Alternative 2 does not propose new development. Alternative 4 places commercial use along SR 89 and residential lots surrounding the commercial lot to reflect the community design of commercial uses along the travel corridor and residences beyond the roadway frontage. Alternatives 1, 3, and place commercial or higher activity uses along the roadway frontage. Residential uses are located nearer existing residences. Inconsistent – Alternative 5. Alternative 5 proposes a highly visible 4-story multi-family housing structure along SR 89. The height and visibility of the structure are incompatible with the surrounding residential community and buffering does not alleviate this issue.
9. New development areas shall be designed and constructed to provide all public infrastructure, facilities and service necessary to serve both initial and buildout populations, including but not limited to: adequate surface water supplies; sewage collection, treatment, and disposal facilities; public utilities; police and fire protection and emergency services, school and medical facilities where warranted by population; and public transportation. Extensions of new infrastructure, including water, sewer, roads, etc., should be compatible with existing incorporated Cities' General Plans. (See also #16.)	Consistent –Alternative 2. Alternative 2 does not propose new development. Consistent with Mitigation – Alternatives 1, 3, 4, 5, and 6. Alternatives 1, 3, 4, 5, and 6 require extension of public infrastructure on the site. Extension of infrastructure will be provided by developer cost. Development fees will be applied to address fire protection and schools. Law enforcement mitigation will be provided through fees if determined to be required. Public transportation exists onsite and will be expanded under those alternatives with the greatest degree of development. The selected alternative will demonstrate adequate water supply and utility service to the site prior to construction.
10. New development areas should assist in the resolution of regional problems, including but not limited to air quality, transportation, regional employment needs, and growth pressures on existing communities.	Consistent – Alternatives 1, 2, 3, 4, and 6. Alternative 2 does not propose new development. Alternatives 1 and 3 include participation in EIP projects that improve transportation, water quality, and scenic quality. They provide employee housing. Alternative 4 reduces traffic and associated air emissions and improves the scenic quality. Inconsistent – Alternative 5. Alternative 5 proposes alternatives transportation, landscaping, and economic growth; however this alternatives proposes a highly visible 4-story multi-family housing structure along SR 89. The height and visibility of the structure are incompatible with the surrounding community and findings cannot be made to support an amendment.
11. Transit services to serve the Project area shall be provided by new development using available state and	Consistent – All Alternatives. Two transit stops currently exist within the Project area and serve the

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federal transportation funding. New development shall be responsible for its fair share of such transit services.	Project area. Alternatives 1, 3, and 5 include transit stop improvements (shelters).
12. The County shall require that land use form and transportation systems in new development areas be designed to provide residents and employees with the opportunity to accomplish a majority of their trips within the new development area by walking, bicycling, and using transit.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternative 4 proposes a new neighborhood commercial development and new residential lots. By providing a new commercial use to serve existing and proposed neighborhoods, vehicle trips may be reduced. The existing transit stops at the Project area will continue to operate. Alternatives 1, 3, 5, and 6 include commercial and recreation uses onsite that serve onsite residents and the local community. Transit stops onsite will be improved, bike trails and pedestrian paths will be extended and Alternatives 1 and 3 include onsite employee housing.
13. The County shall require development in new development areas to be phased in a manner that ensures a balance between the land use and transportation infrastructure at each stage of development. Transportation infrastructure includes roadways, intersections, interchanges, bikeway and pedestrian facilities, and transit facilities (e.g., turn-outs, shelters, storage and maintenance buildings, parking areas for transit and car-pooling, and mode transfer facilities.).	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternative 4 is phased through the initial development of the commercial lot and future development of the residential lots. Alternatives 1, 3, 5, and 6 are phased as discussed in the project description, with alternative transportation improvements occurring within the location of the development phase. Alternatives 1, 3, 5, and 6 include EIP roadway improvements offsite. Intersection improvements at SR 89 and Granlibakken Road will occur before complete build out of the proposed developments.
14. The County shall encourage the use of appropriate new technologies (e.g., telecommuting, traveler information systems, alternative-fuel vehicles, and continuous monitoring systems) in new development areas.	Consistent – All Alternatives. Alternative 2 does not propose new development. Alternatives 1, 3, 5, and 6 include alternative transportation systems. In addition, there is potential for signage placement in Tahoe City indicating if the resort is full to avoid unnecessary vehicle trips to the resort. It is unknown what new technologies may be used for Alternative 4; however, alternative technologies may be used as feasible and appropriate.
15. Road systems within new development areas shall provide links to internal commercial core areas without requiring the use of an adjacent arterial, thoroughfare, or state highway.	Consistent – All Alternatives. Alternative 2 does not result in new development. Alternatives 1, 3, 4, 5, and 6 include internal roadways to link residential and commercial/tourist uses, which avoids internal access trips on other area roads.

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16. In conjunction with the processing of a GPA application for development located within the future study area, the County will enter into an agreement with the adjoining city that would specify acceptable levels of service (including police, fire, park programs, etc.) and measures to mitigate impacts to municipal facilities (transportation, circulation, parks, libraries, etc.). The determination of the impact of development on an adjoining city shall consider the fiscal effects of such development based on a fiscal analysis prepared as a part of the General Plan Amendment proposal. Costs and revenues to both the City and County, resulting from a project, shall be considered in such an analysis.	Consistent – All Alternatives. The EIR/EIS analyzes impacts on utilities and public services, including those services provided by Tahoe City purveyors and service providers. Mitigation is included to annex the Project area into the Fire Protection district, pay fees to support law enforcement and parks and other services, and extend infrastructure, which is funded by HMR.

Source: County of Placer. 1994. *Placer County General Plan Update Countywide General Plan Policy Document*. August 16, 1994. Prepared by Placer County, with Crawford Multari & Starr, DKS Associates, Psomas and Associates, Jones & Stokes Associates, Recht Hausrath & Associates, and J. Laurence Mintier & Associates. Placer County. Auburn, CA, HBA 2010

5.0 ENVIRONMENTAL ANALYSIS

The environmental topic areas (e.g., Chapter 6.0, Land Use) included in Chapters 6.0 through 19.0 are generally organized according to the following format.

5.1 ENVIRONMENTAL SETTING

The Environmental Setting describes the existing conditions as they relate to the attributes of the environment that may be affected by the project.

5.2 REGULATORY SETTING

The Regulatory Setting describes the applicable regulatory framework as well as pertinent federal, state, regional, and local laws and regulations that may apply to the proposed project. It also presents an evaluation of the proposed project's consistency with the various policies and regulations established by agencies with jurisdiction over the Project.

5.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

This section identifies the relevant local, state, TRPA, and federal standards (i.e., water quality standards, air quality standards, zoning provisions, etc.) and other criteria by which a change in the environment can be assessed.

5.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

The impact analyses describe anticipated changes in the environment from construction and operation of the Project and Alternatives. The level of significance is identified for each impact based on a comparison with the impact evaluation criteria. Where an Alternative results in impacts that are considered significant with respect to the impact evaluation criteria, mitigation measures are provided to avoid or minimize the impact. Where impacts cannot be reduced to a level that is less than significant, the impact is identified as significant and unavoidable.

5.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

The cumulative impacts analysis is included at the end of each environmental resource section. If the Project is found to make considerable contribution to a cumulatively significant effect, the analysis identifies recommended mitigation measures to reduce the project's contribution to a level of less than significant. Chapter 20 - Mandated Environmental Analysis, Section 20.1 - Cumulative Impacts explains the approach used to analyze the Project's cumulative impacts. The list of projects considered in the cumulative analysis is provided in Table 20-1.

6.0 LAND USE

This section discusses impacts of the Project and Alternatives on the existing land uses in the Homewood Mountain Resort (HMR) Ski Area Master Plan Area (Project area), including the effects of Plan Area Statement amendments and expanding the boundary of residential and tourist plan areas into the Homewood recreational plan area. This chapter discusses impacts on land use, including compliance with land use goals and policies, zoning compliance, land use consistency and conformity with adjacent uses, and identifies potential mitigation to address adverse changes. To provide a basis for land use evaluation, the setting section describes the existing land uses of the Project area. Land use regulations and limits defined in the TRPA Regional Plan and Placer County General Plan are discussed in the Regulatory Setting.

6.1 ENVIRONMENTAL SETTING

6.1.1 Existing Land Uses

As described in Chapter 3, "Description of Proposed Project and Alternatives," the Project area, encompasses approximately 1,253 acres in the Lake Tahoe region of the Sierra Nevada Mountains. The Project area is located in unincorporated Placer County west of Lake Tahoe, about six miles south of Tahoe City. West Lake Tahoe Boulevard, also called State Route (SR) 89 and Lake Tahoe bound the area to the east, Ellis Peak to the southwest, and Blackwood Ridge to the north. Access to the Project area is typically from Interstate 80 to SR 89. The Project area includes twenty (20) contiguous parcels as shown on Figure 3-4.

TRPA and Placer County have adopted Plan Areas Statements that specify permissible land uses within the Project area. The majority of the Project area is located in TRPA Plan Area Statement (PAS) 157 - the "Homewood/Ski Homewood Area" (Land Use Classification - Recreation). Figure 6-1 shows the location of TRPA PAS boundaries. Figure 3-2 (Chapter 3) shows the location of Placer County Plan Area boundaries. Permissible uses in TRPA PAS 157 include employee housing (S), single-family dwelling (S), hotel, motels and other transient dwelling units (S), eating and drinking facilities (S), food and beverage retail sales (S), general merchandise stores (S), transit stations and terminals (S), skiing facilities (S), riding and hiking trails (A), day use areas (A), and a majority of the resource management uses. Additional information on applicable land-use regulations and standards is set forth below in Section 6.2 -- "Regulatory Setting."

A small portion of the Project area, consisting of the existing gravel parking lot at the southern end of the North Base area, is located in TRPA PAS 158 - the "McKinney Tract" (Residential). Single family dwelling (A) is the primary use allowed in this Plan Area.

A small portion of the Project area, consisting of the northernmost area of the north base (a portion of the paved parking lot adjacent to SR 89), is located in TRPA PAS 159 – "Homewood/Commercial" (Land Use Classification – Tourist). Permissible uses in PAS 159 include employee housing (S), single-family dwelling (S), hotels, motels and other transient dwelling units (A), timeshares (S), eating and drinking facilities (A), food and beverage retail sales (A), general merchandise stores (A), outdoor recreation concessions (A), skiing facilities (S), cross-country skiing courses (S), day use areas (A), riding and hiking trails (S), and a majority of the resource management uses.

The Placer County General Plan Land Use Classification for PAS 157, 158, and 159 are "Recreation with a Mitigation Management Strategy", "Residential with a Mitigation Management Strategy" and

'Commercial/Tourist with a Redirection Management Strategy", respectively. The County Plan Area Statements include mostly the same or similar permissible uses as listed in the TRPA Plan Area Statements. Appropriate development within TRPA PAS 157, 158 and 159 is addressed in the Placer County West Shore Area General Plan. County PAS 159 includes a special policy that states "Planning for development of this area should include consideration of the adjoining ski areas in PAS 157."

The 1,253-acre Project area currently has over 1,781,000 square feet of TRPA verified existing land coverage (including public ROW areas), which includes approximately 271,000 square feet at the North Base area and 117,000 square feet at the South Base area. Over 288,000 square feet is hard coverage consisting of parking and ski facilities, lodges, etc. and the balance is compacted dirt roadways and trails. Between 2006 and 2009, HMR reports that it has restored approximately 240,000 square feet of roads and trails on the mountain. This restoration has not yet been inspected by TRPA for completion and to determine whether it is eligible for land coverage banking. An additional 126,324 square feet was restored previously and banked with the TRPA in 2000. If TRPA verifies all or some of the recent restoration as official land coverage restoration, some of the restored land coverage will be permanently retired and some will be banked for future use on the resort or transfer to potential off-site locations. The Project proposes the restoration of 500,000 square feet of the existing verified land coverage. Chapter 14 provides additional details regarding potential sites for the proposed land coverage restoration. The Project area is presently used in the winter exclusively for a snow skiing operation including accessory food and beverage and rental/retail uses. Summer uses include such activities as farmers markets, concerts, wedding receptions and other special uses at the north and south base lodges and parking lots (weddings and receptions are generally held in the lodges and on associated decks rather than the parking lots. Many weddings are held on the mountain with a reception at one of the lodges, usually the South Lodge). See Chapter 18, "Recreation," for a detailed discussion of existing recreation uses within the HMR Project area.

The Project area can be characterized as mountainous although there is a wide range of topographic values. The North and South Base areas of the Project area range from reasonably flat (slopes of 1 to 10 percent) to slopes up to 30 percent. The Project area includes portions of Quail Lake Creek, Madden Creek and Homewood Creek watersheds. The North Base area and a portion of the South Base area are located within TRPA Intervening Area #7. See Chapter 15, "Hydrology, Water Rights, Surface Water Quality and Groundwater," for detailed watershed descriptions. Mixed-Conifer forest is the primary vegetation type found within the Project area (see Chapter 8, Biological Resources for a detailed discussion of existing vegetation).

6.1.2 Surrounding Land Uses

The predominant land use in the surrounding area along with some "Commercial/Tourist" uses is "Residential". Non-residential uses are primarily concentrated immediately adjacent to the SR 89 corridor, including the Maritime Museum directly to the south of the North Base area parking lot. Other uses in the immediate area include the Homewood High and Dri Marina and Obexer's Marina, West Shore Café on the Lake, a U.S. Post Office, a deli and restaurant, and the recently developed Harborside Interval Ownership Tourist Accommodation project (east of SR 89 from the HMR North Base area). Undeveloped federally-owned lands surround the upper mountain portion of the ski resort.

The following TRPA and County Plan Area Statements are adjacent to the Project area: Plan Area Statement (PAS) 160 – "Homewood/Residential" is located to the North; PAS 152 – "McKinney Lake" (Conservation) and PAS 156 – "Chambers Landing" (Residential) are located to the South; and the remainder of PAS 158 – "McKinney Tract" (Residential) not included in the Project area and the remainder of PAS 159 "Homewood/Commercial" (Tourist) not included in the Project area are located to the East.

6.1.3 Land Ownership

Land areas in the Project vicinity are owned by a variety of individuals and public and private entities. PAS 157 is comprised of land owned by Ski Homewood and adjacent land owned by the USDA Forest Service Lake Tahoe Basin Management Unit (LTMBU) property. Land uses in PAS 158 are primarily residential with individual parcels being owned by a number of private landowners. Land uses in PAS 159 are also primarily in private ownership with a mixture of small commercial uses, marinas and motels, with some residences.

6.1.4 Agricultural Lands

There are no designated agricultural lands in the Project area.

6.1.5 Land Development Policies

According to language in the TRPA Planning Area Statements adopted in 1987, PAS 157 should continue to provide downhill skiing opportunities while PAS 158 should remain in single-family residential use. PAS 157 includes Special Policies indicating there is a need for rehabilitation in the planning area while maintaining the scale and character of the west shore and minimizing conflicts between adjoining land uses. PAS 159 should continue to be a mixed residential and commercial area.

6.2 REGULATORY SETTING

The TRPA and Placer County regulate the type of land use allowed in the Project area along with their respective regulatory settings, which are disclosed below. A third regulatory agency, The California Department of Transportation (Caltrans) will regulate encroachment in the SR 89 right-of-way (ROW) through the permitting process. Lands owned by the USDA Forest Service LTBMU located within the Project area will not be affected by implementation of the Project or alternatives.

6.2.1 Tahoe Regional Planning Agency

TRPA does not have an environmental threshold for land use. However, land use policy is outlined in the Regional Plan and is incorporated into this environmental document by reference. A listing of Regional Plan goals and policies is located in Chapter 4.0 of this EIR/EIS, including an analysis of project consistency with these goals and policies. The Regional Plan (July 1987) consists of the *Regional Goals and Policies Plan*, which sets the basic direction of the Regional Plan, environmental threshold carrying capacities, the Regional Transportation and Air Quality Plan, the Scenic Quality Improvement Program, Code of Ordinances, and PAS, which address the policies, regulations, and programs associated with specific land use areas. These components of the Regional Plan represent an integrated plan that is intended to attain and maintain the regional environmental thresholds established for the Lake Tahoe Basin. The Code of Ordinances establishes the TRPA regulations that are required to implement the policies set forth in the Regional Goals and Policies Plan. Portions of the Code of Ordinances that are of particular importance to land use and potential land use impacts are discussed in detail in the subsections below.

Goals and Policies

The Goals and Policies portion of the Regional Plan establishes the foundation for conservation and overall development of the Lake Tahoe Basin focusing specifically on the following six elements: land use, transportation, conservation, recreation, public services and facilities, and implementation. The *Land Use Element of the Regional Goals and Policies Plan* (TRPA 1986)

sets forth the fundamental land use philosophy of the Regional Plan, including: the direction of development to the most suitable locations within the region; maintenance of the environmental, social, physical, and economic well-being of the region; and coordination of the Regional Plan with local, State, and federal requirements. Land use goals include: (1) restoring, maintaining, and improving the quality of the Lake Tahoe region for the visitor and residents of the region; (2) directing the amount and location of new land uses in conformance with the Environmental Threshold Carrying Capabilities and the other goals of the Tahoe Regional Planning Compact; (3) conformance of all new development with the allowable land capability classifications; (4) providing a distribution of land use that ensures the social, economic, and environmental well-being of the region; and (5) coordinating the regulation of land uses within the region with land uses surrounding the region. Please refer to Chapter 4.0 of this EIR/EIS for a detailed list of applicable land use goals and policies.

Environmental Threshold Carrying Capacities

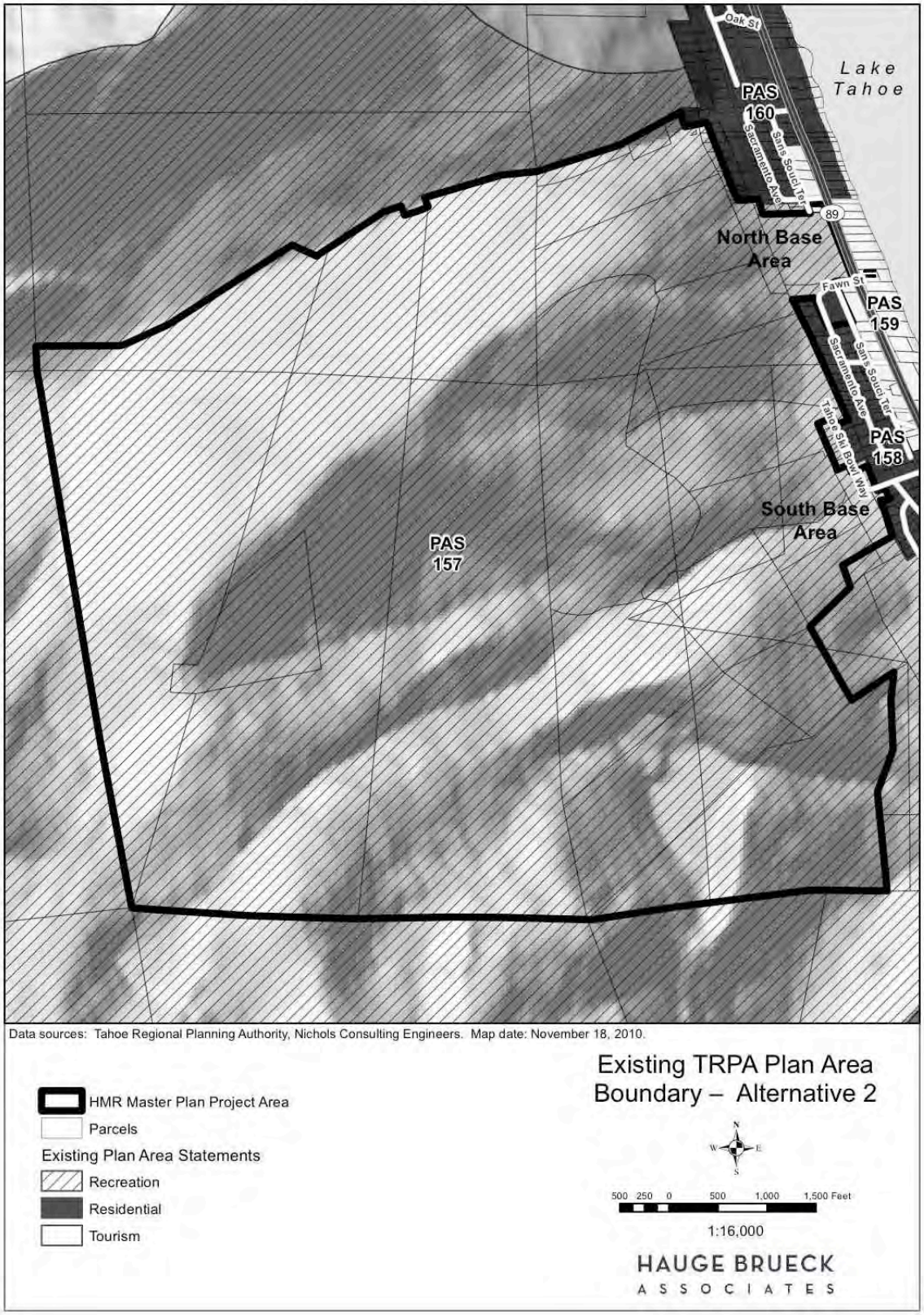
Environmental threshold carrying capacities were established per Resolution 82-11 in order to measure future projects in the basin against the goals established in the TRPA Compact, and are updated every five years with the most recent update occurring in 2007. Thresholds must be attained and maintained by projects and mitigation through avoidance, relocation, compensation, or removal is required for significant impacts to the threshold levels. Threshold carrying capacities have been established for the following: Water Quality, Air Quality, Scenic Resources, Soil Conservation, Vegetation, Fish Habitat, Wildlife Habitat, Noise, and Recreation. These thresholds are incorporated into the criteria of significance for each applicable resource evaluation in Chapters 8.0 through 18.0. TRPA has not adopted an environmental threshold for land-use impacts.

Community Plans and Plan Area Statements (PAS)

The Regional Plan is intended to guide decision-making as it affects growth and development within the Lake Tahoe Basin, utilizing PASs. Each PAS provides a description of land use for a plan area, identifies planning issues, and establishes specific direction for planning to meet the policy direction of the *Regional Goals and Policies Plan*. The PASs also include plan maps that provide specific regulations for identified areas such as would be found in zoning maps. The proposed Project area is located within all or part of three TRPA Plan Areas. These Plan Areas include PAS 157 – Homewood/Ski Homewood (Recreation), PAS 158 – McKinney Tract (Residential, and PAS 159 – Homewood/Commercial (Tourist). The three relevant PAS boundaries are shown in Figure 6-1.

Pursuant to Chapter 14 of the TRPA Code of Ordinances, a Plan Area Statement may be replaced or modified by the adoption of a community plan. PAS 159 is designated by TRPA as a preliminary community plan area and PAS 157 special policy 1 calls for a coordinated Homewood Community Plan that includes Plan Areas 158 and 159. A Community Plan for this area has not been prepared or adopted by TRPA to date.

Figure 6-1. Existing TRPA Plan Area Boundaries - PAS 157, 158 and 159



Plan Area 157 – Homewood/Tahoe Ski Bowl

PAS 157 encompasses the Ski Homewood and Tahoe Ski Bowl areas. Tahoe Ski Bowl was purchased by Homewood several years ago and now the two resorts are operated as one resort. The Land Use Classification for PAS 157 is "Recreation" with a "Mitigation" Management Strategy and a Special Designation of "Scenic Restoration Area". "Recreation" areas are those areas with good potential for outdoor recreation, park use, or concentrated recreation. The "Mitigation" Management Strategy includes areas that can accommodate additional development if the impacts are fully mitigated (on- and off-site) and the land is capable of withstanding the proposed use. The "Scenic Restoration Area" Special Designation applies to areas with scenic roadway or shoreline units that are not in compliance with Scenic Thresholds. The Planning Statement for this area establishes that "This area should continue to provide opportunities for downhill skiing within guidelines prepared thorough ski area master plans and scenic restoration plans."

Special policies for PAS 157 include the following:

1. A coordinated Homewood Community Plan should include this Plan Area as well as Plan Area 159.

2. All affected parties should coordinate planning to assess the feasibility and demand for expanded ski facilities.

3. The water in Quail Lake should be used to provide minimum in stream flows for Quail Creek.

4. Multi-use of ski area base facilities is encouraged, especially joint use agreements between the ski areas and local marinas to share parking space.

5. Common management and consolidation of the two ski areas is encouraged.

6. Upgrading and redevelopment of the Homewood base ski facilities should be encouraged.

7. New commercial facilities are limited to the base areas of the existing facilities.

8. Access for cross country skiing should be improved.

9. Any new or additional commercial uses shall be permitted only pursuant to an adopted Community Plan.

The uses generally permitted throughout the plan area include residential (employee housing and single-family dwellings), tourist accommodations, commercial, public service, recreation, and resource management.

Maximum development densities included in PAS 157 are as follows:

- Single-Family Residential Dwelling – one unit per parcel

- Employee Housing (Multi-family dwellings only) – 15 units per parcel

- Bed and Breakfast Tourist Accommodations – 10 units per acre

- Hotel, Motel, and other Transient Tourist Accommodation Units – 20 units per acre.

Additional Developed Outdoor Recreation targets and limits for PAS 157 are as follows:

- Summer Day Uses – 0 PAOT
- Winter Day Use – 4,000 PAOT (Note: the current PAS lists 4,000, but 1,100 is the correct number)
- Overnight Uses – 280 PAOT
- Other – Five miles hiking trails

The Environmental Improvement Programs for PAS 157 state, "The capital improvement and other improvement programs required by the Regional Goals and Policies Plan and Environmental Improvement Plan (EIP) for this area shall be implemented." Applicable EIP programs described in the Project Description are required to be implemented within this Plan Area.

Plan Area 158 – McKinney Tract

A portion of the southeastern part of the Project area is located within the McKinney Tract PAS 158. The Land Use Classification for PAS 158 is "Residential" with a "Mitigation" Management Strategy and a Special Designation of "Scenic Restoration Area". "Residential" areas have potential to provide housing for the residents of the Region. This land use classification identifies density patterns related to both the physical and manmade characteristics of the land and to identify complimentary accessory and non-residential uses. Areas with the "Mitigation" Management Strategy can accommodate additional development if the impacts are fully mitigated and the land is capable of withstanding the use (Chapter 13, TRPA Code of Ordinances). Mitigation for all on-site and off-site impacts is required. The Planning Statement for this area establishes, "This area should remain residential, with a density of one single family dwelling per parcel."

There is one special policy for PAS 158 that states, "The Scenic Roadway and Shoreline Unit should be reevaluated in this area for attainment."

Generally permitted uses throughout the plan area include residential (single-family dwellings), public service, recreation, and resource management.

Maximum development densities included in PAS 158 are as follows:

- Single-Family Residential Dwelling – one unit per parcel
- Piers in Visually Modified Character Unit – average one pier per 100 linear feet.

There are no additional Developed Outdoor Recreation targets or limits for PAS 158.

As required for PAS 157, capital improvement and other improvement programs are required in PAS 158 through the Environmental Improvement Program.

Plan Area 159 – Homewood/Commercial

A small portion of the of the Project area along SR 89 bounded by Obexer's Marina, Homewood Ski Area and the Swiss Lakewood Resort is located within the Homewood/Commercial PAS 159. The Land Use Classification for PAS 159 is "Tourist" with a "Redirection" Management Strategy and Special Designations of "Preliminary Community Plan Area," "TDR Receiving Area for Existing Development" and "Scenic Restoration Area." The "Tourist" Land Use Classification applies to areas that have the potential to provide intensive tourist accommodations and services or intensive recreation, including gaming. Areas with a "Redirection" Management Strategy need to improve environmental quality and community character by changing the direction of development or density through facility relocation and rehabilitation or restoration of existing structures and uses. This area has a special designation as a "Preliminary Community Plan Area" as it is eligible for a community plan. This Plan Area is designated as a "TDR Receiving Area for Existing Development" where the existing development designation determines which areas are eligible for the transfer of existing uses permissible in the plan area. The area is a mixture of small commercial uses, a U.S. Post Office, the Villas at Harborside interval ownership resort, the West Shore café and Lodge, base facilities for Ski Homewood, the Maritime Museum, two marinas, motel facilities and some residential uses.

The Planning Statement for this area states that: "This area should continue to be a tourist commercial area. However, there is a need for rehabilitation while maintaining the scale and character of the west shore."

Special policies for PAS 159 include the following:

1. Community planning for development of this area should include consideration of the adjoining ski areas in PAS 157.

2. The Community Plan or the Homewood Marina Master Plan should consider the sea plane base and establish a noise corridor for the sea plane base.

3. This area should be considered for a major water borne transit stop.

4. The marina facilities should be expanded and upgraded to accommodate increasing boating needs.

5. Tourism and recreation compatible with the west shore scale of development should be encouraged in this Plan Area.

The uses generally permitted throughout the plan area include residential (employee housing and single-family dwellings), tourist accommodations, commercial, public service, recreation, and resource management. There are six Special Policies in the plan, one of which is relevant to the proposed project. Special Policy 1 states that: "Community Planning for development of this area should include consideration of the adjoining ski areas in PAS 157." Special Policy 5 states that: "Tourism and recreation compatible with the west shore scale of development should be encouraged in this Plan Area."

Maximum development densities included in PAS 159 are as follows:

- Single-Family Residential Dwelling – one unit per parcel

- Multiple Family Residential Dwelling – 8 units per acre
- Employee Housing – 8 units per acre
- Bed and Breakfast Tourist Accommodations – 10 units per acre
- Hotel, Motel and Transient Units (with less than 10% of units with kitchens) – 20 units per acre
- Hotel, Motel and Transient Units (with 10% or more units with kitchens) – 15 units per acre
- Timeshare – As per above
- Piers in Visually Dominated or Visually Modified Character Unit – average one pier per 100 linear feet.

There are no additional Developed Outdoor Recreation targets and limits for PAS 159.

As required for PAS 157 and 158, capital improvement and other improvement programs are required in PAS 159 through the Environmental Improvement Program.

TRPA Multi-Residential and Tourist Accommodation Bonus Units

TRPA Code Subsection 33.4.A(3) describes how TRPA allocates the development of additional tourist accommodation units (TAU). Code Subsection 33.4.A(3) states that TRPA shall allocate the remaining TAU bonus units to projects within community plans in accordance with Chapter 35.

Bonus units for both multi-residential and tourist accommodation units are governed through Chapter 35 of the Code of Ordinances. Bonus units are additional residential or tourist accommodation units acquired through a system that matches existing units if certain criteria are met. Code of Ordinances Subsection 35.2 establishes policies for granting multi-residential bonus units within plan areas allowing multi-residential uses. These units are granted based on limits established in the plan area, mitigation measures, and type of unit (affordable, moderate-income). While the plan area provides a specific pool of bonus units, the number of units granted for a project depends on the type of unit and the type of mitigation that is proposed. Different types of mitigation result in various levels of points awarded. One residential bonus unit may be approved for every ten points achieved by a project. In addition, scores are improved by a factor of 1.5 if the project is within a community plan and by a factor of 2 if the project is proposing affordable employee housing. Points are awarded as detailed in TRPA Code Section 35.2.D.

Residential bonus units can be earned without mitigation for affordable or moderate-income housing based on need per Code of Ordinances Subsection 35.2.E.

TRPA Code Subsection 35.2.F details the requirements for bonus unit substitutions. A bonus unit may be assigned for each TAU converted to a residential use if each of the four conditions are met when proposed in accordance with the unit of use conversion provisions of Code of Ordinances Subsection 33.7.E.

Tourist accommodation bonus units may be approved within an adopted community plan and when at least one existing TAU is transferred. The number of awarded units are subject to the limits established in the community plan and may only be awarded within a community plan that allows this type of land use. The number of units awarded are subject to a point system in which one unit is awarded for every ten points matched by a transfer from Land Capability Districts 4 through 7, for every seven points from Land Capability Districts 1a, 1c, 2, or 3, and for every five points from Land Capability District 1b or SEZ. Points are earned through mitigation as detailed in TRPA Code Subsection 35.3.D. HMR is proposing an amendment to Code Chapters 33 and 35 to allow for use and distribution of additional tourist accommodation units in Ski Area Master Plans as well as Community Plans.

The bonus units reserved for the HMR Project are from the TRPA "Special Project" pool and are not awarded based on the bonus unit point formula discussed above. In this case, HMR has requested and has been approved for "reservation" of 12 multi-residential bonus units and 50 tourist accommodation bonus units by the TRPA Board via Resolution 2008-11.

Regional Transportation Plan—Air Quality Plan

The purpose of the integrated Regional Transportation Plan—Air Quality Plan is to attain and maintain the Environmental Threshold Carrying Capacities established by TRPA in 1982 and applicable federal, State, and local standards pertaining to air quality and transportation. The TRPA Code of Ordinances, Chapter 91, establishes air quality control regulations. The project's consistency with this plan is analyzed in Chapter 12.0 ("Air Quality").

Water Quality Management Plan

The Water Quality Management Plan (208 Plan) for the Lake Tahoe Region fulfills TRPA's responsibilities under Section 208 of the federal Clean Water Act. The 208 Plan includes the Water Quality Management Plan, Handbook of Best Management Practices, Stream Environment Zone Protection and Restoration Program, and Capital Improvements Program for Erosion and Runoff Control (TRPA 1988). The project's consistency with this plan is analyzed in Chapter 15.0 ("Hydrology and Water Quality").

TRPA Code of Ordinances

The TRPA Code of Ordinances establishes standards and regulations for implementation of the Regional Plan for the Lake Tahoe Basin. Public agencies and organizations in the Lake Tahoe Basin must comply with TRPA provisions or may establish equivalent or higher requirements in their jurisdiction. The Code of Ordinances is the coordination of a series of documents addressing environmental and land use planning issues in the Basin, including the Tahoe Regional Planning Compact, Environmental Threshold Carrying Capacities, Goals and Policies, the PAS and Maps, and other TRPA plans and programs. The Code of Ordinances is intended to implement the Goals and Policies of the Regional Plan while maintaining the environmental thresholds (TRPA 1987).

Code of Ordinances Chapter 13 addresses Plan Area Statements. Section 13.7 includes regulations for amending a Plan Area Statement. Plan Amendments modify plan area boundaries, special area boundaries, plan area name and number, Land Use Classification, Management Strategy, Special Designations, Planning Statement, Special Policies, and Additional Recreation Development. Modification of Permissible Uses, Maximum Densities, and assigned Maximum Community Noise Equivalent Levels are by ordinance, while modification of the Description,

Planning Considerations and Improvement Programs are by resolution. Findings, as listed in Section 13.7.D, are required prior to amendment adoption. These findings are as follows:

(1) The amendment is substantially consistent with the plan area designation criteria in Subsections 13.5.B and 13.5.C; and

(2) If the amendment is to expand an existing urban plan area boundary or to add residential, tourist accommodation, commercial, or public service as permissible uses to a non-urban plan area, it must be found that the amendment will make the plan area statement consistent with an adopted policy or standard of the Regional Plan, and that the amendment will satisfy one or more of the following criteria:

a) The amendment is to correct an error which occurred at the time of adoption, including but not limited to a mapping error, an editing error, or an error based on erroneous information; or
b) The amendment is to enable TRPA to make progress toward one or more environmental thresholds without degradation to other thresholds as measured by the Chapter 32 indicators; or
c) The amendment is needed to protect public health and safety and there is no reasonable alternative.

(3) If the amendment is to add multiple-family as a permissible use to a plan area or for one or more parcels, except as provided for in (5) below, the plan area or affected parcel must be found suitable for transit-oriented development (TOD). TRPA shall find that the following factors, or a functional equivalent as provided for in (4) below, are satisfied when determining TOD suitability:

a) The area must have access to operational transit within a 10 minute walk; and
b) Neighborhood services within a 10 minute walk, (e.g., grocery/drug stores, medical services, retail stores, and laundry facilities); and
c) Good pedestrian and bike connections; and
d) Opportunities for residential infill (at densities greater than 8 units per acre) or infill with mixed uses; and
e) Adequate public facilities, (e.g., public schools, urban or developed recreation sites, government services, and post offices).

(4) In order for TRPA to find a proposal is the functional equivalent of one of the factors listed in 13.7.D (3), or 13.7.D (5) (a), the proposal must be found to facilitate TOD in a manner that is equal or superior to that feature.

(5) If the amendment is to add multiple-family dwellings as a permissible use to a plan area or for one or more parcels, and would result in deed restricted affordable housing units, the plan area or affected parcel must be found suitable for transit-oriented development (TOD). TRPA shall find that the following factors are satisfied when determining TOD suitability:

a) access to operational transit within a 10 minute walk, or a functional equivalent as provided for in (4) above; and
b) neighborhood services; or
c) public facilities.

6.2.2 Placer County Regulations

The West Shore Area General Plan (Placer County, 1998) was prepared to satisfy the statutory requirements for General Plan adoption for the Placer County portion of the west shore of Lake Tahoe. The West Shore Area General Plan replaces regulations established in the Placer County General Plan, the Lake Tahoe General Plan, and the Ward Valley General Plan. The purpose of the West Shore Area General Plan is to make the County's land use regulations more consistent with those of the TRPA. West Shore Area General Plan policies that are more restrictive than TRPA policies shall be applied. The County utilizes the TRPA Plan Area Statement format and adopts them, with some modification, as County code, including the Plan Area Statement maps and boundaries. Future community plans may tier from this General Plan. A list of West Shore Area General Plan policies and project compliance with those policies is provided in Chapter 4.0 of this EIR/EIS.

Placer County PAS 157 included in the West Shore Area General Plan contains the same land use classification, management strategy and special designation as TRPA's Plan Area. According to the Planning Statement, "This area should continue to provide opportunities for downhill skiing within guidelines prepared through ski area master plans and scenic restoration plans for the west shore." Special Policies are as follows:

1. All affected parties should coordinate planning to assess the feasibility and demand for expanded ski facilities under a ski area master plan.

2. Multi-use of ski area base facilities is encouraged, especially joint use agreements between the ski area and local marinas to share parking space. Further partnerships between the public and private sector should be developed to address transportation needs.

3. Upgrading and redevelopment of the Homewood base ski facilities should be encouraged, including landscaping, installation of BMPs and upgrading of the lodge facilities.

4. New commercial facilities are limited to the base areas of the existing facilities, although accessory facilities may be allowed on the mid or upper mountain.

5. Opportunities exist for development of cross-country skiing on properties of the Tahoe City PUD and access for cross country skiing should be improved.

Permissible uses are similar to those listed in the TRPA PAS, although the West Shore Area General Plan considers eating and drinking places, food and beverage sales, and general merchandise stores as allowable uses and it includes outdoor concert events as a special use. While the maximum development densities are the same, the West Shore Area General Plan allows for a greater amount of additional day-use developed outdoor recreation with summer day uses at 500 PAOT, winter day use at 1,150 PAOT and fewer overnight uses at 0 PAOT, in comparison with TRPA PAS 157 which allows for additional winter day use at 1,100 PAOT, additional overnight uses at 280 PAOT, and additional summer day uses at 0 PAOT.

The West Shore Area General Plan, Placer County PAS 158 contains the same classifications and uses as TRPA PAS 158; however, there are some differences in PAS 159. The Land Use Classification under the West Shore Area General Plan is 'Commercial/Tourist", recognizing commercial as well as tourist uses in this area. In addition, the Planning Statement establishes. "This area should continue to be a mixed residential and commercial area. However, there is a need for rehabilitation while maintaining the scale and character of the west shore. Because of the historic development of the area, for example, residential uses interspersed with commercial, the boundaries of this plan area are not contiguous. Special Areas

have been created with limitations on permissible uses to minimize conflicts with adjoining land uses." Permissible land uses, development densities, and additional outdoor recreation are the same as the TRPA PAS 159. The West Shore Area General Plan includes Tourist Accommodation Bonus Units and states that the maximum number of tourist accommodation bonus units permitted for the plan area is 50 units.

In addition to the West Shore Area General Plan other Placer County land use regulations apply to the Proposed Project, including the Placer County zoning ordinance, the Placer County Environmental Review Ordinance and the Placer County Housing Element.

6.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

HMR must obtain permits from Caltrans (right of way encroachment), Placer County and TRPA and comply with the conditions contained therein. Table 6-1 presents the evaluation criteria for land use. These criteria are drawn primarily from local plans, adapted where necessary to reflect California Environmental Quality Act (CEQA) and TRPA requirements. For the purpose of this analysis, the stated applicable points of significance determine whether implementing the Project will result in a significant impact. These points of significance are based upon Appendix G of the State CEQA Guidelines, the TRPA Initial Environmental Checklist and the associated codified regulations. A land use impact is significant if implementation of the Project meets or exceeds the point of significance shown in Table 6-1.

Table 6-1

Evaluation Criteria with Point of Significance - Land Use

Evaluation Criteria	Point of Significance	Justification
LU-1. Will the Project be consistent with the land use plan or zoning plan, or land use goals, policies, and provisions of the TRPA Regional Plan, including the Goals and Policies, Code of Ordinances, Plan Area Statements, or Ski Area Master Plan Guidelines, and the Placer County General Plan and West Shore Area General Plan?	a) Non-compliance with land use plans, goals, policies, or provisions as established by TRPA or Placer County adopted for the purpose of avoiding or mitigating an environmental effect b) Failure to make findings required for proposed Plan amendments	CEQA Appendix G Checklist X (b); TRPA Initial Environmental Checklist II (8a); TRPA Regional Plan, Goals and Policies, Chapter 2, Land Use Element; TRPA Code of Ordinances Chapters 2, 12, 13, 18, 41, and 43; TRPA Plan Area Statements 157, 158 and 159; Placer County General Plan and West Shore Area General Plan
LU-2. Will the Project be consistent with adjacent land uses, expand/intensify existing non-conforming uses or transfer development rights that exceed density limits?	a) Inconsistency with adjacent land uses that results from adverse physical impacts (e.g., noise levels that exceed standards) b) Failure to make findings required for transfer of development rights	TRPA Initial Environmental Checklist II (8a, b); TRPA Plan Area Statements 152, 156, 157, 158, and 159 and 160; TRPA Code of Ordinances; Placer County General Plan and West Shore Area General Plan

Source: Hauge Brueck Assoc. 2009

Table Notes:

CEQA Appendix G Checklist items II–a (Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use), II-b (Conflict with existing zoning for agricultural use, or a Williamson Act contract), II-e (Involve other changes in the existing environment which could result in conversion of Farmland to non-agricultural use), X-a (Physically divide an established community), X-c (Conflict with any applicable habitat conservation plan or natural community conservation plan), XI-a (Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state) and XI-b (Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan) are not applicable to the Project as there are no agricultural or mineral resources on-site, there are no HCPs associated with the site, and the Project is contained within the resort boundaries so as not to divide the greater community. TRPA Checklist items 9-a (A substantial increase in the rate of use of any natural resources) and 9-b (Substantial depletion of any non-renewable natural resource) are discussed in Mandated Analysis Chapter.

6.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

Impact: **LU-1. Will the Project be consistent with the land use plan or zoning plan, or land use goals, policies, and provisions of the TRPA Regional Plan, including the Goals and Policies, Code of Ordinances, Plan Area Statement, or Ski Area Master Plan Guidelines, and the Placer County General Plan and West Shore Area General Plan?**

Analysis: *Significant Impact; No Project (Alternative 2)*

The No Project (Alternative 2) does not result in any changes to existing conditions. The current ski facilities and associated uses will continue to operate and are in compliance with permissible uses specified in TRPA and County land use plans. No Code or Plan Amendments are required for this alternative. However, this alternative would not result in proposed Master Plan development intended to comply with special policies contained in the County or TRPA PAS. Both County and TRPA PAS 157 states that access for cross-country skiing should be improved and that upgrading and redevelopment of the base areas should be encouraged, including multi-use of ski area base facilities. While the No Project (Alternative 2) will not prevent future improvements, it will not advance the listed improvement policies. Although this documentation indicates the ski area would continue to operate under Alternative 2, it should be noted that the ski area has been documented as losing money for a number of years and the current owner has indicated that it cannot continue to operate at a loss indefinitely, leading to eventual closure with current operations (see Alternative 4).

The consistency analysis in Chapter 4 reveals a variety of inconsistencies between the No Project (Alternative 2) and the TRPA Regional Plan, TRPA Plan Area Statements, the West Shore Area General Plan, and the Placer County General Plan. The inconsistencies are generally in relation to circulation and transportation, scenic improvements, SEZ and stream channel improvements, noise, and a lack of recreation expansion and onsite recreation improvements.

In relation to the TRPA Regional Plan, the No Project (Alternative 2) does not meet current standards for circulation or urban design features, nor does it support onsite rehabilitation or the economic health of the West Shore. This alternative may lead to eventual closure of the ski facilities, which is also inconsistent with land use and recreation goals. Affordable housing would not be promoted, and SEZ and aquatic

habitat restoration would not occur. In addition, the area would continue to be in non-attainment for noise levels, which is inconsistent with noise policies.

The No Project (Alternative 2) results in similar inconsistencies with the TRPA Plan Area Statements. This Alternative does not provide a ski area master plan or expanded, improved or redeveloped ski facilities as indicated in Special Policies 2, 4, and 6. Improvements to the scenic quality rating also would not occur to promote attainment in PAS 159.

Similar inconsistencies occur between the No Project (Alternative 2) and the West Shore Area General Plan. Inconsistencies include a lack of affordable housing, roadway improvements, alternative transportation, pedestrian facilities, redevelopment of ski base facilities, and expansion of recreation opportunities. In addition, this alternative maintains noise levels that exceed threshold limits.

In relation to the Placer County General Plan, this alternative does not meet recreation goals of winter ski facility expansion or scenic goals for reaching attainment within the scenic corridor. The No Project (Alternative 2) also does not support Placer County General Plan economic development goals because it would not expand the unique summer or winter recreational opportunities at the ski facility. Improvements to circulation and alternative transportation would not occur, which is inconsistent with the transportation goals and policies. The lack of improvements to SEZs and stream channels would also result in inconsistencies with the Placer County General Plan. In addition, maintaining structures and roads within the floodplain results in inconsistencies with policies related to floodplain management and drainage.

Mitigation: No mitigation is feasible.

After Mitigation: *Significant and Unavoidable Impact; Alternative 1*

Under the No Project Alternative, the project area would continue to be inconsistent with numerous goals and policies included in the TRPA Regional Plan, TRPA Plan Area Statements, the West Shore Area General Plan, and the Placer County General Plan.

Analysis: *Less than Significant Impact; Alternatives 1, 3 and 6*

The Proposed Project (Alternative 1) and Alternatives 3 and 6 require changes to the boundaries and content of County and TRPA Plan Areas 157, 158, and 159, because some proposed land uses, such as interval ownership units (residential timeshares), are not permitted in Plan Area 157, but are permitted in Plan Area 159. Expanding the tourist plan area (159) boundary to include these land uses places the appropriate mix of land uses with the Plan Area that most represents and best regulates such uses, as well as the West Shore General Plan. As documented in Chapter 3, these alternatives will expand the boundary of Plan Areas 158 and 159 to encompass the base areas of Homewood Mountain Resort, reducing the size of the recreational Plan Area 157. Appendix E includes the proposed amended text for Plan Areas 157, 158, and 159. Figures 6-2 and 6-3 show the proposed changes to existing Plan Area boundaries at the North and South Base areas under each of the HMR MP Alternatives.

Figure 6-2. Existing and Proposed Plan Area Boundaries – Alternatives 1 and 2

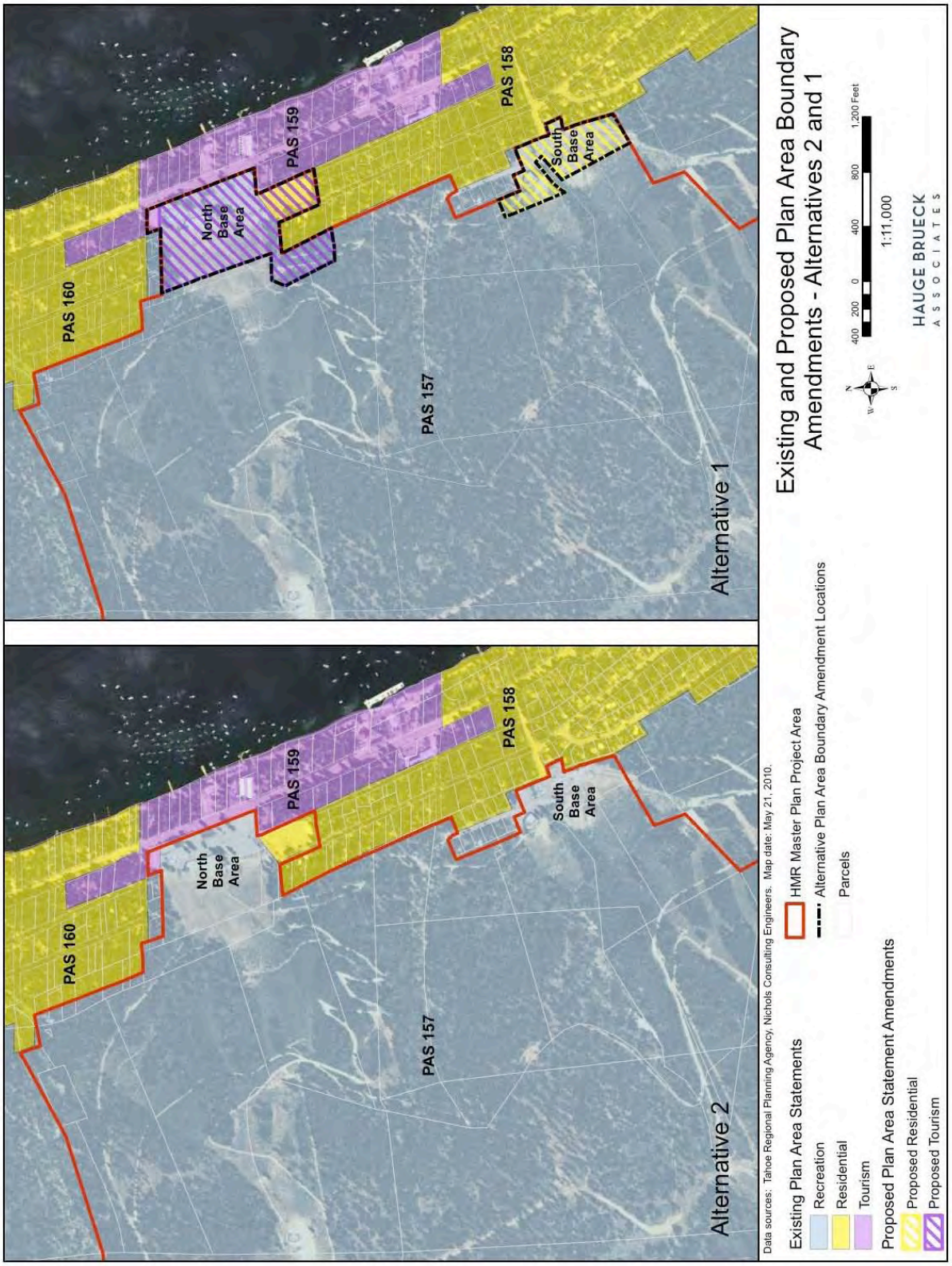
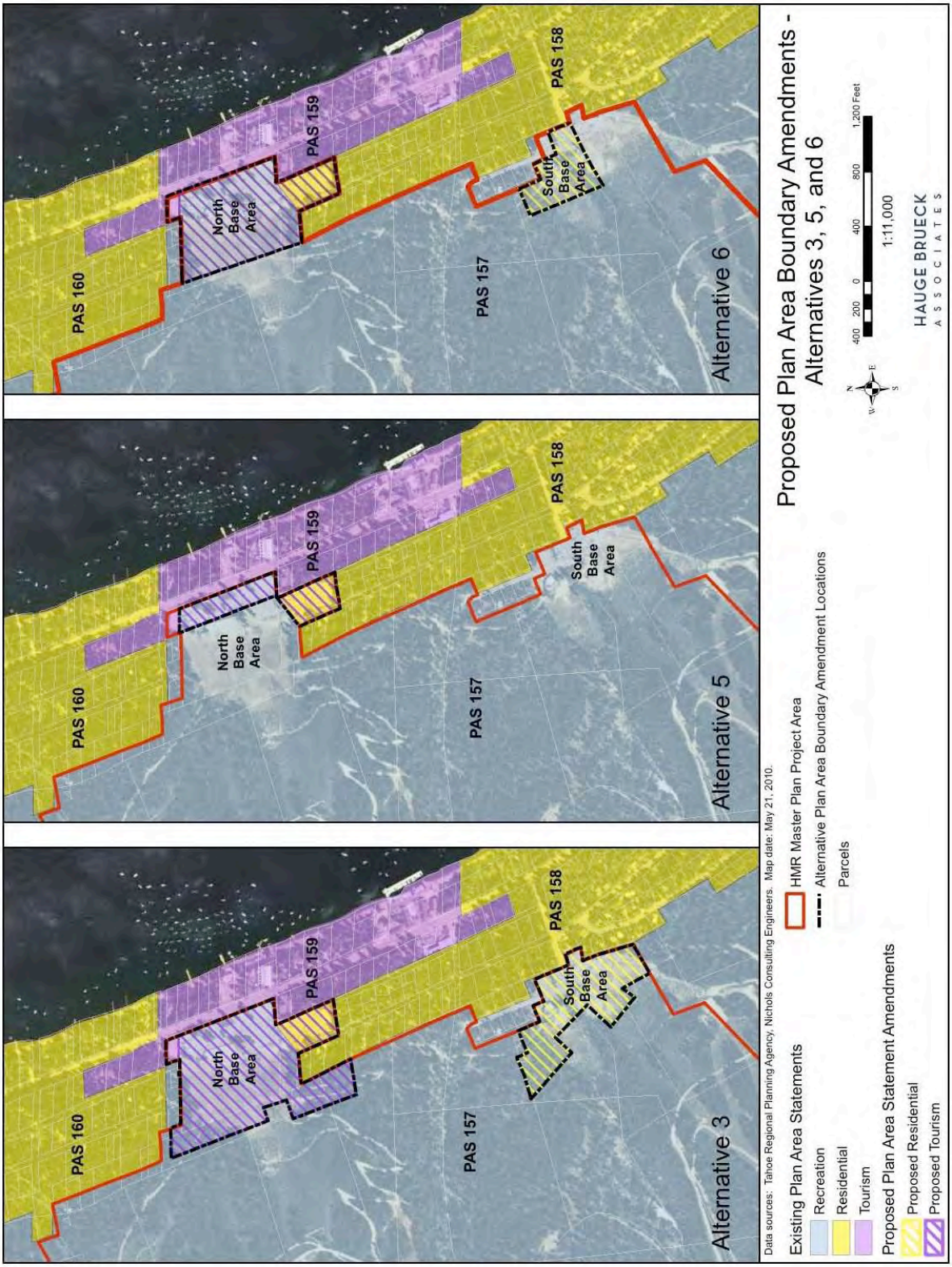


Figure 6-3. Existing and Proposed Plan Area Boundaries – Alternatives 3, 5 and 6



Plan Area Amendment – Boundary Line: At the South Base, TRPA and Placer County Plan Area 158 will be expanded to include the proposed development area currently included in Plan Area 157. Under the Proposed Project (Alternative 1), approximately 6.6 acres located within Plan Area 157 will be added to Plan Area 158. Under Alternative 3, approximately 10.1 acres will be added to Plan Area 158. Under Alternative 6, approximately 3.6 acres will be added to Plan Area 158. Under Alternatives 1 and 3, the South Base development area will be entirely located within Plan Area 158 and this expanded area will be identified as a "Special Area" within Plan Area 158 in which an additional set of rules and conditions apply. This will allow a different set of permissible land uses only within the "Special Area". The uses proposed in this area include multi-family dwelling and skier services. Under Alternative 6, only the proposed multi-residential building located north of Homewood Creek would be located in Plan Area 158, identified as a "Special Area".

At the North Base, TRPA and Placer County Plan Area 159 will be expanded to include the proposed development area currently included primarily in TRPA Plan Area 157 and partially in TRPA Plan Areas 158 (gravel parking lot) and 159 (far north end of paved parking lot) and Placer County Plan Areas 157 and 159. Under the Proposed Project (Alternative 1), approximately 16.4 acres located within Plan Areas 157 and 158 will be added to Plan Area 159. Under Alternative 3, approximately 20.4 acres will be added to Plan Area 158. Under Alternative 6, approximately 14.1 acres will be added to Plan Area 158. The proposed boundary adjustment will place all of the North Base development area within Plan Area 159. Uses proposed in this area include a hotel, interval ownership tourist units, condominiums, townhouses, employee housing, commercial uses, skier services, and parking. The amended area of Plan Area 159 will be identified as a "Special Area" in which a separate set of land uses is permitted, including multi-family dwellings and privately owned assembly and entertainment. The portion of Plan Area 157 that is being added to Plan Area 159 presently includes the hotel use as a permissible use, but the hotel land use cannot be subdivided to create the interval ownership/residential timeshare use, nor are multi-family dwellings permissible as is necessary to allow the subdivision into condominiums for sale, or the amphitheater use which is defined as "privately owned assembly and entertainment" by TRPA.

The proposed Plan Area boundary adjustments will increase the amount of land within the urban area. TRPA Code Chapter 2 defines "urban area" as follows: "Urban areas are those areas designated as residential, tourist, or commercial/public service, by the plan area statements." Increasing urban area typically allows for a greater intensity of urban uses at the expense of conservation and recreation uses. Although Plan Area 157 is classified as recreation, this area currently includes single family residential, commercial and tourist accommodation uses as well as recreational and public service uses in the list of permissible uses under provisions for a special use. Regarding new uses, TRPA Plan Area 157 Special Policy 7 states that new commercial facilities are limited to the base areas of the existing facilities. Presumably, this means the two existing base areas at Homewood Mountain Resort – north and south.

TRPA Plan Area 157 Special Policy 1 states, "A coordinated Homewood Community Plan should include this Plan Area as well as Plan Area 159." A community plan prepared for both Plan Areas would have likely addressed the future growth and use patterns of the Homewood base areas; however, no TRPA sponsored community plan has been prepared to address this policy. Further, Policy 9 states, "Any new or additional commercial uses shall be permitted only pursuant to an adopted Community Plan." As such, this policy must also be amended to permit additional commercial uses pursuant to

adoption of the proposed Ski Area Master Plan. Although a TRPA Community Plan has not been developed and adopted, this Project establishes a Ski Area Master Plan that plans for and establishes the location of recreation, tourist, residential and commercial uses. The Master Plan proposes commercial uses along the SR 89 corridor and intermixes these uses with tourist, residential and recreation facilities. The Master Plan also indicates the commercial uses will serve the greater residential community, giving consideration to local and tourist needs. These neighborhood serving commercial uses (hardware store, deli, ice cream shop, etc.) are in response to input from community residents who attended workshops held by the Applicant to seek public input on direction of the proposed Master Plan. The Master Plan also coordinates development with surrounding recreational and tourist resources such as area marinas, all of which would have been considered in a Community Plan. Coordination with marinas includes alternative transportation through water borne transit, parking, and summer programs. It should be noted that current County PAS 157 allows new commercial facilities in the base areas and accessory facilities in the mid or upper mountain; however PAS amendments to allow the mix of land uses proposed and to maintain PAS boundary consistency between the County and TRPA are required.

The Planning Statement for Plan Area 158 states, "This area should remain residential with a density of one single family dwelling per parcel." This will require an amendment to allow multi-family units within a "Special Area" and increase the allowable density in this special area to 15 units per acre via transfer of existing development rights. The addition of multi-family units and the increase in density confined to a special area are appropriate for a Plan Area classified as "residential". The character of the area is maintained by limited higher density units to the area at the South Base where adjacent land uses include higher density and more commercial uses. This would not affect the overall density character of the Plan Area, but would allow for a greater range of residential options. The Planning Statements for Plan Areas 157 and 159 do not require amendment.

For an amendment to the TRPA Plan Area boundaries, findings must be made by TRPA per Section 13.7.D of the TRPA Code of Ordinances. First the amendment must be substantially consistent with the plan area designation criteria and any special designations. The designation criteria (land use classification/management strategy) for Plan Area 158 is Residential/Mitigation and for Plan Area 159 is Tourist/Redirection. New Homewood uses proposed in Plan Area 158 are residential multi-family condominiums, and a small skier services structure proposed to replace the existing lodge, neither of which are currently permissible uses in Plan Area 158. Multi-family dwellings and skiing facilities (skier services structure) are consistent with the Residential/Mitigation designation criteria because multi-family dwellings provide new residential units to the area and skiing facilities in the form of skier services would not adversely alter the character of the Plan Area, as the use has been in place for several decades. The Planning Statement and development density for Plan Area 158 limit residential density to one single-family dwelling per parcel, with which multi-family units are consistent when implemented through the TRPA's two-step subdivision process, which is required to create residential condominiums that are classified by the TRPA as single-family residential units.

New Homewood uses proposed in Plan Area 159 include a hotel, condo-hotel units, multi-family condominium and townhouses, residential design timeshare (interval ownership tourist accommodation units), commercial uses, employee housing, and skier services, which are permissible uses in Plan Area 159, with the exception of the multi-

family dwelling units. Commercial uses, employee housing, and skier services are existing uses. Plan Area 159 would be amended to allow multi-family residential dwellings within "Special Area #1". Special Area #1 would be limited to the North Base area of the Project. Multi-family dwelling units, particularly within an area of hotel and timeshare units at the resort, will support the tourist designation by providing predominantly second homes and vacation rentals for persons visiting the area regularly; therefore, multi-family units within "Special Area #1" are consistent with the Tourist land use classification.

Each of the Plan Areas includes a special designation as a scenic restoration area, which would not change as a result of the amendments. In addition, Plan Area 159 has a special designation as a TDR Receiving Area for existing development. Plan Area 159 would be amended to add TDR Receiving Area for multi-residential units. It is consistent to amend this special designation for Plan Area 159 because it will support the "Tourist/Redirection" designation criteria for this Plan Area. Multi-family dwelling units will support visitors who seek second homes in the area and will support the continued viability of the resort, which draws recreational oriented tourism to this portion of the Basin. The amendment of the TDR Receiving area is also required to allow for the transfer of multi-residential bonus units to Plan Area 159 for affordable employee housing, which is currently a permissible use under the provisions for a special use. Plan Area 158 would be amended to add the special designation of TDR Receiving Area for 1) existing development and 2) multi-residential units to the newly created "Special Area." These special designation amendments are needed to allow the transfer of development rights for the multi-family residential units. It is consistent to amend these special designations to allow for the proposed multifamily units, which are appropriate to support the continued operation of the winter recreational resort and the "Residential/Mitigation" designation criteria.

TRPA Code Section 13.7.D.2 documents the findings required to expand an existing urban plan area boundary. Alternatives 1, 3, and 6 propose to expand the urban plan area boundary for Plan Area 158 (South Base area) and 159 (North Base area). To allow such an amendment "it must be found that the amendment will make the plan area consistent with an adopted policy or standard of the Regional Plan, and that the amendment will satisfy one or more of the following criteria:

a. The amendment is to correct an error which occurred at the time of adoption; or

b. The amendment is to enable TRPA to make progress toward one or more environmental thresholds without degradation to other thresholds as measured by the Chapter 32 indicators; or

c. The amendment is needed to protect public health and safety and there is no reasonable alternative."

The proposed Plan Area boundary amendment is not needed to protect public health or safety and, according to a review of TRPA files, is not intended to correct an error which occurred at the time of Plan adoption. Therefore, to allow the proposed amendment of Plan Area 158 and 159 boundaries, TRPA must determine that the amendment will satisfy criteria "b", and will help make progress towards one or more of the environmental thresholds without degrading other thresholds as measured by the Chapter 32 indicators. Table 6-2 identifies Project elements proposed by HMR in the Master Plan to achieve environmental improvements and benefits. The HMR Master Plan incorporates measures to fulfill TRPA Code requirements as well as to exceed these requirements as called for in the TRPA Resolution 2008-11 recognizing the HMR Master

Plan and related elements as eligible for CEP designation and reservation of commodities such as commercial floor area, tourist accommodation bonus units, and multi-family bonus units for employee housing. Table 6-2 enumerates the combined environmental improvements and benefits attributable to the Master Plan implementation.

Table 6-2

HMR Ski Area Master Plan - Environmental Improvements and Benefits

Environmental Resource	Improvements/Benefits
EIP Projects	• Project Number 632 - Homewood Ski Area Master Plan • Project Number 86 - Scenic Roadway Unit 11- Homewood • Project number 775 - Homewood Area Pedestrian Facilities • Project Number 855 - Tahoe City "Y" Realignment (fair share participant) • Project Number 725 – Design a stormwater treatment system to treat the 50 year/1 hour storm event within the north and south base areas • Project Number 996 – SR 89 stormwater treatment
Water Quality	• Treatment of the 50 year/1 hour Storm Event for proposed redevelopment areas (EIP 725). Capture of water runoff planned through a series of vaults and infiltration galleries. • Removal of culvert and fill from the SEZ at the South Base area and day lighting Ellis/Homewood Creek channel. • Participation in local Homewood elements of environmental improvement project (EIP 996); a 9 mile segment of SR 89 in Placer County by helping to implement runoff treatment facilities, and erosion control features, including high level stormwater treatment vault and a series of additional vegetated basins to treat SR 89 runoff. • Substantial land coverage reduction and restoration on the upper mountain areas (there is a commitment in the Master Plan for a total of 500,000 square feet of total land coverage restoration, – all of which must be verified by TRPA for potential relocation, banking or retirement). • A majority of building footprints to be located on land capability classes 4 and higher.
Recreation	• By keeping the ski resort open, existing PAOTs assigned to Homewood would remain in operation and the 1987 TRPA Regional Plan assignment of 1,100 PAOTs to HOMEWOOD would remain available for potential use at the Resort (although the Master Plan does not propose to expand PAOT capacity). • Provide five miles of hiking trails within PAS 157. Trails include directional markings, mapping, and interpretive signs. Trails will also be linked to pedestrian access pathways at the North and South Bases. • Mid-mountain lodge located at the top of the proposed Gondola would be available for the public to use (pool, access to hiking, etc.) The lodge will include a space dedicated to members of the HMR HOA. Use of the pool will be open to residents of the west shore from Tahoma to Sunnyside (proximate to Homewood) to fulfill a void for area residents. • New outdoor amphitheater at the North Base area for hosting outdoor concert events and use as the permanent home of the Lake Tahoe Music Festival.

Environmental Resource	Improvements/Benefits
	• A cross country ski connection, which is an extension of the old Olympic course, is proposed for future consideration.
Air Quality/ Transportation	• Winter VMT reduction (based on reducing existing weekend day visitors with residents and guests of the proposed resort facilities). • Provision of transit kiosk with signs, maps, etc. • Integrate transportation linkages. • A Tahoe City Public Utility District (TCPUD) bike path into the North Base area. An eight-passenger gondola will bring guests up to the Mid-Mountain Base area. The existing Tahoe Area Regional Transit (TART) stops will be furnished with shelters (two possibly three stops at resort), and proposed dial-a-ride, shuttle, and water taxi services will be provided to reduce vehicle miles traveled (VMTs). • Alternative transportation initiatives include 2-20+ passenger water taxis for use during summer months, summer and winter dial-a-ride service (7 days a week, at a minimum from 8 AM to 6 PM), and shuttle service. Shuttle service between bases will reduce parking demand at the North Base. Additional alternative transportation measures planned include a free-use bicycle fleet for resort guests, 5-hybrid electric rental vehicles for resort guest use, implementation of the missing bike trail segment. TART passes provided for employees, and shuttle service provided to/from employee housing areas not on a TART route. Summer scheduled shuttle service to/from Tahoe City, 7 days a week from 9 AM to 8 PM (scheduled to augment existing TART service). • Pedestrian facilities will be built in the Homewood area to serve commercial businesses, improve access, improve drainage collection and treatment and provide scenic improvements (EIP 775) • Pedestrian oriented plans with pedestrian access to neighborhood oriented retail and TCPUD bike trail connection to North Base area reduces VMT. On-site daycare to reduce vehicle trips. • Fair-share participant in SR 28/SR 89 intersection improvement project (EIP 855) • Limitation of total maximum ticket sales during the winter season & limiting day skier parking to 400 on-site parking spaces; electronic signage at the Tahoe City "Y" alerting travelers when ski parking is full, alternative means of transportation. Plan calls for a limitation on ticket sales to those arriving via transit only once parking lot at site is full. • Potential to stockpile excavated materials on-site for use by other area projects such as the Blackwood Creek Restoration Project. This would reduce truck trips and VMT caused by material hauling during construction.
Scenic Resources	• Underground utility lines throughout the Project area. • Existing landmark trees integrated into landscape design. • Implement landscape frontage improvements, access controls, building upgrades, sign conformance & walkways throughout project site. • Underground parking and replacement of surface parking lot at frontage with landscaping and pedestrian paths. • Articulated design and incorporation of natural building materials. • Public outdoor artwork at: hotel landscaped area, day skier drop-off landscape area and public ice pond. Public art also planned at indoor public spaces in hotel and day skier facility. Artwork by local/regionally based artists.

Environmental Resource	Improvements/Benefits
Forest Health	• Homewood Mountain Resort has treated over 400 acres of forested areas to reduce the threat of catastrophic fire. There is a plan to continue the forest thinning/fuels management for all forested areas within the 1,200 acre Homewood Mountain Resort and the adjacent 100-acre TCPUD open space parcel. The fuels management program uses a chipper that grinds up fuels waste and spreads the resulting chip material onto the forest floor which helps to reduce storm water runoff and maintain a healthier forest floor.
Housing	• Provision of 13 on-site affordable employee housing units under the proposed Master Plan. • Employee transportation (buses & shuttles) to be provided for off-site employee housing locations (Tahoma/Sunnyside).
LEED Certification	• The north base proposal has been accepted into and will be designed under the LEED for Neighborhood Development Pilot Program. The south base, although not a part of the LEED for Neighborhood Pilot Program, will also be designed to stringent sustainable development standards using the LEED criteria as a template. Although the goal is to achieve LEED Silver certification, the US Green Building Council initial formal feedback suggests plan is on course for Gold Level.
Open Space	• All open space in master plan proposal are publically accessible. Primary open space areas at north base centered around the seasonal public ice pond area/ miniature golf & landscaped frontage adjacent to SR 89. • Deed restriction from further non-recreational development to be placed on whole of mountain beyond the North and South Base areas & Mid-Mountain Base area. • Linkage from the public/pedestrian oriented spaces at base areas to a hiking trail system on mountain aided through a new way finding/graphic system.

HMR Master Plan, 2010

As shown in Table 6-2, Alternatives 1, 3, and 6 propose measures and features to achieve environmental benefits, including land coverage reduction, stormwater treatment above current regulatory requirements, community-wide recreational facilities, deed restricting the upper mountain for only recreational development, deed restricting affordable housing to ensure its presence is maintained, alternative transportation, SEZ protection and enhancement, and scenic quality improvements. While each of the items included in Table 6-2 will provide some amount of environmental benefit, several of the proposed measures will tangibly improve soil and recreational quality and help TRPA with attainment of soil conservation, scenic and recreation threshold standards.

The project includes removal and restoration of existing on mountain roadways no longer needed to operate the ski resort. To earn additional building height under the proposed TRPA Code Chapter 22 amendment, HMR has agreed to permanently retire a minimum of ten (10) percent of existing verified land coverage within the Project area, which equates to an approximate 178,000 square foot reduction in land coverage within the HMR Project area. Detailed analysis of land coverage is provided in Chapter 14, Soils, Geology and Seismicity. The land coverage reduction would be realized in the upper mountain area because existing land coverage located at the base areas as well as land coverage proposed for relocation is required for base area uses included in the Master Plan development plans. As documented in the land coverage analysis in Chapter 14, the overall Project area is shown to be under allowable land coverage limits. However,

existing land coverage is over allowable limits in land capability districts 1a and 2. The permanent retirement of land coverage proposed in the Master Plan and required to mitigate excess land coverage would help achieve soil conservation threshold standard SC-1. The relocation and permanent retirement of existing low capability land coverage would not occur if the proposed plan area boundary is not adopted to allow the proposed multi-family residential uses included in the HMR Master Plan. HMR's Master Plan objectives include the addition of residential and tourist accommodation units at the base areas to increase mid week visitation to the ski resort to make it a sustainable business.

The Proposed Project includes improvements to the quality of an existing winter day use recreational resource with the replacement and upgrade of existing facilities (e.g., lifts, lodges, snowmaking systems, etc.). The project also includes new summer day use recreational facilities (e.g., hiking trails, bike paths, mid mountain swimming, public gathering place, and amphitheater at North Base area) that will expand community wide recreational opportunities in the west shore of Lake Tahoe. These improvements and new facilities will be privately funded and available to the public to increase recreational opportunity and quality and would not occur if the proposed plan area boundary is not adopted to allow the proposed multi-family residential uses included in the HMR Master Plan. As a result, implementation of the Master Plan would help achieve recreational threshold standard R-1.

As part of the proposal to amend the urban plan area boundaries at the North and South Base areas, HMR has agreed to deed restrict the upper mountain area for solely recreational use. At present, the HMR Project area could be developed as estate home development, with one unit on each recognized lot (Alternative 4 studies potential use of the HMR Project area for non-recreational uses). The proposed deed restriction would preclude future non-recreational uses in a Master Plan amendment or as part of a future permit application initiated by a new property owner or owners. Although proposed improvements as shown in Table 6-2 support finding 13.7.D(2)(b), onsite construction would result in temporary impacts to air quality that are significant despite the implementation of BMPs to reduce the intensity of the impact. During construction, criteria pollutant levels would increase and particulate matter levels would temporarily exceed Placer County Air Pollution Control District threshold levels during Phase 1a. Although construction activities may impact air quality, this would be temporary, and other aspects of the project designed to improve soil conservation, energy efficiency, circulation and alternative transportation would support overall air quality thresholds in the long-term. As a result, finding 13.7.D(2)(b) can be made for the proposed amendments to the urban plan area boundary based on the environmental benefits and protections included in the proposed Master Plan and documented progress toward achievement of the soil conservation, scenic and recreation thresholds.

Plan Area Amendment – Permissible Uses: If findings are made for expansion of urban plan area boundaries, amendment to the urban plan area land uses would be required. Table 6-3 lists the land uses proposed under the Proposed Project (Alternative 1) and Alternatives 3 and 6 by TRPA Plan Area. Each alternative includes currently allowed uses, currently allowed special uses, and uses for which an amendment to the Plan Area is required. As shown in the table, a transfer of existing development rights (TDR) within a newly created "Special Area" is proposed as an amendment for Plan Areas 158 and 159 to allow the transfer of multi-residential (PAS 158 and 159) and tourist accommodation bonus units (PAS 159) into the Plan Areas. Because the Master Plan requires an adjustment to the Plan Area boundaries to place all of the North Base in

PAS 159 and all of the South Base in PAS 158, the land uses listed in the table reflect the uses by Plan Area as proposed in the Master Plan and corresponding PAS amendments.

As discussed above under Plan Area Amendment – Boundary Line, adding the land uses listed in Table 6-3 will promote the respective plan area "plan designations". For Plan Area 157, personal services and participant sports facilities support ski resort function and the overall "Recreation" land use classification by either providing additional recreational facilities or services that attract visitors to the resort. These uses are proposed for Plan Area 157 to support year round use of the mid mountain lodge located at the top of the proposed gondola. Year round use of recreational facilities is encouraged in the TRPA Ski Area Master Plan Guidelines and Developed Recreation Policy 2 of Goal 4, which states "Seasonal facilities should provide opportunities for alternative uses in the off-season, whenever appropriate."

Table 6-3

Alternatives 1, 3 and 6 Proposed Land Uses by TRPA Plan Area Statement

PAS	Allowable Use	Special Use	Amended Use
157	-Day Use Areas	-Cross Country Skiing Courses -Skiing Facilities -Eating and Drinking Places -Food and Beverage Retail -General Merchandise -Recreation services	-Personal Services (S) -Participant Sports Facility (S)
158	-Single-family Dwelling		-Multi-Family Dwellings (S)[1] -Skiing Facilities (A)[1] -TDR Receiving Area for Existing Development and Multi-Residential Units[2]
159	-Hotel/motel/transient dwelling -Participant Sports Facilities -Outdoor Recreation Concessions -Day Use Areas -Eating and Drinking Places -Food/Beverage Retail -General Merchandise	-Employee Housing -Single-family Dwelling -Timeshare (hotel and residential design) -Skiing Facilities -Outdoor Retail -Amusements and Recreation Services -Outdoor Amusements -Personal Services	-Multi-Family Dwellings (S) [1] -Privately Owned Assembly and Entertainment (S) [1] -TDR Receiving Area for Multi-Residential Units[2] -TDR Receiving Area for TAU Bonus Units (special area at North Base only)[2]

1. Amended Uses added to a newly created "Special Area" within the Plan Area and not the entire Plan Area.
2. Amended Use added to a newly created "Special Area" within the Plan Area specifically for existing development and multi-residential units.

Multi-family dwellings and skiing facilities would be added to the list of permissible land uses in a "special district" within Plan Area 158. The special area would be limited to the existing South Base area of the HMR. Because the Plan Area is a "Residential" land use classification area, the addition of multi-family dwellings would be consistent with the Plan Area designation. Since dwelling density is limited to exclude multi-family dwellings, it is appropriate to limit this type of development to a "special district" within the resort. This will maintain the overall character of the predominantly single family residential area, while providing for a more varied mix of residential options at the base of the ski resort.

Permissible land use changes for Plan Area 159 include the addition of multi-family dwellings and privately owned assembly and entertainment. Proposed maximum densities for multi-family dwellings and employee housing are proposed to increase from 8 units per acre to 15 units per acre to enable the proposed development boundary to be more consistent with the past development footprint in the North Base area. At only 8 units per acre, the acreage of land area required for the proposed development would extend up the base of the mountain onto lands that are not as compatible for base area residential development. While the proposed Master Plan development would still be clustered at the existing base area, the larger development boundary required for lower density could create project permitting conflicts in the future because of its greater size.

The proposed uses are consistent with the "Tourist" land use classification by providing permanent and second home options for Homewood visitors, improving the quality of the Homewood Mountain Resort, and providing new attractions that entice visitation to the recreational amenities provided in this area. There are existing commercial and tourist uses in the vicinity of the Project area such as marinas that will benefit from additional tourist and housing options. The goals of the Project are to: 1) Optimize the quality of the existing winter ski experience and improve the year-round use of the site while responding to changes in technology, market trends and user preferences; 2) Maintain consistency with the scale and character of Homewood, California; 3) Enhance the lifestyle and property values of West Shore residents; and 4) Generate sufficient revenues to support the proposed environmental and fire safety improvements and ensure the continued viability of the ski operations. These land uses enable the goals to be achieved by allowing a vertical mix of uses that promote year-round tourism and economy and by locating higher density growth along the commercial corridor of SR 89, within the scale and character of Homewood.

Proposed special uses, as listed in Table 6-3, will require TRPA Code Section 18.1.B(1-3) findings for approval. The findings for Subsection 18.1.B(1-3) follow:

1. *The project, to which the use pertains, is of such a nature, scale, density, intensity and type to be an appropriate use for the parcel on which, and surrounding area in which, it will be located.*

   The Project proposes expanded resort facilities that encourage visitation to existing recreational uses, improve land values, provide environmental benefit, provide neighborhood benefits, and plans for development that is located to compliment the urbanized area along SR 89. Although the Project will increase visitation by providing new overnight accommodations and increased density, these are goals of the affected Plan Areas to improve the viability of the existing resort and maintain the tourism based economy of the area.

For Plan Area 157, skiing facilities, recreation services, food/beverage sales and merchandise sales are all uses that either currently exist or that support current ski facilities. Expansion or modification of these uses is appropriate on the site as discussed above. TRPA PAS 157 states, "Upgrading and redevelopment of the Homewood base ski facilities should be encouraged." As discussed in the Needs Assessment (HMR Master Plan Appendices), there is a need to better serve the skiers while on the mountain to improve the recreation experience. Skiers should not have to come all the way to the bottom of the mountain for food, restrooms, shelter and other related services. The proposed mid mountain lodge will provide these services on the upper mountain.

As discussed above, multi-family dwellings and skiing facilities are proposed for Plan Area 158 within a new "Special District" in which these uses would be confined. Because they are limited to the "Special District" within the existing ski resort property, the nature, scale, intensity, density, and type of use are appropriate at this location and reflect the recreation and tourist uses that exist in this area or that are currently allowed at the resort. Multi-family dwellings are residential uses, reflecting the land classification of this Plan Area and the confinement of these higher density dwellings to the resort property prevents changes to the overall residential character of the Plan Area. By keeping multi-family dwellings within the urban area, higher density use is appropriately placed within a more urbanized area, instead of the recreational open space area. Likewise, skiing facilities in this area help to tie this special district to the resort to distinctly recognize the special district's affiliation with the resort base area.

For Plan Area 159, the special uses proposed support or include ski facilities. While some of these uses will expand the degree and intensity of use on the site, the uses are consistent with the primary land use on-site, which is a ski resort. The special uses listed expand upon resort facilities by including a variety of housing opportunities, including employee housing, or by including secondary recreation or entertainment uses that promote the year round viability of the existing and proposed resort facilities. The proposed increased range of uses is designed to allow the ski area to both respond to the Needs Assessment and improve the recreational experience, as well as to provide an economically viable resort so that the ski area can remain open. Based on HMR calculations (see Section 3.4 of this EIR/EIS), the proposed development levels included in Alternative 6 are the minimum size, scale, density and intensity of use necessary to support an economically viable resort. The proposed density is consistent with limits included in a majority of TRPA and Placer County Plans that allow multi-family residential use. The primary change sought by the Master Plan is the ability to subdivide tourist and residential units, which is not otherwise allowed outside an urban plan area boundary. The Master Plan proposed tourist and residential units could be built under the current TRPA and Placer County plan area regulations in PAS 157 but not subdivided for sale to individual owners. Under existing plan area regulations, the tourist and residential units would have to be owned and rented by HMR. According to HMR, the ability to sell some of the proposed tourist and all of the residential units is critical to the economic survival of the resort. Section 3.2 of this EIR/EIS lists the project objectives developed by HMR for the Project.

2. *The project, to which the use pertains, will not be injurious or disturbing to the health, safety, enjoyment of property, or general welfare of persons or property in the neighborhood, or general welfare of the region, and the applicant has taken*

reasonable steps to protect the land, water and air resources of both the applicant's property and that of surrounding property owners.

The layout of the proposed land uses reflects the current use of the site as well as the surrounding neighborhood. The most intense land uses are proposed along the SR 89 corridor, with less intensive use on the mountainside of the existing ski area facilities. Although some of the land uses will be placed back from the SR 89 ROW, this area is currently used during winter for ski resort operations (e.g., parking and skier services). The removal of substandard structures and large expanses of surface parking and the addition of landscaping will improve the visual appearance of the site. Placement of housing and tourist accommodation units on-site will result in fewer vehicle trips during peak winter operations (e.g., weekends and holidays). The incorporation of ground and water transit, water quality improvements both on and off-site, land coverage restoration throughout the site, and extensive forest fuels reduction will substantially improve the environment of the Project area, as well as improve the public health and safety of surrounding urbanized areas.

3. *The project, to which the use pertains, will not change the character of the neighborhood, detrimentally affect or alter the purpose of the applicable planning area statement, community plan and specific or master plan, as the case may be.*

The ski resort has a large impact on the character of the adjacent residential neighborhood. Each of the proposed special uses either directly reflect the existing uses (ski facilities, commercial uses, housing) or are uses that support the ski resort or enhance its year-round use as a recreational facility. As a whole, the Project maintains the purpose of the Plan Area Statements and locates the various types of uses within the appropriate areas with improved ski facilities on the mountain and more commercial and tourist oriented uses adjacent to the SR 89 corridor where they presently exist. With the provision of adequate on-site parking located primarily underground or in designated structured parking, adjacent uses should experience fewer land use related conflicts (e.g., noise, congestion, glare from parked cars) with operation of the ski resort during peak winter operations. New summer operations would occur as a result of the inclusion of tourist and residential land uses. However, these uses would also benefit from improved access and parking for the Project area. The replacement of existing surface parking and off-site parking on the street throughout the neighborhood with a day skier parking structure and lodging guest sub-structure parking will substantially improve the access and safety throughout the neighborhood. Also, the addition of improved transit options, neighborhood serving commercial, year round recreation resources, and other accessory facilities will contribute positively to the character of the residential and tourist oriented community.

Some proposed Master Plan uses require amendment of the list of permissible land uses in Plan Area 158 and 159. According to Subsection 13.7.B of the TRPA Code, modifications to permissible land uses shall be amended by ordinance. Under 13.7.D, the Code includes specific findings for amendments to add multi-family housing as a permissible use. To include multi-family housing, the plan area must be suitable for transit-oriented development (TOD). In determining TOD suitability, the following factors must be found:

a) The area must have access to operational transit within a 10 minute walk; and

b) Neighborhood services within a 10 minute walk (grocery, drug, retail stores, laundry services, medical services); and

c) Good pedestrian and bike connections; and

d) Opportunities for residential infill (at densities greater than 8 units per acre) or infill with mixed uses; and

e) Adequate public facilities (schools, recreation, government services, and post offices).

The Proposed Project (Alternative 1) and Alternatives 3 and 6 include on-site transit operations and retail services, with a small market and other services located within walking distance. Resort operated dial-a-ride and other transit shuttle services, including waterborne shuttles, are proposed in the Master Plan to augment the existing TART system. A sidewalk and bike connections will also be located along the SR 89 corridor. The Proposed Project and Alternatives 3 and 6 propose infill with mixed uses. A post office and 2 marinas, cross – country ski trails, and other recreational uses are located either on-site or nearby. Although schools and government services are not located on-site, they are located nearby in Tahoe City. A majority of the multi-family units are expected to be second homes and not occupied by permanent residents that require school facilities and other governmental services.

Because deed restricted affordable housing is also proposed, TOD suitability is determined through the following factors:

a) Access to operations transit within a 10 minute walk; and

b) neighborhood services; or

c) public facilities.

As discussed above, public transit stops are included on-site as well as local neighborhood services. Other neighborhood services and public facilities are located within walking distance along SR 89. Resort operated dial-a-ride and other transit shuttle services, including waterborne shuttles, are proposed in the Master Plan to augment the existing TART system.

As discussed above, amendments to the West Shore Area General Plan are needed to alter the Special Designation for Plan Areas 158 and 159 and amendments to the list of permissible uses is also required. Because County Plan Area 157 Special Policies allow new commercial facilities at the base areas (Policy 4) as well as accessory uses on the mid or upper mountain (Policy 4), special policy amendments are not needed for County Plan Area 157. Since participant sports facilities are already permissible as a special use, only personal services (weddings, receptions, etc,) would need to be added to the list of permissible land uses for the Mid Mountain Lodge area. County Plan Area 158 requires the same Special Designation addition of TDR Receiving Area for 1) Existing Development and 2) Multi-Residential Units to the newly created “Special Area.” County Plan Area 158 also requires the addition of Multi-Family Dwellings and Skiing Facilities to the newly created “Special Area.” County Plan Area 159 requires the Special Designation addition of TDR Receiving Area for Multi-Residential Units and Tourist Accommodation Bonus Units. In addition, the list of permissible land uses will need to be expanded to include Multi-Family Dwellings and Privately Owned Assembly and Entertainment, although outdoor concert events are currently permissible as a special use. The urban plan area boundary amendment for Plan Area 158 would be the same for both the County and TRPA. For Plan Area 159, the County’s Plan Area boundary amendment would be smaller because the existing paved parking lot at the North Base area is currently located in County Plan Area 159.

According to County Code Section 17.60.090 (G) amendments to General Plans are processed through 1) a Planning Commission Hearing and Recommendations followed by 2) a Board of Supervisors Hearing and Decision per County Code Sections 17.60.090 (A through D). As discussed above for amendments to TRPA Plan Areas, it is feasible for County amendments to occur as these changes do not alter the intent of classification of their respective plan areas and they would be in keeping with proposed TRPA mapping.

The consistency analysis in Chapter 4 reveals inconsistencies between the Proposed Project (Alternative 1), Alternative 3, Alternative 6 and the TRPA Regional Plan, TRPA Plan Area Statements, the West Shore Area General Plan, and the Placer County General Plan. Implementation of proposed amendments results in consistencies with policies related to transfer of development rights, plan area boundaries, height and allowable uses that would otherwise result in an inconsistency. Implementation of proposed mitigation measures eliminates the other inconsistencies with policies related to noise, habitat, SEZ function, operational air quality, groundwater, fertilizer use, transportation and circulation, erosion control, species protection, scenic improvements, development fees, and affordable housing.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternative 4*

One PAS amendment is proposed under Alternative 4. Alternative 4 proposes commercial uses within the north base parking area currently located in TRPA Plan Area 157 and Placer County Plan Area 159. In this area, a variety of commercial uses may be considered under the provisions of a special use including eating and drinking places, food and beverage retail sales, general merchandise stores, outdoor retail sales, amusements and recreation services, and secondary storage. However, at present, Plan Area 157 is not a TDR receiving area for existing development. To allow for transfer of commercial floor area to Plan Area 157 under Alternative 4, a special area is required that would allow TDR for existing development. The same amendment is required for Alternatives 1 and 3 for transfer of commercial floor area to the mid mountain lodge. Although it is currently unknown what types of commercial uses will occupy the proposed commercial lot under Alternative 4, the variety of allowable and special uses already established within the Plan Area indicate that any future commercial use proposed under Alternative 4 will likely be compliant with the existing list of permissible uses for Plan Area 157. Commercial development at the North Base parking area would be inconsistent with existing Plan Area 157 special policies, which state "Any new or additional commercial uses shall be permitted only pursuant to an adopted Community Plan." Alternatives 1 and 3 proposed to amend this special policy to also allow new or additional commercial uses pursuant to an adopted Ski Area Master Plan. However, under Alternative 4, there would be no Ski Area Master Plan. As such, this impact is considered to be significant.

Single-family estate lots are proposed for the remainder of the proposed development area under Alternative 4. Single-family dwellings may be considered under the provisions for a special use in Plan Area 157.

Because single-family dwellings are a special use, they will require TRPA Code Section 18.1.B(1-3) findings for approval, as follows:

1. The project, to which the use pertains, is of such a nature, scale, density, intensity and type to be an appropriate use for the parcel on which, and surrounding area in which, it will be located.

   Alternative 4 proposes 16 residential estate lots. The low density of lots reflects surrounding residential uses. With large lots, the residences will be well separated and will not intensify urbanization in the area. The proposed estate lots are located on the lower portion of the existing ski resort and may be visible from off-site locations, including Lake Tahoe. However, the dense forest vegetation and large size of the proposed lots (e.g., approximately 20 acres) will facilitate substantial screening from adjacent land uses.

2. The project, to which the use pertains, will not be injurious or disturbing to the health, safety, enjoyment of property, or general welfare of persons or property in the neighborhood, or general welfare of the region, and the applicant has taken reasonable steps to protect the land, water and air resources of both the applicant's property and that of surrounding property owners.

   Because a small number of estate residential lots are proposed, the effect of 16 single-family residences will be negligible on the adjacent residential neighborhood. In addition, the overall use of the Project area will decrease with the elimination of the winter ski resort operations. However, with the sale of the Project area to individual land owners, there will be more parties responsible for the installation and maintenance of BMPs for new development and upkeep of the remnants of the former ski resort (e.g., on mountain dirt roadways). As such, implementation of Alternative 4 could lead to greater potential for soil erosion and corresponding water quality impacts in addition to the loss of the existing recreational skiing opportunity.

3. The project, to which the use pertains, will not change the character of the neighborhood, detrimentally affect or alter the purpose of the applicable planning area statement, community plan and specific or master plan, as the case may be."

   The single-family estate lots will not change the character of the neighborhood. The surrounding area is characterized by a commercial corridor along SR 89 with residential uses tucked within the natural landscape beyond the commercial developments. This alternative will continue to reflect this existing character; however, closure of the ski resort to allow residential estate lots will eliminate the Project area's ability to meet the recreational goals of Plan Area 157.

As addressed above and in Chapter 4 (Relationship to Existing Land Use Plans, Policies, and Regulations), Alternative 4 is not consistent with many TRPA or Placer County land use plans, goals, policies, and provisions adopted for the purpose of avoiding or mitigating environmental effects. For example, closure of the ski resort is considered a significant land use impact as a major recreational provider would cease to exist/operate affecting recreation resources available in the Lake Tahoe Basin and supporting commercial services. As a result, numerous policies included in the County and TRPA Plan Areas would not be achieved. Ski Resort closure would also affect the adjacent tourist plan area 159 as the resort area would be substantially redefined and future commercial uses would be severely limited without the tourist draw of the ski resort. As discussed above, long-term environmental impacts may also result, such as water quality impacts from the on mountain roadway network. Therefore, this impact is considered to be significant and unavoidable.

Mitigation: No mitigation is available.

After Mitigation: *Significant and Unavoidable Impact; Alternative 4*

No mitigation is available to offset the closure of the ski resort under Alternative 4. While Plan Area Statements may be amended to allow commercial development within the existing North Base area parking lots, the degree of change from the closure of the ski resort would necessitate the complete reclassification of the Project area. Loss of a large winter day use recreation resource could not be mitigated because there are no sites available for its replacement in the Lake Tahoe Basin.

Analysis: *Significant Impact; Alternative 5*

As with Alternatives 1 and 3, Alternative 5 requires an amendment to the Plan Area 159 boundary to include the existing ski area parking lot at the North Base area. Under Alternative 5, approximately 5.1 acres located within Plan Areas 157 and 158 will be added to Plan Area 159. As shown in Figure 6-3, the Plan Area 159 amendment would not include the remainder of the North Base area located west of the existing parking lot under Alternative 5 because proposed uses in this portion of the North Base would be consistent with uses presently permitted in Plan Area 157. No amendment is required to the Plan Area 158 boundary at the South Base area, because Alternative 5 proposes single family homes at the South Base area, which are currently a permissible use in Plan Area 157 (special use). In summary, under Alternative 5, all proposed multi-family housing units would be located in the area used for existing North Base parking lots. The existing gravel parking lot is located in TRPA Plan Area 158, a residential plan area. The existing paved parking lot is located in TRPA Plan Area 157, a recreation plan area. However, under the Placer County West Shore Area General Plan, the paved parking lot is located in Placer County Plan Area 159, a tourist plan area considered to be appropriate for residential development.

As with Alternatives 1 and 3, Alternative 5 proposes to amend the list of allowable land uses for Plan Area 157 to add personal services and participant sports facility and Plan Area 159 to add multi-family dwellings. In addition, Alternative 5 requires the addition of TDR Receiving Area for existing development to Plan Area 157 to allow for the transfer of Tourist Accommodation Units and commercial floor area, which are currently allowed uses in Plan Area 157 but cannot be transferred to the plan area from outside areas. Unlike Alternatives 1 and 3, Alternative 5 also requires the addition of privately owned assembly and entertainment use to Plan Area 157 to permit the proposed amphitheater which would be located in Plan Area 157 rather than Plan Area 159. The proposed multi-family dwelling use for Plan Area 159 would be limited to a newly created “Special Use” area at the North Base Development Area (e.g., in the existing gravel and paved parking lot area). This Plan Area 159 “Special District” will also be proposed to be a TDR receiving area for multi-family residential units. Because of the smaller size of the proposed Plan Area 159 boundary amendment for Alternative 5 (only approximately 5 acres consisting of the existing parking areas), the required density maximum for the multi-family residential units would be approximately 45 units per acre.

The necessary findings for amendment of the Plan Area boundaries and allowable uses are described above under Alternatives 1 and 3. Under Alternative 5, the size of the urban area expansion would be smaller than Alternatives 1 and 3, limited to the existing parking area at the North Base area, an area presently used for urban type land uses (e.g., parking and skier services). As mentioned above, a portion of the existing north base

parking area is presently recognized by both TRPA and Placer County as an urban plan area. Therefore, restricting the Alternative 5 multi-family for sale uses to the existing parking areas is being studied as an alternative to expanding an urban plan area (159) into non-urban plan area 157. As discussed above, the environmental benefits of the Project, which would also occur under Alternative 5, and the inclusion of transit oriented development into Project design indicate the necessary findings can be made for the amendment to the plan area boundary and uses. However, as addressed above and in Chapter 4 (Relationship to Existing Land Use Plans, Policies, and Regulations), Alternative 5 is not consistent with several TRPA or Placer County land use plans, goals, policies, and provisions adopted for the purpose of avoiding or mitigating environmental effects. For example, in order to fit the multi-family units proposed in Alternatives 1 and 3 into the existing north base parking areas, necessary density is increased to 45 units per acre, using 4- and 5-story buildings. Forty-five (45) units per acre is not currently a permitted density in the TRPA Regional Plan and would require an amendment to TRPA Code Chapter 21, Density. However, a density amendment for Alternative 5, if proposed, would result in significant impacts to scenic quality as documented in Chapter 10, Scenic Resources. Therefore, this impact is considered to be significant and unavoidable.

Mitigation: No mitigation is feasible.

After Mitigation: *Significant and Unavoidable Impact; Alternative 5*

No mitigation is feasible to accommodate up to 45 multi-family units per acre in the existing north base parking areas under Alternative 5. While Plan Area Statements may be amended to expand boundaries and add necessary land uses, the required building massing and height for the density proposed in Alternative 5 would result in significant and unavoidable impacts to adjacent land use (see Impact LU-2 below) and scenic quality.

Impact: LU-2. Will the Project be consistent with adjacent land uses, expand/intensify existing non-conforming uses, or transfer development rights that exceed density limits?

Analysis: *Less than Significant Impact; No Project (Alternative 2)*

No change to existing conditions will occur under the No Project (Alternative 2). While HMR has said that continued operation of the existing ski resort is uncertain without approval of a Master Plan to allow residential and tourist development of the base areas, under the No Project (Alternative 2) the Project area is assumed to continue to be used for ski resort operations without tourist accommodation or residential units. No change will occur to the 13,943 square feet of skier services at the North Base and 11,084 square feet of skier services and maintenance at the South Base. Existing facilities include the warming shelter, vehicle shop/maintenance facility, food services, restrooms, ski school, rentals/repairs, snowmaking, ski lifts, administrative offices, employee services, ski patrol, and sales. The 980 total parking spaces at the North Base and 242 total parking spaces at the South Base will remain in their current locations. No expansion, intensification, or new uses are proposed under the No Project (Alternative 2). Since existing conditions will continue in the same capacity as they currently operate, this impact is considered to be less than significant.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternatives 1, 3 and 6*

Consistency with Adjacent Land Uses. The Proposed Project (Alternative 1) and Alternatives 3 and 6 will result in substantial changes to the existing conditions, with proposed new land uses as defined by TRPA, expansion or modification of existing land uses, and overall changes to the layout, height and density of the developed base areas at Homewood Mountain Resort. Existing structures will be deconstructed. As discussed in Chapter 3, the Proposed Project (Alternative 1) and Alternatives 3 and 6 will result in a mixed-use base area (North Base), a residential base area (South Base), and a lodge at the Mid-Mountain Base area, including:

	Alternative 1	Alternative 3	Alternative 6
NORTH BASE AREA			
Hotel			
Rooms	75	75	50
Condo/Hotel Units	40	40	25
Penthouse Condos	30	30	0
Residential Condos	36	36	145
Fractional Condos	20	20	0
Townhouses	16	16	0
Residential Lots	0	0	0
Workforce (Affordable) Housing	13	13	12
Commercial	25,000 sf	25,000 sf	25,000 sf
Skier Services	30,000 sf	30,000 sf	20,000 sf
Parking spaces			
Day skier structure	272	272	156
Surface parking	47	47	80
Underground	410	410	410
Total Parking	*729*	*729*	*646*
SOUTH BASE AREA			
Residential Condos	99	99	50
Maintenance	0	0	0
Parking spaces	117	117	65
Residential Lots	0	0	14
Skier Services	2,000 sf	2,000 sf	2,000 sf
MID-MOUNTAIN AREA			
Day Lodge	15,000 sf	15,000 sf	15,000 sf
Gondola terminal	18,000 sf	18,000 sf	18,000 sf
Maintenance facility	15,000 sf	15,000 sf	15,000 sf
Water storage tanks (250,000 gallons each)	2	2	2

In addition to the units described above, Alternatives 1, 3 and 6 will include changes to ski lifts (without any increase to verified PAOT capacity) and the addition of bike trails, a cross-country ski connection, amphitheater, ice skating facilities, swimming facilities, and small miniature golf facility that are either common to a ski resort and compatible with a resort function or are features that are open to the community and enhance overall recreation and community gathering opportunities. These uses will be located on the mountain in Plan Area 157 or at the North Base area in the proposed Plan Area 159 expansion area. Plan Area 157 lists day use areas and riding/hiking trails as acceptable uses and cross-country ski courses, and skiing facilities as special uses. Plan Area 159 lists local assembly and entertainment, day use areas, and participant sports facilities as allowable uses, with cross-country skiing courses, riding/hiking trails and skiing facilities as special uses. Because the project site currently houses recreation facilities, modifications to ski facilities and the addition of new recreation facilities that either expand winter recreation options (cross-country ski connection and ice skating) or expand summer recreation opportunities beyond the existing hiking trails (swimming, biking, miniature golf) are considered to be consistent with existing and adjacent land uses. Neither of these Alternatives would require an allocation of additional TRPA PAOTs.

The proposed hotel is consistent with the existing land uses in the Project area and is an allowable use in both Plan Areas 157 and 159. Condo-hotels, residential condos, employee housing, and single-family dwellings are all special uses within PAS 157 and 159. Only single-family dwellings are allowed in PAS 158. Timeshare units are a special use in Plan Area 159 and are not allowed in Plan Area 157. With the proposed amendment to Plan Area 159 boundaries, each of the proposed Master Plan uses would be located in Plan Area 159 under Alternatives 1, 3 and 6.

Existing uses, ski facilities and ski services, conform to Plan Area 157. These uses will be upgraded, but the TRPA verified PAOT capacity will not increase for resort use because some lifts have already been, or will be removed entirely and others will be replaced with increased capacity (e.g., the existing Madden chair lift will be replaced with a high speed gondola). New uses include non-skiing recreation resources, tourist accommodations and residential use to support the existing and proposed recreation operations, and commercial services that support the recreation operations such as food and beverage sales. Expansion of these recreation and residential uses would enhance the recreation and visitor experience and help achieve the land use direction for the applicable Plan Areas at Homewood. Adjacent land uses include single-family homes, commercial uses, recreation facilities, and tourist accommodations. The existing commercial uses are centered along SR 89 with the majority of single family homes located off SR 89 to the north and south of the existing base areas. Increased density along the SR 89 corridor, while providing scenic enhancements included in the Master Plan, is consistent with the community planning direction as discussed in Impact LU-1. Therefore, the proposed land uses and their locations in Alternatives 1, 3 and 6 are consistent with adjacent land uses and would not expand/intensify existing non-conforming uses.

Expand/Intensify Existing Non-Conforming Uses. Existing facilities include the warming shelter, vehicle shop/maintenance facility, food services, restrooms, ski school, rentals/repairs, snowmaking, ski lifts, administrative offices, employee services, ski patrol, parking and sales. These are considered skiing facilities or uses accessory to skiing facilities, such as the maintenance facility and administrative offices, and are special uses listed under Plan Area 157. Non-conforming uses are considered existing

uses not listed in Plan Area 157. Since ski facilities are listed as a special use in Plan Area 157, they are not considered non-conforming. There are no existing non-conforming uses onsite; therefore, the Proposed Project (Alternative 1) and alternatives would not expand or intensify existing non-conforming uses.

Transfer of Development Rights. Alternatives 1, 3 and 6 propose to transfer residential units, development rights, tourist accommodation units and bonus units to the Project area. The transfer of development rights would increase the overall development density within the project area. Table 6-4 outlines the proposed tourist and residential units and the existing inventory of transferable units for each action alternative.

The Project Applicant currently has 152 Tourist Accommodation Units (TAUs) available for the Project associated with the North Shore Lodge/Sierra Tahoe (13) and the Tahoe Inn (139). TAUs are required for the 155 proposed traditional hotel units, condo-hotel units and fractional (e.g., timeshare) units. In addition, under the CEP application, Homewood has applied for 50 bonus TAUs from the TRPA special project's pool available based on restoration of low capability lands associated with 50 units at the Tahoe Inn property (located on Class 3 land). These 50 bonus units will replace 50 TAUs from the Tahoe Inn that Homewood is proposing to convert to ERUs under the provisions of TRPA Code Chapter 33.7. With the 152 TAUs in the Project Applicant's inventory, a deficit of three TAUs exists under Alternatives 1 and 3. Under Alternative 6, there would be a surplus of 77 TAUs.

The TAUs proposed for construction at the HMR Project area under Alternatives 1, 3 and 6 will, for the most part, be larger than the TAUs removed from the sending sites. The average TAU size under the Proposed Project (Alternative 1) and Alternatives 3 and 6 is approximately 637 square feet. The TAUs proposed in Alternatives 1 and 3 consist of 75 traditional hotel rooms that average 450 square feet each, 40 condo/hotel units that average 1,000 square feet (20 of which will have lock offs and therefore will utilize two TAUs each at 500 square feet), and 20 fractional condos that average 1,250 square feet each. The TAUs proposed in Alternative 6 consist of 50 traditional hotel rooms that average 450 square feet each, and 20 condo/hotel units that average 1,000 square feet. The average size of the TAUs demolished within the sending parcels is approximately 325 square feet (approximately 13 by 25 feet). However, transferring the TAUs to the HMR Project area would eliminate potential impacts (e.g., trip generation, land coverage, etc.) that could result within the sending Plan Area or Community Plan because the transferred TAUs would not be rebuilt at the sending location in the future. For example, the Tahoe Inn site at North Stateline is largely Class 3 land and that sensitive land will be restored and deed restricted to open space. The new TAUs planned at Homewood would be built on higher capability land (Class 4 or better) and will utilize less water and energy resources per unit than the units removed from off-site locations proposed for TAU transfer. The North Base area mixed-use development proposal has been accepted into and will be designed under the Leadership in Energy and Environmental Design (LEED) for Neighborhood Development Pilot Program as an example of exemplary green and sustainable development. The south base, although not a part of the LEED for Neighborhood Pilot Program because it is not a mixed-use development (residential only), will also be designed to stringent sustainable development standards using the LEED criteria as a template.

Table 6-4

Proposed Tourist and Residential Units by Alternative

Units	Alt 1	Alt 3	Alt 4	Alt 5	Alt 6
Tourist Accommodation Units (TAU – Hotel and Timeshare Units)					
Proposed TAU:					
Hotel Rooms	75	75	0	75	50
Condo Hotel[2]	60	60	0	0	25
Fractional Units	20	20	0	0	0
TOTAL TAUs	**155**	**155**	**0**	**75**	**75**
HMR Purchased TAU available for Transfer[1]	102	102	102	102	102
Bonus TAU requested by HMR in CEP [1]	50	50	50	50	50
Total TAU available to HMR	152	152	152	152	152
Additional TAUs Required	3	3	0	0	0
Equivalent Residential Units (ERU – Whole Ownership and Single Family Units)					
Proposed ERU:					
Residential Condominiums	135	135	0	225	145
Townhouses	16	16	0	0	0
Penthouse Condominiums	30	30	0	0	0
Residential Lots	0	0	16	16	14
TOTAL ERUs	**181**	**181**	**16**	**241**	**159**
Homewood owned TAUs to be converted to ERUs (based on low capability restoration match)[1]	50	50	0	50	50
HMR Purchased ERU available for Transfer[3]	3	3	3	3	3
HMR Purchased Development Rights[3]	23	23	23	23	23
Total ERUs and Development Rights Available	76	76	76	76	76
Additional ERUs Required	105	105	0	165	83
Multi-Family Residential Bonus Units (MBRU - Affordable Housing)					
Proposed MRBU (TRPA bonus pool)	13	13	0	12	12

Source: HMR, September 9, 2009

1 HMR has an inventory of 152 TAUs from two properties in the North Shore (North Shore Lodge – 13 TAU and Tahoe Inn – 139 TAU). HMR proposes to convert 50 of the restored TAU from the Tahoe Inn Class 3 lands to ERUs under the provisions of TRPA Code Chapter 33.7 (one ERU for each TAU with low capability land restoration credit). HMR has requested 50 bonus TAUs from the TRPA special project pool that may be granted as a result of low capability (Class 3) restoration associated with units at the Tahoe Inn.

2 Although 40 units are proposed, the design on the 20 units with lockoffs requires two TAUs per unit with a lockoff. Therefore 60 TAUs are required for the 40 Condo-Hotel units.

3 HMR has an inventory of 26 ERUs and developments rights from two sources – TVI (23 development rights) and the Tahoe Inn (3 ERUs).

Note: Less than 10% of the hotel rooms would include kitchens. All other units (residential condominiums, fractional units, condo hotel, penthouse condominiums, townhouses) would include kitchens.

Equivalent residential units (ERUs) are required for the penthouse condominium, residential condominium, and townhome units. The Project Applicant currently has an inventory of 26 ERUs associated with the Tahoe Inn (3) and 23 development rights acquired from Tahoe Valley Investments (TVI). In addition, HMR proposes to convert 50 of the restored TAU from the Tahoe Inn Class 3 lands to ERUs under the provisions of TRPA Code Chapter 33.7 (one ERU for each TAU with low capability land restoration credit) for a total of 76 ERUs.

The units transferred from a portion of the Tahoe Inn in the North Stateline Community Plan (NSCP) are eligible for conversion to ERU because of the low capability land coverage restoration that would occur on the Tahoe Inn sending site. While the NSCP encourages the transfer of TAUs into this urban area, the transfer of units out of this area may be considered beneficial because a nearly equivalent number of TAUs is proposed to be transferred into the NSCP for the proposed Boulder Bay CEP Project. Most of the land in the NSCP is land capability class 3 and is not eligible for additional coverage or unit transfer, because TRPA Code limits the transfer of development into low capability sites unless there is no increase in existing land coverage or parking. Development rights, which are needed for each additional residential unit approved, can be transferred if the transfer complies with the density limitations of the receiving site. Therefore, the Plan Area Statement amendments discussed above in LU-1 must be approved to allow the proposed transfer because multi-family residential is currently not allowed.

Chapter 33.7 allows the conversion of TAUs to ERUs at a one to one ratio as stated in Section 33.7.A – Transfer from Sensitive Lands, "Conversion of an existing residential or tourist accommodation units to a residential, tourist, or commercial use may be permitted when a residential or tourist unit is transferred from a parcel classified as land capability districts 1, 2, 3, or SEZ, and the parcel is restored." The 50 TAUs from the Tahoe Inn restoration site may be converted to ERUs based on the provisions of Chapter 33.7.A. With this conversion and transfer included, Alternatives 1 and 3 will have 76 ERUs and development rights available, resulting in a demand for 105 additional ERUs to accommodate total buildout. However, Alternatives 1 and 3 require 66 ERUs for Phase 1 (North Base) development and therefore additional ERUs would be needed for Phase 2 (South Base) development. Under Alternative 6, there would be a remaining demand for 83 additional ERUs, but 33 of those additional ERUs would be needed for Phase 1 (North Base) development, leaving Alternative 6 short for both Phase 1 and Phase 2.

The 13 affordable housing multi-family units proposed under Alternatives 1 and 3, and 12 affordable housing units proposed under Alternative 6 will require multi-family residential bonus units (MRBU) from TRPA's bonus pool for affordable housing. HMR is requesting 13 MRBUs from TRPA for Alternatives 1 and 3; however, the February 2008 Resolution only identifies reservation of 12 MRBUs. The 2008 Resolution also requires deed restrictions in perpetuity for the use of MRBUs for affordable housing to ensure they are not later converted to market rate units. The 13 workforce housing units will be located at the North Base area adjacent to the parking structure (Building P). As discussed in Chapter 7, the 13 two-bedroom apartments will accommodate a maximum of 52 employees for Alternatives 1 and 3. With only 12 units recognized by TRPA, there is a deficit of one MRBU allocation for Alternatives 1 and 3. However, there are many MRBU available and the provision of affordable housing is one of the goals of the TRPA CEP and Placer County General Plan.

Many of the TAUs proposed for transfer are from the NSCP area. However, approximately 45 of the TAUs have already been removed and banked on the site of the Tahoe Inn and as a result, are not being physically removed as a result of the proposed transfer. The parcels from which these TAUs originated were overdeveloped at the time of their construction and exceeded the allowable land coverage limits. In addition, a portion of the Tahoe Inn units were located within sensitive low capability Class 3 lands that are being restored to earn bonus TAUs from TRPA's special project pool. Although the transfer of 139 TAUs associated with the Tahoe Inn would result in a decrease in the available TAUs in the NSCP, it would also contribute to water quality and scenic quality improvements, helping to meet other applicable Community Plan goals.

The physical effects at the Project TAU receiving site have been analyzed in this EIR/EIS and have been mitigated where necessary to avoid significant impacts. The proposed TAU transfer will reduce existing development potential in the NSCP. However, the Boulder Bay CEP Project is currently proposing to utilize 31 bonus TAUs available from the NSCP and a transfer of 136 TAUs (40 bonus TAUs and 96 Boulder Bay owned TAUs) into the NSCP. Therefore, slightly more units will be added to the NSCP (from bonus pools and Washoe and El Dorado County transfers) under Alternatives 1 and 3 than will be transferred out for the HMR Project, helping to balance the overall TAU supply in the NSCP.

Section 34.4 of the TRPA Code of Ordinances outlines the process for transferring TAUs and ERUs. Existing developments may be transferred within the same classification (ERU to ERU or TAU to TAU) to a receiving parcel in a Plan Area or an adopted community plan designated for receiving such transfers. In addition, the Plan Area or Community Plan must allow the type of use to be transferred or findings must be made to allow a special use transfer. Historical structures and affordable housing may or may not be transferred and the transfer shall be evaluated for adverse impacts that must be mitigated (Section 34.4.B(7). The Code further states that the receiving parcel shall be land Class 4 Capability or greater unless: there is greater than 25 percent reduction in existing land coverage with restoration on the receiving parcel with no adverse impacts, or parking, vehicle, or structural volume increases; or the transfer is from sensitive land to equal or less sensitive land with a reduction of coverage and restoration equal to 300 square feet of the land coverage. Following transfer, the development from which the transfer occurred must be removed or modified consistent with the terms of the transfer, and the land must be restored and maintained to eliminate the units that once existed on that site. If some of the transfer units originated on sensitive lands, that land shall be permanently restricted from transferring development back to the parcel through a deed restriction or other recorded covenant. With the proposed use of Class 4 land capability or better on the Project site as well as the restoration of the Tahoe Inn site, transfer of the units from the Tahoe Inn site to the HMR Project area is feasible with the approval of the proposed Plan Area Statement amendments discussed in LU-1 above.

The proposed Homewood Master Plan receiving area for the transferred TAUs (currently located in Plan Area 157) does not currently allow transfer of existing development rights. As discussed under Impact LU-1, the proposed Master Plan includes a Plan Area amendment that would move the North Base development area into Plan Area 159 and would allow for transfer of TAUs into the Project area. Both Plan Areas 157 and 159 currently allow for tourist oriented development, but Plan Area 159 does not require special use findings for hotel units and Plan Area 157 does not allow the timeshare use that is allowed in Plan Area 159 under the provisions of special use.

In addition to residential and tourist units, Alternatives 1, 3 and 6 request 25,000 square feet of commercial floor area (CFA) from TRPA's bonus pool. According to the February 2008 TRPA Resolution, up to 23,237 CFA have been reserved for the project. Pursuant to Chapter 33 of the TRPA Code of Ordinances, projects that create additional CFA cannot be constructed without first receiving an allocation approved by TRPA. Therefore, the CFA reservation recommended in the Resolution must be approved prior to construction; however, the requested CFA (25,000) exceeds the recommended CFA reservation (23,237 CFA) by 1,763 CFA. Since no additional CFA may be constructed without TRPA CFA allocation and approval, the project request currently exceeds the 2008 reservation and a reduction shall be required or additional CFA will need to be reserved. As shown in Table 6-2, the Project demonstrates environmental benefits needed to approve the CFA reservation.

Since the proposed uses are either an appropriate expansion of facilities as discussed in LU-1 or are uses that will be amended to the Plan Area in support of Plan Area and community-wide goals, the Proposed Project and Alternatives 3 and 6 are determined to be consistent with adjacent land uses. Although some TAU, ERU, and CFA have been allocated or purchased, the proposed mix of tourist, residential, and commercial uses will require the allocation of additional CFA, MFBU, and ERU before permits can be finalized.

Mitigation: **LU-2a. Purchase and Transfer of Additional ERUs**

Prior to permitting ERU development associated with the proposed Master Plan in excess of current entitlements, HMR shall obtain ERUs adequate for the proposed project application. At present, HMR is lacking ERUs for their proposed Phase 2 development at the South Base and the Townhouses at the North Base under Alternatives 1 and 3, and a portion of the proposed Phase 1 development under Alternative 6. These ERUs can be obtained by either converting excess TAUs that originated on low capability lands or by purchasing ERUs from other off-site locations. Prior to transfer, HMR shall demonstrate that the transfer of these additional units does not result in negative impacts to the Plan Area or Community Plan from which the purchased units came. Preferably, the units will be transferred from a nearby Plan Area or Community Plan area located in Placer County, and will be associated with the restoration of sensitive lands.

If the TRPA Governing Board does not approve an increase in the number of MRBUs included in the TRPA February 2008 Governing Board resolution, then the proposed affordable housing units shall be reduced to 12 or an additional ERU may be transferred to the Project Area (Alternatives 1 and 3) area to accommodate the proposed 13 affordable housing units.

LU-2b. CFA Reduction or Additional CFA Reservation

To comply with the CFA allocation reserved by TRPA under the 2008 Resolution, the project must reduce total CFA by 1,763 square feet or obtain an additional 1,763 square feet of CFA pursuant to TRPA Code Section 33.3. If additional CFA is pursued, the additional CFA must be obtained prior to the permitting of the development phase for which it will be applied.

After Mitigation: *Less than Significant Impact; Alternatives 1, 3 and 6*

Implementation of mitigation measures LU-2a and LU-2b will reconcile requested entitlements with those available to the Proposed Project (Alternative 1) or Alternatives 3 and 6. The addition of additional entitlements or the reduction of the proposed project to match supply will reduce this impact to a less than significant level assuming the proposed Plan Area amendments are approved (as discussed in Impact LU-1).

Analysis: *Less than Significant Impact; Alternative 4*

Alternative 4 will result in substantial changes to the existing conditions, with the demolition of existing ski related structures and elimination of winter day use recreation uses and the development of 17 lots. As discussed in Chapter 3, Alternative 4 will result in up to 15,000 square foot of commercial floor area at one lot located at the North Base area and 16 residential estate lots located on the lower portion (face area) of the Project area. Lot line adjustments are proposed for Alternative 4.

The 15,000 square feet of commercial floor area will need to be purchased and transferred to the Project area, or a Special Project allocation will need to be requested from TRPA under Alternative 4. Depending on the source of the commercial floor area, there must be a purchase and transfer under provisions for transfer defined in TRPA Code of Ordinances Chapter 34.4, or an allocation and assignment to the Project area. The commercial lot will be located entirely within TRPA Plan Area 157 and therefore if the commercial floor area is to be purchased, an amendment would be required to allow transfer of existing development rights, which is not currently allowed. No amendment would be required for a Special Project designation and allocation. While TRPA Plan Area 157 includes provisions for commercial use if special use findings can be made, it also includes special policies that state "any new or additional commercial uses shall be permitted only pursuant to an adopted Community Plan." As such, the proposed commercial uses under Alternative 4 would not be consistent with existing plan guidance from TRPA. However, the proposed commercial lot is partially located in Placer County Plan Area 159 (the portion of the parking lot that is paved), which allows commercial use without special use findings and is considered by the County to be a Community Plan area.

Alternative 4 is not considered under the TRPA CEP. Therefore, the 23,237 square feet of CFA reserved for the Homewood Master Plan CEP project would not be available for use on the commercial lot. Pursuant to Chapter 33 of the TRPA Code of Ordinances, projects that create additional CFA cannot be constructed without first receiving an allocation approved by TRPA or purchasing and transferring the CFA from another private source. Therefore, a CFA transfer would be required to approve commercial development proposed under Alternative 4.

The 16 residential estate lots would be in compliance with permissible land uses for Plan Area 157. According to the proposed conceptual map for Alternative 4, each of the residential estate lots would be located within Plan Area 157. Therefore, special use findings would be required for the residential lots. Since the location of these residential lots indicates the ski resort would crease to exist, this would substantially alter the direction of this Plan Area and would result in the substantial loss of a large winter day use recreation facility that could not be replaced within other recreational plan locations.

While Alternative 4 substantially changes the type of land use on the Project area, the proposed reduction in use of the site from a ski resort to residential and commercial uses near the base areas would be consistent with land uses on adjacent properties. The area closest to the roadway will be commercial, which is indicative of this portion of the SR 89 corridor and reflects current uses north and south of the site. In addition, the Project area is adjacent to existing single-family residences in the Homewood and Chambers Landing areas. Therefore, this impact is considered to be less than significant.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternative 5*

Alternative 5 will also result in substantial changes to present conditions, with the demolition of existing structures and the development of a 75-unit hotel, 225 multi-family residential units (condominiums), and 16 single-family residential lots as shown in Table 6-4. Under Alternative 5, no on-site affordable housing units are proposed to minimize the size of the North Base area development footprint. As discussed in Chapter 3, Alternative 5 will also include the 25,000 square feet of commercial area and up to 30,000 square feet of skier services at the North Base area that is proposed under Alternatives 1 and 3. Alternative 5 differs from Alternatives 1 and 3 at the South Base area and only includes a small skier services building (with no parking) and 16 residential lots.

Existing uses, ski facilities and ski services, conform to the Plan Area. These uses will be modified, but it is not anticipated that the PAOT will increase for resort use as some lifts will be removed and replaced with new lifts, such as the gondola. New uses include non-skiing recreation resources, tourist accommodations and residential use to support the existing and proposed recreation operations, and commercial services that support the recreation operations such as food and beverage sales. As discussed above under Alternatives 1 and 3, expansion of the summer recreational uses is consistent with the existing Plan Area direction and other existing uses located nearby. The addition of tourist and residential uses would enhance the recreation and visitor experience and help achieve the land use direction for the applicable Plan Areas at Homewood. Adjacent land uses include single-family homes, commercial uses, recreation facilities, and tourist accommodations. The existing commercial uses are centered along SR 89 with the majority of single family homes located off SR 89 to the north and south of the existing base areas. Increased density along the SR 89 corridor, while providing scenic enhancements included in the Master Plan, is consistent with the community planning direction as discussed in Impact LU-1. However, under Alternative 5, the residential development is limited to the existing parking lots at the North Base area, an area equal to approximately 5 acres. While this alternative reduces the acreage of urban plan area expansion compared to Alternatives 1 and 3, the required density for the 225 multi-family residential units increases from 15 units/acre to 45 units/acre because only 5 acres is available for the multi-family residential uses. The residential building design in this area under Alternative 5 includes four full stories plus a roof level and building heights up to 55 feet immediately adjacent to SR 89 and the single family residential units located west of Sacramento Avenue. Under Alternatives 1 and 3, buildings in this area are two and three stories with heights up to 40 feet. The greater massing and density of structures included in Alternative 5 for the multi-family residential uses would not be consistent with either historical or existing land uses in the vicinity of the HMR North Base area. As such, this impact is considered to be significant.

The 25,000 square feet of commercial floor area will need to be obtained and transferred to the Project area. According to the February 2008 TRPA Resolution, up to 23,237 CFA are reserved for the project. Pursuant to Chapter 33 of the TRPA Code of Ordinances, projects that create additional CFA cannot be constructed without first receiving an allocation approved by TRPA. Therefore, the CFA reservation recommended in the Resolution must be approved prior to construction; however, the requested CFA (25,000) exceeds the recommended CFA reservation (23,237 CFA) by 1,763 CFA. Since no additional CFA may be constructed without TRPA CFA allocation and approval, the project request currently exceeds the 2008 reservation and a reduction shall be required or additional CFA will need to be reserved. As shown in Table 6-2, the Project demonstrates environmental benefits needed to approve the CFA reservation.

The 16 single-family residential lots proposed for the South Base area under Alternative 5 will be in compliance with the existing Plan Area guidance for the Project area. Plan Area 157 considers single-family dwellings as a special use. However, the proposed residential units would be located nearby other existing residential uses located below (to the east and south) the base of the existing ski resort. Development of these single-family lots would not prevent the primary use of Plan Area 157 as a ski resort.

Alternative 5 proposes to transfer residential and tourist accommodation units to the Project area. Table 6-4 outlines the proposed tourist and residential units and the existing inventory of transferable units for each action alternative.

As shown in Table 6-4 above, 75 TAUs are proposed, which can be accommodated through the transfer of the 152 TAUs currently owned by Homewood Mountain Resort. No additional TAUs are needed. However, as discussed for Alternatives 1 and 3, the NSCP from which these units are being transferred seeks to increase the number of TAUs, whereas Alternative 5 will reduce the total number of available TAUs (although Alternative 5 will require fewer NSCP TAUs than Alternatives 1 and 3). Since other projects in the NSCP are transferring TAUs from other areas of the Basin into the NSCP, a net increase in TAUs is proposed for the NSCP area under Alternative 5.

The 16 ERUs needed for the single-family residential lots and the 225 ERUs needed for the condominiums will not be sufficiently covered through the transfer of existing ERUs owned by Homewood from TVI development rights (23), Tahoe Inn (3), or the Tahoe Inn TAUs (50) that are proposed for conversion to ERUs. As shown in Table 6-4, 165 additional ERUs are needed. Since the 225 condominium units are planned for Phase 1, an additional 149 ERUs (16 ERUs are for the single family units included in Phase 2) will be needed before construction of Alternative 5 begins.

It is possible for a portion of the 85 excess TAUs owned by Homewood to be converted to ERUs at a one to one ratio pursuant to TRPA Code Section 33.7. The units may only be converted if adverse impacts can be mitigated and the sending units are located on sensitive lands (Class 3 or lower). Since a portion of the units from the Tahoe Inn result in a transfer of units from sensitive land, the conversion may be approved under Section 33.7.A since the Tahoe Inn site was restored and the units would be transferred to higher capability lands. However, even if TRPA can allow the conversion of each remaining unused TAU unit, an additional 80 ERU would still be needed for Alternative 5 development.

Because many of the ERUs necessary for transfer to the Project area for Phase 1 Alternative 5 development are not known at this time, it is not possible to analyze

whether there are land use effects from removing development potential at the sending sites. Therefore, this impact is considered to be significant.

Since only 12 employee housing units are proposed, Alternative 5 does not need to pursue additional MRBUs.

In summary, because the massing and density of multi-family residential uses proposed for the HMR North Base area are not consistent with adjacent land uses and because Alternative 5 requires additional ERU from unknown sources, this impact is considered significant.

Mitigation: **LU-2b. CFA Reduction or Additional CFA Reservation**

To comply with the CFA allocation reserved by TRPA under the 2008 Resolution, the project must reduce total CFA by 1,763 square feet or obtain an additional 1,763 square feet of CFA pursuant to TRPA Code Section 33.3. If additional CFA is pursued, the additional CFA must be obtained prior to the permitting of the development phase for which it will be applied.

LU-2c. Purchase and Transfer of Additional ERUs

Prior to approval of Alternative 5, HMR shall obtain up to 165 additional ERUs. Prior to transfer, HMR shall demonstrate that the transfer of these units does not result in negative impacts to the Plan Area or Community Plan from which the purchased residential units originated. Preferably, the units will be transferred from a nearby Plan Area or Community Plan area or will be purchased as a result of restoration of sensitive lands.

After Mitigation: *Significant and Unavoidable Impact; Alternative 5*

Obtaining additional ERUs and CFA or the reduction in CFA would allow the resort to develop the proposed uses and/or comply with TRPA allocations. However, under Alternative 5, the massing and density of multi-family residential units is inconsistent with adjacent land uses because the residential units proposed for development are confined to a relatively small area currently identified as urban land uses by TRPA and Placer County. Because the purpose of Alternative 5 is to study the effects of implementing the HMR MP program in a reduced development footprint, there is no mitigation available other than the reduction of multi-family residential units that would reduce this impact to a less than significant level. According to HMR, a reduction of residential units would not meet the objectives of the project and is therefore not feasible (see Chapter 3.4).

6.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact: LU-C1: Will the Project have significant cumulative impacts to land use?

Analysis: *Less than Significant Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will not result in changes to existing land use and will not contribute to a cumulative impact or change in land use. According to HMR, continued operation of the existing ski resort is not financially viable and therefore, under No Action, it is possible that the ski resort would eventually be sold or closed for re-use of the Project area. However, because this conclusion is speculative, it is assumed that under the No Project (Alternative 2), the existing ski resort would remain in operation

and would continue to provide recreational land uses listed as permissible in existing planning guidance for the site.

Mitigation: No mitigation is required.

Analysis: *Less than Significant; Alternatives 1, 3, and 6*

The Proposed Project (Alternative 1) and Alternatives 3 and 6 would amend the list of permissible uses in the three affected Plan Areas and would increase tourist, commercial, and residential growth in these Plan Areas, particularly in the area fronting SR 89. These alternatives would also increase the size of urban land use boundaries. While some of these changes are promoted in the Plan Area Statement, the result is that the overall urbanization of the region increases, especially when cumulatively considered. However, by placing commercial and higher density development within the urban area, this helps to unify growth in the region instead of promoting development outside the existing tourist corridor. It should be noted, that the project and alternatives include a deed restriction on the majority of the property from future non-recreational development and also include other environmental benefits not required under existing codes and regulations. These benefits are magnified as there are other publicly-sponsored projects in the area that implement traffic improvements, water quality improvements, soil stabilization, coverage reduction or land restoration, and scenic quality improvements. The recreation benefits of the project are considerable in that they serve both residents and tourists to the basin. With new tourist facilities planned in the north shore, bike trail expansions, and improved access, new facilities at HMR will result in an overall improvement to the tourist and recreation experience, thereby improving the vitality and long-term viability of the area in conjunction with long-term environmental and scenic improvements.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternative 4*

Alternative 4 will result in the closure of the ski resort and the loss of a regional recreation resource. Although other projects may propose new recreational resources (new parks, expansion of existing recreation sites, new or enhanced bike or pedestrian trails), the loss of this resource is considerable, especially when other projects propose increased residential or tourist facilities that increase the demand for such resources. Alternative 4 is cumulatively significant.

Mitigation: No mitigation is feasible.

After Mitigation: *Significant and Unavoidable Impact; Alternative 4*

No mitigation is feasible for Alternative 4 that would reduce the cumulative impact of ski facility loss.

Analysis: *Significant Impact; Alternative 5*

Alternative 5 would amend the list of permissible uses in the affected Plan Areas and would increase tourist, commercial, and residential growth in these Plan Areas, particularly in the area fronting SR 89. These alternatives would also increase the size of urban land use boundaries. While similar actions occur under the Proposed Project (Alternative 1) and Alternatives 3 and 6, the degree to which this change occurs under Alternative 5 is intensified by the proposed height, massing, and density, which may alter the land use development patterns in the area, particularly in combination with other

developments along the roadway. Allowing significantly higher densities changes the direction of the area by encouraging high-density development. The density proposed (45 units/acre) is greater than any TRPA maximum density limits. Large, dominant structures along SR 89 also change the development character established in the Plan Areas and shift the development character towards high-density urban uses, uncharacteristic of the west shore. Alternative 5 results in an overall increase in urbanization and opens the direction of the Plan Area to significant change, especially when cumulatively considered with other development. Alternative 5 is cumulatively significant.

Mitigation: No mitigation is feasible.

After Mitigation: *Significant and Unavoidable Impact; Alternative 5*

No mitigation is feasible for Alternative 5 that would reduce the cumulative impact of the change in development direction that encourages high density, high visibility development in the area.

REFERENCES

Tahoe Regional Planning Agency (TRPA). As amended. *Code of Ordinances*.

Tahoe Regional Planning Agency (TRPA). As amended. *Regional Plan for the Lake Tahoe Basin, Goals and Policies.*

Tahoe Regional Planning Agency (TRPA). As amended. *Plan Area Statements (157, 158 and 159).*

Placer, County of. 1998. *West Shore Area General Plan*. Adopted October 19, 1998

Placer, County of. 1994. *Placer County General Plan*. Adopted August 16, 1994.

Placer, County of. *Placer County Zoning Ordinance*, Chapter 17, Edition 9.

7.0 POPULATION, EMPLOYMENT, AND HOUSING

7.1 ENVIRONMENTAL SETTING

7.1.1 Population Characteristics

The information below includes a variety of collected public data sources and associated calculations. The data sources include the 2000 U.S. Census, 2007 Census updates, and 2009 State of California population data for the counties and zip codes.

Population

The Lake Tahoe Basin, including the Homewood area, is traditionally a vacation or second-home area, with many homeowners maintaining their primary residency outside of the region. Consequently, the number of people occupying homes in the Basin can vary widely with seasons and holiday periods. The year-round or permanent resident population of the Lake Tahoe Basin is approximately 68,000 people as of 2007, an 8% increase since 2000. Table 7-1 shows the historic population growth by zip code area for Lake Tahoe Basin. Figure 2-1 provides a map of communities in the Lake Tahoe Basin.

From 1990 to 2007, the rate of population increase has been greater in the North Shore region than the South Shore region, although the South Shore remains more populous with 63% of the total Basin population in 2007. Homewood (zip code 96141) has the second smallest population in the Basin with 906 residents. Homewood experienced the second highest growth rate from 1990 to 2000, but then slowed considerably after 2000. More recent information (Mobility 2030, TMPO RTP) indicates that the year round population of the Tahoe Region has decreased by 7,662 residents between 2000 and 2005. Additional information suggests that the Placer County portion of the Tahoe Region has decreased by 2,310 persons over the same time frame. These estimates are supported by corresponding decreases in school enrollment, traffic volumes and unemployment rates.

Placer County's overall population was 248,399 in 2000 and increased 34% between 2000 and 2007 to 332,920 primarily within the western portions of the County outside of the Lake Tahoe region. As of January 1, 2009, the population of Placer County was 339,577 (DOF 2009).

Age Distribution

Recent age distribution data is reported by City-Data.com for 2007. Homewood has a median age of 40.5 years. By comparison, the whole of Placer County had a median age of 38.0 while the State of California had a median age of 33.3. These data indicate a larger than average proportion of older adults, which includes senior citizens, residing in the Homewood area than the rest of the county or the State as a whole.

Table 7-1

Population by County, Lake Tahoe Region, 1990-2007

County	State	Community (Zip Code)	1990	2000	% Change 1990-2000	2007	% Change 2000-2007
North Shore							
Placer	CA	Carnelian Bay (96140)	631	1,928	205.5%	2,080	7.9%
Placer	CA	Homewood (96141)	264	840	218.2%	906	7.9%
Placer	CA	Tahoma/Meeks Bay (96142)	368	1,282	248.4%	1,383	7.9%
Placer	CA	Kings Beach (96142)	3,299	4,802	45.6%	5,185	8.0%
Placer	CA	Tahoe City/Alpine Meadows (96145)	4,744	3,997	-15.7%	4,313	7.9%
Placer	CA	Tahoe Vista	861	669	-22.3%	721	7.8%
Washoe	NV	Incline Village (89451)	7,760	9,601	28.7%	12,325	23.4%
		Total North Shore	***17,927***	***23,119***	***29.0%***	***26,913***	***16.4%***
South Shore							
El Dorado	CA	South Lake Tahoe (96150)	28,955	33,024	14.1%	32,597	-1.3%
Douglas	NV	Zephyr Cove (89448)	2,116	2,498	18.1%	3,206	28.3%
Douglas	NV	Stateline (89449)	3,245	3,832	18.1%	4,919	28.4%
Douglas	NV	Glenbrook (89413)	309	365	18.1%	468	28.2%
		Total South Shore	***34,625***	***39,719***	***14.7%***	***41,190***	***3.7%***
		Total Lake Tahoe Region	***52,552***	***62,838***	***19.6%***	***68,103***	***8.4%***

Source: U.S. Census Bureau (1990-2000); City-Data.com (2000-2007).

Race and Ethnicity

Race and ethnicity in Homewood and Placer County are summarized in Table 7-2. The majority of Homewood residents are White (including Hispanic), comprising over 97% of the population, as compared to 93% of the population in Placer County. While Hispanic race/ethnicity data are combined with data for White residents in Homewood, this category is reported separately in Placer County and represents nearly 10% of the County's population, with White alone comprising over 83% of Placer County residents. Other Races and Two or More Races are the second and third largest groups in Placer County; relatively few persons report themselves to be Black, American Indian/Alaska Native, Asian/Pacific Islander, Other Race, or Two or More Races in Homewood.

Income

In 2007, the estimated median household income in Homewood zip code 96141 was $95,758, with 0.9% of the population (7 persons) below the poverty line (City-data.com 2009).

Approximately 0.9% of the population (7 persons) was below the poverty level and no persons were below 50% of the poverty line. No families or children under age 18 or seniors aged 65 or over are considered impoverished (U.S. Census Bureau 2009).

Table 7-2

Placer County and Homewood (96141) Race and Ethnicity, 2000

Race	Placer County*	Homewood (94161)*
White (including Hispanic)	93.1%	97.3%
Black or African American	0.8%	0.2%
American Indian/Alaska Native	1.9%	0.1%
Asian/Pacific Islander	2.3%	1.0%
Other Race	3.4%	0.2%
Two or More Races	3.2%	1.2%

Source: U.S. Census Bureau 2009, and City.data.com 2009.

*Total could be greater than 100% because Hispanics could be counted in other races

7.1.2 Housing Characteristics

The number of housing units in the Lake Tahoe region grew from 43,265 in 1990 to 46,248 in 2000, an increase of 2,983 units as shown in Table 7-3. Growth occurred at a faster rate within the North Shore than in the South Shore. Vacation homes comprised 29.8% of the housing units in the Lake Tahoe region in 2000, with owner occupied units the second largest category at 32.4%, renter occupied units at 22.8%, and 5% of the housing units were vacant (U.S. Census Bureau 2009).

For the Placer County Portion of the Lake Tahoe Region, the 2000 Census counted 11,481 housing units, with 2,840 owner occupied units, 1,992 renter occupied units, and 6,271 seasonal units, and 6,649 vacant units. In Homewood, there were 1,396 single-family homes and condominium units, and 80 renter-occupied apartments in 2007. Renters occupied 21% of housing units. "Vacant" housing units in Homewood totaled 1,027 (74% of the total) indicating that a large proportion of the housing stock was either vacation homes used exclusively by their owners or seasonal rentals (U.S. Census Bureau 2000). The median house or condominium value in 2007 was $978,426 and the median asking price for houses and condos in 2007 was $1,204,298. The mean 2007 price for a detached house was $918,236 while the mean price for five or more attached units was $973,622. Median rent for rental units was estimated at $1,000 to $1,249 (City-data.com 2009).

7.1.3 Employment Characteristics

Lake Tahoe Region

Businesses that depend primarily on travel and tourism – lodging establishments, gaming, restaurants, and recreation services – are important to the economy of the Lake Tahoe region by providing the primary source of employment and payroll earnings in the region as shown in

Tables 7-4 and 7-5. The data presented below show employment and earnings by place of work. According to the *2004 North Lake Tahoe Tourism and Community Investment Master Plan*, approximately 71% of jobs in North Lake Tahoe are within the tourist industry.

Table 7-3

Lake Tahoe Region Housing Units, 1990-2000

Region	1990	2000	Change	% Change
North Shore	19,103	20,798	1,695	8.9%
South Shore	24,162	25,450	1,288	5.3%
Total	43,265	46,248	2,983	6.9%

Source: U.S. Census Bureau 2009.

Table 7-4

Lake Tahoe Distribution of Employment, 2003

Employment Category	Number	Percent (%)*
Accommodation & Food Service	12,508	41.9%
Retail Trade	2,436	8.2%
Arts, Entertainment & Recreation	2,359	7.9%
Local Government	2,227	7.5%
Construction	2,174	7.3%
Professional & Business Services	2,056	6.9%
Education & Health Services	1,769	5.9%
Other Services	960	3.2%
Finance & Insurance	852	2.9%
All Other	816	2.7%
Real Estate, Rental & Leasing	612	2.1%
Transportation & Utilities	264	0.9%
Manufacturing	196	0.7%

Source: EDD 2009; Nevada Department of Employment, Training and Rehabilitation 2009.

* – May not total 100% due to rounding

Table 7-5

Lake Tahoe Distribution of Earnings, 2003

Employment Category	Annual Payroll (Millions)	Percent (%)*
Accommodation & Food Service	$296	34.0%
Retail Trade	$89	10.2%
Arts, Entertainment & Recreation	$82	9.4%
Local Government	$75	8.6%
Construction	$73	8.4%
Professional & Business Services	$58	6.9%
Education & Health Services	$52	6.0%
Other Services	$47	5.4%
Finance & Insurance	$46	5.3%
All Other	$26	3.0%
Real Estate, Rental & Leasing	$12	1.4%
Transportation & Utilities	$7	0.8%
Manufacturing	$7	0.8%

Source: EDD 2009; Nevada Department of Employment, Training and Rehabilitation 2009.

* – May not total 100% due to rounding
Note – Accommodation & Food Services includes casino hotels and the associated gaming activity.

Homewood Area

In 2000, the U.S. Census reported 650 residents (73.2%) over age 16 in the civilian labor force with an unemployment rate of 3.4%. Management, professional and related occupations was the primary occupational category (48.2% of persons employed); followed by sales and office occupations (27.8%); service occupations (10.6%); construction (9.0%); and production, transportation, and material moving (4.4%). Class of Worker data included private wage and salary workers (78.9%), government workers (11.7%), and self-employed workers (9.5%). The mean travel time to work was 19.4 minutes.

In September 2009, the overall unemployment rate for Placer County had risen to 11.3% - no unemployment data for 2009 are available for Homewood (EDD 2009). According to *City-data.com*, 85.7% of employed Homewood residents work at locations within Placer County. The industries located in Homewood by number of employees in 2005 were:

- Arts, Entertainment and Recreation: Skiing Facilities (100-249 employees; 1 establishment);
- Accommodation and Food Services: Full-Service Restaurants (10-19: 2, 5-9: 1, 1-4: 1);

- Construction: New Single-Family Housing Construction (except Operative Builders) (10-19:1, 1-4: 5);
- Construction: Residential Remodelers (10-19: 1, 1-4: 1);
- Other Services (except Public Administration): Other Similar Organizations (except Business, Professional, Labor, and Political Organizations) (10-19: 1);
- Construction: Roofing Contractors (5-9: 1, 1-4: 1);
- Arts, Entertainment, and Recreation: Marinas (5-9: 1);
- Accommodation and Food Services: Limited Service Restaurants (5-9: 1); and
- Wholesale Trade: Jewelry, Watch, Precious Stone, and Precious Metal Merchant Wholesalers (5-9: 1).

7.2 REGULATORY SETTING

The Tahoe Regional Planning Agency (TRPA), Placer County, or other regulatory agencies in the Basin have no specific Environmental Thresholds for population. The TRPA limits construction of new housing using an allocation system defined in *TRPA Code Chapter 33 – Allocation of Development*. Transfer of existing development rights can also occur according to *TRPA Code Chapter 34 – Transfer of Development*. The *TRPA Regional Plan Goals and Policies* states, "Population growth in the Region is to be guided by the limitations on land use and other environmental threshold carrying capacities set forth in the Plan." An *Economic Threshold Evaluation Report* was completed by TRPA in 2001 (*Chapter 11, Economics*), but no specific controls on population levels were defined.

The *TRPA Code of Ordinances Chapter 18 – Land Use* lists "employee housing" as a primary land use in the Basin, and provides the following definition: Employee Housing: Residential units owned and maintained by public or private entities for purposes of housing employees of said public or private entity. Placer County uses the term "workforce housing" for a similar land use. For the purposes of consistency with TRPA and Placer County terminology, this environmental analysis and will use the term "employee/workforce housing."

The *1994 Placer County General Plan* and *2009 Housing Element*, and *1998 West Shore Area General Plan*, set forth goals and policies related to population, employment, and housing. An evaluation of consistency of the Proposed Project (Alternative 1) and Alternatives with these goals and policies is provided in Table 7-8 below. The General Plan does not specifically limit population growth. The *West Shore Area General Plan* identifies permissible uses, maximum densities, and other land use requirements for each PAS, but does not have specific growth restrictions. The Housing Element provides goals, policies, and implementation programs for the planning and development of housing to meet the County's existing and projected housing needs in compliance with State law.

7.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

For the purposes of this analysis, an impact to population, employment, or housing is defined as a physical change to the existing employment, population, or housing conditions. An impact is determined to be significant if additional population exceeds the planned growth rate or substantially affects the available housing supply and demand.

Table 7-6 presents the evaluation criteria for population, employment, and housing. These criteria are drawn primarily from local plans, adapted where necessary to reflect California Environmental Quality Act (CEQA) and TRPA requirements. For the purpose of this analysis, the stated applicable points of significance determine whether implementing the Proposed Project (Alternative 1) or Alternatives will result in a significant impact. These points of significance are based upon Appendix G of the State CEQA Guidelines and the TRPA Initial Environmental Checklist. An employment, population, or housing impact is significant if implementation of the Proposed Project (Alternative 1) or Alternatives exceeds the point of significance shown in Table 7-6.

Table 7-6

Evaluation Criteria with Point of Significance –Population Employment and Housing

Evaluation Criteria	Point of Significance	Justification
PEH-1. Will the Project increase the demand for housing, thereby causing direct or indirect environmental impacts?	Increase in housing unit demand in excess of growth anticipated in the *TRPA Regional Plan*	TRPA Initial Environmental Checklist II (12a); CEQA Appendix G Checklist XII (a); *TRPA Regional Plan* Land Use Element and Plan Area Statements
PEH-2. Will the Project alter the location, distribution, density, or growth rate of the human population planned for the Region?	Increase in population in excess of growth anticipated in the *TRPA Regional Plan*	TRPA Initial Environmental Checklist II (11a); CEQA Appendix G Checklist XII (a)

Source: Hauge Brueck Associates 2009.

Note: CEQA Appendix G Checklist items XII-b (Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere) and XII-c (Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere) are not applicable to the Project. TRPA Checklist items 11-b (Include or result in the temporary or permanent displacement of residents) and 12-b (Will the proposal result in the loss of housing for lower-income and very-low-income households) do not apply, as no homes would be eliminated under the Project.

7.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

IMPACT: PEH-1. Will the Project increase the demand for housing, thereby causing direct or indirect environmental consequences?

Analysis: *Less than Significant Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will result in the continuation of resort operations under existing conditions. There are no existing tourist accommodation units or residential units on-site. Existing skier service operations at the existing North Base and South Base lodges will continue. Therefore, no new employment or demand for employee/workforce housing will be generated by implementation of the No Project (Alternative 2).

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

The rate of unemployment in Placer County was 11.3% in September 2009 (EDD November 2009). Based on the number of Accommodation and Food Service, Retail Trade, and Arts, Entertainment and Recreation jobs reported in 2003 (Table 7-4), up to 1,955 unemployed leisure, retail trade, and hospitality workers may currently be looking for work in the Lake Tahoe Region who have skills necessary to perform the duties sought by the Proposed Project (Alternative 1) and Alternatives. The jobs generated by the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 are considered a beneficial socioeconomic impact. With existing unemployment among likely qualified workers in the Basin, the recruitment of new workers from outside the region is not expected to be required, and substantial new population growth with new jobs generated by the Proposed Project (Alternative 1) or Alternatives 3, 4, 5, or 6 is not anticipated.

The workforce associated with construction will be temporary. Weather conditions and scheduling of interdependent construction activities will further affect timing of the temporary housing need. Because the work will not be permanent, construction workers unable to commute to the Project area are expected to rent living quarters based on the duration of stay. These quarters may be hotel rooms, vacation units, or longer-term rental units such as apartments, condominiums, and homes. Due to the dispersion of rental demand throughout the West Shore area and the temporary nature of this demand, construction would not result in a demand for new full-time housing. This is considered a less than significant impact on housing and no mitigation is required.

The permanent expansion of tourist accommodation units, full service condominiums, and a mix of commercial, skier and accessory services provided at HMR will result in increased permanent staffing levels within the Project area. The seasonal nature of HMR operations and the regional tourist economy leads to unemployment or underemployment of many residents. To adjust for seasonal variations in employment, employment data is presented in terms of the full-time equivalent (FTE), a standardized measure of individual jobs. One FTE is equivalent to a single full-time, 40 hour per week job for 52 weeks out of the year, or the equivalent of about 2,087 total labor hours.

JMA Ventures, LLC conducted a study to estimate the number of new FTEs generated by the Project (JMA Ventures, LLC 2008). An estimated 0.33 FTE would be generated per new residential unit or transient accommodation unit, and 2.0 FTEs would be generated per 1,000 square foot of commercial/retail area. HMR ski area operations would employ approximately 110 new staff on a seasonal basis, primarily during the 11-week peak ski season from the week of December 25th through the first week of March. The 110 new employees for 11 weeks adds up to 48,400 annual labor hours and is the equivalent of 23 new FTEs. New FTEs generated by Alternative are shown in Table 7-7.

The generation of new FTEs is important for economic planning and for determining the need for employee/workforce housing. *Placer County Housing Element* Policies B-15 and C-2 require projects to develop a employee/workforce housing plan that can accommodate at least half of the new employees. Table 7-7 provides the number of employee/workforce housing units required based on a minimum occupancy rate of two (2) persons per two-bedroom unit.

This analysis assumes that new residential units will generally not be affordable to employees. The Proposed Project (Alternative 1) and Alternative 3 will provide 13 employee/workforce housing units with capacity to accommodate a minimum of two employees each, providing employee/workforce housing for 26 employees. Alternative 4 does not include the construction of employee/workforce housing units. Alternatives 5

and 6 include 12 employee/workforce units to accommodate a minimum of 24 employees each.

Table 7-7

Estimated Employment Generated, and Employee/Workforce Housing Required, by Alternative

Alternative	New FTEs*	*Housing Element* Policy C-2 Required Employee/Workforce Housing Units (Employees)	Units Provided (Employees Housed)**	Employee/Workforce Housing Unit Deficit (Employees)
Proposed Project (Alternative 1) – HMR Master Plan	182	46 (91)	13 (26)	33 (65)
No Project (Alternative 2)	0	0 (0)	0 (0)	0 (0)
Alternative 3 – No Code Amendment for Building Height	182	46 (91)	13 (26)	33 (65)
Alternative 4 – Close Ski Resort – Estate Lots	35	9 (18)	0 (0)	9 (18)
Alternative 5 – Reduced Urban Boundary Amendment	177	44 (89)	12 (24)	32 (65)
Alternative 6 – Reduced Urban Boundary/Lower Height	166	42(83)	12 (24)	30 (59)

Source: Hauge Brueck Associates 2009.

*Limited to new commercial, retail and other new Project developments; does not include the estimated 23 FTEs for ski area operations. Under Alternative 4 it is assumes that the 23 FTEs at the ski resort are removed with the closure of HMR.

**Based on providing housing for 50% of new employees in 2-bedroom units, occupied by a minimum of two persons per unit, rounded to the next whole unit.

Employees not accommodated in employee/workforce housing will require housing elsewhere in the region. New jobs generated by the Proposed Project (Alternative 1) or Alternatives 3, 4, 5, or 6, would not result in substantial new population growth or demand for new housing considering the existing population and housing stock in the Placer County portion of the Lake Tahoe Basin. Placer County has approximately 14,588 persons and 11,481 housing units in the Basin.

As documented in the Plan consistency analysis included in Table 7-8, the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 do not provide sufficient employee/workforce housing to meet the requirements of *Placer County Housing Element* Policies B-15, C-2, and other applicable policies in the *Housing Elemen*t and *1998 West Shore Area General Plan*. The Proposed Project (Alternative 1) and Alternative 3 require up to 33 units for 65 new employees, Alternative 4 requires up to nine units for 18 employees, Alternative 5 requires up to 32 units for 65 employees, and Alternative 6 requires up to 30 units for 59 employees. As a condition of receiving 13 MRBUs from TRPA as a CEP Project, the Applicant in its acceptance letter dated January 31, 2008, indicated that it would find employee/workforce housing solutions for

the balance of new FTEs generated in excess of those served by the 13 on-site MRBUs. Following Master Plan adoption, HMR intends to identify and secure off-site employee/workforce housing for the balance of new full time equivalent employees generated by the selected alternative. Because the necessary off-site employee/workforce housing is not currently identified, this impact is considered to be significant, and mitigation is required.

Mitigation: **PEH-1: Develop Homewood Employee/Workforce Housing Plan.**

The Project Applicant shall develop a detailed "Homewood Employee/Workforce Housing Plan" based on the alternative selected for Placer County review and approval. Provision of sufficient housing opportunities to accommodate a minimum of half of new FTEs generated by Project operation will be assured through a combination of one or more of the following:

- Development of new on-site employee/workforce housing;
- Development/renovation of off-site employee/workforce housing;
- Dedication of sufficient land for needed units, and/or;
- Payment of an in-lieu fee.

The designs of applicant-provided on-site and off-site employee/workforce housing shall be reviewed and approved by the County. An approved Homewood Employee/Workforce Housing Plan shall be required prior to the issuance of building permits or recordation of final maps, whichever occurs first. The Homewood Employee/Workforce Housing Plan shall provide an accounting of the final number of net new FTEs expected to be created by the constructed alternative with identified phasing; the number, locations, and capacity of new employee/workforce housing units to be developed; location and capacity of dedicated land for new employee/workforce housing; in-lieu fees paid to the County, and implementation schedule to ensure that sufficient new housing is available for new employees as Project construction is completed and operations begin.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1), Alternatives 3, 4, 5, and 6*

Implementation of Mitigation Measure PEH-1 will ensure that sufficient employee/workforce housing is provided on-site and/or off-site for at least half of the expected new FTEs generated, consistent with *Placer County General Plan Housing Element* Policies B-15, C-2, and other applicable policies in the *Housing Elemen*t and *1998 West Shore Area General Plan*. Implementation of Mitigation Measure PEH-1 reduces this impact to less than significant.

Table 7-8

HMR Consistency Analysis with the *1994 Placer County General Plan* and *2009 Housing Element*, and *1998 West Shore Area General Plan* Goals, Policies, and Development Standards Related to Population, Employment, and Housing

Goals, Policies, and Development Standards	HMR Master Plan Consistency Analysis
PLACER COUNTY *1994 GENERAL PLAN*	
RESIDENTIAL LAND USE	
Goal 1.B: To provide adequate land in a range of residential densities to accommodate the housing needs of all income groups expected to reside in Placer County.	
1.B.1. The County shall promote the concentration of new residential development in higher-density residential areas located along major transportation corridors and transit routes.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 would concentrate new housing adjacent to the major transportation route in the region, SR 89. The No Project (Alternative 2) includes no changes to existing development.
1.B.2. The County shall encourage the concentration of multi-family housing in and near downtowns, village centers, major commercial areas, and neighborhood commercial centers.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would concentrate new multi-family housing adjacent to mixed use and commercial areas. The No Project (Alternative 2) and Alternative 4 include no multi-family housing.
1.B.3. The County shall encourage the planning and design of new residential subdivisions to emulate the best characteristics (e.g., form, scale, and general character) of existing, nearby neighborhoods.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 would consider County and TRPA Design Guidelines and aesthetic requirements in the design and location of new housing. The No Project (Alternative 2) includes no changes to existing development.
1.B.4. The County shall ensure that residential land uses are separated and buffered from such major facilities as landfills, airports, and sewage treatment plants.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 would concentrate new housing in an area buffered from major facilities. The No Project (Alternative 2) includes no changes to existing development.
1.B.5. The County shall require residential project design to reflect and consider natural features, noise exposure of residents, visibility of structures, circulation, access, and the relationship of the project to surrounding uses. Residential densities and lot patterns will be determined by these and other factors. As a result, the maximum density specified by General Plan designations or zoning for a given parcel of land may not be realized.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 would consider County and TRPA Design Guidelines and aesthetic requirements in the design and location of new housing. The No Project (Alternative 2) includes no changes to existing development.
1.B.6. The County shall require new subdivided lots to be adequate in size and appropriate in shape for the range of primary and accessory uses designated for the area.	**Consistent.** Subdivided lots under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 would be adequate in size and shape for the range of uses. The No Project (Alternative 2) includes no changes to existing development.
1.B.7. The County shall require multi-family developments to include private, contiguous, open space for each dwelling.	**Consistent.** Multi-family housing in the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 include private, contiguous, open space for each dwelling. The No Project (Alternative 2) and Alternative 4 include no multi-family housing.
1.B.8. The County shall require residential subdivisions	**Consistent.** The No Project (Alternative 2) includes no

Goals, Policies, and Development Standards	HMR Master Plan Consistency Analysis
to be designed to provide well-connected internal and external street and pedestrian systems.	changes to existing development. **Consistent with Mitigation.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 have potential to result in inadequate internal emergency vehicle access and evacuation routes. See *Chapter 17 – Hazardous Materials and Public Safety*, Impact PS-2 for discussion of required mitigation measures.
1.B.9. The County shall discourage the development of isolated, remote, and/or walled residential projects that do not contribute to the sense of community desired for the area.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 are located and designed to be integrated into the existing Homewood community. The No Project (Alternative 2) includes no changes to existing development.
1.B.10. The County shall require that all residential development provide private and/or public open spaces in order to insure that each parcel contributes to the adequate provision of light, air, and open space.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 provide open spaces for adequate provision of light, air, and open space. The No Project (Alternative 2) includes no changes to existing development.
COMMERCIAL LAND	
Goal 1.D: To designate adequate commercial land for and promote development of commercial uses to meet the present and future needs of Placer County residents and visitors and maintain economic vitality.	
General Commercial Areas Policies	
1.D.1. The County shall require that new commercial development be designed to encourage and facilitate pedestrian circulation within and between commercial sites and nearby residential areas rather than being designed primarily to serve vehicular circulation.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 include mixed-use or neighborhood commercial areas with pedestrian access. The No Project (Alternative 2) includes no changes to existing development.
1.D.3. The County shall require that new, urban, community commercial centers locate adjacent to major activity nodes and major transportation corridors. Community commercial centers should provide goods and services that residents have historically had to travel outside of the area to obtain.	**Consistent.** Commercial areas are located on SR 89, the major transportation route in the area, under Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6. The No Project (Alternative 2) includes no changes to existing development.
Downtown Areas/Village Centers Policies	
1.D.5. The County shall encourage existing and new downtowns/village centers to provide a variety of goods and services, both public and private.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 include mixed-use or neighborhood commercial areas that provide a variety of goods and services adjacent to other commercial uses in Homewood. The No Project (Alternative 2) includes no changes to existing development.
1.D.6. The County shall promote use of first floor space in new buildings in downtowns/village centers for retail, food service, financial institutions, and other high-volume commercial uses.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 include mixed-use with first-floor retail. The No Project (Alternative 2) includes no changes to existing development.
JOBS-HOUSING BALANCE	
Goal 1.M: To work toward a jobs-housing balance.	
1.M.1. The County shall concentrate most new growth within existing communities emphasizing infill development, intensified use of existing development, and expanded services, so individual communities become more complete, diverse, and balanced.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 provides for growth and infill development within an existing community. The No Project (Alternative 2) includes no changes to existing development.
1.M.3. The County shall encourage the creation of	**Consistent.** The Proposed Project (Alternative 1) and

Goals, Policies, and Development Standards	HMR Master Plan Consistency Analysis
primary wage-earner jobs, or housing which meets projected income levels, in those areas of Placer County where an imbalance between jobs and housing exists.	Alternatives 3, 4, 5, and 6 provides for expanded commercial, retail, and mixed-uses for new employment opportunities. The No Project (Alternative 2) includes no changes to existing development.
ECONOMIC DEVELOPMENT	
Goal 1.N: To maintain a healthy and diverse local economy that meets the present and future employment, shopping, recreational, public safety, and service needs of Placer County residents and to expand the economic base to better serve the needs of residents.	
1.N.1. The County shall promote economic expansion based on Placer County's unique recreational opportunities and natural resources.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 provide for economic expansion related to a unique natural resource and recreational opportunity. The No Project (Alternative 2) includes no changes to existing development. **Not Consistent.** Alternative 4 would reduce natural resource based recreational opportunities with closure of the ski area. See *Chapter 18 – Recreation*, Impact REC-2 and Impact REC-4 for discussion and analysis.
High Sierra Policies	
1.N.15. The County shall support development of tourist and recreational facilities that extend the High Sierra's tourist season.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 provide for economic expansion related to a unique natural resource and recreational opportunity. The No Project (Alternative 2) includes no changes to existing development. **Not Consistent.** Alternative 4 would reduce tourist and recreational facilities that extend the High Sierra's tourist season with closure of the ski area. See *Chapter 18 – Recreation*, Impact REC-2 and Impact REC-4 for discussion and analysis.
Placer County General Plan 2009 Housing Element	
A. NEW RESIDENTIAL CONSTRUCTION	
Goal A. To provide new housing opportunities to meet the needs of existing and future Placer County residents in all income categories.	
A-1. The County shall maintain an adequate supply of appropriately zoned land with public services to accommodate housing needs of existing and future residents.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 focus new residential development on appropriately zoned lands. The No Project (Alternative 2) includes no changes to existing development.
A-3. The County shall encourage innovative subdivision design and a range of housing types within larger-scale development projects to encourage mixed-income communities (e.g., single-family detached homes, second units, duplexes, live-work units).	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 provide a range of housing types. The No Project (Alternative 2) includes no changes to existing development. **Consistent with Mitigation.** Alternative 4 provides only single-family housing affordable to above-moderate income households. **Mitigation Measure PEH-1** requires the development of a Homewood Employee/Workforce Housing Plan to achieve consistency with Policy A-3.
A-4. The County shall encourage mixed-use and transit-	**Consistent.** The Proposed Project (Alternative 1) and

Goals, Policies, and Development Standards	HMR Master Plan Consistency Analysis
oriented development projects where housing is provided in conjunction with compatible nonresidential uses.	Alternatives 3, 4, 5, and 6 focus new residential development adjacent to transit opportunities and commercial/retail land uses. The No Project (Alternative 2) includes no changes to existing development.
A-5. The County shall encourage residential infill development through flexible development standards, and other incentives in areas of the county where adequate public facilities and services are already in place.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 focus new residential development in an infill location served by existing public services and utility infrastructure.
A-7. The County shall encourage the development of multi-family dwellings in locations where adequate infrastructure and public services are available.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 focus new residential development in an infill location served by existing public services and utility infrastructure. The No Project (Alternative 2) and Alternative 4 include no multi-family dwellings.
B. AFFORDABLE HOUSING	
Goal B. To encourage construction and maintenance of safe, decent and sound affordable housing in the county.	
B-1. The County shall give highest priority for permit processing to development projects that include an affordable residential component.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 include an employee/workforce housing component. The No Project (Alternative 2) includes no changes to existing development. **Consistent with Mitigation.** Alternative 4 provides only single-family housing affordable to above-moderate income households. **Mitigation Measure PEH-1** requires the development of a Homewood Employee/Workforce Housing Plan to achieve consistency with Policy B-1.
B-4. The County shall require housing for low-income households that is to be constructed on-site in a new residential project to be dispersed throughout the project to the extent practical given the size of the project and other site constraints.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 provide an employee/workforce housing component that will be situated on-site or nearby and accessible by transit. The No Project (Alternative 2) and Alternative 4 include no employee/workforce housing.
B-6. The County shall require low-income-housing units in density bonus, or other projects that may be required to provide affordable housing, to be developed in a timely manner with the market-rate units in the project to avoid delaying the construction of the affordable units to the end of the project.	**Consistent.** The No Project (Alternative 2) includes no changes to existing development, and no employee/workforce housing is required. **Consistent with Mitigation.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 do not provide a sufficiently detailed employee/workforce housing plan to demonstrate compliance with Policy B-6. **Mitigation Measure PEH-1** requires the development of a Homewood Employee/Workforce Housing Plan to achieve consistency with Policy B-6.
B-7. The County shall facilitate expanded housing opportunities that are affordable to the workforce of Placer County.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 include employee/workforce housing. The No Project (Alternative 2) includes no changes to existing development, and no employee/workforce housing is required.

Goals, Policies, and Development Standards	HMR Master Plan Consistency Analysis
	Consistent with Mitigation. Alternative 4 does not provide employee/workforce housing. **Mitigation Measure PEH-1** requires the development of a Homewood Employee/Workforce Housing Plan to achieve consistency with Policy B-7.
B-10. On a case-by-case basis, when evaluating possible reductions in development standards to encourage affordable housing, the County shall also consider public health, safety, and other important standards such as adequate open space in developments.	**Consistent.** The No Project (Alternative 2) includes no changes to existing development, and no employee/workforce housing is required. **Consistent with Mitigation.** Alternative 4 does not provide employee/workforce housing. The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 do not provide a sufficiently detailed employee/workforce housing plan to demonstrate compliance with Policy B-10. **Mitigation Measure PEH-1** requires the development of a Homewood Employee/Workforce Housing Plan to achieve consistency with Policy B-10.
B-12. The County shall continue to give highest priority in the development review process to senior housing, very low-, low- and moderate-income housing projects.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 include employee/workforce housing. The No Project (Alternative 2) includes no changes to existing development, and no employee/workforce housing is required. **Consistent with Mitigation.** Alternative 4 does not provide employee/workforce housing. **Mitigation Measure PEH-1** requires the development of a Homewood Employee/Workforce Housing Plan to achieve consistency with Policy B-12.
B-13. The County shall continue to implement the following incentive programs for the construction of affordable housing: • Allow second residential units with single-family residences; • Allow mobile homes and manufactured housing in all residential zoning districts; • Allow "hardship mobile homes" as second residential units in residential and/or agricultural zones; and • Allow relief from parking standards and other specified development standards on developments for seniors and for low and very low-income residents.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 include employee/workforce housing. The No Project (Alternative 2) includes no changes to existing development, and no employee/workforce housing is required. **Consistent with Mitigation.** Alternative 4 does not provide employee/workforce housing. **Mitigation Measure PEH-1** requires the development of a Homewood Employee/Workforce Housing Plan to achieve consistency with Policy B-13.
B-15. The County shall require that any privately-initiated proposal to amend a General Plan or Community Plan land use designation of Agricultural/Timberland, Resort and Recreation, Open Space, General Commercial, Tourist/Resort Commercial, or Business Park/Industrial to a land use designation of Residential or Specific Plan shall include an affordable housing component subject to approval by County and/or comply with any adopted County	**Consistent.** The No Project (Alternative 2) includes no changes to existing development, and no employee/workforce housing is required. **Consistent with Mitigation.** The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 do not provide sufficient detail in their employee/workforce housing component to demonstrate compliance. Alternative 4 provides no employee/workforce housing.

Goals, Policies, and Development Standards	HMR Master Plan Consistency Analysis
affordable housing program.	**Mitigation Measure PEH-1** requires the development of a Homewood Employee/Workforce Housing Plan to achieve consistency with Policy B-15.
C. HOUSING IN THE TAHOE BASIN	
Goal C. To promote housing opportunities that meet the specific needs of residents and workers in the Tahoe Basin portion of Placer County.	
C-2. The County shall require new development in the Sierra Nevada and Lake Tahoe areas to provide for employee housing equal to at least 50 percent of the housing demand generated by the project. If the project is an expansion of an existing use, the requirement shall only apply to that portion of the project that is expanded (e.g., the physical footprint of the project or an intensification of the use). Employee housing shall be provided for in one of the following ways: • Construction of on-site employee housing; • Construction of off-site employee housing; • Dedication of land for needed units; and/or • Payment of an in-lieu fee.	**Consistent.** The No Project (Alternative 2) includes no changes to existing development, and no employee/workforce housing is required. **Consistent with Mitigation.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 do not include sufficient employee/workforce housing for at least half of new FTEs. **Mitigation Measure PEH-1** requires the development of a Homewood Employee/Workforce Housing Plan to achieve consistency with Policy C-2 by requiring construction of sufficient on-site and off-site employee/workforce housing, dedication of sufficient land for new housing, and/or payment the appropriate in-lieu fee.
H. ENERGY CONSERVATION	
Goal H. To increase the efficiency of energy use in new and existing homes with a concurrent reduction in housing costs for Placer County residents.	
H-1. The County shall require that all new dwelling units meet current State requirements for energy efficiency, and encourage developers to exceed Title 24 requirements. Retrofitting of existing units shall be encouraged.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will be designed to exceed Title 24 standards and meet LEED Certification standards for energy conservation. The No Project (Alternative 2) includes no changes to existing development.
H-2. The County shall promote land use patterns that encourage energy efficiency, to the extent feasible.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will be designed to exceed Title 24 standards and meet LEED Certification standards for energy conservation. The No Project (Alternative 2) includes no changes to existing development.
H-4. The County shall continue to implement provisions of the Subdivision Map Act that require subdivisions to be oriented for solar access, to the extent practical.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will be designed to provide adequate solar access. The No Project (Alternative 2) includes no changes to existing development.
QUANTIFIED HOUSING OBJECTIVES FOR THE 2008-2013 PLANNING PERIOD	
For the 2008-2013 planning period: Extremely Low Income: 150 units. Very low-income: 490 units. Low-income: 430 units. Moderate Income: 365 units. ***Subtotal, Affordable Housing: 1,435 units*** Above moderate income: 128 units. Total Units: 1,563 units. Tenure: 25% rentals, 75% owner-occupied. Type: 75% single-family detached; 25% multi-family and mobile home.	**Consistent.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 provide market rate housing affordable to above moderate-income households. The Proposed Project (Alternative 1) and Alternative 3 contribute 13 employee/workforce housing units on-site, and Alternatives 5 and 6 provide 12 units. Due to the resort setting of the Project area, new housing units are expected to be mostly multi-family vacation units or rentals with the exception of 16 single-family detached homes under Alternative 4, 16 under Alternative 5, and 14 under Alternative 6. Consequently, tenure and type ratios would not be met for the Project area housing.

Goals, Policies, and Development Standards	HMR Master Plan Consistency Analysis
	The expected low ratio of owner-occupied, single-family detached homes is considered appropriate for the unique setting of the Project area.
1998 West Shore Area General Plan	
II. Community Development/Land Use Element	
A. Housing Goals and Policies	
2. Provide opportunities for affordable housing, including affordable senior housing in appropriate areas where public transportation is easily available, close to neighborhood serving retail facilities, and where such development will be compatible with surrounding uses.	**Consistent.** The No Project (Alternative 2) includes no changes to existing development, and no employee/workforce housing is required. **Consistent with Mitigation.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 do not include sufficient employee/workforce housing for at least half of new FTEs. **Mitigation Measure PEH-1** ensures compliance with Policy 2 by requiring construction of sufficient on-site and off-site housing, dedication of sufficient land, and/or payment of an appropriate in-lieu fee.
3. Provide for employee housing in appropriate areas, through the use of the affordable housing pool, conversion of existing tourist accommodation multiple unit structures (consistent with density limitations), as a requirement of project approval for large-scale projects, and through other appropriate means.	**Consistent.** The No Project (Alternative 2) includes no changes to existing development, and no employee/workforce housing is required. **Consistent with Mitigation.** The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 do not include sufficient employee/workforce housing for at least half of new FTEs. **Mitigation Measure PEH-1** ensures compliance with Policy 3 by requiring construction of sufficient on-site and off-site housing, dedication of sufficient land, and/or payment of an appropriate in-lieu fee.

Source: HBA 2010

IMPACT: PEH-2. Will the Project alter the location, distribution, density, or growth rate of the human population planned for the Region?

Analysis: *Less than Significant Impact; Proposed Project (Alternative 1) and All Alternatives*

The Proposed Project (Alternative 1) and Alternatives are not expected to result in substantial new population growth. The existing population in the North Lake Tahoe Basin was 26,913 residents in 2007, and the population of the Placer County portion of the Basin was 14,588 and Homewood was 906 persons. As presented in *Chapter 3 – Project Description*, the Proposed Project (Alternative 1) and Alternative 3 will include up to 165 whole or partial ownership market rate multi-family dwelling units and 16 Townhomes. Assuming 2.6 persons per household (average Placer County household size in 2007), the full time resident population may increase by up to 471 persons under the Proposed Project (Alternative 1) and Alternative 3. There will be no population growth under No Project (Alternative 2). Alternative 4 includes 16 estate home sites to be developed, accommodating a population increase of up to 42 persons. Alternative 5

would build 241 single- and multi-family units developed for a population increase of up to 627 persons. Alternative 6 includes 209 single- and multi-family units with a potential population increase of up to 543 persons.

These population estimates would be worst-case scenarios because recent real estate trends show that 50 – 70% of these units would typically be sold to second homeowners not permanently residing in the units. Consequently, permanent populations in these units are expected to be no more than 50% of the estimate above, or 236 for the Proposed Project (Alternative 1) and Alternative 3, 21 for Alternative 4, 314 for Alternative 5, and 272 for Alternative 6.

The Proposed Project (Alternative 1) and Alternative 3 will include 13 employee/workforce housing units with 26 bedrooms with an additional on-site population increase of up to 52 persons. Alternatives 5 and 6 include 12 employee/workforce housing units with 24 bedrooms for an additional on-site population increase of up to 48 persons.

Additional employee/workforce housing units are required to be provided off-site as required by *Placer County General Plan Housing Element* Policy C-2 for another 39 employees under the Proposed Project (Alternative 1) and Alternative 3, bringing total employment-related population growth to 91 workers. Alternative 4 requires employee/workforce housing for 18 employees. Under Alternatives 5 and 6, additional employee/workforce housing would be provided for 41 and 35 employees, bringing the total employment related population growth to 89 and 78 persons for Alternatives 5 and 6, respectively.

Employment related population growth is expected to be zero persons under No Project (Alternative 2) and up to 182 new workers under the Proposed Project (Alternative 1) or Alternative 3. A majority of the employment growth is assumed to currently reside in the region and will commute to the resort from nearby areas such as Homewood, Tahoma, and Tahoe City. Although these employees may add to commuter traffic in the area, employment increases for the Project area will not substantially alter the population growth rate or density in the Placer County portion of the Lake Tahoe Basin with an existing population of 14,588 persons.

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will result in temporary population increases from tourists vacationing at the resort, renting housing units, or visiting the commercial facilities. This growth in visitation will not consist of permanent population and will fluctuate according to peak tourist seasons at Lake Tahoe. This population is not counted in official population census totals or planned growth rates for the area, and is not considered to be a population impact.

The increase in permanent residents, including employees in employee/workforce housing on-site and off-site, would be 327 persons under the Proposed Project (Alternative 1) and Alternative 3, 39 persons under Alternative 4, 403 persons under Alternative 5, and 355 persons under Alternative 6. This represents a range of population increase in the Placer County portion of the Basin from 2.7% for Alternative 5 to 0.3% for Alternative 4. The expected population increase resulting from the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 is expected to be less than significant.

Mitigation: No mitigation is required.

7.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact: **PEH-C1: Will the Project have significant cumulative impacts to population, employment, and housing?**

Analysis: *Less than Significant Impact; Proposed Project (Alternative 1) and All Alternatives*

Alternative 2 (No Project) will not substantially contribute to changes in the distribution or composition of population, employment, or housing in the Project area or vicinity and will not result in considerable population or housing changes. The growth in population, employment, and housing in the region is limited by existing land use designations and the availability of lots suitable for new construction or redevelopment.

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will result in population increases, including lower-income population demographic associated with the leisure, retail, and hospitality employment growth. There are multiple projects proposed for the North and West Shore Tahoe region that will expand recreation, commercial, and hospitality services. There are other projects proposed in Tahoe Vista and Kings Beach that are specifically targeted at increasing the amount of employee/workforce housing in the Lake Tahoe Region. There are other employee/workforce housing projects proposed in Kings Beach (84 units) and Tahoe Vista (162 units) that may provide an opportunity for housing new HMR employees. There is existing unmet demand, however, for employee/workforce housing in the region. The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 are required to provide housing for only half of the new project-related employee/workforce housing demand under *Placer County General Plan Housing Element* policy C-2. Consequently, the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 contribute to the existing cumulative impact of a lack of employee/workforce housing in the region.

The Proposed Project (Alternative 1) and Alternatives 3 will increase unmet demand for approximately 23 employee/workforce housing units for 91 new FTEs, Alternative 4 will increase unmet demand for five units for 18 FTEs, Alternative 5 will increase unmet demand for 23 units for 89 FTEs, and Alternative 6 will increase unmet demand for 21 units for 83 FTEs. Based on a supply of 11,481 housing units in the Placer County portion of the Lake Tahoe Basin, the potential contributions of the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 to unmet demand for employee/workforce housing are not expected to be cumulatively considerable. In addition, based on existing employment and residential patterns in the area, a substantial portion of new employees at HMR are expected to be existing residents in the Placer County portion of the Lake Tahoe Basin. Therefore, this potential cumulative impact related to population, employment and housing is considered less than significant.

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will contribute to a cumulative employment benefit to the region by providing tourist recreational services and vacation homes that draw visitors to the area. In addition to the refurbished and improved winter sports facilities, the added services (hotel, restaurants, retail, hiking and biking trails) and the conversion of Tourist Accommodation Units (TAUs) to residential units will provide new tourist opportunities in conjunction with other tourist features offered at other redeveloped projects in the Lake Tahoe Basin. Therefore, this potential cumulative impact is considered less than significant.

Mitigation: No mitigation is required.

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8.0 BIOLOGICAL RESOURCES

This section describes special-status species, vegetation communities, and fish and wildlife habitats in the Project area and addresses potential impacts to these resources. Impacts evaluated include the potential for loss of special-status (endangered, threatened, rare, or protected) species associated with habitat in the Project area, potential loss of sensitive vegetation communities and wildlife habitats, blockage of major migration corridors, potential detrimental effects to nesting raptors and to wildlife resources. The section also identifies mitigation measures that, upon implementation, will reduce the magnitude of significant impacts.

8.1 ENVIRONMENTAL SETTING

This section describes the riparian and stream environment zones, plant communities, their related wildlife assemblages, and special-status species that may occur in the Project area, and addresses potential Project-specific and cumulative impacts to these resources.

8.1.1 Regional Setting

Homewood Mountain Resort (HMR) is located in Homewood, California, approximately 5 miles to the south of Tahoe City, California along the west shore of Lake Tahoe. The Project area is located in portions of sections 1, 2, 11, and 12 of Township 14 North, Range 16 East. Elevation range of the Project area ranges between 6,240 to 7,900 feet above mean sea level (msl). HMR is surrounded by private residential properties to the east, and by U.S. Department of Agriculture Forest Service (USFS) lands on the north, west and south.

8.1.2 Local Setting

8.1.2.1 Site Location and Description

HMR is located on the east slope of the Sierra Nevada on the west shore of Lake Tahoe. The Project area is a composite of forested slopes, existing ski trails, and developed areas that include ski lodges, maintenance structures and parking areas. HMR encompasses 1,200 acres and currently includes a portion of Lake Louise and Quail Lake. The Quail Lake parcel was recently sold to the USFS but is used as a part of the ski-able terrain associated with Homewood Mountain Resort (December 2009).

8.1.2.2 Physical Features

HMR is composed of a long forested ridgeline below Homewood Peak that runs down slope to the northeast and is bordered by Madden Creek to the north and the northeastern slope of Knee Ridge to the south. Homewood Creek transects the southern portion of the Project area. The Project area is dominated by forested landscapes composed of pine and fir species described below. Interspersed with the forested areas and represented adjacent to the stream courses are riparian vegetation associations and wetland areas along the lake shores. As the Project area has been utilized as a ski resort since the 1960's, ski trails were cut through the forested area to create a mosaic of cleared areas, forested patches and cut lift lines to allow for ski lift access. The clearing and maintenance of ski trails in the otherwise forested environment have resulted in a

biological environment with existing disturbance and human activities. Figure 8-1 identifies the habitats within the Project area.

8.1.3 Biological Communities

The majority of the Project area is forested with white fir (*Abies concolor*) as the dominant species in lower elevations. At higher elevations, the north facing slopes are dominated by red fir (*Abies magnifica*), lodgepole (*Pinus contorta*) and western white pine (*Pinus monticola*). Vegetation communities in the Project area are primarily forested and include white fir, red fir, sierran mixed conifer and lodgepole pine forest (nomenclature follows Mayer and Laudenslayer 1988). In addition to these forest associations, the Project area contains relatively small, dispersed patches of montane chaparral, montane riparian, and wet meadow vegetation. Other overstory species, including incense cedar (*Calocedrus decurrens*), occur as an occasional component in the white fir forest association.

The ski runs are either covered with native shrubs such as greenleaf manzanita (*Arctostaphylos patula*) and huckleberry oak (*Quercus vaccinifolia*) or have been seeded with a mixture of wheatgrasses (*Agropyron* spp.). There are several riparian areas that are dominated by thin leaf alder (*Alnus incana* ssp. *tenuifolia*) and willow species (*Salix scouleriana*, *S. lucida* ssp. *lasiandra*, and *Salix lasiolepis*).

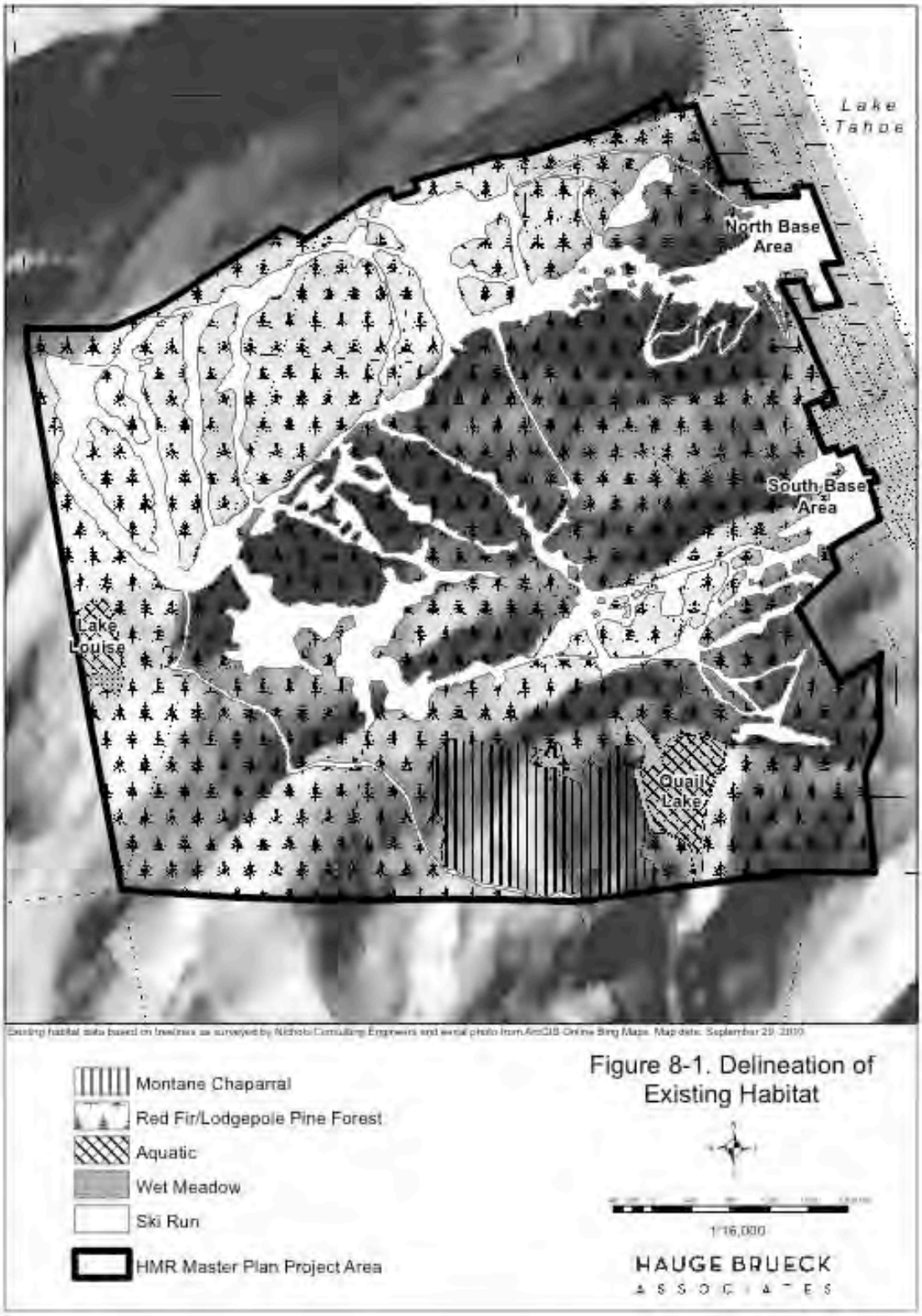
The base areas near the two lodges are disturbed ground with some landscaping. Non-native species are mostly associated with the disturbed base areas and roadways. Noxious weeds were observed in the Project area, including Klamath weed (*Hypericum perforatum*), bull thistle (*Cirsium vulgare*), cheat grass (*Bromus tectorum*), woolly mullein (*Verbascum thapsus*), and witchgrass (*Panicum capillare*). Eurasian water milfoil (*Myriophyllum spicatum*) was also identified in Quail Lake. These species are listed as weeds with the USFS LTBMU and have been identified during site surveys in August of 2007 in areas adjacent to the North Base and South Base area lodges and in Quail Lake (Botanical Field Reconnaissance Report, 2007).

Red fir forest and lodgepole pine forest have limited distribution in the Project area. Red fir forest occurs at higher elevations and is dominated by red fir or a mixture of red fir and western white pine. Lodgepole pine forest occurs generally in locations with seasonally wet soils such as meadow margins. Lodgepole pine may also occur as a component of the other forest types in the Project area.

Timber size class and density (percentage crown cover) have been mapped by the LTBMU for forested lands in the Project area. Timber size classes range from 2 (6 to 12 feet crown diameter) to 4 (25 to 40 feet crown diameter), with most forest stands having a size class of 3 (13 to 24 feet crown diameter) or 4. Timber density ranges from less than 20% crown cover to over 70%, with most stands having at least 20%.

Madden Creek, Homewood Creek, and Quail Creek flow through the Project area. Other SEZs in the Project area include one perennial seep (a moist or wet location where groundwater reaches the surface) and one seasonal seep that support minimal riparian vegetation. SEZ has been delineated within the existing gravel parking lot located behind the Maritime Museum located at the southern end of the North Base area. One unnamed ephemeral drainage is located between the North Base area and South Base area. This unnamed ephemeral drainage does not support riparian vegetation but contains seasonal flow that drains to low-lying areas with near surface groundwater. Vegetation communities associated with SEZs in the Project area include montane riparian and wet meadow. Characteristic species in the montane riparian association include mountain alder (*Alnus tenuifolia*), willows (*Salix* spp.), and mountain maple (*Acer glabrum*). Wet meadows consist of a layer of herbaceous plants that occur where water is at or near the surface most of the growing season.

Figure 8-1. Delineation of Existing Habitats



A small wet meadow area is located adjacent to the margins of Lake Louise and Quail Lakes the two open water communities located within the operational boundary of Homewood Mountain Resort.

The Project area contains small patches of montane chaparral association. Characteristic species include mountain whitethorn (*Ceanothus cordulatus*), chinquapin (*Castanopsis sempervirens*), and huckleberry oak. Characteristic understory species in the Project area include greenleaf manzanita, beardtongue (*Penstemon* spp.), currant (*Ribes* spp.), mule ears (*Wyethia mollis*), serviceberry (*Amelanchier alnifolia*), California lilac (*Ceanothus velutinus*), young white fir, willow, quaking aspen (*Populus tremuloides*), corn lily (*Veratrum californicum*), and bracken fern (*Pteridium aquilinum*).

8.1.4 Wildlife

The Lake Tahoe Region provides habitat for over 360 species of resident and migratory vertebrate wildlife species and over 860 invertebrate species. Each of these vertebrate species of mammals (66), birds (262), reptiles (8), amphibians (6) and fish (27) occur in the Lake Tahoe basin (Murphy and Knopp 2000). The quality and size of suitable habitat generally determine the abundance of any one species or animal population.

The habitats in the Project area provides habitat for numerous small mammals, including golden-mantled ground squirrel (*Spermophilus lateralis*), Belding's ground squirrel (*Spermophilus beldingi*), Douglas' squirrel (*Tamiasciurus douglasii*), several species of chipmunk (*Tamias* spp.), and a variety of smaller rodents. Several bat species may roost and/or forage in the Project vicinity and include big brown bat (*Eptesicus fuscus*), California myotis (*Myotis californicus*), long-eared myotis (*Myotis evotis*), little brown myotis (*Myotis lucifugus*) and fringed myotis (*Myotis thysanodes*)

Larger mammals known to occur in the Project vicinity include coyote (*Canis latrans*), bobcat (*Lynx rufus*), mountain lion (*Felis concolor*), American marten (*Martes americana*), black bear (*Ursus americanus*), mountain beaver (*Aplodontia rufa*), and mule deer (*Odocoileus hemionus*).

A wide variety of resident and migratory bird species nest and forage on or in the Project vicinity. Clark's nutcrackers (*Nucifraga columbiana*) and Steller's jays (*Cyanocitta stelleri*) can be found year-round throughout the Project area and surrounding forested lands. Mountain chickadee (*Parus gambeli*), evening grosbeak (*Coccothraustes vespertinus*), and white-breasted nuthatch (*Sitta carolinensis*) may also be found year-round, while other species such as western tanager (*Piranga ludoviciana*) and western wood pewee (*Contopus sordidulus*) are summer residents only. A variety of woodpeckers, including northern flicker (*Colaptes auratus*) and hairy woodpecker (*Picoides villosus*), are commonly observed in association with forested habitats in the Project area. Typical raptors include red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), osprey (*Pandion haliaetus*), northern goshawk (*Accipiter gentilis*), bald eagle (*Haliaeetus leucocephalus*), great horned owl (*Bubo virginianus*), and turkey vulture (*Cathartes aura*).

Reptiles are represented in the Project area by species such as the western fence lizard (*Sceloporus occidentalis*), northern alligator lizard (*Gerrhonotus coeruleus*), rubber boa (*Charina bottae*), and western terrestrial garter snake (*Thamnophis elegans*). Amphibians include western toad (*Bufo boreas*) and Pacific chorus frog (*Pseudacris regilla*).

Fish species occurring in and the Lotic habitats within the Project vicinity include rainbow trout (*Oncorhynchus mykiss*), brook trout (*Salvelinus fontinalis*), and German brown trout (*Salmo trutta*) (USFS 2008).

8.1.5 Special-Status Species

Special-status plant and wildlife species are species that have been afforded special recognition and protection by federal, state, or local resource conservation agencies and organizations. These species are generally considered rare, threatened, or endangered due to declining or limited populations. Special-status species include:

- plants and animals listed or proposed for listing under the Endangered Species Act;
- candidates for possible future listing as threatened or endangered under the ESA, or as species of concern (NMFS).
- Listed or candidates for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5).
- fully protected species under the California Fish and Game Code Section 3511(birds), Section 4700 (mammals), Section 5515 (fish), and Section 5050 (reptiles and amphibians).
- plants and animals determined to meet the definitions of rare or endangered under CEQA (State CEQA Guidelines, Section 15380).
- Plants and animals listed as a sensitive species by USDA Forest Service, Region 5.
- plants and animals designated as special interest species by the Tahoe Regional Planning Agency (TRPA); and
- plants and animals with no formal listing status that are considered by the scientific community to be rare or in serious decline.

The following sources provided information pertaining to the occurrence or potential occurrence of special-status species in the study area:

California Natural Diversity Database (CNDDB/Rarefind August 2009). A copy of the CNDDB report for the Homewood, Rockbound Valley, Tahoe City, Meeks Bay and Wentworth Springs 7½ minute USGS topographic quadrangles are included in Appendix G.

U.S. Fish and Wildlife Service (USFWS) list of federally listed and proposed threatened and endangered species that may occur in the Project vicinity (letter dated October 27, 2009). A copy of the letter is included in Appendix H.

Tahoe Regional Planning Agency Special Interest Species. Source: Tahoe Regional Planning Agency. 1987. Regional Plan for the Lake Tahoe Basin: Code of Ordinances, Rules of Procedure. Chapters 78-79.

California Native Plant Society Inventory Database Search. The CNPS Database was searched on May 11, 2010. A copy of the database search is included in Appendix H.

California Department of Fish and Game Special Animals List (July 2009)

Tables 8-1 and 8-2 present a list of special-status plant and wildlife species, respectively, with potential to occur in the Project area or vicinity. These tables provide the current state, federal, or other agency status; a description of the habitat utilized by each of these species; and an evaluation of the potential for each species to occur in the Project area. A discussion of those species that are identified as having a moderate or high likelihood to occur in the Project area is provided in the section following Table 8-2. Those species that are listed as having no likelihood of occurrence in the Project area are included in the table as they are included in the sources as listed above.

Table 8-1

Special-Status Plants that May Occur In the Project area or Vicinity

Species	Status				Habitat Description	Bloom Period	Likelihood of Occurrence in Project area
	Federal	State	CNPS	TRPA			
Galena Creek (=Carson Range) rock cress *Arabis rigidissima* var. *demota*	FSS	--	1B	SI	Broadleaved upland forest, upper montane coniferous forest on rocky substrates. Known in CA from only two occurrences near Martis Peak, and in NV from 11 occurrences in the Carson Range. Elevation range 2,255-2,560m.	August	None; suitable habitat not present in Project area.
Upswept moonwort *Botyrchium ascendens*	FSC	--	2	--	Grassy fields and coniferous woods near springs and creeks of montane coniferous forest. Elevation range 1,500-2,060m.	Not applicable	Moderate; although not previously observed on site, potentially suitable habitat is present on site.
Shore sedge *Carex limosa*	--	--	2	--	Meadows, marshes, and swamps of upper montane coniferous forest. Possibly more widespread in the Sierra Nevada. Elevation range 1,200-2,700m.	June-August	Low; species not previously observed within the Project area.
Alpine dusty maidens *Chaenactis douglasii* var. *alpina*	--	--	2	--	Alpine boulder and rock fields of granite. Elevation range 3,000-4,000m.	July-September	None; suitable habitat not present in Project area.
Subalpine cryptantha *Cryptantha crymophila*	--	--	1B	--	Volcanic rocky sites in subalpine coniferous forest. Elevation range 2,600-3,200m.	July-August	Moderate; although not previously observed on site, potentially suitable habitat is present on site.
Tahoe draba *Draba asterophora* var. *asterophora*	--	--	1B	SI	Alpine boulder and rock fields in crevices, and open talus slopes of	July-August	None; suitable habitat not present in Project

Table 8-1

Special-Status Plants that May Occur In the Project area or Vicinity

Species	Status				Habitat Description	Bloom Period	Likelihood of Occurrence in Project area
	Federal	State	CNPS	TRPA			
					decomposed granite in subalpine coniferous forest. Elevation range 2,500-3,505m.		area.
Cup Lake draba *Draba asterophora* var. *macrocarpa*	FSC	--	1B	SI	Alpine boulder and rock fields in shade of granitic rocks in subalpine coniferous forest. Elevation range 2,500-2,815m.	July-August	None; suitable habitat not present in Project area.
Subalpine fireweed *Epilobium howellii*	--	--	1B	--	Meadows and seeps, and subalpine coniferous forests in mesic environments. Known from only four occurrences in Fresno, Mono, and Sierra counties. Elevation range 2,000-2,700m.	July-August	Moderate; although not previously observed on site, potentially suitable habitat is present on site.
Oregon fireweed *Epilobium oreganum*	FSC	--	1B	--	Bogs and fens of montane coniferous forest. Elevation range 500-2,240m.	June-September	Moderate; although not previously observed on site, potentially suitable habitat is present on site.
Marsh willowherb *Epilobium palustre*	--	--	2	--	Bogs, fens and meadows of montane coniferous forest. Elevation range 2,200m.	July-August	Moderate; potentially suitable habitat is present on site. No previous records of occurrence.
Donner Pass buckwheat *Eriogonum umbellatum* var. *torreyanum*	FSC	--	1B	--	Meadows and seeps, and upper montane coniferous forest on volcanic, rocky substrate. Elevation range 1,855-2,620m.	July-September	Moderate; potentially suitable habitat is present on site.

Table 8-1

Special-Status Plants that May Occur In the Project area or Vicinity

Species	Status				Habitat Description	Bloom Period	Likelihood of Occurrence in Project area
	Federal	State	CNPS	TRPA			
Long-petaled lewisia *Lewisia longipetala*	FSC	--	1B	SI	Alpine boulder and rock fields in subalpine coniferous forest. Elevation range 2,500-2,925m.	June-August	None; suitable habitat not present in Project area.
Mees's moss *Meesia triquetra*	--	--	2	--	Bogs and fens of montane coniferous forest. Elevation range 1,300-2,500m.	Not applicable	Moderate; although not previously observed on site, potentially suitable habitat is present on site.
Tahoe yellow cress *Rorippa subumbellata*	FC	SE	1B	SI	Lower montane coniferous forest, meadows and seeps / decomposed granitic beaches. Known in CA from less than 10 extant occurrence around Lake Tahoe. Elevation range 1,895-1,900m.	May-September	None; suitable habitat is not present in the Project area.
Water bulrush *Scirpus subterminalis*	--	--	2	--	Bogs, fens, marshes, swamps and lake margins of montane coniferous forest. Elevation range 750-2,250m.	July-August	Moderate; potentially suitable habitat is present on site. No previous records of occurrence.

Source: CDFG 2009, CNPS 2009, USFWS 2009, TRPA Code of Ordinances

Table Notes

Federal status:

FE Listed as endangered under the Federal Endangered Species Act
FT Listed as threatened under the Federal Endangered Species Act
PE Proposed for listing as endangered under the Federal Endangered Species Act
PT Proposed for listing as threatened under the Federal Endangered Species Act
FC Candidate species for listing under the Federal Endangered Species Act
D Delisted in accordance with the Federal Endangered Species Act

FSS USDA, Forest Service sensitive species

State Status:

SE Listed as endangered under the California Endangered Species Act
ST Listed as threatened under the California Endangered Species Act
CSC Species of concern as identified by the California Department of Fish and Game
CFP Listed as fully protected by the California Fish and Game Code
Rare Species identified as rare by the California Department of Fish and Game

California Native Plant Society Listing Categories (CNPS 2001):

1B Plant species that are rare, threatened, or endangered in California and elsewhere
2 Plant species that are rare, threatened, or endangered in California, but are more common elsewhere
3 Plant species that lack the necessary information to assign them to a listing status
4 Plant species that have a limited distribution or that are infrequent throughout a broader area in California

TRPA Status:

SI Sensitive Plant Species

Table 8-2

Special-Status Wildlife Species that May Occur In the Project area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence In Project area
	Federal	State	TRPA		
Fish					
Lahontan cutthroat trout *Oncorhynchus (=Salmo) clarki henshawi*	FT	--	--	Historically occurred in all accessible cold waters of the Lahonton Basin in a wide variety of water temps and conditions. Currently inhabits Fallen Leaf Lakek as it has been reintroduced in this body of water. Cannot tolerate presence of other salmonids. Gravel riffles in streams required for breeding.	None; no suitable habitat present on site. Historic Lake Tahoe population extirpated from Madden, Homewood, and Quail Creeks.
Lahontan Lake tui chub *Gila bicolor pectinifer*	FSS	CSC	--	A schooling species that inhabits large, deep lakes. Known from Lake Tahoe; Pyramid Lake, NV; and Walker Lake, NV. Populations of chubs that occur in Stampede, Boca, and Prosser reservoirs may also represent this subspecies (Moyle et al. 1995).	None; no suitable habitat present on site.

Table 8-2

Special-Status Wildlife Species that May Occur In the Project area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence In Project area
	Federal	State	TRPA		
Amphibians					
Mount Lyell salamander *Hydromantes platycephalus*	--	CSC	--	Inhabits rock fields in mixed conifer, red fir, lodgepole pine, and subalpine communities, utilizing rock fissures, seeps, shade, and low-growing plants. Elevation range extends from 1,200 to 3,500m.	Low; suitable habitat present on site but the species is not known from the Lake Tahoe Region.
Sierra Nevada yellow-legged frog *Rana sierra*	FC FSS	CSC	--	Inhabits ponds, lakes, and streams associated with montane riparian, lodgepole pine, subalpine conifer, and wet meadow communities.	Moderate; montane riparian and wet meadow communities in the study area may provide suitable habitat.
Northern leopard frog *Rana pipiens*	FSS	CSC	--	Aquatic habitat in close proximity to grass- or forb-dominated community with a moist substrate. Aquatic habitat provides oviposition and overwintering sites. Grassy shelves used for foraging during the active season. In California, the known elevation range is 1,216 to 1,503m.	Low; suitable habitat present on site but the species is not known from the Lake Tahoe Region.
Yosemite toad *Bufo canorus*	--	CSC CFP	--	High mountain meadows and forest borders of the whitebark and lodgepole pine zones emerging soon after the snow melts.	None; suitable habitat is not present on site. Occurrence in the Lake Tahoe Region has not been confirmed.
Birds					
Waterfowl			SI	Avian species associated with marsh/wetland habitats.	High; Quail Lake and Lake Louise provide suitable habitat for these species.

Table 8-2

Special-Status Wildlife Species that May Occur In the Project area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence In Project area
	Federal	State	TRPA		
					Incidental observations of Mallard and common mergansers have been noted. (Personal Observation 2009)
Osprey *Pandion haliaetus*	--	CSC	SI	Uses large snags and open trees, primarily in ponderosa pine through mixed conifer community types, near large bodies of water.	High; Quail Lake and Lake Louise provide suitable foraging and nesting habitat for these species. Species observed foraging at Quail Lake in 2007. Active nest located approximately 2 miles east of Project area.
Bald eagle *Haliaeetus leucocephalus*	D	SE CFP	SI	Breeds and roosts in remote coniferous forests in close proximity to a river, stream, lake, reservoir, marsh, or other wetland area.	High; Quail Lake and Lake Louise provide suitable foraging habitat for these species. No observations of Bald Eagle have been observed in Quail Lake.
Golden eagle *Aquila chrysaetos*	--	CSC CFP	SI	Rolling foothills, mountain areas, grasslands, savannas, deserts, and early successional stages of forests and shrub communities. Cliffs and large trees are utilized for nesting.	None; no suitable nesting habitat present on site. Low quality foraging habitat may be present.

Table 8-2

Special-Status Wildlife Species that May Occur In the Project area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence In Project area
	Federal	State	TRPA		
Cooper's Hawk *Accipiter cooperii*	--	CSC	--	Uses dense stands of conifer, liver oak, riparian deciduous or other forest communities. Appear to be expanding into urban areas throughout the Central Valley and foothills.	High; suitable nesting and foraging habitat is present in the Project area. Incidental observations have occurred within the Project area. (Wildlife Resource Consultants 2007)
Northern goshawk *Accipiter gentilis*	FSC FSS	CSC	SI	Breeds and forages in mature stands of coniferous, mixed, and deciduous forest. Nest sites often associated with north-facing aspects.	High; suitable habitat is present in the Project area. Active breeding population located approximately 1.5 mi south of Project area.
Sharp-shinned hawk *Accipiter striatus*	--	CSC	--	Breeds in riparian deciduous, mixed conifer, black oak, ponderosa pine, and Jeffrey pine communities. During winter may be found in a wide variety of communities.	High; suitable habitat is present in the Project area. This species was not observed during wildlife surveys.
American peregrine falcon *Falco peregrinus anatum*	D	SE CFP	SI	Inhabits open country, breeding near rivers, wetlands, lakes, or other aquatic features; nests on cliffs, banks, dunes, mounds, and human-made structures.	Low; although no suitable nesting habitat is present on site, foraging habitat is present and species is known to occur in the project vicinity.

Table 8-2

Special-Status Wildlife Species that May Occur In the Project area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence In Project area
	Federal	State	TRPA		
Black tern *Chlidonias niger*	FSC	CSC	--	Nests on lakeshores and in marshes, uncommon to rare on the west coast of North America.	Low; the species may occur as a seasonal migrant. Foraging habitat and low quality nesting habitat is present.
Great gray owl *Strix nebulosa*	FSS	SE	--	A resident of mixed conifer and red fir forest communities, in or on edge of meadows. High canopy closure and large diameter snags are required.	Low; occurrence in the Lake Tahoe basin has not yet been confirmed (Murphy and Knopp 2000)
California spotted owl *Strix occidentalis occidentalis*	FSC FSS	CSC	--	Typically breeds in stands of mixed coniferous forest containing a mixture of tree sizes with a number of very large, old trees, usually at least two canopy layers, and a total canopy cover in excess of 70% (may be as low as 30-40% at high elevations). Large snags and an abundance of downed woody debris are also usually present.	High; known to occur in project vicinity; suitable foraging habitat is present in the Project area. Active breeding area located approximately 2 mi south of Project area. No California spotted owls were detected within the Project area during surveys.
Black swift *Cypseloides niger*	FSC	CSC	--	In western British Columbia, Klamath Region, northern Sierra Nevada, west-central Rocky Mountains and Sierra Madre Occidental, this species nests in colonies on cliffs and beneath waterfalls.	None; suitable nesting habitat is not present in the Project area.

Table 8-2

Special-Status Wildlife Species that May Occur In the Project area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence In Project area
	Federal	State	TRPA		
Rufous hummingbird *Selasphorus rufus*	FSC	--	--	A common migrant and uncommon summer resident of California; many post-breeders migrate south through the Cascade Range and Sierra Nevada. Found in a variety of environments that provide nectar-producing flowers; including montane riparian, high mountain meadows, valley foothill hardwood-conifer, and various chaparral communities.	Moderate; suitable habitat is present in the Project area.
Lewis' woodpecker *Melanerpes lewis*	FSC	--	--	An inhabitant of open, deciduous and conifer communities with bushy understory. Snags or dead portion of a live tree are commonly used for nesting.	Moderate; suitable habitat is present in the Project area. No Lewis' woodpeckers observed during wildlife surveys.
Little willow flycatcher *Empidonax traillii brewsteri*	FSC	--	--	Typically breeds in willow-dominated riparian vegetation along perennial streams in moist meadows or spring-fed or boggy areas.	Moderate; suitable habitat is present in the Project area. No willow flycatcher observed within the Project area. WIFL observed north of the Project area, in Blackwood Creek drainage.
Hermit warbler *Dendroica occidentalis*	FSC	--	--	A summer visitor and migrant, breeds in mature ponderosa pine, montane hardwood-conifer, mixed conifer, redwood, Douglas fir, red fir, and Jeffrey pine communities.	Low; forested areas in the Project area may provide suitable habitat.
California yellow warbler *Dendroica petechia brewsteri*	--	CSC	--	Breeds in willow dominated riparian woodlands that may also include cottonwoods, alders, and	Moderate; montane riparian communities in

Table 8-2

Special-Status Wildlife Species that May Occur In the Project area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence In Project area
	Federal	State	TRPA		
				sycamores, montane chaparral and montane shrubbery in open coniferous forests.	the Project area may provide suitable habitat.
Brewer's sparrow *Spizella breweri*	FSC	--	--	Breeds in extensive treeless shrub communities with moderate canopy coverage, especially sagebrush.	None; Project area does not contain suitable breeding habitat.
Mammals					
Townsend's big-eared bat *Corynorhinus townsendii*	FSS	CSC	--	Found in a wide variety of communities, including coastal conifer and broad-leaf forests, oak and conifer woodlands, grasslands, and high-elevation forests and meadows. Most commonly associated with mesic environments. Roosts in caves, mines, tunnels, buildings, or other man-made structures. This species is extremely sensitive to disturbance at its roosting sites.	Moderate; breeding and roosting habitat is present adjacent to the Project area. Two roosts are in close proximity to the Project area to the south of Quail Lake in the old Noonchester Mine. Occurrence in the Lake Tahoe basin has not yet been confirmed (Murphy and Knopp 2000).
Spotted bat *Euderma maculatum*	FSC	CSC	--	Occurs in a variety of environments, ranging from deserts and grasslands to mixed conifer forests; roosts in rock crevices along cliffs or caves.	Low; Project area may provide foraging habitat; however, breeding and roosting habitat is not present on site. Occurrence in the Lake Tahoe basin has not yet been confirmed

Table 8-2

Special-Status Wildlife Species that May Occur In the Project area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence In Project area
	Federal	State	TRPA		
					(Murphy and Knopp 2000).
Small-footed myotis bat *Myotis ciliolabrum*	--	CSC	--	Inhabits relatively arid wooded and brushy uplands in close proximity to water, from 0 to 8,900 feet. Maternity colonies may occur in buildings, caves and mines.	Moderate; breeding and roosting habitat is present adjacent to the Project area. Two roosts are in close proximity to the Project area to the south of Quail Lake in the old Noonchester Mine. Occurrence in the Lake Tahoe basin has not yet been confirmed (Murphy and Knopp 2000).
Long-eared myotis bat *Myotis evotis*	--	CSC	--	May be found in a variety of brush, woodland, and forest communities, from 0 to about 9,000 feet; shows a preference toward coniferous woodlands and forests. Nursery colonies located in buildings, crevices, spaces under bark, snags; night roosting in caves.	Moderate; forested portions of Project area provide suitable breeding and foraging habitat. Bats were detected within the Project area, however their species were unable to be confirmed.
Fringed myotis bat *Myotis thysanodes*	--	CSC	--	May be found in a variety of environments; valley and foothill hardwood, hardwood-conifer and pinyon-juniper woodland provide optimal habitat.	Moderate; suitable breeding and foraging habitat occurs on site.

Table 8-2

Special-Status Wildlife Species that May Occur In the Project area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence In Project area
	Federal	State	TRPA		
				Maternity colonies and roosts located in caves, mines, buildings, and crevices.	Bats were detected within the Project area, however their species were unable to be confirmed.
Long-legged myotis bat *Myotis volans*	--	CSC	--	This species is most commonly associated with woodland and forest communities above 4,000 feet. However, may also forage in chaparral, coastal scrub, Great Basin shrub habitats, and in early successional stages of woodlands and forests. Occurrence records range from 0 to 11,400 feet. Roosts in rock crevices, buildings, under tree bark, in snags, mines, and caves.	Moderate; suitable breeding and foraging habitat occurs on site. Bats were detected within the Project area, however their species were unable to be confirmed.
Yuma myotis bat *Myotis yumanensis*	--	CSC	--	Optimal environments include open forests and woodlands in proximity to bodies of water used for foraging; maternity colonies in caves, mines, crevices, and buildings.	Moderate; suitable breeding and foraging habitat occurs on site. Bats were detected within the Project area, however their species were unable to be confirmed.
Sierra Nevada snowshoe hare *Lepus americanus tahoensis*	--	CSC	--	Frequents early successional stages of mixed conifer, red fir, lodgepole pine forests, and deciduous riparian communities at higher elevations.	Moderate; suitable habitat is present in the Project area.
Sierra Nevada mountain beaver *Aplodontia rufa californica*	--	CSC	--	In the Sierra Nevada and East Slope, associated with dense growth of small deciduous trees and shrubs, wet soil, and an abundance of forbs. Needs an abundant supply of water.	High; species documented in Madden Creek , Homewood Creek and an unnamed

Table 8-2

Special-Status Wildlife Species that May Occur In the Project area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence In Project area
	Federal	State	TRPA		
					tributary above Quail lake.
Sierra Nevada red fox *Vulpes vulpes necator*	FSS	ST	--	Inhabits a variety of communities from wet meadows to forested areas; preferring forests that are interspersed with meadows or alpine fell-fields. Dense vegetation and rocky areas provide cover and den sites.	Low; suitable habitat is present in the Project area. Not detected during forest carnivore studies.
California wolverine *Gulo gulo luteus*	FSS	ST CFP	--	Occurs in a variety of environments, including subalpine conifer, alpine dwarf-shrub, barren, mixed conifer, and lodgepole pine forests at or near timberline. Typically associated with areas of low human disturbance.	Low; although suitable habitat is present in the Project area, species does not typically occur in close proximity to human activity.. Not detected during forest carnivore studies.
American (=Pine) marten *Martes americana*	FSS	CSC	--	Prefers multi-storied, mature mixed coniferous forests with high canopy coverage and an abundance of large snags and downed woody debris. Riparian corridors may be used for foraging and as travelways.	High; occurrence documented in two locations within the Project area during forest carnivore studies. Forest and riparian habitats present.
Pacific fisher *Martes pennanti pacifica*	FSC FSS	CSC	--	Prefers multi-storied, mature mixed coniferous forests with high (>50%) canopy coverage and an abundance of large snags and downed woody debris. Dense riparian corridors are utilized as dispersal corridors. Foraging often occurs in small (<2 acres) forest openings with significant ground cover.	Low; potentially suitable habitat is present in the Project area. Not detected during forest carnivore studies.

Table 8-2

Special-Status Wildlife Species that May Occur In the Project area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence In Project area
	Federal	State	TRPA		
Mule deer *Odocoileus hemionus*		--	SI	Prefers areas interspersed with diverse seral stages or edges. This includes riparian vegetation, meadows, and the early to mid-successional stage of most vegetation types.	High; suitable habitat present in the Project area. Species detected during forest carnivore studies.

Source: HBA, 2010

Federal Status:

- FE Listed as endangered under the Federal Endangered Species Act
- FT Listed as threatened under the Federal Endangered Species Act
- FC Listed as Candidate species under the Federal Endangered Species Act
- PE Proposed for listing as endangered under the Federal Endangered Species Act
- PT Proposed for listing as threatened under the Federal Endangered Species Act
- PD Proposed for delisting as threatened or endangered under the Federal Endangered Species Act
- D Delisted in accordance with the Federal Endangered Species Act
- FSS USDA Forest Service sensitive species
- MI LTBMU Management Indicator species

State Status:

- SE Listed as endangered under the California Endangered Species Act
- ST Listed as threatened under the California Endangered Species Act
- CSC Species of concern as identified by the California Department of Fish and Game
- CFP Listed as fully protected by the California Fish and Game Code
- Rare Species identified as rare by the California Department of Fish and Game

TRPA Status:

- SI Special Interest Species

Surveys for special-status wildlife species were conducted for the Project in July and August of 2007 and 2008 by Wildlife Resource Consultants (Wildlife Resource Consultants, 2008). Surveys were performed for the following species: California spotted owl, northern goshawk, willow flycatcher, osprey, mountain beaver, forest carnivore species, amphibian species, and bat species. The survey reports for 2007 and 2008 are included in Appendix I. The following section addresses special-status wildlife species that have the potential to be affected by Project implementation. For each species, a description of the species' background and general life requirements, as well as its historical presence in the Project area or vicinity, is provided.

Sierra Nevada Yellow-legged Frog

The Sierra Nevada yellow-legged frog (*Rana sierra*) is a State species of concern and a federal candidate species. This species inhabits ponds, lakes, and streams associated with montane riparian, lodgepole pine, subalpine conifer, and wet meadow communities (Zeiner et al. 1988, Jennings and Hayes 1994, USFWS 2000). Open stream and lake margins that gently slope to a depth of 2 to 3 inches appear to be preferred (Jennings and Hayes 1994). In the Sierra Nevada, the elevation range is 4,500 to 12,000 feet (Stebbins 2003, Jennings and Hayes 1994).

In the Sierra Nevada, breeding typically occurs from May to August depending on local conditions (Stebbins 2003). In still water environments, such as pools, eggs are deposited as unattached masses in shallow water; however, in streams the egg masses may be attached to the substrate (Jennings and Hayes 1994). Due to the short active season and the brevity of the intervals during which the aquatic habitat maintains warm temperatures, larvae (tadpoles) may over-winter up to two times before attaining metamorphosis (Mullally and Cunningham 1956, Jennings and Hayes 1994).

Threats to Sierra Nevada yellow-legged frogs include introduction of non-native predatory fish (Bradford 1989, Jennings and Hayes 1994), contaminant introductions (USFWS 2000), livestock grazing (Martin et al. 1994, Bohn and Buckhouse 1986, Kauffman and Krueger 1984), acidification from atmospheric deposition (Bradford et al. 1994), nitrate deposition (USFWS 2000), ultraviolet radiation (Blaustein and Wake 1995), drought (Bradford et al. 1993), disease, and other factors (USFWS 2000).

Site-specific surveys for Sierra Nevada yellow-legged frogs were conducted along Homewood and Madden Creeks and along the shorelines of Quail Lake and Lake Louise. No Sierra Nevada yellow legged frogs were detected during surveys. The closest known population is located approximately 7 miles south of the Project area in desolation wilderness. The Sierra Nevada yellow-legged frog is not assumed to occur in the Project area (Wildlife Resource Consultants 2007).

Bald Eagle

The bald eagle is a delisted species under FESA and an endangered species under California ESA. The bald eagle is known to breed and winter in the Lake Tahoe Basin, where it occurs in association with large bodies of water such as lakes, reservoirs, and river systems that provide a source of forage fish. Wintering habitat in the Lake Tahoe Basin consists of mid-to-late successional stages of montane riparian and mixed conifer forests. Bald eagle habitats are characterized by a canopy closure of less than 40% and the presence of standing dead trees or snags (USDA 1988).

The wintering population of bald eagles in the Lake Tahoe Basin is estimated at four to sixteen birds. The number of bald eagles that winter in the Lake Tahoe Basin each year is related to the success of the basin's Kokanee salmon spawning runs and to the freezing of lakes and reservoirs located elsewhere in the Sierra Nevada, which precludes eagles from foraging at these water bodies. The primary areas used by wintering bald eagles in the Lake Tahoe Basin include Taylor Creek, Emerald Bay, and Fallen Leaf Lake. A wintering Bald Eagle management area has been established along the west shore of Lake Tahoe and includes Taylor Creek, Cascade Lake, and Emerald Bay. The eastern boundary of this wintering area along Taylor Creek is located approximately 9 miles northwest of the Project site.

The breeding population of bald eagles in the Lake Tahoe Basin consists of at least 2 nesting pairs, one at Emerald Bay and one at Marlette Lake. The limiting factor to future nesting in the Lake Tahoe Basin is intensive human disturbance, especially boating and development or heavy recreational use in foraging areas. Emerald Bay was identified by Golightly et al. (1991) as a potential area for establishing bald eagle nesting habitat in the Lake Tahoe Basin. At least one bald eagle nesting territory has been active at Emerald Point since 1997 and a second nesting territory was documented at Marlette Lake in 1996 and 2000, but successful breeding at this site has not been observed in recent years.

The Project site is not located within 5 miles of Emerald Bay, a known bald eagle nesting site, and is not located in a bald eagle disturbance zone as mapped by TRPA. Potential foraging habitat is located in the Quail Lake vicinity, although no bald eagles were observed during wildlife surveys (Wildlife Resource Consultants, 2008).

Northern Goshawk

Northern goshawks (*Accipiter gentilis*) inhabit a broad range of forested communities, including mixed conifer, true fir, montane riparian, Jeffrey pine, ponderosa pine, and lodgepole pine forest. In California, this species occurs in the Sierra Nevada, Klamath, Cascade, Inyo-White, Siskiyou, and Warner Mountains, and the North Coast Ranges (Zeiner et al. 1990, USFS 2000). Goshawks may also possibly inhabit suitable habitats in the Transverse Ranges and other mountainous areas in southern California (Zeiner et al. 1990, USFS 2000).

A study conducted in the Lake Tahoe region of the Sierra Nevada found that nest-site areas used by northern goshawks were characterized by high canopy closure, high densities of trees in the >60-100 centimeter (cm) and >100 cm diameter-at-breast-height (dbh) classes, low densities of 5-30 cm dbh trees, and low shrub/sapling and ground cover (Keane 1999). Other site factors, including northerly aspects, proximity to water or meadows, forest openings, and low slope angles, have also been associated with nest sites in numerous studies, although these factors vary widely (USFS 2000). Snags and logs are considered important components of northern goshawk foraging areas, as they provide habitat for prey populations (USDA 1988).

A model of goshawk nest stands developed by Fowler (1988) for application on the west slope of the Sierra Nevada, with consideration for east side habitat conditions, indicates that canopy closure of 60 to 100 % from dominant and co-dominant trees is characteristic of goshawk nest stands. In Fowler's model, slopes of 0 to 25% are identified as optimal. Slopes of 26 to 50 % are considered suitable, while slopes greater than 50% are unsuitable. Aspect is also identified as an important component in nest stand selection, with a north to east aspect considered optimal. North to northwest and east to southeast slopes are considered suitable, while other aspects are identified as marginal (Fowler 1988).

Nesting behavior, including courtship and nest initiation, begins mid-February to early March. The average incubation period is approximately 33 days (USFS 2000). The nestling period typically extends from early June through early July, with most young fledged by mid-July. The post-fledging dependency period extends until mid/late August.

Foraging areas around nest sites generally encompass approximately 2,500 acres of forested habitat (Austin 1991, Hargis et al. 1991). Northern goshawks are known to prey on over 50 species of birds and mammals throughout their western range (Graham et al. 1994). In the Lake Tahoe region primary prey species include Douglas squirrel (*Tamiasciurus douglasii*), Steller's jay (*Cyanocitta stelleri*), northern flicker (*Colaptes auratus*), and ground squirrel (*Spermophilus* spp.) (Keane 1999). Other prey species include American robin (*Turdus migratorius*), blue grouse (*Dendragapus obscurus*), other woodpeckers, and other squirrels.

Although no northern goshawks were detected during 2007 and 2008 surveys, suitable nesting habitat is present in the Project area. The closest known active Protected Activity Centers are located 2 miles to the north in Blackwood Canyon and 2 miles to the south near General Creek (Wildlife Resource Consultants 2008).

Cooper's Hawk

Cooper's hawk (*Accipiter cooperii*) is a summer resident of coniferous forests, woodlands, and riparian habitats in the Sierra Nevada. The species generally prefers lower elevations and is therefore found primarily in Jeffrey pine and well-developed alder-willow riparian associations in the Lake Tahoe Region. Nests are found near the trunk in large sized coniferous and deciduous trees. Cooper's hawk feeds primarily on small birds, but may also take small mammals, reptiles and amphibians. Cooper's hawks were detected during 2007 and 2008 biological surveys (Wildlife Resource Consultants 2008) and are assumed to be extant.

Sharp-shinned Hawk

Open deciduous woodlands, mixed or coniferous forests, and forest edges provide year-round habitat for sharp-shinned hawk (*Accipiter striatus*) in the Sierra Nevada. The species prefers coniferous forest associations with a high percentage of canopy closure as nesting habitat. Sharp-shinned hawk is generally found in lower elevation associations such as the Jeffrey pine and mixed conifer forests. Sharp-shinned hawks at higher elevations typically move downslope to lower elevations during fall, winter, and spring. Small birds comprise the greatest proportion of prey for the sharp-shinned hawk, while small mammals, frogs, lizards, and insects are only occasionally taken. The species nests near the trunk in large sized coniferous and deciduous trees. Sharp-shinned hawks were detected during 2007 and 2008 biological surveys (Wildlife Resource Consultants 2008) and are assumed to be extant.

American Peregrine Falcon

American peregrine falcons (*Falco peregrinus*) nest adjacent to water on high protected cliffs and ledges. This large raptor forages in woodland, forest and coastal habitats often near water. Peregrines often catch flying prey on the wing and takes a variety of avian prey up to ducks in size and occasionally mammals, insects and fish. This large raptor is known to be nesting in the Tahoe Basin at Luther Rock above Christmas Valley south of Meyers, California. This species has also been observed nesting on the cliffs at Lovers Leap located above Strawberry, California.

Osprey

Osprey (*Pandion haliaetus*) are found in a variety of habitats associated with large rivers, lakes, and coastlines. In the Sierra Nevada, the osprey is a summer resident only. Nesting sites include large coniferous and deciduous trees, cliffs, and poletops located near or over water. Osprey that nest in the Lake Tahoe Basin are thought to migrate from Central and South America (Poole 1989). Osprey lay between two to four eggs in their nest from April to May. Young hatch between 35 to 42 days later. (Ehrlich et al. 1988). Juveniles spend a total of 17 months in wintering grounds, and at 2 years old migrate north (Poole 1989). The species feeds primarily on fish, which it captures by hovering over the water and plunging feet-first after its prey. Other prey types include rodents, birds, small vertebrates, and crustaceans (Ehrlich et al. 1988, Poole 1989).

The Project site was surveyed for osprey nests and activity in 2007 (Wildlife Resource Consultants 2008). Osprey were observed foraging in Quail Lake and flying over the Project area. The Project site does not contain known osprey nesting sites and is not located within ¼-mile of a known historical osprey nest (Wildlife Resource Consultants 2008). An active nesting site is located approximately 2 miles east of the Project area.

California Spotted Owl

The range of the California spotted owl (*Strix occidentalis occidentalis*) is considered to include the southern Cascades, the entire Sierra Nevada province of California, mountainous regions of the southern California province, and the central Coast Ranges at least as far north as Monterey County (Verner et al. 1992). In the Sierra Nevada, the major forest types comprising known and potential habitat include mixed conifer, red fir, ponderosa pine/hardwood, eastside pine, and foothill riparian/hardwood forests (Verner et al. 1992). Mixed conifer forest is the most abundant forest type and contains most of the known owl sites. Habitats used for nesting typically have greater than 70% total canopy cover, except at very high elevations where canopy cover as low as 30 to 40% may occur (as in some red fir stands of the Sierra Nevada). Nest stands typically include a mixture of tree sizes with a number of very large, old trees and usually at least two canopy layers. Large snags and an accumulation of downed woody debris are usually present. Foraging habitat is similar in structure and composition, but also comprises more open stands with canopy covers down to 40%.

Home range sizes of California spotted owl tend to be smallest in lower elevation hardwood forests, intermediate in size in conifer forests of the central Sierra Nevada, and largest in true fir forests in the northern Sierra Nevada (Verner et al., 1992). Neal et al. (1990) reported that California spotted owl home ranges in Sierra Nevada mixed conifer forests average 3,400 acres, including about 460 acres in stands with 70% or greater canopy cover, and about 1,990 acres in stands with 40 to 69% canopy cover. Verner et al. (1992) generally concur with these data, indicating that Sierra National Forest owls were found to have a median home range for pairs of approximately 3,000 to 5,000 acres. However, Verner et al. (1992) cite an overall mean home range size of owl pairs during the breeding period in Sierran conifer forests of about 4,200 acres. Owl use areas designated to date by the LTBMU comprise approximately 3,500 to 4,665 acres. Radiotelemetry studies have not been undertaken for California spotted owls in the LTBMU, so more accurate home range information is currently unavailable.

Nesting pairs of California spotted owls are known to occur to the north in Blackwood Canyon and to the south in Sugar Pine State Park. The only Protected Activity Centers that was active in

2009 in close proximity to the Project area was Stanford Rock located three miles to the north of the Project area. Protocol-level surveys for California spotted owl were conducted in the Project area in 2007 and 2008. Due to lack of California spotted owl detections in the immediate Project area during protocol surveys, it is not anticipated that this species is present in the Project area (Wildlife Resource Consultants 2008).

Willow Flycatcher

Willow flycatcher (*Empidonax traillii*) is a summer resident of wet meadow and montane riparian habitats at 2,000 to 8,000 feet elevation in the Sierra Nevada and Cascade ranges (Gaines 1983). The species is typically associated with broad, open river valleys or large mountain meadows with extensive growth of shrubby willows. Dense willow thickets are required for nesting and roosting, while low exposed branches are used for singing posts and hunting perches.

Three subspecies of the willow flycatcher are currently recognized in California. These subspecies include the southwestern willow flycatcher (*E. t. extimus*), which occurs in southern California; *E. t. adastus*, which occurs east of the Sierra/Cascade crest; and the little willow flycatcher (*E. t. brewsteri*), which breeds from the coast to the Sierra Nevada crest and is the subspecies present in the Lake Tahoe basin (Craig et al. 1992).

In comparison to other passerines nesting in Sierra meadows, willow flycatchers arrive and breed late in the season (Sanders and Flett 1989). Willow flycatchers typically arrive in early to mid-June, and form pairs and establish territories by late June (Sanders and Flett 1989). Two to four eggs are laid, which are incubated by the female for a period of 12 days (King 1955, Bent 1963, Sanders and Flett 1989). The nestling period lasts approximately 14 days (King 1955, Sanders and Flett 1989). Winter migration occurs from August to mid-September.

The species was once known to breed in willow thickets throughout most of lowland and montane California (Zeiner et al 1990), but numbers have declined drastically in recent decades because of cowbird parasitism and habitat destruction. Habitat destruction and degradation has been caused by a variety of activities including livestock grazing, and agricultural and urban development.

Broadcast surveys for willow flycatcher were performed June and July of 2007. Due to lack of willow flycatcher detections in the Project area during protocol surveys, it is not anticipated that this species is present in the Project area (Wildlife Resource Consultants 2008). Historicaly willow flycatcher have occupied Blackwood Canyon to the north of the Project area. In 2010, one male was detected and monitored throughout the season (LTBMU 2009 Wildlife Program Annual Report).

California Yellow Warbler

The California yellow warbler (*Dendroica petechia brewsteri*) is designated by the California Department of Fish and Game as a species of special concern. Although once common in riparian communities throughout California, it is now an uncommon to rare breeding bird in many lowland areas (Zeiner et al. 1990). The number of breeding pairs in lowland areas, such as the Colorado River, southern coast, and San Joaquin and Sacramento Valleys, has experienced a dramatic decline in recent decades (Zeiner et al. 1990a).

Breeding occurs in willow dominated riparian communities that may also include cottonwoods, alders, aspens, and sycamores from sea level to 8,000 feet. In the Sierra Nevada, montane chaparral and montane shrubbery in open coniferous forests may also be used for breeding (Dunn and Garrett 1997, Zeiner et al. 1990). California yellow warblers typically arrive at their breeding grounds by early May and depart for their wintering grounds by early September (Dunn and Garrett 1997).

Declines of this species have largely been attributed to the loss or alteration of lowland riparian habitats and brood parasitism by brown-headed cowbirds (Dunn and Garrett 1997, Zeiner et al. 1990).

Yellow warbler were detected in the Quail lake area as well as along Madden Creek during 2007 protocol surveys for willow flycatcher and are assumed to be extant (Wildlife Resource Consultants 2008).

Mule Deer

Mule deer (*Odocoileus hemionus*) are a LTBMU Management Indicator Species (MIS). This cervid is a seasonable resident to the Lake Tahoe Basin. Mule deer often occur in open forested regions of the Basin and migrate to higher elevations during the summer months to montane meadow environments. A variety of vegetation with openings, dense trees, edge habitat and close proximity to water is important (Ahlborn 2002). In these habitats mule deer browse and graze on a variety of forbs, grasses and shrubs. Mating takes place from September to December. Bucks mate with multiple does. Mule deer fawns are born early spring to early summer. Does and fawns remain together in small groups, while bucks often remain solitary. Predators of mule deer include humans, black bears, coyotes and mountain lions.

The Project area is in the southern boundary of the Truckee-Loyalton Deer Herd. This herd's home range stretches from southern Plumas and Lassen Counties down to the Placer/El Dorado County line. Potentially suitable habitat exists within the boundaries of Homewood Mountain Resort and therefore mule deer may potentially occur. Suitable habitat for foraging includes existing ski trails and the meadow areas along the margins of Quail Lake and Lake Louise. No migration corridors have been identified within the Project area.

Townsend's Big-eared Bat

The Townsend's big eared bat (*Corynorhinus townsendii*) is found in a variety of habitats excluding alpine and subalpine habitats. C. townsendii is abundant in mesic habitats where it feeds mostly on small insects while in flight using echolocation. This species also gleans insects from foliage. Caves, mines, tunnels and other manmade structures provide roosting locations. Hibernaculum are located in similar habitats as the roosing locations and individuals may move between sites for night, day and hibernation. Two roosting sites have been identified at the southern boundary of the Project area, just south of Quail Lake at the Noonchester mine location (Personal Communication, Patrick Stone TRPA Sept. 2010). Because potential roosting habitat occurs in the Project area and the species has been observed adjacent to the Project area, it is presumed the Townsend's big-eared bat has the potential to occupy habitat in the Project area.

Long-eared Myotis

Long-eared myotis (*Myotis evotis*) are found throughout the Sierra Nevada mountains, occurring in woodland and forest habitats, particularly coniferous forests, at elevations up to approximately 9,000 feet (Harris 2002a). They feed largely on a wide variety of insects, including beetles, moths, and flies, and also spiders. Foraging consists mostly of gleaning prey items from foliage, but prey are also taken while in flight. Long-eared myotis largely forage along habitat edges in open areas over shrubs and water. Long-eared myotis roost in buildings, crevices, caves, snags, and in spaces under bark. Open meadow habitat associated with Quail Lake and Lake Louise provides potentially suitable foraging habitat for this species. Large trees and snags in the Project area may provide suitable roost sites for these bats. Because potential roosting habitat occurs in the Project area it is presumed the long-eared myotis has the potential to occupy habitat in the Project area.

Long-legged Myotis

Long-legged myotis (*Myotis volans*) are found seasonally in a wide variety of habitats including high-elevation forests and meadows of the Sierra Nevada (Williams 1986, Zeiner et al. 1988). These bats feed on flying insects, primarily moths. While foraging, these bats fly low over water close to trees and cliffs and in open meadows. Suitable roost sites include rock crevices, buildings, under tree bark, in snags, and in caves and mines. This species forms large nursery colonies consisting of hundreds of individuals, usually located under bark or in hollow trees. Open meadow habitat associated with Quail Lake and Lake Louise provides potentially suitable foraging habitat for this species. Large trees and snags in the Project area may provide suitable roost sites for these bats. Because potential roosting habitat occurs in the Project area it is presumed the long-legged myotis has the potential to occupy habitat in the Project area.

Yuma Myotis

Yuma myotis (*Myotis yumanensis*) is widespread throughout California, occurring in a wide variety of habitats from sea level up to 11,000 feet. It is uncommon to rare at elevations above 8,000 feet. Yuma myotis feed on a wide variety of insects including moths, midges, flies, termites, ants, and caddisflies. Foraging occurs primarily over water sources includes ponds, lakes and streams. Yuma myotis roost in mines, buildings, caves, or crevices. Open forests and woodlands are optimal habitat provided that suitable roosting sites are available nearby. Open meadow habitat associated with Quail Lake and Lake Louise and associated open forest provides potentially suitable foraging habitat for this species. Large trees and snags in the Project area may provide suitable roost sites for these bats. Because potential roosting habitat occurs in the Project area it is presumed the Yuma myotis has the potential to occupy habitat in the Project area.

Fringed Myotis

Fringed myotis (*Myotis thysanodes*) is found in a variety of habitats throughout California and has been known to occur from sea level to 9,350 feet. Habitats that are most often preferred are pinion-juniper, valley foothill hardwood and hardwood conifer. (Harris, 2002b) Diet consists of beetles, moths, arachnids and crickets. Fringed myotis roost in mines, crevices, buildings and caves. Foraging activity often occurs over water and open habitats, and includes gleaning off leaves. Open meadow habitat associated with Quail Lake and Lake Louise provides potentially suitable foraging habitat for this species. Large trees and snags in the Project area may provide

suitable roost sites for these bats. Because potential roosting habitat occurs in the Project area it is presumed the fringed myotis has the potential to occupy habitat in the Project area.

Sierra Nevada Snowshoe Hare

The Sierra Nevada snowshoe hare (*Lepus americanus tahoensis*) occurs in the higher elevations of the northern and central Sierra Nevada where optimum habitat is provided by the early successional stages of mixed conifer, red fir, and lodgepole pine forests. In addition, high elevation deciduous riparian and herbaceous habitats are also utilized by this species. A key component of each of these habitats is dense thickets of vegetation that can provide refuge from predators. Although the large tree stages of the coniferous forest associations do not provide optimum habitat, these associations can provide suitable habitat for snowshoe hares where sufficient shrub or herbaceous cover exists. Forested habitat in the Project area in early successional stages provides suitable habitat for this species. Because potential habitat occurs in the Project area it is presumed the Sierra Nevada showshoe hare has the potential to occupy habitat in the Project area.

Sierra Nevada Red Fox

Sierra Nevada red fox (*Vulpes vulpes necator*) inhabit forested areas interspersed with riparian and meadow habitats and brush fields. The range of this species is described as the northern California Cascades eastward to the northern Sierra Nevada, then south along the Sierra Nevada crest to Tulare County. In the Sierra Nevada, preferred forest types include red fir, lodgepole pine, and subalpine fir. Jeffrey pine, eastside pine, and montane hardwood-conifer habitats are also used. The species occurs mainly at elevations greater than 7,000 feet, and seldom is observed below 5,000 feet.

The Sierra Nevada red fox moves seasonally from higher elevations in winter to mid-elevation forests during the summer. Predator avoidance in the open may not be a problem for this native fox, as they are known to hunt in open areas (Duncan Furbearer Interagency Workgroup 1989). Although little is known about this subspecies and no specific criteria for analyzing its habitat have been developed, it has been assumed that the Sierra Nevada red fox, like other subspecies of red fox, may be more adaptable and opportunistic than other forest carnivores. Further, it has been assumed that if the more restrictive habitat requirements of Pacific fisher, American marten, willow flycatcher and California spotted owls are provided, the habitat requirements of Sierra Nevada red fox will also be met (Freel 1991).

As of 1977, Sierra Nevada red fox populations were thought to be either maintaining themselves at a reduced level or slowly declining. There is little current information available to either justify or counter this assumption. No Sierra Nevada red fox were found during the forest carnivore surveys conducted at Homewood in 2007 (Wildlife Resource Consultants 2008). The habitat within the Project area is heavily fragmented due to existing ski trails and mountain operations and is of lower quality than the surrounding area which is relatively unfragmented. Therefore, based on this information and lack of historical detections in the Project area the Sierra Nevada red fox is presumed absent from the Project area.

California Wolverine

The California wolverine (*Gulo gulo luteus*), which is generally considered to be a wilderness mammal, occurs in a variety of open terrain habitats at or near timberline. The species is known

to have historically occurred in mountainous areas of California from the north coast to the Cascades, and south to the southern Sierra Nevada. The wolverine is a wide-ranging animal and may travel great distances in a home range that encompasses several hundred square miles (CDFG 1990).

Extensive trapping in the late 19th and early 20th centuries is thought to have severely reduced wolverine populations. The California Cooperative Wolverine Study, led by the Department of Forestry and Resource Management at the University of California, Berkeley is using remote photographic bait stations in areas of historic range and recent reported occurrences to document the current existence of wolverines in California.

One confirmed sighting of a wolverine (photograph and fur samples) occurred in early 2008 in the Sagehen Creek area (25 miles to the north of the Project area), on the Tahoe National Forest (CDFG News Release March 2008). In addition, there have been numerous sightings reported by USFS employees in recent years. The majority of the sightings have been reported from the southern Plumas National Forest and the northern Tahoe National Forest. There is also at least one sighting from the Mammoth area. No wolverines were detected during forest carnivore surveys in 2007 (Wildlife Resource Consultants 2008). Due to lack of detections in the 2007 study, relatively high human activity in the Project area, and lack of recent detections in the Tahoe Basin, this species has a low potential to occur in the Project area.

American Marten

The American (=Pine) marten (*Martes americana*) is known to occur in suitable habitat throughout the Sierra Nevada Province. Based on an extensive review of scientific literature and expert opinion, Freel (1991) described preferred habitat as dense (60 to 100% canopy closure), multi-storied, multi-species late seral stage coniferous forest of red fir, red fir/white fir mixtures, lodgepole, and mixed conifer. A high number of large snags and downed logs are associated with preferred habitat. Habitat areas are generally in close proximity to dense riparian corridors, which are used as travelways. An interspersion of small (<1 acre) openings with good ground cover is required for foraging. For the northern Sierra Nevada, Freel (1991) cites elevation records of 3,400 to 10,400 feet, with an average elevation of 6,000 feet.

According to Freel (1991), numerous and heavily traveled roads are not desirable in American marten habitat areas as they are associated with habitat disruption and animal mortality. Roads may also reduce food availability for American marten by increasing road kills in prey populations and creating behavioral barriers to foraging movements (Allen 1987). Occasional one and two lane forest roads with moderate levels of traffic are not believed to limit American marten movements (Freel 1991).

Forest carnivore surveys detected a minimum of two marten and possibly a total of four marten during the 2007 survey (Wildlife Resource Consultants 2007) at the Dutch Treat ski run station as well as the lake Louise station. Due to detections in the 2007 study and past observations in the Project area, it is assumed this species is extant in the Project area.

Pacific Fisher

In California, Pacific fisher (*Martes pennanti pacifica*) most often occurs at somewhat lower elevations than the American marten. These elevations are typically between 2,000 and 5,000 feet in the North Coast region and between 4,000 feet and 8,000 feet in the southern Sierra

Nevada. Based on Freel's (1991) literature review, preferred habitat for the fisher is characterized by dense (60 to 100 % canopy), multi-storied, multi-species late seral stage coniferous forest with a high number of large (>30 inches dbh) snags and downed logs. Preferred habitat types in the Sierra Nevada include montane hardwood-conifer, mixed conifer, montane riparian, Jeffrey pine, ponderosa pine, lodgepole pine, subalpine conifer, aspen, eastside pine and possibly red fir. Habitat areas also include close proximity to dense riparian corridors, saddles between major drainages, or other landscape linkage patterns that are used as dispersal corridors. An interspersion of small (< 2 acres) openings with good ground cover is required for foraging.

Although studies have indicated that fishers apparently use greater percentages of early to mid-seral stage forest stands for foraging in summer months, they still appear to need and utilize the mature, old growth stands for denning, especially in areas with high snowfall (Freel 1991). Numerous and heavily traveled roads are not desirable, as they are associated with habitat disruption and animal mortality. However, occasional one and two lane forest roads with moderate levels of traffic are not believed to limit fisher movements.

The CNDDB contains a single occurrence record of fisher in the Lake Tahoe Region from 1967. This occurrence was recorded approximately four miles south of Meyers which is over 13 miles from the Project area. It is assumed this species is not present in the Project area due to lack of historic presence, relatively poor habitat quality, and it not being detected in the Project area during forest carnivore surveys (Wildlife Resource Consultants 2008).

Fisheries

LTBMU inventoried the streams within the Project area in 1994 (Kleinfelder 2007). Based on the LTBMU information, it appears that most of Madden creek may provide better potential habitat for adult trout than the other streams in the assessment due to its greater proportion of pools and their greater depth. The lower portion of Madden Creek, outside of the Project area, does not provide good fish habitat due to alterations of the streambed for flood control. Homewood (Homewood) Creek provides limited habitat for adult trout lifestages, but contains substantial suitable spawning habitat. High gradients in Homewood Creek in the upper reaches could result in natural barriers for migration in low flow years. The culvert located in the parking area at the south base could be a barrier for migration of fish species. The streams within the project area were surveyed in 2008 by the USDA Forest Service, Lake Tahoe Basin Management Unit. Brook, brown and rainbow trout were found within streams (Madden and Homewood Creeks) in the project area.

8.1.6 Sensitive Habitats

Waters of the U.S.

A “no net loss of wetland acreage or value” policy is established in both the state and federal executive branches (California Wetlands Conservation Policy 1993). Ditching, draining, or other activities that could alter the characteristic physical, chemical, biological or public interest values (as defined by 40 CFR 230 Subparts C-F) associated with wetlands and other waters of the U.S. (WoUS) are considered impacts under USACE authority. For the purposes of this document, fill, excavation, or other disturbance in a jurisdictional lake, stream, wetland, or other water of the U.S. is considered significant.

Placement of fill material in WoUS is regulated through §404 of the Clean Water Act of 1972 (CWA), under jurisdiction of the USACE. WoUS defined under §404 include, but are not limited to, areas subject to the ebb and flow of the tide, streams, and wetlands (33 CFR §328.23[3]). The extent of the waters in streams is defined by elevations along the stream bank above which water normally does not rise (ordinary high water). Wetlands are defined as areas that are saturated or inundated by surface or ground water for a frequency and duration sufficient to support the prevalence of plants adapted for life in saturated soil conditions (33 CFR §328 [(b)b]).

The goal of the CWA is to maintain, restore, and enhance the physical, chemical, and biological integrity of the Nation's waters. In reviewing projects with impacts to wetlands, the USACE requires no net loss of wetland functions and values. Compensatory mitigation for unavoidable impacts to wetlands permitted by the USACE requires replacement acreage, preferably in-kind and in the same watershed, sufficient to achieve the goal of no net loss. The USACE determines replacement acreage is based on the functions and values of the area being filled, the functions and values of the mitigation site, and the likelihood of success of the mitigation. Wetland mitigation includes restoration, creation, and/or preservation. The mitigation is based on the functions and values of wetlands that are affected and the local opportunities to utilize these three approaches. Compensation is completed before or concurrent with the impact, as near to the site of impact as practicable, and the mitigation site must be protected from subsequent loss or degradation.

Since 1984, the USACE began to regulate the discharge of fill into isolated waters. The 1984 draft regulations also included the now expired Nationwide permit (NWP) 26 for discharges into isolated waters and other waters above the headwaters. NWP 26 has been replaced, in large part, by NWP 39, and other NWPs, effective June 1, 2000. Lacking information about migratory bird use, the USACE assumed jurisdiction over seasonal wetlands, including seasonal pools and ponds, that are isolated or above the headwaters hinging its regulatory authority on the Migratory Bird Species Act. The USACE operated under the assumption until the January 2001 United States Supreme Court decision Solid Waste Agency of Northwestern Cook County versus United States Army Corps of Engineers et al. (SWANCC decision). The Court apparently removed the jurisdictional status of isolated intrastate waters including vernal pools, abandoned, water-filled quarry pits, some ponds and lakes without outlets, isolated wetlands, seeps and seasonally wet depressions. The State RWQCB exercises jurisdiction and control over waters of the State under applicable Basin Plan wetland protection and water quality control policies.

Current policy statements issued by USACE General Counsel assert that, "the Corps' ecological judgment about the relationship between waters and their adjacent wetlands provides an adequate basis for legal judgment that adjacent wetlands may be defined as waters under the CWA. In sum, the holding, the facts, and the reasoning of United States versus Riverside Bayview Homes continues to provide authority for the USEPA and the USACE to assert CWA jurisdiction over of the traditional navigable waters, interstate waters, and tributaries to navigable or interstate waters, upstream to the highest reaches of the tributary systems, and over wetlands adjacent to any and all of these waters."

To date, no wetland delineations have been performed in the Project to determine which water bodies, i.e. Quail Lake, Lake Louise or the streams in the Project area fall under §404 of the CWA. However, the lakes and creeks in the Project area likely satisfy the definition of Waters of the U.S.

Riparian Areas/Stream Environment Zones

The TRPA defines a Stream Environment Zone (SEZ) as a biological community that derives its characteristics from the presence of riparian vegetation, alluvial soil, surface water or a seasonal high groundwater table. An SEZ is delineated by the presence of riparian vegetation, soil type, elevated groundwater, drainage ways and floodplains, including adjacent marshes, meadows, and riparian areas.

SEZs provide wildlife habitat, purification of water and scenic enjoyment. Protection and restoration of stream environment zones are essential for improving and maintaining the environmental amenities of the Lake Tahoe Basin and for achieving environmental thresholds for water quality , vegetation preservation, and soil conservation (TRPA Goals and Policies). SEZs are identified by the presence of at least one key indicator or the intersection of three secondary indicators (TRPA Code Section 37.3.B), which include:

SEZ Key Indicators:

- Evidence of surface water flow, including perennial, ephemeral and intermittent streams, but not including rills or human-made channels;
- Primary riparian vegetation;
- Near surface groundwater (less than 20 inches from the surface);
- Lakes or ponds;
- Beach soil; or
- One of the following alluvial soils:
  - Elmira coarse sand, wet variant; or
  - Marsh.

Secondary Indicators:

- Designated flood plain;
- Groundwater in 20-40 inches of the surface;
- Secondary riparian vegetation; and
- One of the following alluvial soils:
  - Loamy alluvial land;
  - Celio gravely loamy coarse sand; or
  - Gravely alluvial land.

Madden Creek, Homewood Creek, and Quail Creek flow through the Project area. Other SEZs in the Project area include one perennial seep and one seasonal seep that support minimal riparian vegetation and a SEZ located in the gravel parking lot at the southern end of the North Base area. One unnamed ephemeral drainage is located between the North Base area and South Base area. This unnamed ephemeral drainage does not support riparian vegetation but contains seasonal flow that drains to low-lying areas with near surface groundwater. A small wet meadow area is located

adjacent to the margins of Lake Louise and Quail Lakes. Other ephemeral SEZ are located on the mountain and within the overall Project area but have not been formally delineated by TRPA.

8.2 REGULATORY SETTING

8.2.1 TRPA Environmental Thresholds

The TRPA has established Environmental Thresholds for common vegetation (including richness, relative abundance, and pattern), uncommon plant communities, and sensitive plants. Furthermore, Environmental Thresholds for wildlife have been established that address special interest species, habitats of special significance, stream habitats, and instream flows. Environmental Thresholds are used to establish the significance of an environmental effect to vegetation and wildlife resources in the Lake Tahoe Basin. Applicable TRPA Environmental Thresholds for vegetation and wildlife resources, as cited in TRPA Resolution 82-11 Exhibit A, are as follows:

Common Vegetation

Increase plant and structural diversity of forest communities through appropriate management practices as measured by diversity indices of species richness, relative abundance, and pattern.

Richness

Maintain the existing species richness of the basin by providing for the perpetuation of the following plant associations:

- *Yellow Pine Forest:* Jeffrey pine, white fir, incense cedar, sugar pine.
- *Red Fir Forest:* red fir, Jeffrey pine, lodgepole pine, western white pine, mountain hemlock, western juniper.
- *Subalpine Forest:* whitebark pine, mountain hemlock, mountain mahogany.
- *Shrub Associations:* greenleaf and pinemat manzanita, tobacco brush, Sierra chinquapin, huckleberry oak, mountain whitethorn.
- *Sagebrush Scrub Vegetation:* basin sagebrush, bitterbrush, Douglas chamise.
- *Deciduous Riparian:* quaking aspen, mountain alder, black cottonwood, willow.
- *Meadow Association (wet and dry meadow):* mountain squirrel tail, alpine gentian, whorled penstemon, asters, fescues, mountain brome, corn lilies, mountain bentgrass, hairgrass, marsh marigold, elephant heads, tinker's penney, mountain Timothy, sedges, rushes, buttercups.
- *Wetland Associations (marsh vegetation):* pond lilies, buckbean, mare's tail, pondweed, common bladderwort, bottle sedge, common spikerush.
- *Cushion Plant Association (alpine scrub):* alpine phlox, dwarf ragwort, Draba.

Relative Abundance

Of the total amount of undisturbed vegetation in the Lake Tahoe Basin:

- Maintain at least 4% meadow and wetland vegetation.
- Maintain at least 4% deciduous riparian vegetation.
- Maintain no more than 24% dominant shrub association vegetation.
- Maintain 15 to 25% of the Yellow Pine Forest in several stages other than mature.
- Maintain 15 to 25% of the Red Fir Forest in several stages other than mature.

Pattern

Provide for the proper juxtaposition of vegetation communities and age classes by:

- Limiting acreage size of new forest openings to no more than eight acres.
- Adjacent openings shall not be of the same relative age class of successional stage to avoid uniformity in stand composition and age.

A non-degradation standard to preserve plant communities shall apply to native deciduous trees, wetlands, and meadows while providing for opportunities to increase the acreage of such riparian associations to be consistent with the SEZ threshold.

Native vegetation shall be disturbed to the minimum extent feasible to be consistent with the limits defined in the Land Capability Classification of the Lake Tahoe Basin, California-Nevada, A Guide for Planning, Bailey, 1974, for allowable impervious cover and permanent site disturbance.

Uncommon Plant Communities

Provide for the non-degradation of the natural qualities of any plant community that is uncommon to the Basin or of exceptional scientific, ecological, or scenic value.

This threshold shall apply but not be limited to:

1. The deepwater plants of Lake Tahoe;
2. Grass Lake (sphagnum bog);
3. Osgood swamp;
4. The Freel Peak cushion plant community;
5. Taylor Creek Marsh;
6. Pope Marsh;
7. Upper Truckee Marsh; and
8. Hell Hole.

Sensitive Plants

Maintain a minimum number of population sites for each of the sensitive plant species identified in Table 8-3.

Table 8-3

TRPA Sensitive Plants

Species	Number of Population Sites
Arabis rigidissima var. *demota*	7
Lewisia longipetala	2
Draba asterophora var. *macrocarpa*	2
Draba asterophora var. *asterophora*	5
Rorippa subumbellata	26

Source: TRPA Regional Plan for the Lake Tahoe Basin: Resolution No. 82-11 as Amended

Wildlife

Special Interest Species

Provide a minimum number of population sites and disturbance zones for the species identified in Table 8-4:

Table 8-4

TRPA Environmental Thresholds for Special Interest Species

Species of Interest	Population Sites	Disturbance Zone	Influence Zone
Northern goshawk	12	0.50 miles	3.50 miles
Osprey	4	0.25 miles	0.60 miles
Bald eagle (winter)	2	Mapped Areas	Mapped Areas
Bald eagle (nesting)	1	0.50 miles	Variable
Golden eagle	4	0.25 miles	9.0 miles
Peregrine falcon	2	0.25 miles	7.6 miles
Waterfowl	18	Mapped Areas	Mapped Areas
Deer	--	Meadows	Mapped Areas

Source: TRPA Regional Plan for the Lake Tahoe Basin: Resolution No. 82-11 as Amended

Habitats of Special Significance

A non-degradation standard shall apply to significant wildlife habitat consisting of deciduous trees, wetlands, and meadows while providing for opportunities to increase the acreage of such riparian associations.

Stream Habitat

Maintain the 75 miles of excellent, 105 miles of good, and 38 miles of marginal stream habitat as indicated by the map on page 76 of the EIS for the Environmental Thresholds Study.

Instream Flows

Until instream flow standards are established in the Regional Plan to protect fishery values, a non-degradation standard shall apply to instream flows.

TRPA Goals and Policies

Vegetation

Goal #1: Provide for a wide mix and increased diversity of plant communities in the Tahoe Basin.

Policies:

1. Forest management practices shall be allowed when consistent with acceptable strategies for the maintenance of forest health and diversity, prevention of fire, protection of water quality, and enhancement of wildlife habitats.
2. Opportunities to improve the age structure of the pine and fir plant communities shall be encouraged when consistent with other environmental considerations.
3. Forest pattern shall be manipulated whenever appropriate as guided by the size and distribution of forest openings.
4. Edge zones between adjacent plant communities will be maximized and treated for their special value relative to plant diversity and wildlife habitat.
5. Permanent disturbance or unnecessary alteration of natural vegetation associated with development activities shall not exceed the approved boundaries (or footprints) of the building, driveway, or parking structures, or that which is necessary to reduce the risk of fire or erosion.
6. The management of vegetation in urban areas shall be in accordance with the policies of this plan and shall include provisions that allow for the perpetuation of the natural-appearing landscape.
7. Disturbance or removal of forest litter should be avoided to promote the natural catchment of nutrients.
8. Revegetation of disturbed sites shall require the use of species approved by the agency. TRPA shall prepare specific policies designed to avoid the unnecessary use of landscaping which requires long-term irrigation and fertilizer use.

9. All proposed actions shall consider the cumulative impact of vegetation removal with respect to plant diversity and abundance, wildlife habitat and movement, soil productivity and stability, and water quality and quantity.

Goal #2: Provide for the maintenance and restoration of such unique ecosystems as wetlands, meadows, and other riparian vegetation.

Policies:

1. Riparian plant communities shall be managed for the beneficial uses of passive recreation, groundwater recharge, and nutrient catchment, and as wildlife habitats.
2. Riparian plant communities shall be restored or expanded whenever and wherever possible.

Goal #3: Conserve threatened, endangered, and sensitive plant species and uncommon plant communities on the Lake Tahoe Basin.

Policies:

1. Uncommon plant communities shall be identified and protected for their natural values.
2. The population sites and critical habitat of all sensitive plant species in the Lake Tahoe Basin shall be identified and preserved.

Wildlife

Goal #1: Maintain suitable habitats for all indigenous species of wildlife without preference to game or non-game species through maintenance of habitat diversity.

Policies:

1. All proposed actions shall consider impacts to wildlife.
2. Riparian vegetation shall be protected and managed for wildlife.
3. Non-native wildlife and exotic species shall be controlled and release of such animals into the wild is forbidden.
4. Domestic animals and pets shall be controlled and appropriately contained.

Goal #2: Preserve, enhance and where feasible, expand habitats essential for threatened, endangered, rare, or sensitive species found in the Basin.

Policies:

1. Endangered, threatened, rare, and special interest species shall be protected and buffered against conflicting land use.

Fisheries

Goal #1: Improve aquatic habitat essential for the growth, reproduction, and perpetuation of existing and threatened fish resources in the Lake Tahoe Basin.

Policies:

1. Development proposals affecting streams, lakes and adjacent lands shall evaluate impacts to the fishery.
2. Unnatural blockages and other impediments to fish movement will be prohibited and removed wherever appropriate.
3. An instream maintenance program should be developed and implemented.
4. In-stream flows shall be regulated, when feasible, to maintain fishery values.

TRPA Code of Ordinances

Chapter 65 – Vegetation Protection During Construction

65.2.A Vegetation: Vegetation shall not be disturbed, injured, or removed except in accordance with the Code or conditions of Project approval. All trees, major roots, and other vegetation, not specifically designated and approved for removal, in connection with a project, shall be protected according to methods approved by TRPA.

Chapter 71 – Tree Removal

71.2.A Standards for Conservation and Recreation Lands: In lands classified by TRPA as conservation or recreation land use or Stream Environment Zones, any live, dead or dying tree greater than or equal to 30 inches diameter at breast height (dbh) in westside forest types shall not be cut, and any live, dead or dying tree greater than or equal to 24 inches diameter at breast height in eastside forest types shall not be cut. Except as follows:

(1) Trees and snags larger than 30 inches dbh in the westside forest types and 24 inches dbh in eastside forest types may be cut in urban interface areas if TRPA determines that they would unreasonably contribute to fuel conditions that would pose a fire threat or hinder defense from fire in an urbanized area. In the urban interface areas, fire management strategies favoring the retention of healthy trees 30 inches dbh or larger in the westside forest types and 24 inches dbh or larger in eastside forest types trees shall be fully considered. Urban interface areas are defined as: all undeveloped lands in a 1,250 foot zone immediately adjacent to TRPA residential, commercial, or public service plan area boundaries.

(2) A tree larger than 30 inches dbh in westside forest types and larger than 24 inches dbh in eastside forest types may be felled, treated or removed if TRPA and the land manager determine the tree pose an unacceptable risk to occupied or substantial structures or areas of high human use. Examples of areas of high human use are campgrounds, parking lots, ski trails, and developed beaches. . Where a land manager determines that a tree constitutes a physical emergency (e.g. imminent threat of falling on occupied or substantial structures, or people), the land manager may remove the tree but must provide photographic documentation to TRPA in two working days.

(3) Where immediate treatment and removal is warranted to help control an outbreak, severely insect-infested or diseased trees may be removed. Trees to be felled, treated or removed require TRPA review on a tree by tree basis, in 30 working days of written notification by the land manager.

(7) In case of extreme fuel loading some snags larger than 30 inches dbh in the westside forest types and 24 inches dbh in eastside forest types may be cut if the removal is consistent with 78.2.D.

(8) Large trees may be removed for large public utilities projects if TRPA finds there is no other reasonable alternative.

(9) Tree Removal During Emergency Fire Suppression Activities: Trees may be removed when an emergency fire suppression need exists as determined by the local, state or federal fire suppression agency involved in a fire suppression activity.

71.2.B Standards for Non-SEZ Urban Lands: In non-SEZ urban areas: Individual trees larger than 30 inches dbh that are healthy and sound shall be retained as desirable specimen trees having aesthetic and wildlife value, unless 1) all reasonable alternatives are not feasible to retain the tree, including reduction of parking areas or modification of the original design, or 2) paragraphs 71.2.A (1), 71.2.A (2), 71.2.A (3), 71.2.A (7), 71.2.A (8), or 71.2.A (9) can be applied.

71.3 General Standards: The cutting, moving, removing, killing, or materially damaging of live trees, the removal of disease-infested and hazardous trees, and the attachment of appurtenances to trees, shall comply with this chapter. The removal of trees 14 inches d.b.h. or less is exempt from TRPA approval under subsection 4.2.A (13) and requirements of this chapter. A TRPA permit is required for the removal of trees 6-inch dbh and greater on lakefront properties where the trees to be removed provide vegetative screening of existing structures, as viewed from Lake Tahoe. Except as provided in subsections 71.5.B, and 71.5.J§§, removal of trees greater than fourteen inches dbh shall require approval by TRPA. Permits shall be granted or denied in conformity with the provisions of this chapter. Such tree-related projects and activities also shall conform to the other provisions of the Code.§§§

71.3.A Findings: Before tree-related projects and activities are approved by TRPA, TRPA shall find, based on a report from a qualified forester, that the Project or activity is consistent with this chapter and the Code. TRPA may delegate permit issuance to a federal, state, or other qualified agency through a memorandum of understanding.§§§§

71.3.B Harvest Or Tree Removal Plan: In cases of substantial tree removal, as set forth in subsection 71.4.I, the applicant shall submit a harvest plan or tree removal plan, prepared by a qualified forester. The plan shall set forth prescriptions for tree removal, water quality protection, vegetation protection, residual stocking levels, reforestation, slash disposal, fire protection, and other appropriate considerations. The plan, as approved by TRPA, shall become a part of the project and prescriptions contained in the plan shall be conditions of approval.

71.4.I Substantial Tree Removal: Substantial tree removal shall be activities on Project areas of twenty acres or more and proposing the removal of more than 100 live trees ten inches dbh or larger, or proposing the removal of more than 100 live trees 10 inches dbh or larger in land capability districts 1a, 1b, 1c, 2, or 3 regardless of the Project area, or proposing tree removal that, as determined by TRPA after a joint inspection with appropriate State or federal forestry staff, does not meet the minimum acceptable stocking standards set forth in Subsection 71.4.B. Substantial tree removal projects shall be processed by the appropriate State and federal agencies in coordination with TRPA in the following manner:

(2) Review process for private parcels:

(a) Harvest plan shall be written by a qualified forester;

(b) Harvest plan shall be submitted to the appropriate state and federal agencies and TRPA with an initial environmental checklist or environmental assessment;

(c) Preparation of environmental impact statement if necessary;

(d) Pre-approval field review;

(e) Approval of project by TRPA;

(f) Pre-harvest field review; and

(g) Post-harvest review.

Chapter 75 – Sensitive and Uncommon Plant Protection and Fire Hazard Reduction

75.2.A Sensitive Plants: Projects and activities in the vicinity of sensitive plants and their associated habitat, shall be regulated to preserve sensitive plants and their habitat. All projects or activities that are likely to harm, destroy, or otherwise jeopardize sensitive plants or their habitat, shall fully mitigate their significant adverse effects. Those projects and activities that cannot fully mitigate their significant adverse effects are prohibited. Measures to protect sensitive plants and their habitat include, but are not limited to:

1. Fencing to enclose individual populations or habitat;
2. Restrictions on access or intensity or use;
3. Modifications to project design as necessary to avoid adverse impacts;
4. Dedication of open space to include entire areas of suitable habitat; or
5. Restoration of disturbed habitat.

75.2.B Uncommon Plant Communities: Uncommon plant communities shall be managed and protected to preserve their unique ecological attributes and other associated values. Projects and activities that significantly adversely impact uncommon plant communities, such that normal ecological functions or natural qualities of the community are impaired, shall not be approved.

Chapter 77 – Revegetation

77.2 Approved Species: Revegetation programs shall use TRPA-approved plant species listed on the TRPA Recommended Native and Adapted Plant List.

77.3 Soil Stabilization: Site preparation for revegetation shall include measures necessary to stabilize the soil until the vegetation is reestablished.

77.4 Revegetation Plans: Where revegetation is required to stabilize soils, replace removed vegetation, or for rehabilitation of areas where runoff or soil erosion needs to be controlled, the applicant shall provide a revegetation plan.

Chapter 78 – Wildlife Resources

78.2A Stream Environment Zones: No project or activity shall be undertaken in the boundaries of a SEZ except as otherwise permitted for habitat improvement, dispersed recreation, vegetation management, or as approved in Chapter 20 of the TRPA Code of Ordinances, Rules of Procedure.

78.2.B Movement and Migration Corridors: Movement and migration corridors shall be protected as follows:

1. Stream environment zones adjoining creeks and major drainages link islands of habitat and shall be managed, in part, for use by wildlife as movement corridors. Structures, such as bridges, proposed in these movement corridors shall be designed so as not to impede the movement of wildlife.

78.2.C Critical Habitat: Any element of the overall habitat for any species of concern, which, if diminished, could reduce the existing population or impair the stability or viability of the population, shall be considered critical habitat. This shall apply also to habitat for special interest species indigenous to the Region whose breeding populations have been extirpated but could return or be reintroduced.

1. No project or activity shall cause, or threaten to cause, the loss of any habitat component considered critical to the survival of a particular wildlife species.
2. No project or activity shall threaten, damage, or destroy nesting habitat of raptors and waterfowl or fawning habitat for deer.
3. Wetlands shall be preserved and managed for their ecological significance, including their value as nursery habitat to fishes, nesting and resting sites for waterfowl, and as a source of stream recharge, except as permitted pursuant to Chapter 20.

78.3 Special Interest, Threatened, Endangered, And Rare Species: Special interest species which are locally important because of rarity or other public interest, and threatened, endangered or rare species as designated under state and federal endangered species acts, shall be protected from habitat disturbance from conflicting land uses. These special interest species are: goshawk, osprey, bald eagle, golden eagle, peregrine, water fowl, and deer. The habitat locations of these species are depicted on TRPA maps. At a minimum, the following standards shall apply for the protection of special interest, threatened, endangered and rare species and associated habitat:

78.3.A Disturbance Zones: Perching sites and nesting trees of goshawks, peregrines, eagles, and osprey as shown on the TRPA Regional Plan Overlay Maps shall not be physically disturbed in any manner nor shall the habitat in the disturbance zone be manipulated in any manner unless such manipulation is necessary to enhance the quality of the habitat. The threshold applies not only to the number of known population sites, but will also apply to the disturbance and influence zone buffers to sites found in the future.

(1) The disturbance zones for goshawks are 0.5 mile radius around each nest site.

(2) The disturbance zones for osprey and peregrines are 0.25 mile radius around each nest site.

(3) The disturbance zones for wintering bald eagles are as shown on the TRPA maps.

(4) The disturbance zones for nesting bald eagles are 0.5 mile radius around each nest.

(5) The disturbance zones for golden eagles are 0.25 mile radius around each nest site.

78.3.B Adverse Impacts: Uses, projects or activities, outside existing urban areas and within the disturbance zone of special interest, threatened, endangered or rare species, shall not, directly or indirectly, significantly adversely affect the habitat or cause the displacement or extirpation of the population.

78.3.C Environmental Documents: Applicants for projects within disturbance zones shall submit, with their applications, appropriate environmental documentation prepared by a biologist, which includes specific recommendations for avoiding significant adverse impacts to the special interest, threatened, endangered or rare species.

78.3.D Special Conditions: Special conditions of project approval may be required to mitigate or avoid significant adverse impacts to special interest species listed by TRPA or the U.S. Forest Service for the Lake Tahoe Basin, or for threatened, endangered and rare species.

78.3.E Developed Parcels: Subsections 78.3.A through 78.3.C, inclusive, shall not apply to situations where special interest, threatened, endangered or rare species choose to live in close proximity to existing developed parcels.

Chapter 78 – Fish Resources

79.2.B Stream Habitat: Stream habitat shall be protected as follows:

(1) Artificial modifications to stream channels, or other projects, activities or uses in stream environment zones that may physically alter the natural characteristics of the stream, shall not be permitted unless TRPA finds that such actions avoid significant adverse impacts to the fishery or are otherwise allowed under the Code.

(2) All stream crossings shall be constructed so as to allow unrestricted upstream and downstream movement of fishes.

(3) Existing structures within stream environment zones which are barriers to fish migration may be removed or modified to permit fish passage. (See Chapters 9 and 32).

(4) Development adjacent to tributaries shall be required to fully mitigate significant adverse impacts to the fishery.

(5) Proposals for stream habitat improvement shall include at a minimum, the following information:

(a) Purpose of the project;

(b) Species to be benefited;

(c) Time and methods of construction or other work;

(d) Materials: their use, source, placement, and quantity; and

(e) A vegetation plan for fish cover, shading, and bank protection as needed.

(6) Wildlife habitat improvement projects or activities, or other projects or activities requiring the diversion of stream water, shall mitigate significant adverse impacts to the tributary by:

(a) Maintaining adequate instream flows adjacent and downstream from the Project area;

(b) Preventing the introduction or reentry of nutrients or sediment-enriched water to the tributary;

(c) Providing for unobstructed migration or fishes through the main stream channel;

(d) Protecting or restoring fish habitat;

(e) Protecting or restoring riparian vegetation; and

(f) Protecting or restoring other relevant instream values such as recreation, aesthetics, and wildlife habitat.

(7) Fish and wildlife stream habitat projects or activities shall be developed in coordination with the appropriate fish and wildlife agencies.

(8) Whenever possible, existing points of water diversion from streams shall be transferred to Lake Tahoe when the diversions significantly and adversely impact instream beneficial uses.

(9) An instream beneficial use assessment, such as the type established by Title 23, Section 670.6 of the California Administrative Code, shall be required for all projects and activities involving the diversion of water from a stream where instream flow standards have not been established. The assessment also may be required on streams where existing diversions are creating identified problems such as non- compliance with environmental thresholds. Prior to TRPA approval, standards of stream flow shall be established pursuant to the results of the assessment. Approval shall be conditioned on compliance with those standards and other mitigation necessary to achieve and maintain the environmental thresholds.

8.2.2 Federal Regulations

Endangered Species Act

FESA recognizes that many species of fish, wildlife, and plants are in danger of or threatened with extinction and established a national policy that all federal agencies should work toward conservation of these species. The Secretary of the Interior and the Secretary of Commerce are designated in FESA as responsible for identifying endangered and threatened species and their critical habitats, carrying out programs for the conservation of these species, and rendering opinions regarding the impact of proposed federal actions on endangered species. FESA also outlines what constitutes unlawful taking, importation, sale, and possession of endangered species and specifies civil and criminal penalties for unlawful activities.

Biological assessments are required under Section 7(c) of FESA if listed species or critical habitat may be present in the area affected by any major construction activity conducted by, or subject to issuance of a permit from, a federal agency as defined in Part 404.02. Under Section 7(a)(3) of FESA every federal agency is required to consult with the United States Fish and Wildlife Service or National Marine Fisheries Service on a proposed action if the agency determines that its proposed action may affect an endangered or threatened species.

Section 9 of FESA prohibits acts of disturbance, which result in the "take" of threatened or endangered species. "Take" is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Violation of this section can result in penalties of up to $250,000 and up to one-year imprisonment. Sections 7 and 10(a) of FESA

provide a method for permitting an action that may result in an "incidental take" of a federally listed species. Incidental take refers to take of a listed species that is incidental to, but not the primary purpose of, an otherwise lawful activity. Incidental take is permitted under Section 7 for projects on federal land or involving a federal action, while Section 10(a) provides a method for permitting an incidental take resulting from a state or private action.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711) makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21).

Wetlands and Other Jurisdictional Waters of the United States

Ditching, draining, or other activities which could alter the characteristic physical, chemical, biological or public interest values (as defined by 40 CFR 230 Subparts C-F) associated with wetlands and other waters of the U.S. are considered impacts under U.S. Army Corps of Engineers (ACOE) authority. For the purposes of this document, any destruction of wetlands or other waters of the U.S. (either in fill or other disturbance) is considered significant. Although waters of the U.S. have not been delineated, it is assumed Grass Lake Creek is considered a water of the U.S. Delineation of said waters will be required prior to Project initiation.

Placement of fill material in waters of the United States is regulated through Section 404 of the Clean Water Act (CWA), under jurisdiction of the ACOE. Waters defined under Section 404 include, but are not limited to, areas subject to the ebb and flow of the tide, streams, and wetlands (33 CFR §328.23[3]). The extent of the waters in streams is defined by elevations along the stream bank above which water normally does not rise (ordinary high water). Wetlands are defined as areas that are saturated or inundated by surface or ground water for a frequency and duration sufficient to support the prevalence of plants adapted for life in saturated soil conditions (33 CFR §328 [(b)b]).

The goal of the CWA is to maintain, restore, and enhance the physical, chemical, and biological integrity of the Nation’s waters. In reviewing projects involving impacts to wetlands, the ACOE requires no net loss of wetland functions and values. Compensatory mitigation for unavoidable impacts to wetlands permitted by the ACOE requires replacement acreage, preferably in-kind and in the same watershed, sufficient to achieve the goal of no net loss. Replacement acreage is determined by the ACOE based on the functions and values of the area being filled, the functions and values of the mitigation site, and the likelihood of success of the mitigation. Wetland mitigation may include restoration, creation, and/or preservation. The mitigation must be based on the functions and values of wetlands that are affected and the local opportunities to utilize these three approaches. Compensation should be completed before or concurrent with the impact, as near to the site of impact as practicable, and the mitigation site must be protected from subsequent loss or degradation.

Wetlands impacts are considered significant if implementation of the Project would result in the disturbance of wetlands based on:

1. The objective (Chapter 5) of the Water Quality Control Plan for the Lahontan Region (Basin Plan, 1995), which prohibits degradation of aquatic communities or populations.

2. State prohibitions against discharge to SEZs or 100-year flood plains.

8.2.3 Placer County General Plan

The Placer County General Plan was adopted in 1994. The following Goals and Policies apply to the Homewood Mountain Resort Ski Area Master Plan Project:

Water Resources

Goal 6.A: To protect and enhance the natural qualities of Placer County's streams, creeks and groundwater.

Policies

6.A.1. The County shall require the provision of sensitive habitat buffers which shall, at a minimum, be measured as follows: 100 feet from the centerline of perennial streams, 50 feet from centerline of intermittent streams, and 50 feet from the edge of sensitive habitats to be protected including riparian zones, wetlands, old growth woodlands, and the habitat of rare, threatened or endangered species (see discussion of sensitive habitat buffers in Part I of this Policy Document). Based on more detailed information supplied as a part of the review for a specific project, the County may determine that such setbacks are not applicable in a particular instance or should be modified based on the new information provided. The County may, however, allow exceptions, such as in the following cases:

a. Reasonable use of the property would otherwise be denied;

b. The location is necessary to avoid or mitigate hazards to the public;

c. The location is necessary for the repair of roads, bridges, trails, or similar infrastructure; or

d. The location is necessary for the construction of new roads, bridges, trails, or similar

infrastructure where the County determines there is no feasible alternative and the project has minimized environmental impacts through project design and infrastructure placement.

6.A.3. The County shall require development projects proposing to encroach into a creek corridor or creek setback to do one or more of the following, in descending order of desirability:

a. Avoid the disturbance of riparian vegetation;

b. Replace riparian vegetation (on-site, in-kind);

c. Restore another section of creek (in-kind); and/or

d. Pay a mitigation fee for restoration elsewhere (e.g., wetland mitigation banking program).

6.A.4. Where creek protection is required or proposed, the County should require public and private development to:

a. Preserve creek corridors and creek setback areas through easements or dedications. Parcel lines (in the case of a subdivision) or easements (in the case of a subdivision or other development) shall be located to optimize resource protection. If a creek is proposed to be

included within an open space parcel or easement, allowed uses and maintenance responsibilities within that parcel or easement should be clearly defined and conditioned prior to map or project approval;

b. Designate such easement or dedication areas (as described in a. above) as open space;

c. Protect creek corridors and their habitat value by actions such as: 1) providing an adequate creek setback, 2) maintaining creek corridors in an essentially natural state, 3) employing creek restoration techniques where restoration is needed to achieve a natural creek corridor, 4) utilizing riparian vegetation within creek corridors, and where possible, within creek setback areas, 5) prohibiting the planting of invasive, non-native plants (such as vinca major and eucalyptus) within creek corridors or creek setbacks, and 6) avoiding tree removal within creek corridors;

d. Provide recreation and public access near creeks consistent with other General Plan policies;

e. Use design, construction, and maintenance techniques that ensure development near a creek will not cause or worsen natural hazards (such as erosion, sedimentation, flooding, or water pollution) and will include erosion and sediment control practices such as: 1) turbidity screens and other management practices, which shall be used as necessary to minimize siltation, sedimentation, and erosion, and shall be left in place until disturbed areas; and/or are stabilized with permanent vegetation that will prevent the transport of sediment off site: and 2) temporary vegetation sufficient to stabilize disturbed areas.

f. Provide for long-term creek corridor maintenance by providing a guaranteed financial commitment to the County which accounts for all anticipated maintenance activities.

6.A.8. Where the stream environment zone has previously been modified by channelization, fill, or other human activity, the County shall require project proponents to restore such areas by means of landscaping, revegetation, or similar stabilization techniques as a part of development activities.

Wetland and Riparian Areas

Goal 6.B: To protect wetland communities and related riparian areas throughout Placer County as valuable resources.

Policies

6.B.1. The County shall support the "no net loss" policy for wetland areas regulated by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game. Coordination with these agencies at all levels of Project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

6.B.2. The County shall require new development to mitigate wetland loss in both regulated and non- regulated wetlands to achieve "no net loss" through any combination of the following, in descending order of desirability: (1) avoidance; (2) where avoidance is not possible, minimization of impacts on the resource; or (3) compensation, including use of a mitigation banking program that provides the opportunity to mitigate impacts to rare, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas.

6.B.3. The County shall discourage direct runoff of pollutants and siltation into wetland areas from outfalls serving nearby urban development. Development shall be designed in such a manner that pollutants and siltation will not significantly adversely affect the value or function of wetlands.

6.B.4. The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetlands and riparian areas that are critical to the survival and nesting of wetland and riparian species.

6.B.5. The County shall require development that may affect a wetland to employ avoidance, minimization, and/or compensatory mitigation techniques. In evaluating the level of compensation to be required with respect to any given project, (a) on-site mitigation shall be preferred to off-site, and in-kind mitigation shall be preferred to out-of-kind; (b) functional replacement ratios may vary to the extent necessary to incorporate a margin of safety reflecting the expected degree of success associated with the mitigation plan; and (c) acreage replacement ratios may vary depending on the relative functions and values of those wetlands being lost and those being supplied, including compensation for temporal losses. The County shall continue to implement and refine criteria for determining when an alteration to a wetland is considered a less-than-significant impact under CEQA.

Fish and Wildlife Habitat

Goal 6.C: To protect, restore, and enhance habitats that support fish and wildlife species so as to maintain populations at viable levels.

Policies

6.C.1. The County shall identify and protect significant ecological resource areas and other unique wildlife habitats critical to protecting and sustaining wildlife populations. Significant ecological resource areas include the following:

a. Wetland areas including vernal pools.

b. Stream environment zones.

c. Any habitat for rare, threatened or endangered animals or plants.

d. Critical deer winter ranges (winter and summer), migratory routes and fawning habitat.

e. Large areas of non-fragmented natural habitat, including Blue Oak Woodlands, Valley Foothill Riparian, vernal pool habitat.

f. Identifiable wildlife movement zones, including but not limited to, non-fragmented stream environment zones, avian and mammalian migratory routes, and known concentration areas of waterfowl in the Pacific Flyway.

g. Important spawning areas for anadramous fish.

6.C.2. The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the reasonable value of the habitat for wildlife is maintained.

6.C.3. The County shall encourage the control of residual pesticides to prevent potential damage to water quality, vegetation, and wildlife.

6.C.4. The County shall encourage private landowners to adopt sound wildlife habitat management practices, as recommended by California Department of Fish and Game officials, the U.S. Fish and Wildlife Service, and the Placer County Resource Conservation District.

6.C.5. The County shall require mitigation for development projects where isolated segments of stream habitat are unavoidably altered. Such impacts should be mitigated on-site with in-kind habitat replacement or elsewhere in the stream system through stream or riparian habitat restoration work.

6.C.6. The County shall support preservation of the habitats of rare, threatened, endangered, and/or other special status species. Federal and state agencies, as well as other resource conservation organizations, shall be encouraged to acquire and manage endangered species' habitats.

6.C.7. The County shall support the maintenance of suitable habitats for all indigenous species of wildlife, without preference to game or non-game species, through maintenance of habitat diversity.

6.C.8. The County shall support the preservation or reestablishment of fisheries in the rivers and streams in the County, whenever possible.

6.C.9. The County shall require new private or public developments to preserve and enhance existing native riparian habitat unless public safety concerns require removal of habitat for flood control or other public purposes. In cases where new private or public development results in modification or destruction of riparian habitat for purposes of flood control, the developers shall be responsible for acquiring, restoring, and enhancing at least an equivalent amount of like habitat in or near the Project area.

6.C.10. The County will use the California Wildlife Habitat Relationships (WHR) system as a standard descriptive tool and guide for environmental assessment in the absence of a more detailed site- specific system.

6.C.11. Prior to approval of discretionary development permits involving parcels in a significant ecological resource area, the County shall require, as part of the environmental review process, a biotic resources evaluation of the sites by a wildlife biologist, the evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of rare, threatened, or endangered species of plants or animals. Such evaluation will consider the potential for significant impact on these resources, and will identify feasible measures to mitigate such impacts or indicate why mitigation is not feasible. In approving any such discretionary development permit, the decisionmaking body shall determine the feasibility of the identified mitigation measures.

Significant ecological resource areas shall, at a minimum, include the following:

a. Wetland areas including vernal pools.

b. Stream environment zones.

c. Any habitat for rare, threatened or endangered animals or plants.

d. Critical deer winter ranges (winter and summer), migratory routes and fawning habitat.

e. Large areas of non-fragmented natural habitat, including Blue Oak Woodlands, Valley Foothill Riparian, vernal pool habitat.

f. Identifiable wildlife movement zones, including but not limited to, non-fragmented stream environment zones, avian and mammalian migratory routes, and known concentration areas of waterfowl in the Pacific Flyway.

g. Important spawning areas for anadramous fish.

6.C.12. The County shall cooperate with, encourage, and support the plans of other public agencies to acquire fee title or conservation easements to privately-owned lands in order to preserve important wildlife corridors and to provide habitat protection of California Species of Concern and state or federally listed rare, threatened, or endangered plant and animal species.

6.C.13. The County shall support and cooperate with efforts of other local, state, and federal agencies and private entities engaged in the preservation and protection of significant biological resources from incompatible land uses and development. Significant biological resources include endangered, threatened, or rare species and their habitats, wetland habitats, wildlife migration corridors, and locally-important species/communities.

6.C.14. The County shall support the management efforts of the California Department of Fish and Game to maintain and enhance the productivity of important fish and game species (such as the Blue Canyon and Loyalton Truckee deer herds) by protecting identified critical habitat for these species from incompatible suburban, rural residential, or recreational development.

Vegetation

Goal 6.D: To preserve and protect the valuable vegetation resources of Placer County.

Policies

6.D.1. The County shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually-sensitive areas such as hillsides, ridges, and along important transportation corridors.

6.D.2. The County shall require developers to use native and compatible non-native species, especially drought-resistant species, to the extent possible in fulfilling landscaping requirements imposed as conditions of discretionary permits or for project mitigation.

6.D.3. The County shall support the preservation of outstanding areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.

6.D.4. The County shall ensure that landmark trees and major groves of native trees are preserved and protected. In order to maintain these areas in perpetuity, protected areas shall also include younger vegetation with suitable space for growth and reproduction.

6.D.5. The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects.

6.D.6. The County shall ensure the conservation of sufficiently large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife.

6.D.7. The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient catchment, and wildlife habitats. Such communities shall be restored or expanded, where possible.

6.D.8. The County shall require that new development preserve natural woodlands to the maximum extent possible.

6.D.9. The County shall require that development on hillsides be limited to maintain valuable natural vegetation, especially forests and open grasslands, and to control erosion.

6.D.10. The County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained.

6.D.11. The County shall support the continued use of prescribed burning to mimic the effects of natural fires to reduce fuel volumes and associated fire hazard to human residents and to enhance the health of biotic communities.

6.D.12. The County shall support the retention of heavily vegetated corridors along circulation corridors to preserve their rural character.

6.D.13. The County shall support the preservation of native trees and the use of native, drought-tolerant plant materials in all revegetation/landscaping projects.

6.D.14. The County shall require that new development avoid, as much as possible, ecologically-fragile areas (e.g., areas of rare or endangered species of plants, riparian areas). Where feasible, these areas should be protected through public acquisition of fee title or conservation easements to ensure protection.

8.2.4 State of California

California Endangered Species Act

The California Endangered Species Act (Fish and Game Code Sections 2050-2098) established a State policy to conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat. The Fish and Game Commission is charged with establishing a list of endangered and threatened species. State agencies must consult with the CDFG to determine if a proposed Project is likely to jeopardize the continued existence of any endangered or threatened species. The California Fish and Game Code defines “take” (Section 86) and prohibits “taking” of a species listed as endangered or threatened under the California Endangered Species Act (California Fish and Game Code Section 2080) or identified as fully protected in California Fish and Game Code Sections 3511, 4700, and 5050. Impacts on individuals of those species are considered significant if they result in the following effects: a) direct mortality; b) permanent or temporary loss of occupied habitat that would result in mortality to or reduced productivity of at least one individual of the species; c) avoidance of biologically important habitat for substantial periods resulting in mortality to or reduced productivity of at least one individual of the species.

Section 2081 of the Fish and Game Code allows the "take" of a species listed as threatened or endangered by the California Endangered Species Act provided that a habitat management program is implemented resulting in a net benefit to the species. Take may also be authorized for scientific or educational purposes.

California Fish and Game Code, Native Plant Protection Policy

The goals of the Chapter 10 of the California Native Plant Protection Policy are as follows:

8.2.3. The intent of the Legislature and the purpose of this chapter is to preserve, protect, and enhance endangered or rare plants of this state (Fish and Game Code, Section 1900). For purposes of this Chapter, a 'native plant' means a plant that grows in a wild uncultivated state, which is normally found native to the plant life of this state (Fish and Game Code, Section 1901).

No person shall import into this state, or take, possess, or sell within this state, except as incident to the possession or sale of the real property on which the plant is growing, any native plant, or any part or product thereof, that the commission determines to be an endangered native plant or a rare native plant, except as otherwise provided in this chapter (Fish and Game Code, Section 1908).

All state departments and agencies shall, in consultation with the department, utilize their authority in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered or rare native plants. Such programs include, but are not limited to, the identification, delineation, and protection of habitat critical to the continued survival of endangered or rare native plants (Fish and Game Code, Section 1911).

8.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

Justification to accompany the points of significance of impacts to the natural environment is from the major regulatory policies, ordinances, and rules that govern the Tahoe Basin region. The primary federal and state laws and ordinances include the TRPA Code of Ordinances, Placer County Master Plan, FESA, and CESA.

Table 8-5 presents the evaluation criteria for Biological Resources. These criteria are drawn primarily from local plans, adapted where necessary to reflect CEQA and TRPA requirements. For the purpose of this analysis, the stated applicable points of significance determine whether implementing the Project will result in a significant impact. These points of significance are based upon Appendix G of the State CEQA Guidelines and the TRPA Initial Environmental Checklist. A Biological Resources impact is significant if implementation of the Project exceeds the point of significance shown in Table 8-5.

Table 8-5

Evaluation Criteria with Point of Significance – Biological Resources

Evaluation Criteria	Significance Threshold	Justification
BIO-1. Will the Project, directly or indirectly (including through spread of noxious weeds and habitat modification), cause a loss of individuals or occupied habitat of endangered or threatened fish or wildlife species[1]?	a) Greater than 0 endangered, threatened, or rare fish or wildlife individuals that are lost. b) Greater than 0 acres of occupied or designed critical habitat disturbed.	TRPA Initial Environmental Checklist II (5b) TRPA Threshold Carrying Capacities (Resolution # 82-11) TRPA Code of Ordinances Chapter 78 FESA CESA (Sections 2062 and 2067) CEQA Appendix G Checklist IV (a) CEQA Guidelines Section 15065 California Native Plant Protection Act (Fish and Game Code Sections 1900-1913) Placer County General Plan Section 6
BIO-2. Will the Project cause loss of raptor nests, migratory bird nests, or wildlife nursery sites?	Greater than 0 active nest sites or wildlife nursery sites lost	CEQA Guidelines Section 15065 CDFG Wildlife Habitat Relationships model - (Version 8.2) Fish and Game Code Section 3503.5 TRPA Threshold Carrying Capacities (Resolution # 82-11) TRPA Code of Ordinances Chapter 78 Placer County General Plan Section 6 Migratory Bird Treaty Act of 1918
BIO-3. Will the Project substantially block or disrupt major fish or wildlife migration or travel corridors[3]?	Greater than 0 fish or wildlife corridors blocked or disrupted	TRPA Initial Environmental Checklist II (5c) TRPA Code of Ordinances Chapter 78 & Chapter 79 CEQA Appendix G Checklist IV (d) Placer County General Plan Section 6
BIO-4. Will the Project cause a permanent loss of sensitive wildlife individuals or habitat, as defined by the Tahoe Regional Planning Agency, Placer County General Plan Section 6, or California Department of Fish and Game or cause a decline in population levels below a viable population level?	a) Greater than 0 sensitive wildlife species lost b) Greater than 0 acres of sensitive wildlife habitat disturbed by direct habitat modification or indirectly from increased human presence c) Greater than 0 populations decreased in size, to a level that is not viable d) Greater than 0 populations of MIS decreased in size to a level that is not viable	TRPA Code of Ordinances Chapters 65, 78, and 79 and Threshold Carrying Capacities (Resolution # 82-11) TRPA Initial Environmental Checklist II (5a,b) CEQA Guidelines Section 15065 CEQA Appendix G Checklist IV a CDFG Wildlife Habitat Relationships model - (Version 8.2) CDFG Interim (CNDDB 1994, 1995) Wildlife/Hardwood Management Guidelines (February 1, 1989) Placer County General Plan Section 6
BIO-5. Will the Project affect wetlands or waters of the U.S.	a) Greater than 0 square feet and/or 0 linear feet of disturbance	CEQA Appendix G Checklist IV (b, c) USACE Jurisdictional Waters

Table 8-5

Evaluation Criteria with Point of Significance – Biological Resources

Evaluation Criteria	Significance Threshold	Justification
and/or riparian and Stream Environment Zones (SEZ) through direct removal, filling, hydrologic interruption, encroachment, removal of streamside vegetation or other means?	or discharge to wetland and/or riparian and stream environment zones (Acreage of SEZ includes setbacks as identified in TRPA Subsection 37.3.D). b) Greater than 0 square feet of streamside vegetation removed. c) Greater than 0 square feet of permanent fill in jurisdictional wetlands or other waters of the U.S.	Regulations Clean Water Act, 404 CFR 230 Section 404(b)(1) TRPA Initial Environmental Checklist II (4b) TRPA Code or Ordinance Chapter 37, 74, 78 and 79 TRPA 208 Plan Lahontan Basin Plan, Chapter 3, Water Quality Objectives Fish and Game Code, Section 1600 et seq. U.S. EPA and State of California no net loss policies Placer County General Plan Section 6
BIO-6. Will the Project, directly or indirectly (including through spread of noxious weeds), cause a loss of individuals or occupied habitat of endangered, threatened, or CNPS List 1b, 2, and 3, or TRPA listed plant species[1]?	a) Greater than 0 individuals of a CNPS List 1b, 2, and 3 plant species that would be lost b) Greater than 0 acres of occupied or designated critical habitat that would be disturbed through construction or operation of the project	TRPA Initial Environmental Checklist II (4d, e) TRPA Threshold Carrying Capacities (Resolution # 82-11) TRPA Code of Ordinances Chapter 78 FESA CESA (Sections 2062 and 2067) CEQA Guidelines Section 15065 California Native Plant Protection Act (Fish and Game Code Sections 1900-1913) Placer County General Plan Section 6
BIO-7. Will the Project have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or the US Fish and Wildlife Service?	Greater than 0 acres of sensitive natural communities impacted directly or indirectly	CEQA Appendix G Checklist IV (b) Placer County General Plan Section 6
BIO-8. Will the Project cause a change in diversity or distribution of species or result in permanent loss of sensitive native plant communities (including Stream Environment Zones [SEZ] and communities	a) Overall decrease in diversity of species in a community b) Greater than 0 acres of sensitive native plant community lost	TRPA Environmental Checklist (4b, d, f) TRPA Code of Ordinances Chapters 65, 78, and 79 and Threshold Carrying Capacities (Resolution # 82-11) CEQA Guidelines Section 15065 CDFG Wildlife Habitat Relationships

Table 8-5

Evaluation Criteria with Point of Significance – Biological Resources

Evaluation Criteria	Significance Threshold	Justification
defined as sensitive in the California Natural Diversity Data Base), including trees, shrubs, grass, crops, micro flora and aquatic plants through direct removal or indirect lowering of the groundwater table?	c) Greater than 0 riparian hardwood species lost	model - (Version 8.2) California Native Plant Protection Act (Fish and Game Code, Sections 1900-1913) CDFG Interim (CNDDB 1994, 1995) Placer County General Plan Section 6
BIO-9. Will the Project introduce new vegetation that will require excessive fertilizer or water, or will provide a barrier to the normal replenishment of existing species?	a) Greater than 0 noxious species introduced into the Project area b) Introduction of new vegetation that requires excessive fertilizer or water	TRPA Environmental Checklist II (4c)
BIO-10. Will the Project result in the removal of any native live, dead or dying trees 30 inches or greater in diameter at breast height (dbh) in TRPA's Conservation or Recreational land use classifications, remove native vegetation in excess of the area utilized for the actual development permitted by the land capability, or cause a change in the natural functioning of an old growth ecosystem?	a) Greater than 0 trees removed 30 inches or greater in dbh from a Recreation or Conservation Plan Area without an acceptable Forest Plan b) Greater than 0 acres of native vegetation removed in excess of the area utilized for the actual development permitted by the land capability	TRPA Environmental Checklist II (4a, g, h) TRPA Code of Ordinances Chapter 65 and 71 Placer County General Plan 6.D.4

Source: Hauge Brueck Associates, 2010

Notes:

FESA Federal Endangered Species Act
NDOW Nevada Division of Wildlife
NNHP Nevada Natural Heritage Program
TRPA Tahoe Regional Planning Agency
USFWS United States Fish and Wildlife Service

1. Endangered, threatened, or rare is defined here as:
   - federally listed endangered, threatened, or proposed plant or wildlife species
   - state listed endangered, threatened, or proposed plant or wildlife species or rare plant species
   - federal candidates for listing
   - CNPS List 1B plant species
2. Sensitive wildlife are defined here as:
   - wildlife designated at "special concern" by TRPA
   - wildlife designated as "vulnerable" by NNHP
   - wildlife listed as "fully protected" in California
3. In terms of habitats, a "major corridor", for purposes of the EIS, is defined as any habitat which serves as a movement corridor for entire populations of a given species, essential to completion of their life cycle.

8.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

IMPACT: BIO-1. Will the Project, directly or indirectly (including through spread of noxious weeds and habitat modification), cause a loss of individuals or occupied habitat of endangered or threatened fish or wildlife species?

Analysis: *Less Than Significant Impact; Proposed Project (Alternative 1) and Alternatives 2, 3, 4, 5 and 6*

Sierra Nevada red fox (*Vulpes vulpes necator*) and California wolverine (*Gulo gulo luteus*) are both Threatened in the State of California. Bald Eagle (*Haliaeetus leucocephalus*) is Endangered in the State of California. Sierra Nevada yellow-legged frog is a candidate for federal endangered status. While the Project area contains potentially suitable habitats for these species, occurrences for Sierra Nevada red fox, California wolverine and Sierra Nevada yellow-legged frog have not been recorded in or adjacent to the Project area. Forest carnivore surveys did not reveal the presence of either California wolverine or Sierra Nevada red fox during the survey in 2007 by Wildlife Resource Consultants. Sierra Nevada yellow-legged frogs were not detected during amphibian surveys within the Project area (Wildlife Resource Consultants 2007). Bald eagle have been observed foraging at Quail Lake, however no changes to the Quail Lake area will occur with implementation of the project and associated alternatives. The Quail Lake Parcel has been sold to the USDA Forest Service and will continue to be utilized as skiable terrain, however no improvements or modifications to the habitats are proposed at this time, therefore no impacts to Bald Eagle will occur.

The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 would result in the construction of the Mid-Mountain Lodge and associated water tanks. In addition, the 16 townhomes (Proposed Project and Alternative 3) or the 16 residential lots (Alternatives 4 and 5) would also result in the removal of habitat that may be utilized by these species. Construction would remove forested habitat that would be suitable for foraging for both the California wolverine and Sierra Nevada red fox. However, due to existing human activities associated with existing recreational and operational uses onsite, the suitability of the habitat mountain-wide is severely diminished as both species prefer habitats undisturbed by human influences. No habitat for Sierra Nevada yellow-legged frog would be impacted as a result of the 16 residential lots or Mid-Mountain Lodge. Therefore, this impact is considered less than significant.

Mitigation: No mitigation is required.

IMPACT: BIO-2. Will the Project cause loss of raptor nests, migratory bird nests, or wildlife nursery sites?

Analysis: *No Impact; No Project (Alternative 2)*

With the continued operation and associated recreational use of the resort, Alternative 2 will not result in new disturbance in the Project area. Therefore, Alternative 2 will not impact potential nest sites.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

The Proposed Project (Alternative 1) and Alternatives, 3, 4, 5, and 6 each include tree removal associated with development at the North Base and South Base areas (the Proposed Project and Alternatives 3, 5 and 6), on the mid-mountain areas associated with estate residential development (Alternative 4), and the Mid-Mountain Lodge and gondola (the Proposed Project and Alternatives 3, 5 and 6). Table 8-6 identifies trees to be removed by alternative. Trees that are equal to or over 24 inch dbh are the most suitable for raptor nests. These older trees contain a higher degree of structural anomalies such as dead leaders, rotten portions of boles and deformities due to mistletoe or other infectious growths. These characteristics are attractive to many bird and bat species. Older trees often contain deadwood that is suitable for excavation by cavity nesters.

Table 8-6

Estimated Tree Removal By Alternative (diameter at breast height)

Alternative	15 to 29 inches	30 inches and greater
Project (Alternative 1) and Alternative 3		
North Base	6	9
Town Homes/Access Road	71	4
South Base	6	13
Mid-Mountain	79	7
Total	*162*	*33*
Alternative 2 and 4*		
Total	*0*	*0*
Alternative 5		
North Base	6	13
Town Homes/Access Road	71	4
South Base	6	13
Mid-Mountain	79	7
Total	*162*	*37*
Alternative 6		
North Base	6	9
South Base	6	13
Mid-Mountain	79	7
Total	*91*	*29*

Source: HBA 2010

Notes:

* Alternative 2 would maintain existing conditions. Alternative 4 includes development of single family homes in currently open ski trails and utilization of existing roadways, therefore no tree removal will be necessary.

Tree removal and construction activities associated with the new buildings may result in direct removal of active nests for migratory birds, raptors, or other wildlife and may result in disturbance or abandonment of nesting, roosting, or breeding sites in adjacent habitat. While no active nests or roosting sites were detected during previous surveys, the potential exists for nests or roosts to be present before construction commences in the future; therefore, this impact is considered to be significant.

Mitigation: **BIO-2. Active Raptor, Migratory Bird Nest Site, Wildlife Nursery/Den Site, and Bat Roost Protection Program**

Pre-construction surveys, conducted during the nesting/breeding season (spring) immediately prior to initial Project construction (e.g., where excavation and tree removal is required), shall be conducted to identify active raptor nest sites, migratory bird nests, mammal den sites, and bat roost sites in the proposed construction area. If no nests, den sites or roosts are found, then mitigation requirements are complete. If nests or roosts are located within the Project area during the pre-construction surveys, additional monitoring shall be required as follows. During initial construction activities (tree removal and excavation for the construction), a qualified biological monitor will be onsite to evaluate whether raptors are occupying trees, sensitive den sites are within the Project area or bats are occupying identified roosts. The biological monitor will have the authority to stop construction near occupied trees/den sites if he/she determines proposed activities could have a negative impact on nesting raptors, migratory birds or their young, or bats observed in the construction zone. If construction must be stopped, the monitor must consult with TRPA and CDFG staff within 24 hours to determine appropriate actions (minimum setbacks and avoidance measures appropriate to specific species present and individual situations) to restart construction while reducing impacts to identified raptors, migratory bird nests, den sites or bats. If a potential American marten den is located, an appropriate method will be used to confirm whether American marten occupy the den. This may involve placing a tracking medium at the den entrance to determine use of the den or using motion sensing camera stations. Monitoring for den occupancy shall be conducted for a minimum of two consecutive nights. Other devices such as fiber optic scope may be utilized to determine occupancy. If no marten occupy the potential den, the entrance shall be blocked to ensure no marten occupy the area during the construction period. If the den is found to be occupied by American marten, the California Department of Fish and Game shall be notified of the observation and shall be consulted regarding approach to addressing the den site. A potential option includes providing a no-disturbance buffer around the den during the breeding season (May 1 through July 31).

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 4, 5 and 6*

Implementation of mitigation measure BIO-2 will reduce project-related impacts to a less-than-significant level by allowing for surveys to be performed in the season prior to construction activities to ensure protection of active nests, dens or roosts.

IMPACT: BIO-3. Will the Project substantially block or disrupt major fish or wildlife migration or travel corridors?

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternative 3*

Analysis: *Less than Significant Impact; Alternatives 2, 4, 5 and 6*

Three perennial creeks occur in the Project area including Madden Creek, Homewood Creek and Quail Creek. A portion of Homewood Creek is confined to a 60-foot long culvert that runs beneath the portion of Tahoe Ski Bowl Way (Placer County ROW) that crosses the South Base parking lot. The Proposed Project (Alternative 1) and Alternative 3 includes the removal of the culvert and restoration of the SEZ associated with Homewood Creek in this area. Under Alternatives 2, 4, 5 and 6, the existing roadway and associated culvert will remain in place. Under Alternatives 1 and 3, a new bridge would span the Homewood Creek SEZ and allow for establishment of riparian vegetation. Restoration will include design measures to allow for fish passage. Riparian vegetation associated with stream environment zones are often utilized by wildlife species as travel corridors as they contain more dense vegetation and provide connectivity to other suitable habitats. Restoration would allow for enhanced functioning of the SEZ through increased diversity of riparian plant species, increased habitat for wildlife, and increased sinuosity of the stream channel thereby slowing flows. Increased suitability of habitat will allow for the riparian corridor to be better utilized for travel by wildlife species. The restored SEZ will allow for connectivity of habitats above the South Base area to habitats that exist below the existing parking area. Through widening of the SEZ and the addition of step pools, utilization of the habitats may increase and result in unhindered passage of fish and wildlife species. Specific design of the restored SEZ has not been provided and therefore it cannot be determined that there would be no impact to the movement of fish species within the restored creek area. The remaining creeks in the Project area (Madden Creek and Quail Creek) would not be modified under the Proposed Project (Alternative 1) or Alternatives. Further, no other changes to the flow of the creeks or vegetation associated with them will occur.

The mule deer in the area are members of the Loyalton-Truckee Deer Herd. The closest travel corridor associated with the Loyalton-Truckee Deer Herd is located 4 miles to the Northwest of the HMR. No impacts to deer migration corridors will result from implementation of the Proposed Project (Alternative 1) or Alternatives, as no corridors exist in the Project area.

Mitigation: **BIO-3. Fish Passage Protection and Enhancement**

Removal of the culvert within Homewood Creek located in the South Base area under Alternatives 1 and 3 shall be performed in such a manner to protect fish passage during and after construction. Protection measures include installation of creek flow bypass measures to maintain flows below the Project area. The Stream Environment Zone restoration plan for Homewood Creek (Appendix C) shall be modified to include fish passage measures in the design so as to not inhibit movement upstream or downstream of fish and other aquatic species. The restoration plan shall include design elements that will enhance fish habitat. Prior to finalization of the restoration plans, TRPA and Placer County staff shall review and approve the design to ensure adequate habitat improvements are included and fish passage is provided.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alternative 3*

Implementation of mitigation measure BIO-3 will reduce project-related impacts to a less-than-significant level by protecting fish access and movement in Homewood Creek during project construction.

IMPACT: BIO-4. Will the Project cause a permanent loss of sensitive wildlife individuals or habitat, as defined by the Tahoe Regional Planning Agency, Placer County General Plan Section 6, or California Department of Fish and Game or cause a decline in population levels below a viable population level?

Analysis: *No Impact; No Project (Alternative 2)*

The No Project Alternative will not result in the removal of habitats, nest trees or ground disturbance. Therefore, the No Project (Alternative 2) will not cause a permanent loss of sensitive wildlife individuals, habitats or nest sites.

Analysis: *Significant Impact; Proposed Project (Alternative 1), Alts 3, 4, 5, and 6*

Sensitive wildlife species in the Project area include California yellow warbler, waterfowl, osprey, Townsend's big-eared bat, Sierra Nevada mountain beaver, American marten, and mule deer. Sensitive species with suitable habitat in the Project area but not observed during wildlife surveys include Sierra Nevada yellow-legged frog, bald eagle, northern goshawk, coopers hawk, sharp-shinned hawk, California spotted owl, willow flycatcher, Myotis bat species, Sierra Nevada showshoe hare, Sierra Nevada red fox, California wolverine, and Pacific fisher.

California yellow warbler were detected during willow flycatcher surveys along Madden Creek and at Quail Lake (Wildlife Resource Consultants 2008). This species occupies riparian, lake shore, and meadow habitats. Detected yellow warblers are assumed to be extant in the Project area during the summer breeding months. The Proposed Project (Alternative 1) and Action Alternatives (Alternatives 3, 4, 5, and 6) would not modify riparian vegetation at Quail Lake or along Madden Creek where this species was observed. A stream channel will be restored at the South Base area with the Proposed Project and Alternative 3. Restoration may provide new suitable habitat for this species; however, due to close proximity of human habitation, activity, and presence, the suitability of nesting habitat for this species is considered low. The Proposed Project (Alternative 1) and Action Alternatives would not modify other riparian, lake, or meadow habitats at HMR, so this impact is considered less than significant for this species.

American marten were detected within the Project area during forest carnivore surveys in 2007. The marten were detected at the Ditch Treat Ski run station and at the Lake Louise station. Appendix I includes a map that shows the location of the detections. Due to the detection of marten within the Project area and in surrounding locations, it is anticipated marten are extant within the Project area. Construction activities associated with installation of the mid mountain lodge, water tanks and gondola will result in the disturbance of existing forest which is suitable foraging habitat for American marten. This minor loss of habitat will not likely have a negative impact on the local marten population but may have an impact on individuals. Mitigation measure BIO-2 includes protection of den sites and requires the area be surveyed prior to construction activities.

With the introduction of a mid-mountain lodge within the Project area the opportunity arises for existing wildlife species to be impacted from increased human presence. The mid-mountain lodge will result in higher numbers of people using the area in both summer and winter seasons. This increase in human presence is associated with higher volumes of trash and refuse generated by food service and recreational activities.

Wildlife species (black bear, marten, *Spermophilus sp*, *Tamais sp*., and many avian species) are often attracted to trash and refuse as a food source. Introduction of anthropogenic foods to wildlife can modify their natural foraging behavior and result in habituation to humans. Wildlife species that become dependent on human food lose the ability to forage for food in their natural setting and can become aggressive toward humans as an association is made between humans and food. Limiting the exposure of refuse and food to wildlife species is vital to protect the wildlife and humans alike and decreases the potential negative interaction between the two. Potential impacts to sensitive individuals may occur due to prolonged exposure of wildlife species to refuse generated by the new development.

Sierra Nevada mountain beaver have been documented in three drainages in the Project area: Madden Creek, Homewood Creek (Homewood Canyon Creek), and a small drainage above Quail Lake (Wildlife Resource Consultants 2007). The Proposed Project (Alternative 1) and Alternatives 3 and 5 will remove upland forest due to construction activities associated with the Mid-Mountain Lodge, water tanks, sewer line and gondola. No further modifications to upland forest will occur for the estate single-family dwellings under Alternative 4. Mountain beavers occupy riparian corridors and do not often range into upland forested habitat. The proposed stream restoration located at the South Base would impact existing riparian habitat, however this area is heavily disturbed and is not suitable for mountain beaver. As no proposed activities would impact existing riparian habitats that are suitable for mountain beavers, impacts to this species are considered less than significant.

Osprey requires large trees for nesting that are located in close proximity to water bodies that provide foraging habitat. Suitable habitat for osprey nest sites are widespread throughout the Project area as Quail Lake and Lake Louise are suitable bodies of water containing fish for foraging. Lake Tahoe is in close proximity to the Project area and is actively utilized by osprey for foraging. While no active or inactive nests have been located in the Project area, construction may result in the removal of suitable nesting trees for osprey. The Proposed Project (Alternative 1), Alternative 3, and Alternative 5 will result in the removal of large trees for construction of the South and North Base area development and Mid-Mountain Lodge, water tanks, gondola and associated utility alignments. Construction of roads and single-family dwellings under Alternative 4 would not remove large trees. Due to the large number of trees in the Project area, and the high degree of human activity associated with the North and South Base areas proposed for a majority of the development, the loss of the large trees will not have a substantial impact on availability of nest trees for osprey. As no nests were located during surveys in the Project area, it is likely no individuals will be impacted or lost. While currently there are no active osprey nests in the Project area, the potential exists for the establishment of nests in the Project area prior to construction, therefore, this impact is considered to be potentially significant.

Wildlife surveys determined bat species are roosting within the Homewood Lodge (Wildlife Resource Consultants 2007). Due to noise interference from machinery within the building the species of bat could not be determined roosting within the Homewood Lodge. As there are a number of sensitive species with suitable habitat (Townsend's big-eared bat, Spotted bat, small-footed myotis bay, long-eared myotis bat, fringed myotis bat, long-legged myotis, yuma myotis bat) the potential to disturb individuals during demolition is high. Alternatives 1, 3, 5 and 6 would each result in the demolition of

Homewood Lodge at the north base. Due to this potential impact to individuals and the uncertainty of species to be impacted this impact is considered potentially significant.

Mitigation: **BIO-2. Active Raptor, Migratory Bird Nest Site, Wildlife Nursery/Den Site, and Bat Roost Protection Program**

BIO-4a. Bat Roost Relocation Program

Prior to demolition of the Homewood Lodge located at the north base, the building shall be surveyed using acoustic survey methods as well as visual searches of the building to determine the presence or absence of bat species. The survey shall determine if the roost is a maternity roost (if survey is being performed in the spring), hibernacula or day roost. If a maternity roost is present, delay of the demolition may be necessary until after the roost is vacated. If bat species are detected/observed within the building, measures shall be taken to clear the bats prior to demolition activities. Measures to disturb resident bats within may include but are not limited to: disturbance to roosting individuals through introduction of light and/or noise to create an undesirable setting and to encourage the bats to vacate the roost. Upon removal of the bats, access points to the building shall be sealed to prevent reentry of bat species. Once it has been concluded that no bat species are present, demolition may commence upon final approval of TRPA. To offset the loss of the occupied bat roost, Homewood Mountain Resort shall install bat boxes in the vicinity of the North Base to provide roosting opportunities and locations for the displaced bats. Homewood Mountain Resort shall work together with Placer County and TRPA biologists to agree upon the number of bat boxes and their respective installation locations prior to removal of the bat roost/demolition activities.

BIO-4b. Trash Management Program

Prior to finalization of construction permits for the new mid-mountain lodge, HMR shall prepare a Trash Management Program for review and approval by the TRPA and Placer County. The Trash Management Program shall include measures to prevent wildlife access to trash and refuse generated by the new lodge and associated facilities. Measures to be included at a minimum are wildlife proof trash containers in all outside areas, scheduling for removal of refuse from the lodge area on a daily basis and educational signage outlining the dangers of feeding wildlife.

After Mitigation: *Less than Significant Impact; Alternatives 1, 3, 4, 5 and 6*

Implementation of mitigation measures BIO-2 and BIO-4a and BIO-4b will reduce Project related impacts to a less-than-significant level by allowing for surveys to be performed in the season prior to construction activities to ensure protection of active osprey nests should one be detected.

IMPACT: BIO-5. Will the Project affect wetlands or waters of the U.S. and/or riparian and Stream Environment Zones (SEZ) through direct removal, filling, hydrologic interruption, encroachment, removal of streamside vegetation or other means?

Analysis: *No Impact; No Project (Alternative 2)*

The No Project Alternative will not result in the construction of new facilities or modifications to existing structures in delineated SEZ areas as identified by the TRPA. Therefore, the No Project (Alternative 2) will not further impact SEZ or WoUS.

Mitigation: No mitigation is required.

Analysis: *Less Than Significant Impact, Alternative 4*

Alternative 4 will not result in construction in SEZ areas as single-family dwellings will be constructed within existing ski trails and outside of onsite drainages and SEZ areas. Roadway improvements for access to the estate single-family residences will utilize existing roadway alignments, but may result in minor impacts to SEZs. However existing regulations require implementation of best management practices, which will protect the SEZ areas and will not result in significant impacts as no new roadway alignments will be created. Implementation of Alternative 4 will not result in new SEZ disturbance and therefore this impact is considered less than significant.

Mitigation: No mitigation is required.

Analysis: *Significant Impact, Proposed Project (Alternative 1) and Alternative 3*

The Project area contains SEZs associated with the streams that flow through or originate in the Project area. Streams include Madden Creek, Homewood Creek (Homewood Canyon Creek), Quail Creek, and an unnamed ephemeral drainage between the North Base and South Base areas.

Proposed Project (Alternative 1) and Alternative 3 do not include new development in areas delineated as SEZ with the exception of the replacement of the existing roadway and culvert at the South Base area (see Impact BIO-3) and construction of an improved access roadway for the townhouse located to the west of the North Base area. The removal of the existing culvert and roadway at the South Base area will result in a reduction in total disturbance of the existing SEZ. The access roadway leading from the South Base to the townhomes located to adjacent to the North Base area will cross a narrow SEZ. The proposed paved roadway utilizes the same alignment as the existing dirt roadway that leads from the South Base area to the North Base area. BMPs for the roadway in the form of rolled curb and drainage basins will prevent stormwater from reaching the drainage. Construction will be restricted to the existing roadway, and no riparian vegetation will be impacted due to paving.

As described under Impact BIO-3, the SEZ in the South Base area will be restored to a more natural state with the removal of the culvert and the day lighting of the stream channel under Alternatives 1 and 3. In its existing condition, Homewood creek is highly constrained with steep banks and a culverted section under the South Base parking area. The SEZ restoration plan for Homewood Creek (see Appendix C) includes widening of the creek to allow for increased cross sectional area and will contain primary and secondary flood plains (IERS, April 2010). Widening of the stream cross-section results in a reduction of the kinetic energy and creates benefits to the SEZ. The following benefits have been taken from a memo prepared by Integrated Environmental Restoration Services dated April 3, 2010:

- Flood Attenuation – Widening of the stream channel allows for more space for the water to be contained in and allows flood water to stay within the banks.
- Culvert Removal – Culverts present an increased potential for clogging by debris in large flow events. Clogging often lead to failure of the culvert and can result in channel incision, increased sediment delivery to the creek, overtopping of

culvert and/or stream banks, destruction of adjacent infrastructure and/or habitats. Removal of the culvert will eliminate the potential for clogging.

- Bed Contact – Expansion of the SEZ allows for increase area for groundwater recharge and increase aquatic invertebrate habitat.
- Ground Water Recharge – Widening of the SEZ channel and reduction of flow rates allows for increased residence time for water to infiltrate into the groundwater system. Increased width of the SEZ channel also allows for lateral rewatering of the soil profile in the restoration area.
- Bank Erosion Reduction – Widening of the SEZ channel results in decreased flow rates which thereby decreases the energy available for bank cutting and erosion.
- Fish Passage – Passage of fish will be enhanced though the expansion of aquatic habitat. The restoration plan includes step pools and removal of the culvert which drastically improves habitat in the area.
- Aeration – Water moving through the restored area will pass through step pools which results in the infusion of oxygen. This reintroduction of oxygen into the water column results in increased availability of oxygen to aquatic species, carbon dioxide reduction and ammonia and hydrogen sulfide reduction.
- Habitat – Improvements to riparian habitat and function in the area are likely to result from restoration activities. Increased diversity of plant species will be planted which will result in improved avian habitat. Shading of the creek bed will become more consistent, thereby maintaining water temperature for aquatic species.
- Sediment Load and Transport Reduction– Velocity reduction of the stream will allow for decreased transport of sediment.

The restoration allows for better functioning of the SEZ habitat and will likely result in an increase of SEZ habitat in the Project area. Restoration of the Homewood Creek SEZ in the South Base area will not have negative impacts to downstream areas. The stream is currently contained by the culvert running through the parking lot. The proposed restoration will provide a connection to two day lighted areas that exist above and below the South Base development area. The restoration may have a positive impact on downstream floodplains as it will allow for increased area for groundwater recharge and also allow for the floodplain downstream to retain its character. The restoration of the Homewood Creek SEZ will likely result in improvements to the SEZ however the proposed Restoration Plan included in Appendix C does not provide sufficient detail to substantiate a conclusion that impacts will be beneficial and no negative impacts will occur to the SEZ below the Project area. Therefore this impact is considered potentially significant.

Under the Proposed Project (Alternative 1) and Alternative 3, the proposed North Base area parking garage has been designed to locate the footprint of the building completely outside of the SEZ delineated by TRPA during the HMR Land Capability Challenge (2008). While there are no plans provided by HMR for the restoration of the SEZ portions of the gravel parking lot, it is assumed that the gravel parking lot fill will be removed and restored during construction of the proposed parking garage and that the

project will result in a benefit to the SEZ. Therefore, this impact is considered less than significant for the Proposed Project (Alternative 1) and Alternative 3.

Mitigation: **BIO-5a: Final Homewood Creek SEZ Restoration Plan**

The Project Applicant shall modify the Homewood Creek SEZ Restoration Plan - April 3, 2010 to include supplemental information necessary for TRPA project approval and permitting. The Revised Homewood Creek SEZ Restoration Plan shall add the following information:

- List of existing constraints of the Project area;
- Channel location;
- Channel substrate composition;
- In-channel features such as logs or rocks to act as flow separators (if necessary) to encourage braiding of the channel and sediment deposition;
- A profile of the restored stream channel in conjunction with existing cross sections;
- A narrative of construction techniques that describe modifications to channel geometry;
- A comprehensive planting plan identifying species and planting locations of riparian and wetland plants shall be incorporated into the restoration plan, including species that are known to occur in the existing undisturbed SEZ above the proposed restoration site;
- Soil stabilization and erosion control measures and other permanent BMPs; and
- A long-term maintenance and monitoring plan to measure establishment of plants and to monitor the progress of restoration activities.

The desired condition shall mirror historic site conditions, adjacent plant community composition, and habitat value. Goals shall be identified to ensure parameters such as plant density, percent plant cover, and stage of maturity of planted plant species are achieved. The revised restoration plan shall be review and approved by appropriate permitting agencies prior to implementation to ensure restoration goals and success criteria are acceptable, sufficient and attainable for the site-specific conditions.

After Mitigation: *Less than Significant Impact; Alternatives 1 and 3*

Implementation of mitigation measures BIO-5a will provide sufficient detail for approval of the restoration project and provide evidence on impacts to the SEZ below the Project area. This plan will reduce potential impacts to a less-than-significant level.

Analysis: *Significant Impact, Alternatives 5 and 6*

The Project area contains SEZs associated with the streams that flow through or originate in the Project area. Streams include Madden Creek, Homewood Creek (Homewood Canyon Creek), Quail Creek, and an unnamed ephemeral drainage between the North Base and South Base areas. Alternatives 5 and 6 do not include changes to existing SEZ

disturbance at the South Base area or in the area located between the South Base and North Base areas.

At the North Base area, Alternatives 5 and 6 include construction of a residential building on a parcel west of the Maritime Museum and Sacramento Street (see building number C, Figures 3-16 and 3-19, Chapter 3) currently used as a gravel parking lot that contains 7,504 square feet of existing and verified land coverage; a small portion of which is in TRPA verified SEZ. This SEZ is not associated with a mapped stream channel, but was verified during the HMR Land Capability Challenge (TRPA File #LLAD20080083). As currently designed, up to 2,161 square feet of the southwest corner of the residential structure would be located in the delineated SEZ, representing a 5,343 square foot reduction in land coverage in the SEZ. The gravel parking contains a small area of riparian vegetation along the southern border of the parcel, the only area that does not have existing coverage or development. Restoration plans have not been prepared to date by HMR to show how the SEZ will be restored and its associated habitat enhanced. While disturbance in the SEZ would remain under Alternatives 5 and 6, the overall disturbance would be less than the existing disturbance associated with maintenance of the gravel parking lot and therefore the overall function of the SEZ would likely benefit from the implementation of Alternatives 5 and 6. However, without detailed plans to document the restoration of the SEZ adjacent to the proposed structure, the level of improvement cannot be determined and this impact is considered to be potentially significant for Alternatives 5 and 6.

Mitigation: **BIO-5b. SEZ Restoration Plan for Gravel Parking Lot**

HMR shall develop a detailed SEZ restoration plan for the portion of the North Base area gravel parking lot that will be restored during development of the residential housing under Alternatives 5 and 6. This plan shall be in alignment with the overall adaptive management strategy for HMR. This SEZ plan shall also be consistent with TRPA guidelines, and include a monitoring plan. The monitoring program will include clear success criteria and management responses if criteria are not met thus insuring goal achievement. This plan must include site maintenance for a minimum of three years, and a geomorphic/stability, groundwater monitoring, and vegetation monitoring plan consisting of two site assessments per year for five years. The vegetation monitoring components shall include measurements of species type and density, percent survival, plant vigor/health, and survival rate. An annual report shall be prepared presenting the results of the monitoring for the previous year. The annual report shall be presented to TRPA and Lahontan Regional Water Quality Control Board.

After Mitigation: *Less than Significant Impact Alternatives 5 and 6*

Implementation of mitigation measure BIO-5b will reduce Project related impacts to a less-than-significant level by ensuring that existing SEZ disturbance is successfully restored.

IMPACT: BIO-6. Will the Project, directly or indirectly (including through spread of noxious weeds), cause a loss of individuals or occupied habitat of endangered, threatened, or CNPS List 1b, 2, and 3, or TRPA listed plant species?

Analysis: *Less Than Significant Impact; No Project (Alternative 2)*

The No Project Alternative will not result in the construction of new facilities or ground disturbance. Catherine Schnurrenberger performed a botanical field reconnaissance for construction areas in early August 2007 (Botanical Field Reconnaissance Report, 2007). No special-status plant species were observed during the survey in the Project area. Noxious weeds were observed in the Project area, including Klamath weed (*Hypericum perforatum*), bull thistle (*Cirsium vulgare*), Eurasian watermilfoil (*Myriophyllum spicatum*), cheat grass (*Bromus tectorum*), woolly mullein (*Verbascum thapsus*), and witchgrass (*Panicum capillare*). HMR does not have a noxious weed management plan in place to eradicate and control weeds onsite. While there were no special-status plant species detected during surveys, the potential exists for species to colonize suitable habitat present at HMR. With no vegetation removal or new ground disturbance under Alternative 2, the No Project Alternative is not expected to create new opportunities for the introduction or expansion of existing weed populations that may displace native species. Therefore, this impact is considered less than significant.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6*

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 include construction activities which may introduce additional noxious weed species or create conditions that increase the probability for the spread of existing weed populations. Catherine Schnurrenberger performed a botanical field reconnaissance for construction areas in early August 2007 (Botanical Field Reconnaissance Report, 2007). No special-status plant species were observed during the survey in the Project area. Noxious weeds were observed in the Project area, including Klamath weed (*Hypericum perforatum*), bull thistle (*Cirsium vulgare*), cheat grass (*Bromus tectorum*), woolly mullein (*Verbascum thapsus*), and witchgrass (*Panicum capillare*). Eurasian watermilfoil (*Myriophyllum spicatum*) was also noted to be present in Quail Lake. HMR does not have a noxious weed management plan in place to eradicate and control weeds onsite. While there were no special-status plant species detected during surveys, the potential exists for species to colonize suitable habitat present at HMR. Vegetation removal and ground disturbance associated with construction may introduce new weed species or result in the spread of existing noxious weeds that may exclude native plant species. Therefore, this impact is considered significant for the Proposed Project (Alternative 1) and Alternatives 3, 4, and 5.

Mitigation: **BIO-6a. Noxious Weed Risk Assessment and Eradication**

HMR shall develop and implement a Noxious Weed Eradication and Control Program to protect suitable sensitive plant habitat and to protect future populations of sensitive plants from invasive terrestrial and aquatic noxious weeds. The plan shall identify a noxious weed coordinator for HMR and include abatement measures to decrease and eradicate known populations of noxious weeds and prevention measures as follows:

- Known populations of terrestrial and aquatic noxious weeds shall be identified and a plan shall be implemented to control and eradicate weed populations and restore native plant cover.

- Equipment used in the Project must be sanitized and free of non-native invasive species before moving into the Project area to ensure that the equipment is free of soil, seeds, vegetative material, or other debris that could contain or hold seeds of non-native invasive species. Vehicles, especially large, off-road and/or earthmoving vehicles shall be cleaned when they come into the Lake Tahoe Basin or come from a Basin area known to contain non-native invasive species. Equipment will be considered clean when visual inspection finds no soil, seeds, plant material, or other such debris.
- Gravel, fill, or other materials shall be "weed-free." Use onsite sand, gravel, rock, or organic matter when possible. Otherwise, obtain "weed-free" materials from gravel pits and fill sources that have been surveyed and approved by the CDFA or Nevada Department of Agriculture or by the noxious weed coordinator.
- Use "weed-free" mulches, and seed sources. Salvage topsoil from Project area for use in onsite revegetation, unless contaminated with non-native invasive species. Do not use soil or materials from areas contaminated by cheat grass.
- After construction, the noxious weed coordinator shall be notified. The Project area shall be monitored for 3 years subsequent to Project implementation to ensure additional non-native invasive species do not become established in the areas affected by the Project, that native species are established on re-seeded or restored habitats, and that known non-native invasive species do not spread.

BIO-6b. Pre-Construction Rare Plant Surveys

HMR shall hire an approved botanist/biologist to perform rare plant surveys in Project areas proposed for development prior to construction. The survey shall identify species observed and include locations of rare plant species identified. TRPA and Placer County staff shall be notified of the location of rare plant species present within the proposed Project area. If rare plants are identified, measures shall be taken to avoid disturbance and impacts to the plants. Protection measures shall be developed in conjunction with TRPA, CDFG and Placer County staff as necessary and shall be specific to the species present and the potential disturbance that may result from construction activities (habitat modification, direct removal, blasting activities, noxious weed introduction, etc.). If avoidance of rare plant species is not possible, compensation measures shall be developed prior to disturbance/constructions activities. These compensation measures shall be tailored to the specific species to be disturbed and to the location in which the disturbance is to occur. If agency staff determines that compensation measures are not feasible, then the project shall be modified to avoid the disturbance.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 4, 5, and 6*

Implementation of mitigation measured BIO-6a and BIO-6b will reduce/eliminate known populations of noxious weeds and protect sensitive plant habitats and individuals from potential infestation and impacts associated with construction activities. This impact is considered less than significant after mitigation.

IMPACT: **BIO-7. Will the Project have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or the US Fish and Wildlife Service?**

Analysis: *No Impact; No Project (Alternative 2) and Alternative 4*

The No Project Alternative will not result in the construction of new facilities or modifications to existing structures in sensitive natural communities identified by the TRPA or Placer County. Alternative 4 will not result in additional adverse effects on SEZ areas as no construction will occur in delineated SEZ boundaries. Therefore, the No Project (Alternative 2) and Alternative 4 will not impact sensitive natural communities.

Mitigation: No mitigation is required.

Analysis: *Significant, Proposed Project (Alternative 1) and Alternatives 3, 5 and 6*

Sensitive natural communities in the Project area include SEZs as defined by TRPA. No uncommon plant communities identified by TRPA are present. As discussed under Impact BIO-5, mitigation measures BIO-5a and BIO-5b ensure that onsite SEZs are properly restored with the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6. The Proposed Project (Alternative 1) and Alternative 3 will increase the amount and function of SEZ due to the restoration of Homewood Creek in the South Base area and restoration of a portion of the gravel parking lot located in SEZ at the North Base area. Due to construction in the SEZs at the South Base and North Base areas, the Proposed Project (Alternative 1) and Alternatives 3 and 5 would have potentially significant impacts to sensitive natural communities, and mitigation is required.

Mitigation: **BIO-5a. Final Homewood Creek SEZ Restoration Plan (Alternatives 1 and 3)**

BIO-5b. SEZ Restoration Plan for Gravel Parking Lot (Alternatives 5 and 6)

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 5 and 6*

Implementation of mitigation measures BIO-5a and BIO-5b will reduce Project related impacts to a less than significant level by ensuring that existing SEZ disturbance is successfully restored.

IMPACT: **BIO-8. Will the Project cause a change in diversity or distribution of species or result in permanent loss of sensitive native plant communities (including Stream Environment Zones [SEZ] and communities defined as sensitive in the California Natural Diversity Data Base), including trees, shrubs, grass, crops, micro flora and aquatic plants through direct removal or indirect lowering of the groundwater table?**

Analysis: *No Impact; No Project (Alternative 2) and Alternative 4*

The No Project Alternative will not result in the construction of new facilities or modifications to existing structures in delineated SEZs or other sensitive native plant communities. Alternative 4 will not result in adverse effects on sensitive native plant communities as no construction will occur in previously undisturbed areas. Therefore, the No Project (Alternative 2) and Alternative 4 will not result in impacts.

Analysis: *Less than Significant Impact, Proposed Project (Alternative 1), Alternatives 3, 5 and 6*

The Project area does not contain sensitive native plant communities as defined by the CNDDB. The Project area contains SEZs as defined by the TRPA (Figure 8-2). The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will improve SEZ function and habitat through the restoration of Homewood Creek in the South Base area (Alternatives 1 and 3) and a portion of the gravel parking lot in the North Base area (Alternatives 1, 3, 5, and 6). Based on the increase of SEZ area and enhancement of riparian habitat on site (as compared to the existing conditions) associated with these Alternatives, this is considered a beneficial impact. The remainder of the development would occur in existing disturbed areas and/or on common upland habitat types, such as conifer forests. These common upland habitat types are not considered sensitive native plant communities.

Mitigation: No mitigation is required.

IMPACT: BIO-9. Will the Project introduce new vegetation that will require excessive fertilizer or water, or will provide a barrier to the normal replenishment of existing species?

Analysis: *No Impact; No Project (Alternative 2)*

The No Project Alternative will not result in the planting of new vegetation associated with construction of new facilities. Therefore, the No Project (Alternative 2) will not result in impacts.

Analysis: *Significant Impact, Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

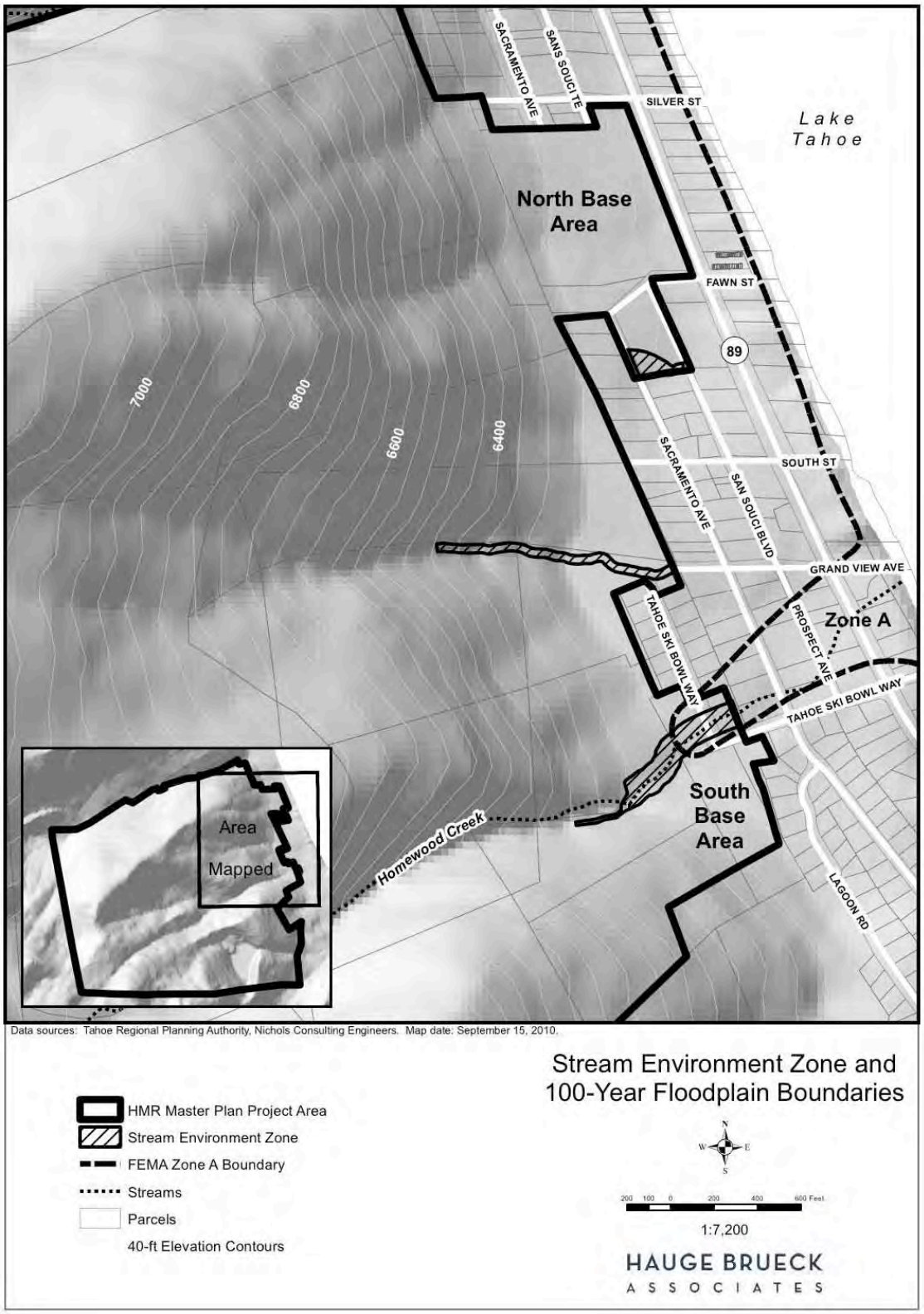
Landscape plans and fertilizer plans have not been developed for the Action Alternatives. Under Alternatives 1, 3, 5 and 6, landscaping and fertilizer management would be the responsibility of HMR. Under Alternative 4, the Project area would be divided up and sold to individual owners, increasing the potential for inappropriate vegetation and mismanagement of fertilizers. Therefore, the level of impact that may result due to introduction of new vegetation or types of fertilizer cannot be determined with certainty. Therefore, this impact is considered to be potentially significant and mitigation is required.

Mitigation: **BIO-9. Final Landscape/Revegetation Plan and Fertilizer Management Plan**

HMR shall prepare and implement a final landscape/revegetation plan and fertilizer management plan for the Project area in accordance with Sections 3.5.19 and 3.5.20 of this document. This plan shall comply with TRPA Code of Ordinances Section 31.7 Landscaping Standards and Section 81.7 Fertilizer Management. The landscape plan shall include replacement of trees in accordance with Placer County regulations. The plan shall be reviewed and approved by TRPA and Placer County Planning Department prior to issuance of the final Project approval. Under Alternative 4, the landscape and fertilizer management would fall upon owners of the residential and commercial parcels sold by HMR.

The revegetation/landscaping plan shall require the use of native or TRPA-approved nonnative shrubs and trees in the project area, as these plants are most adapted to the conditions of the Project area and require less irrigation for establishment and upkeep.

Figure 8-2. Stream Environment Zones and 100-Year Floodplain Boundaries



Bioretention areas for stormwater treatment are proposed for use throughout the project area in-line with stormwater conveyance and retention systems. Runoff shall be directed into bioretention areas, where it can pond and infiltrate into the soil. The engineered soil mix and vegetation in the bioretention areas shall provide water quality treatment and infiltration similar to undeveloped areas.

High traffic groomed turf areas are designed and located to allow for controlled irrigation and fertilization throughout the Project area. Irrigation shall be installed and managed to minimize the potential for runoff to the stormwater treatment systems.

Fertilizer shall be managed carefully and used in dry, slow release form when applications are necessary. Special measures to avoid over spraying onto paved surfaces, which could result in wash off of nutrient rich water to the stormwater treatment systems, shall be taken. To ensure minimal escape of nutrients, fertilizer and irrigation shall be monitored closely. The Plan shall include, but shall not be limited to the following measures to minimize the potential for nutrients entering surface water or escaping the root zone and being delivered to groundwater:

- Use of non-mowed or slow-growing turf grass species, locally native or adapted species with annual fertilizer requirements that do not exceed 1.5 pounds per 1,000 square feet;
- Implementation of a Fertilizer Management Plan that meets the requirements of Section 81.7 of TRPA Code or Ordinances;
- Determination of appropriate fertilizer rates by a soil/revegetation specialist and based on the results of soil nutrient testing;
- Incorporation of fertilizer into soils prior to seed application to prevent burning and low germination rates;
- Use of Biosol or other organic, slow-release fertilizers that do not contain nitrate or ammonium with careful application to avoid application on hardscape;
- Prohibit fertilizer use on bioretention areas for stormwater treatment after initial establishment; and
- Installation of a highly controlled spray irrigation system to avoid over irrigation and overspray onto hardscape.

The Revegetation Plan shall apply to areas disturbed during construction activities, the steep slopes above the North and South Base areas and the bioretention areas for stormwater treatment. The objective of the soil and revegetation treatments is to control sediment at its source, to maximize hydrologic and biological function in the soil and to develop and support a robust vegetation community. Specific treatment outcomes shall include:

- Maximize soil infiltration rates and minimize runoff;
- Protect the soil surface with functional mulch cover;
- Reestablish soil nutrient cycling; and
- Reestablish an appropriate, self-sustaining native plant community.

Bioretention areas shall receive similar treatments as disturbed areas. Bioretention areas are not expected to be wet during much of the growing season and are therefore not under the influence of a mesic or wet hydrologic regime. Soil treatments shall be the same as

for the disturbed areas. Since runoff will be routed into bioretention areas for stormwater treatment, bioretention areas shall be designed such that concentrated flow will be routed through energy dissipaters using rocks or other landscape elements to eliminate scouring flows. More specific seeding and planting strategies in bioretention areas shall be developed in conjunction with the landscape architect developing the final landscaping plan, as discussed below.

Slow-release, organic fertilizer shall be used and irrigation shall be applied so that water penetrates to at least eight inches below ground surface (bgs) within 24 hours of irrigation. The irrigation system shall be designed to meet this specification without displacing mulch or causing erosion. The final Plan shall include site-specific fertilizer and irrigation rates and a monitoring plan and shall be submitted to TRPA for project approval and permitting.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 4, 5, and 6*

Implementation of mitigation measure BIO-9 will require the creation of a landscape plan and fertilizer management plan that complies with TRPA Code of Ordinances to retain native species where applicable and regulate the use of fertilizer. Implementation of this measure will reduce the impact to less than significant.

IMPACT: BIO-10. Will the Project result in the removal of any native live, dead or dying trees 30 inches or greater in diameter at breast height (dbh) in TRPA's Conservation or Recreational land use classifications, remove native vegetation in excess of the area utilized for the actual development permitted by the land capability, or cause a change in the natural functioning of an old growth ecosystem?

Analysis: *No Impact; No Project (Alternative 2)*

The No Project Alternative will not result in the removal of trees or removal of native vegetation. The No Project Alternative will also not have an effect on old growth ecosystem as none exists in the Project area. Therefore, the No Project (Alternative 2) will not result in impacts.

Analysis: *Significant Impact, Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

The Proposed Project (Alternative 1) involves tree removal for construction of facilities at the North Base, South Base, townhome sites, gondola alignment and Mid-Mountain Lodge. Table 8-6 details tree removal numbers associated with the base areas and Mid-Mountain Lodge, including the water tank. Detailed plans have not been provided for the utility corridor that would connect the North Base and the Mid-Mountain Lodge. Therefore, accurate tree removal estimates cannot be developed for utility alignments. However, it is anticipated that utilities would utilize existing roadway alignments or ski trails, which have been previously cleared of trees.

The trees to be removed are located in PAS 157 Homewood/Tahoe Ski Bowl, which is a recreational plan area. Table 8-6 identifies a total of 33 trees 30 inches or greater for removal for the Proposed Project (Alternative 1) and Alternative 3. Alternative 5 will result in the removal of 37 trees that are 30 inches dbh or larger. Alternative 6 will result in the removal of 29 trees that are 30 inches dbh or larger. Of these 33, 37 and 29 trees proposed for removal under the Action Alternatives, a total of nine trees have been identified for potential preservation in the North Base area based on a memorandum from

Nichols Consulting Engineers dated May 21, 2009. However, at present, it cannot be determined with certainty that these trees can be retained based on potential modifications to construction activities or building locations. Therefore, they are included in the estimated total tree removal count. It is noted on the May 21, 2009 memo that "Trees proposed to be removed fall in the parameters of the proposed building footprint or hardscape. Building development location was analyzed and selected in order to minimize impacts on scenic, ground water, grading and land coverage criteria." However, no development area is considered an old growth forest.

TRPA Code Section 71.2.A identifies the standards for tree removal on conservation and recreation plan areas:

71.2.A - Standards for Conservation and Recreation Lands: In lands classified by TRPA as conservation or recreation land use or Stream Environment Zones, any live, dead or dying tree greater than or equal to 30 inches diameter at breast height (dbh) in westside forest types shall not be cut, and any live, dead or dying tree greater than or equal to 24 inches diameter at breast height in eastside forest types shall not be cut.

The one exception that applies to Homewood is TRPA Code Section 71.2.A(6) which states:

71.2.A(6) - In ski areas with existing TRPA-approved master plans, trees larger than 30 inches dbh in the westside forest types and 24 inches dbh in eastside forest types may be removed for facilities that are consistent with that master plan. For activities that are consistent with a TRPA-approved master plan, trees larger than 30 inches dbh in the westside forest types and 24 inches dbh in eastside forest types may be removed when it is demonstrated that the removal is necessary for the activity.

While 71.2.A(6) may apply to the proposed project, because the Project is located on private land, TRPA Code Section 71.2.C can be applied, which states:

71.2.C - Alternative Private Landowner Process: A private landowner may follow the regulations in Subsections 71.2.A or a private landowner may follow one of the following planning processes to achieve or maintain the late seral/old growth threshold, goals, and polices.

(2) Private landowners may prepare a limited forest plan when there is limited proposed impact to large trees.

(a) A limited forest plan may be prepared if 10% or less of the trees over 30 inches dbh in the westside forest types and 24 inches dbh in eastside forest types in the project site are proposed to be cut in the life of the plan.

(b) The content of a limited forest plan shall include:

(i) The relative state permit application, if available;

(ii) Description of harvest activities;

(iii) Description of management activities;

(iv) Explanation of how thresholds, goals and policies will be attained under the forest plan;

(v) The expiration date of the plan. A minimum lifespan of 10 years and a maximum lifespan of 50 years will be accepted.

The removal of 33 (Alternative 1 and 3) and 37 (Alternative 5) trees larger than 30 inches dbh would be much less than 10 percent of the total large trees in the Project area and therefore Subsection 71.2.C(2) could be applied for the Project. However, because a limited forest plan has not been generated for the Project area, this impact is considered significant and mitigation is required.

A number of trees larger than 30 inches dbh are proposed to be saved and to remain onsite at the North Base area. The potential exists for these trees to be damaged during construction and result in increased loss of large mature trees onsite.

The Project does not conflict with the Placer County Tree Preservation ordinance adopted in October of 1991. The tree preservations Ordinance applies to all projects where discretionary permit approvals are required by the County provided, however, no Landmark Tree may be removed without obtaining a tree permit pursuant to Section 12.16.060. However, there are no Landmark Trees proposed for removal within the HMR project area.

Mitigation: **BIO-10. Prepare Forest Plan and Tree Protection Plan For Homewood Mountain Resort**

HMR shall prepare and implement a Forest Plan for the Project area that complies with TRPA Code of Ordinances Chapter 71 and incorporates the Fire Suppression and Management Plan compliance measure as described in Section 3.12.12 of this document. The Forest Plan shall be produced by a Registered Professional Forester and be submitted to TRPA for review and approval to confirm that the plan complies with Chapter 71. The forest plan shall identify and detail trees for removal and other forested areas which may require treatment (thinning) in order to increase the overall health of the forest.

In addition, a Tree Protection Plan shall be prepared for the Project. Included in the Tree Protection Plan shall be tree protection measures to prevent damage to trees that are proposed to remain. The Project applicant shall hire a Certified Arborist to develop specific measures to ensure adequate protection to trees slated for retention in the vicinity of proposed development. The tree protection measures shall include the establishment of tree protection zones, and protection measures to prevent damage to the trees (bole, roots and branches). Additionally the Tree Protection Plan shall identify areas where tree roots are to be protected and proper methods for pruning, irrigation and limb removal during construction activities. The Tree Protection Plan shall include monitoring of the trees slated for retention for a period of three years. Mortality of any of the retained trees shall require the replacement of trees lost utilizing the same species and relative location.

The Tree Protection Plan shall be submitted to Placer County and the TRPA for review and approval prior to removal of any trees associated with the Project.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 4, 5 and 6*

Implementation of mitigation measure BIO-10 will ensure Homewood Mountain Resort will comply with TRPA regulations regarding removal of trees larger than 30 inches dbh prior to construction. This impact will be less than significant after mitigation.

8.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact: **BIO-C1: Will the Project have significant cumulative impacts to biological resources?**

Analysis: *Less than Significant; No-Project (Alternative 2)*

Under the No Project alternative, the combined effect of reasonable and foreseeable future projects on biological resources, wildlife and fisheries would be beneficial due to the nature of the projects being implemented. Future projects include projects that will result in the enhancement of habitat through the restoration of riparian habitats forest thinning projects. These restoration and enhancement projects would not necessarily result in immediate increase in quality of habitat, however over time would result in higher quality habitats for sensitive vegetation communities (i.e. riparian) and wildlife species that are associated with such habitats. Other types of projects in the Project area (outlined in Table 20.1-1) are development projects that will not result in significant impacts to sensitive plant or wildlife species. Other known erosion control project and fuels reduction projects will result in modifications to habitats but will require compliance with regulatory measures to avoid or minimize impacts to sensitive species and their respective habitats.

Mitigation: No mitigation is required.

Analysis: *Less than Significant; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

Under the action alternatives (Alternatives 1, 3, 4, 5 and 6) the combined effect of reasonably foreseeable future projects on biological resources (as listed in Table 20.1-1), would not result in a significant impact. Many of the future projects that are proposed in the vicinity Project area include development projects that will not result in significant impacts to sensitive plant or wildlife species. These development projects involve redevelopment of existing disturbed areas and structures, including, but not limited to, the NTPUD infrastructure replacements on existing sites and in area roadways, Kings Beach Commercial Core Area Improvements (aesthetic, accessibility, and water quality improvements) Project within the existing commercial area, the Tahoe Vista Affordable Housing and Interval Ownership Project on an existing campground site, the Kings Beach Gas Station Project on a disturbed site, the Rippey Commercial Building Project in Tahoe City on a disturbed site, and the Denny's Trailer Park Project that will reconfigure existing lots to conform to manufactured home layouts. Additionally, the proposed development projects are located within and surrounded by existing urban uses and do not contain high quality habitats for sensitive wildlife and plant species. Other known erosion control project and fuels reduction projects will result in modifications to habitats but will require compliance with regulatory measures to avoid or minimize impacts to sensitive species and their respective habitats.

Cumulative timber losses that occur as a result of fire within and adjacent to the project vicinity would reduce available habitat for wildlife and plant species and would compound effects of the action alternatives. Homewood Mountain Resort has treated over 400 acres of forested areas to reduce the threat of catastrophic fire, including the 12 acres northwest of the South Base area and the area immediately west of Tahoe Ski Bowl Way between the South and North Base areas. There is a plan to continue the forest thinning/fuels management for forested areas within the 1,253-acre Homewood Mountain Resort. In addition, the Tahoe City Public Utility District, in cooperation with HMR,

conducted forest fuels reduction on 110 acres of their property located south of the HMR South Base. These fuels reduction projects cover most of the urban interface between HMR and adjacent residential areas, with the exception of the residential areas just to the north of the North Base area. This loss of timber as a result of the thinning projects will have an overall increase in the quality of forested habitat and additionally significantly reduces the potential of catastrophic wildfire in the area. Continued timber thinning practices that are proposed in conjunction with Master Plan installation will reduce the chances of catastrophic fire and will result in a benefit to the surrounding forested lands. Forest fuels reduction projects, restoration project and erosion control projects listed in Table 20-1 will result in ground disturbance that could result in impacts to undiscovered rare plant species and sensitive vegetation types. However, existing regulatory measures require surveys to determine presence/absence of rare plants species and other sensitive vegetation communities. Discovery of these species would allow for the avoidance or mitigation of impacts from the cumulative project list.

The projects identified in Table 20-1 may impact wildlife and vegetation resources in a negative manner through the increased human presence in the area and minor loss of habitats. However, standard compliance measures, mitigation measures and design features that will be required for implementation of the projects will offset potential cumulative impacts to biological resources. The proposed fuels reduction projects, restoration projects and erosion control projects will result in improvements to the biological environment. Therefore this impact is considered less than significant.

Mitigation: No mitigation is required.

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9.0 CULTURAL AND HISTORICAL RESOURCES

This section discusses the Project impacts on cultural resources related to disturbance of archaeological, historical, architectural, and Native American and traditional heritage resources. This section also addresses disturbance of unknown archaeological and paleontological resources (fossils). To provide a basis for this evaluation, the setting subsection describes broad periods of cultural history for the Homewood Mountain Resort (HMR) Ski Area Master Plan Area (Project area). The goal of the cultural resources analysis for this Project is to identify prehistoric and historic archaeological sites, architectural and historical sites, historical landscapes, and traditional cultural properties, including Native American heritage resources, potentially affected by implementation of the Project. Detailed archaeological and ethnographic studies of the Project area and vicinity are found in Lindström (2007), and a detailed historic and architectural study is found Marvin and Brejla (2009).

9.1 ENVIRONMENTAL SETTING

Current environmental review policies, in compliance with the Tahoe Regional Planning Agency's (TRPA) Code of Ordinances Section 29.5A and California Environmental Quality Act (CEQA) Section 15064.5, require that heritage resources be considered as part of the environmental assessment process.

9.1.1 Cultural Resources

The following is a summary of the broad periods of cultural history within the Placer County portion of the Lake Tahoe Basin and more specifically Homewood, California and the west shore of Lake Tahoe. This information is based on field surveys, archival research, and consultations.

Prehistoric Period

The prehistory of the northern Sierra Nevada region and Lake Tahoe Basin has been addressed in several publications, including Heizer and Elsasser (1953), Hester (1973), Elston et al. (1977, 1994), Heizer and Hester (1978), Thomas (1981), and Davis (1982). Detailed summaries of this prehistory and its chronological components is presented in Elston (1986) and Elston et al. (1994).

Prehistoric land use patterns, derived from protohistoric Washoe ethnography, are generally consistent with interpretations derived from numerous archaeological investigations in the Lake Tahoe region of the Sierra Nevada (Tahoe Sierra). The archaeological record indicates a shift from hunting-based societies in earlier times to populations with increasing reliance on plant foods by the time of historic contact. Some of the oldest archaeological finds reported for the Tahoe Sierra have been found in the Truckee River Canyon near Squaw Valley and along Donner Creek near Truckee, suggesting human occupation of the area by about 9,000 years ago. The most intensive period of occupation in the region may have occurred at varying intervals between 4,000 and 1,500 years ago and between 1,500 and 500 years ago. Occupation by the protohistoric ancestors of the Washoe people may date roughly from 500 years ago to historic contact (Elston et al. 1994:13). No evidence of prehistoric artifact remains was discovered in the Project area (Lindström 2007).

The earliest peoples' adaptive strategy may have involved sparse populations, high residential mobility, and non-intensive plant food processing and storage, while later populations shifted to a decrease in overall mobility, increased land-use diversity, a broadened diet and intensified resource procurement, perhaps partially due to factors involving paleoclimatic and demographic change (Elston 1986).

Ethnographic Period

The Project area is within the territory of the Hokan-speaking Washoe people. While they were an informal and flexible political collective, Washoe ethnography hints at a level of technological specialization and social complexity for Washoe groups, non-characteristic of their surrounding neighbors in the Great Basin. Semi-sedentism and higher population densities, concepts of private property, and communal labor and ownership were reported and may have developed in conjunction with residential and basic resource stability (d'Azevedo 1986:473-476).

Lake Tahoe was both the spiritual and physical center of the Washoe world. The Washoe lived along its shores, and the locations of several Washoe encampments in the Lake Tahoe Basin have been reported. Ethnographic camps in the project's vicinity are recorded at the mouth of McKinney Creek (Freed 1966:80, No. 13) and Blackwood Creek (Freed 1966:81, No. 15). The former camp, referred to by the Washoe as *cu'wE'thUkhwO'tha*, was used as a base for fishing and collecting berries and medicinal plants. At the latter site, the Washoe fished, trapped small mammals, and gathered porcupine berries and wild rhubarb.

The Washoe are a recognized tribe by the U.S. Government and own and maintain over 64,300 acres of land within five different tribal communities. Its 1,200 tribal members are governed by a tribal council that consists of members of the Carson, Dresslerville, Woodfords, and Reno-Sparks Indian groups, as well as members from non-reservation areas (Inter-Tribal Council of Nevada 1995).

Historic Period

The first recorded sighting of Lake Tahoe by Euroamericans was by John C. Frémont and Charles Preuss in February 1844 (Gudde 1969:328). Frémont named the body of water "Lake Bonpland" in honor of Aimé Bonpland, the French botanist who had accompanied Humboldt on his exploration of South America. In 1853, the official mapmaker of the State of California gave the lake the name of "Bigler" after John Bigler, the third governor of California, and this official designation remained for many years. During the Civil War, the Union sentiment objected to this name because Bigler was an outspoken secessionist, and a movement was started to restore the original Washoe appellation, understood to be "Tahoe" and to mean 'big water' (Lindström 1994:10). Dr. Henry De Groot had explored the mountains in 1859 and suggested the Indian name of the lake, and William Henry Knight placed the name Lake Tahoe on Bancroft's map of the Pacific States in 1862 (Gudde 1969:329). The California State Legislature, oblivious to the popular acceptance of the name "Tahoe," inexplicably legalized "Bigler" in 1870, and this act was not repealed until 1945 (Hoover et. al. 1990:257).

Logging became "big business" to fulfill the urgent demand for fuel wood and lumber needed to support the Comstock mines and growing settlements. Four major lumber companies operated within the Tahoe Basin, each developing networks of sawmills, railroads, tramways, flumes, and rafting operations (Lindström 1994:15). By the mid-1890s, the lower portions of the Lake Tahoe Basin were stripped of its timber and large-scale logging in the region was over, although small independent logging continued (Scott 1957:186).

At the turn of the 20th century, the Lake Tahoe Basin began to attract more tourists, and various resorts along the lakeshore developed. In recent years, recreation has assumed an increasingly important role in the economy of the Lake Tahoe Basin.

Homewood History

Gold and silver were discovered north of Lake Tahoe in 1861 and soon brought many miners to the area. Short-lived settlements known as Elizabethtown and Neptune were established a few miles northwest of what is now Kings Beach, and Claraville and Knoxville were founded near the mouth of Squaw Creek. The Tahoe Mining District, located west and north of Lake Tahoe, includes the areas known as the Squaw Valley and Red, White, and Blue or Elizabethtown districts north of the lake and a few scattered lode-gold mines and prospects west of the lake in the vicinity of Homewood (Clark 1970:124). Prospects and settlements were abandoned after 1864. Mining on a limited scale was reactivated during the 1930s on Tahoe's west shore. The Noonchester mine, established in 1939, and Tahoe Treasure mine, established around 1932, are located ¼-mile south of Quail Lake and the HMR ski area boundary (Gudde 1975:345). Due to the poor grade of the ore, the mines were not profitable and were abandoned. There are remains of two mine shafts at Noonchester mine, suggesting that efforts beyond surface mining were attempted (North Lake Tahoe Historical Society).

In 1864, as ore samples proved worthless, several of the disappointed miners who remained in the Tahoe-Truckee Basins became the founders of its earliest settlements. The Homewood area was settled in the 1880s and 1890s by some of these disenfranchised miners (Lekisch 1988:62). Madden Creek is named for Dick Madden, a Squaw Valley stampeder who settled on land beside the creek (Lekisch 1988:83). Ellis Peak, lying at the head of Madden Creek's watershed, was named for Jack "Jock" Sargent Ellis, a disgruntled miner who established a dairy and cattle ranch south of Burton's Pass in 1863 on the McKinney-Rubicon Springs-Georgetown road (Scott 1957:466). Ellis Peak first appeared on the Wheeler map of 1881 (Lekisch 1988:31).

As stated earlier, logging in the Lake Tahoe Basin is connected to Nevada’s Comstock Lode, (mining operations) and the building of the Central Pacific Railroad and the lumber markets that it served (Knowles 1942). Beginning in 1859, small-scale mill operators staked timber claims north and south of Homewood to supply local needs. Large-scale clear-cut logging to meet the demands of the Comstock Lode and other silver mines commenced in 1873 and continued until 1898. During the late 1870s to mid-1880s, more distant stands were tapped, with relatively limited harvest occurring in selected pockets along Tahoe’s west shore.

A Homewood district, designated as "a composite name for a vacation resort and marina on the west shore of Lake Tahoe" (Salley 1977:99), was established in 1889. Here, 100-foot lots were laid out priced at $50.00 apiece, but they did not sell. Finally they were offered free of charge to any person who would build a substantial house (Lekisch 1988:62). On July 31, 1900, a post office was established at Homewood. In 1910, Annie and Arthur C. Jost, among Homewood's first residents, built the Hotel Homewood. They later added a large casino and dance floor across the road from the hotel, built by the locally renowned Matt Green. In 1938 Mr. and Mrs. Donald Huff purchased the property and renovated it into a family resort (Scott 1957:73).

Modern development along Lake Tahoe’s north shore came in the aftermath of the 1960 Squaw Winter Olympic Games. Events for the cross-country ski races were centered south of Homewood at McKinney and General creeks, but trails extended northward to a point about one quarter mile south of Homewood Canyon in the vicinity of the old Tahoe Ski Bowl and the proposed South Base Lodge at HMR. The Olympics attracted a number of European skiers and

craftsmen who were involved in preparations for the Olympics of 1960 and remained in the Lake Tahoe area practicing their craft. One of these individuals, Martin Hollay, was contacted as part of this study to describe his experienced during this period (Hollay, personal communication 2007). During the summer of 1959, he laid out the Nordic Ski and Biathlon course within Sugar Pine Point State Park, but he does not recall that the trails actually entered into the Project area.

North Base Area

The North Base area, including Lots 112 and 113 of the Lakeside Tract, were the location of the original Homewood Ski Area property. The Homewood dance hall was originally located on the parcels, but when it was demolished in a snow storm, the Huffs built a combination clothing store, gift shop, beauty salon, barber shop, and Union 76 gasoline station on the site (Huff 1984:10, Rick Brown 2009). According to the Placer County Assessor's Office, the store building was erected in 1947 and is now occupied as the ski lodge.

In 1962, Ron Rupp, an employee of the Huffs, set up a rope tow at what would become Homewood Mountain Resort. Shortly thereafter, the property was purchased by Helen Alrich, who developed the Homewood Ski Resort with Rupp (Rick Brown 2009). In 1987 Mrs. Alrich purchased the Tahoe Ski Bowl area to the south, developed in the 1960s by the Kettenhoffen family, and operated the two as Homewood Mountain Resort. In 1998, the resort was purchased by the Jeff Yurosek Family, LLC (McBride 2007).

The oldest building on the property, the ski school building, was moved to the site from the Callender Hotel property. Originally located to the south, on the corner of Fawn and West Lake Shore Boulevard, the building was one of the Callender "Honeymoon Cottages, " built in the late 1930s (Rick Brown 2009).

The resort in its current state has low economic viability due to the age and condition of the lifts, lodges, and other facilities resulting in the resort losing money annually for the past few years. In mid-2006, the current owners, Homewood Village Resorts, LLC (Art Chapman, president), purchased the property from Jeff Yurosek and began evaluating the existing resort and its facilities with a goal for redeveloping the property into an economically viable destination resort.

9.1.2 Historical and Archaeological Resources

An Archaeological Resources study was conducted by Susan Lindström, Ph.D., in May of 2007 and concluded that the steep and relatively inaccessible terrain that characterizes most of the HMR has a low probability for containing archaeological resources. Several prior archaeological surveys of the Project area confirmed this, identifying no archaeological sites and only one recorded isolated artifact. The archaeological data corroborated the ethnographic and historical records, which document the lakeshore and the community of Homewood as the center of cultural activity, rather than the adjoining mountain flank. No further archaeological field study was recommended. The study is provided in Lindström (2007).

A pedestrian survey and visual inspection of the architectural resources of the Project area resulted in the inventory and recordation of three buildings at the North Base area. No buildings at the South Base are 50 years of age or older and thus were not recorded. The three North Base area recorded buildings included the Ski Lodge, Ski School Building, and Ski Patrol Hut. The Ski Lodge was constructed around 1947 by the Huff family as a combination gift and clothing store, beauty shop, and barbershop. It was remodeled for the ski operations in the early 1960s. The building lacks integrity of design, materials, setting, feeling, and association. The Ski School building was originally constructed as one of the nearby

Callender Resort "Honeymoon Cottages" in the late 1930s and moved to the site in the 1960s. The building is in good condition. The Ski Patrol Hut was built in the early 1960s during the development of the ski area. The front porch is no longer existing, and the building is in poor condition. The Historic Structures Evaluation report is provided in Marvin and Brejla (2009).

9.1.3 Paleontological Resources

No paleontological resources are known to exist within the Project area (Lindström 2007).

9.2 REGULATORY SETTING

The resources identified for this Project were evaluated for their eligibility for listing on the National Register of Historic Places (NRHP); California Register of Historical Resources (CRHP); and in accordance with TRPA Code of Ordinances, Chapter 29.

National Register of Historic Places

The National Historic Preservation Act of 1966, as amended, authorized the NRHP. The significance of cultural resources is evaluated under the criteria for listing in the NRHP. The criteria defined in 36 CFR 60.4 are:

> "The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, association, and,
>
> A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. that are associated with the lives of persons significant in our past; or
>
> C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D. that have yielded, or may be likely to yield, information important to prehistory or history."

Sites younger than 50 years, unless of exceptional importance, are not eligible for listing in the NRHP.

An integral part of assessing cultural resource significance, aside from applying the above criteria, is the physical integrity of the resource. Prior to assessing a resource's potential for listing in the NRHP, it is important to understand the seven categories for measuring integrity. According to National Register Bulletin 15 (1984), *How to Apply the National Register Criteria for Evaluation*, the types of integrity are:

- Location is the place where the historic property was constructed or the place where the historic event occurred;
- Design is the combination of elements that create the form, plan, space, structure, and style of a property;
- Setting is the physical environment of a historic property;

- Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property;
- Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;
- Feeling is a property's expression of the aesthetic or historic sense of a particular period of time; and
- Association is the direct link between an important historic event or person and a historic property.

To qualify for listing in the NRHP, a property must represent a significant part of the history, architecture, archeology, engineering, or culture of an area, and it must have the characteristics that make it a good representative of properties associated with that aspect of the past.

Properties change over time. It is not necessary for a property to retain all its historic physical features or characteristics to be eligible for the NRHP. The property must retain, however, the essential physical features that enable it to convey its historic identity. The essential physical features are those features that define both why a property is significant and when it was significant. A property that is significant for its historic association is eligible if it retains the essential physical features that made up its character or appearance during the period of its association with the important event, historical pattern, or persons. A property important for association with an event, historical pattern, or person ideally might retain some feature of all seven aspects of integrity. A basic integrity test for a property associated with an important event or person is whether a historical contemporary would recognize the property as it exists today (National Park Service 1984:6, 46, 48).

California Environmental Quality Act

CEQA includes provisions for significance criteria related to historical and prehistoric archaeological resources. Section 15064.5 of CEQA characterizes significant impacts as those causing damage to an "important archaeological resource." The Public Resource Code was amended (in 1992) with the addition of Section 5024.1, which authorized the establishment of the CRHR. Identified cultural resources must be evaluated against CRHR criteria. To be determined eligible, a property must be significant at the local, State, or national level under one or more of the following four CRHR criteria:

1. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of the history and cultural heritage of California and the United States;
2. It is associated with the lives of persons important to the nation or to California's past;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. It has yielded, or may be likely to yield, information important to the prehistory or history of the State and the nation.

In addition to meeting one of the above criteria, a significant property must exhibit a measure of integrity. Properties eligible for listing in the CRHR must retain enough of their historic character or appearance to be recognizable as historic properties and to convey the reasons for their significance. Integrity is judged in relation to location, design, setting, materials, workmanship, feeling, and association. It must also be judged with reference to the particular criteria under which a property is thought to be eligible. Resources listed on the California Register must be 50 years or older.

An impact is considered to be significant under CEQA if the project may disturb

- historical architectural resources;
- known prehistoric or historic cultural resources; or
- buried, unknown prehistoric or historic archaeological resources.

Tahoe Regional Planning Agency Code of Ordinances, Chapter 29

TRPA Code of Ordinances, Chapter 29 (Chapter 29) has similar requirements outlined above for the NRHP and CRHR, but on a more local/regional level. Chapter 29 states:

> Sites, objects, structures, districts or other resources eligible for designation as resources of historical, cultural, archeological, paleontological, or architectural significance locally, regionally, statewide or nationally shall meet at least one of the following criteria:
>
> 29.5A Resources Associated With Historically Significant Events and Sites: Resources shall exemplify the broad cultural, political, economic, social, civic, or military history of the Region, states, or the nation, or be associated with events that have made a significant contribution to the broad patterns of history, including regional history. Such resources shall meet one or more of the following criteria:
>
> (1) Association with an important community function in the past;
>
> (2) Association with a memorable happening in the past; or
>
> (3) Contain outstanding qualities reminiscent of an early stage of development of the Region.
>
> 29.5B Resources Associated With Significant Persons: Resources that are associated with the lives of persons significant in history, including regional history, such as:
>
> (1) Buildings or structures associated with a locally, regionally, or nationally known person;
>
> (2) Notable examples, or best surviving works, of a pioneer architect, designer or builder; or
>
> (3) Structures associated with the life or work of significant persons.
>
> 29.5C Resources Embodying Distinctive Characteristics: Resources that embody the distinctive characteristics of a type, period, or method of construction, that possess high artistic values, or that represent a significant or distinguishable entity but whose components may lack individual distinction, are eligible. Works of a master builder, designer or architect also are eligible. Resources may be classified as significant if they are a prototype of, or a representative example of, a period style, architectural movement, or method of construction unique in the Region, the states, or the nation.
>
> 29.5D State and Federal Guidelines: Archaeological or Paleontological resources protected, or eligible for protection, under State or federal guidelines are eligible.
>
> 29.5E Prehistoric Sites: Sites where prehistoric archaeological or paleontological resources, which may contribute to the basic understanding of early cultural or biological development in the Region are eligible.

Paleontological Resources

The significance of paleontological resources is evaluated using State guidelines. CEQA guidelines indicate that a Project could have a significant effect on the environment if Project activities disrupt or adversely affect a paleontological site (CEQA, Appendix G).

California Public Resources Code Section 5097.5 prohibits the excavation or removal of any "vertebrate paleontological site, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands." Public lands are defined as lands owned by or under the jurisdiction of the State or any city, county, district, authority, or public corporation. Any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands are considered misdemeanors.

According to standard procedures published by the Society of Vertebrate Paleontology (1991), sedimentary rock units with a high potential for containing significant nonrenewable paleontologic resources are those determined by previous studies to contain vertebrate or significant invertebrate fossils (Society of Vertebrate Paleontology 1991). Significant paleontologic resources are fossils or assemblages of fossils that are unique, unusual, rare, uncommon, diagnostically or stratigraphically important, and those that add to an existing body of knowledge in specific areas, stratigraphically, taxonomically, or regionally (Reynolds 1988).

9.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

Based on the TRPA and CEQA guidelines, a project impact is considered significant if conditions presented in Table 9-1 are met.

Table 9-1

Evaluation Criteria with Points of Significance – Cultural and Historical Resources

Evaluation Criteria	Point of Significance	Justification
CUL-1. Will the Project adversely change the significance of an eligible or potentially-eligible National Register property, or a resource that meets the criteria for inclusion in the California Register of Historical Resources, or a resource on TRPA maps, including archaeological, historical, architectural, and Native American/traditional heritage resources?	a) Reduction in the integrity of the resource's location, design, setting, materials, workmanship, feeling, association or other characteristics that convey its eligibility; b) Demolition, destruction or relocation of an historical or archaeological resource.	CEQA Appendix G Checklist V (a, b) CEQA Guidelines Section 15064.5 TRPA Initial Environmental Checklist II (20 a, b, c) NHPA, Section 106 PRC Sections 5020-5024, 5024.5, 21083.2, 21084.1 TRPA Code of Ordinances Chapter 29 National Trails System Act Section 5(b)(11)
CUL-2. Will the Project cause a physical change which would adversely affect unique ethnic cultural values or restrict historic or pre-historic religious or sacred	a) Loss of unique ethnic cultural values; b) Loss of religious or sacred uses within the potential	TRPA Initial Environmental Checklist II (20 d, e)

Evaluation Criteria	Point of Significance	Justification
uses within the potential impact area?	impact area.	
CUL-3. Will the Project disturb significant unknown archaeological resources?	a) The project has the potential to pose a significant impact on unknown archaeological resources which may be discovered during construction-related ground disturbing activities b) There is a high probability of encountering subsurface cultural remains in certain areas based on the presence of existing/known resources c) The Project will pose a significant impact if it adversely affects greater than 0 previously unknown significant cultural resources	NHPA, Section 106 CEQA Guidelines Section 15064.5 PRC Section 5020-5024, 21083.2, 21084.1 TRPA Regional Plan, Goals & Policies, Chapter IV, Cultural Subelement
CUL-4. Will the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Destruction of greater than 0 significant paleontological resources, sites or geologic features.	CEQA Appendix G Checklist V (c)
CUL-5. Will the Project disturb any human remains, including those interred outside formal cemeteries?	Disturbance of greater than 0 human remains	CEQA Appendix G Checklist V (d) NHPA, Section 106 NAGPRA

Source: Hauge Brueck Associates, 2009

9.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

Impact: **CUL-1: Will the Project adversely change the significance of an eligible or potentially-eligible National Register property, or a resource that meets the criteria for inclusion in the California Register of Historical Resources, or a resource on TRPA maps, including archaeological, historical, architectural, and Native American/traditional heritage resources?**

Analysis: *No Impact; Alternatives 1, 2, 3, 4, 5, and 6*

No NRHP, CRHR, or TRPA mapped properties are located in the Project area (Lindström 2007, and Marvin and Brejla 2009). Architectural resources in the North Base area of the Project area were evaluated as not eligible for listing on the NRHP under any of the criteria, or to be important historical resources for the purposes of CEQA or TRPA, primarily due to their lack of integrity (Marvin and Brejla 2009). HMR intends to

relocate the existing Ski School building to the proposed on-site fishing/ice skating pond located between buildings C and D at the North Base area (area shown on Figures 3-7 and 3-8 in Chapter 3). The relocation of the existing Ski School building will not result in impacts to any eligible or potentially eligible National Register properties.

Mitigation No mitigation is required.

Impact: CUL-2: Will the Project cause a physical change which would adversely affect unique ethnic cultural values or restrict historic or pre-historic religious or sacred uses within the potential impact area?

Analysis: *No Impact; Alternatives 1, 2, 3, 4, 5, and 6*

No unique ethnic cultural values or historic or pre-historic religious or sacred uses are known to have occurred within the Project area (Lindström 2007, and Marvin and Brejla 2009). Therefore, there are no impacts associated with the Proposed Project (Alternative 1) and Alternatives 2, 3, 4, 5, and 6.

Mitigation: No mitigation is required.

Impact: CUL-3: Will the Project disturb significant unknown archaeological resources?

Analysis: *Potentially Significant Impact; Alternatives 1, 2, 3, 4, 5, and 6*

No unique archaeological features are known to exist in the Project area (Lindström 2007, and Marvin and Brejla 2009). Therefore, there are no known impacts associated with any Alternative. No immediate Native American concerns regarding the Project area were identified (Lindström 2007). The Washoe Tribe of Nevada and California was notified of survey findings and concurred with the report recommendations (Lindström 2007). However, as with any construction undertaking (including BMP retrofit disturbance), the potential for undiscovered subsurface archaeological features remains though it is unlikely, particularly within the existing footprint of the previously disturbed base areas. Therefore, this impact is potentially significant.

Mitigation: **CUL-3: Identify and Protect Undiscovered Archaeological Resources.**

To assure that potential undiscovered resources are identified during site grading, a qualified archaeologist shall be on-site during initial ground disturbing construction excavation and grading operations.

If previously undiscovered human remains, archaeological resources, exotic rock (non-native) or unusual amounts of shell or bone are discovered during construction or any subsequent activity, ground disturbing activity will cease in the vicinity of the discovery until the TRPA and Placer County Cultural Resources or Planning staff (or their qualified SOPA-certified consultants) assesses it for eligibility to the NRHP, compliance with TRPA Code Section 29, and/or (in the event of a prehistoric or ethnographic find) for Native American Heritage Commission (e.g., Washoe) values. This assessment will occur in consultation with the California SHPO, TRPA, Placer County and the Washoe Tribe, as appropriate. Cessation of applicable construction activity will continue until proper treatment can be determined and implemented by the responsible agencies.

If the discovery consists of human remains, the Placer County Coroner and Native American Heritage Commission must also be contacted. Work in the area may only

proceed after authorization is granted by the Placer County Planning Department. A note to this effect shall be provided on the Improvement Plans for the project.

Following a review of a new find and consultation with appropriate experts, if necessary, the authority to proceed may be accompanied by the addition of development requirements which provide protection of the site and/or additional mitigation measures necessary to address the unique or sensitive nature of the site.

After Mitigation: *Less than Significant Impact; Alternatives 1, 2, 3, 4, 5, and 6*

Implementation of Mitigation Measure CUL-3 will protect potentially eligible resources that may be unearthed during project construction. Therefore, with mitigation, this impact is reduced to a level of less than significant.

Impact: CUL-4: Will the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Analysis: *Potentially Significant Impact; Alternatives 1, 2, 3, 4, 5, and 6*

No unique paleontological resources or geologic features are located within the Project area. Therefore, there are no known impacts associated with any Alternative. However, as with any construction undertaking (including BMP retrofit disturbance), the potential for undiscovered subsurface paleontological features remains though it is unlikely, particularly within the existing footprint of the previously disturbed base areas. Therefore, this impact is potentially significant.

Mitigation: **CUL-4: Identify and Protect Undiscovered Paleontological Resources.**

Prior to submittal of Improvement Plans, the applicant shall provide written evidence to the Planning Department that a qualified paleontologist has been retained by the applicant to observe grading activities and salvage fossils as necessary. The paleontologist shall establish procedures for paleontological resource surveillance and shall establish, in cooperation with the project developer, procedures for temporarily halting or redirecting work to permit sampling, identification, and evaluation of fossils. If major paleontological resources are discovered, which require temporary halting or redirecting of grading, the paleontologist shall report such findings to the project developer, and to the Placer County Department of Museums and Planning Department.

The paleontologist shall determine appropriate actions, in cooperation with the project developer, which ensure proper exploration and/or salvage. Excavated finds shall be offered to a State-designated repository such as Museum of Paleontology, U.C. Berkeley, the California Academy of Sciences, or any other State-designated repository. Otherwise, the finds shall be offered to the Placer County Department of Museums for purposes of public education and interpretive displays.

These actions, as well as final mitigation and disposition of the resources shall be subject to approval by the Department of Museums. The paleontologist shall submit a follow-up report to the Department of Museums and Planning Department which shall include the period of inspection, an analysis of the fossils found, and present repository of fossils.

After Mitigation: *Less than Significant Impact; Alternatives 1, 2, 3, 4, 5, and 6*

Implementation of Mitigation Measure CUL-4 will protect potentially eligible resources that may be unearthed during project construction. Therefore, with mitigation, this impact is reduced to a level of less than significant.

Impact: CUL-5: Will the Project disturb any human remains, including those interred outside formal cemeteries?

Analysis: *Significant Impact; Alternatives 1 2, 3, 4, 5, and 6*

No formal cemeteries were identified during the cultural resources study for the Project (Lindström 2007, and Marvin and Brejla 2009). No immediate Native American concerns regarding the Project area were identified (Lindström 2007). The Washoe Tribe of Nevada and California was notified of survey findings and concurred with the report recommendations (Lindström 2007). However, as with any ground-disturbing activity there is always the possibility of encountering buried resources that were not revealed during intensive surface investigations. Based on the history and movement of native peoples, the likelihood of encountering buried human remains is potentially significant.

Mitigation: **CUL-3: Identify and Protect Undiscovered Archaeological Resources**

Implement Mitigation Measure CUL-3 as described above under Impact CUL-3.

After Mitigation: *Less than Significant Impact; Alternatives 1, 2, 3, 4, 5, and 6*

Implementation of Mitigation Measure CUL-3 will ensure proper treatment of human remains that may be unearthed during project construction. Therefore, with mitigation, this impact is reduced to a level of less than significant.

9.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact: CUL-C1: Will the Project have significant cumulative impacts to cultural or historical resources?

Analysis: *No Impact; Alternatives 1, 2, 3, 4, 5, and 6*

The list of past, present, and reasonably foreseeable future projects considered in this cumulative impact analysis is provided in Table 20-1, Chapter 20 – Mandated Environmental Review. The Project area contains no known historic, pre-historic, archaeological, or paleontological resources. Construction and operation of the Proposed Project and Alternatives are not expected to affect known cultural or historical resources. Consequently, construction and operation of Alternatives 1, 2, 3 4, 5, or 6 are not expected to result in a cumulatively considerable contribution to a cumulative impact on cultural or historical resources.

Mitigation: No mitigation is required.

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10.0 SCENIC RESOURCES

This chapter discusses impacts of the Proposed Project and Alternatives on the scenic resources in the Homewood Mountain Resort (HMR) Ski Area Master Plan Area (Project area), specifically impacts and thresholds related to visual contrast, public view obstruction or loss of public views from travel routes. This section also evaluates changes in scenic quality resulting from loss or alteration of a specific scenic resource (such as a designated scenic road), and identifies potential mitigation to address adverse changes. To provide a basis for scenic evaluation, the setting section describes the regional landscape character and the existing scenic conditions of the Project area. Sensitive scenic routes/travel ways and other scenic resources designated in local and regional plans are identified.

10.1 ENVIRONMENTAL SETTING

10.1.1 Regional Setting

The scenic vistas and visual resources of the Lake Tahoe Basin are widely valued by residents and visitors to the area. As summarized in the TRPA *1986 Regional Plan: Goals and Policies* (TRPA 1986):

> Scenic quality is perhaps the most often identified natural resource of the Lake Tahoe Basin. The Basin affords views of a magnificent lake setting within a forested mountainous environment. The unique combination of visual elements provides for exceptionally high aesthetic values. The maintenance of the Basin's scenic quality largely depends on careful regulation of the type, location, and intensity of land uses.

CEQA guidelines identify the Lake Tahoe Basin as an area of critical environmental sensitivity for its scenic as well as its ecological and recreational value. Federal policy, under the U.S. Department of Transportation Act Section 4(f), provides that "special effort should be made to preserve the natural beauty of the countryside and public park and recreational lands, wildlife, and waterfowl refuges, and historic sites." The TRPA Compact states that the "Maintenance of the social and economic health of the region depends on maintaining the significant scenic values provided by the Lake Tahoe Basin" (TRPA Compact 1980). TRPA guidelines and regulatory requirements to protect scenic quality are described below in section 10.2, Regulatory Setting.

The Lake Tahoe Region is a unique alpine destination offering immense vistas and vast amounts of natural beauty and scenery. The scenic beauty of the region is recognized as a national treasure. Because of this natural beauty, alpine setting, and large lake, the region is a popular recreation and vacation destination offering boating, skiing, hiking, and tourist accommodations as well as residential and commercial land uses that create a mixture of aesthetic characteristics throughout the Lake Tahoe Region (TRPA 2007).

The region offers a variety of natural settings and vistas. Some areas are characterized by meadows, while others include rocky outcrops and forest vegetation. As a basin, mountain peaks and ridgelines are visible around the lake. Most mountainsides lack structural development with the exception of ski facilities where straight, vertical swaths of cleared forest can be seen from roadways, communities, and the lake.

Most development along with major roads are concentrated on more gentle topographic settings near lake level. Development surrounds much of Lake Tahoe, with the north and south shores generally more

developed than the west or east shores. Amongst the array of trees, is a mixture of parks, beaches, residences, and commercial development often located along the shoreline of the lake.

The architectural character of the region is a mixture of old and new "alpine elegance" structures, rustic wood cabins, mid-century modern and generic modern architecture. While the maintenance and promotion of alpine elegance architecture are emphasized, the variety of existing architecture persists and creates pockets where visual cohesion is lacking.

Designated Scenic highways in the Lake Tahoe Basin include federal U.S. Highway 50 (US 50) and California State Routes 89 (SR 89) and 267 (SR 267).

10.1.2 Project Area Setting

The Project area includes the HMR ski resort, with accessory food, rental, and retail uses, parking lots, and operation and maintenance facilities. Ski slopes and facilities in the Project area are visible from SR 89 and local streets in Homewood, and from Lake Tahoe. There are no existing tourist accommodation or residential units on-site. Structures on-site include the 7,300 square foot South Base lodge, 3,884 square feet vehicle shop/maintenance facility, and 242-space parking lot. The rustic, wooden, two-story North Base lodge is 13,943 square feet in area and includes 700 surface parking spaces adjacent to and visible from State Route (SR) 89. None of these structures reflect current design standards as they consist primarily of flat planes, with little to no landscape screening or architectural interest (TRPA 1989b, 1987). HMR includes a temporary white tent used as a warming structure, which is located mid-mountain. The ski area includes eight ski lifts, including one quad chair, three triple chairs, and four surface lifts. HMR has 62 numbered ski trails covering 441 acres, and five miles of summer hiking trails. Overhead utility lines are present on-site.

Homewood is characterized with a mix of natural landscapes, residential developments, relatively small-scale tourist operations, and support services such as real estate offices, restaurants and marinas, also, there is a U.S. Post Office, fire station, and other small-scale commercial uses in the immediate area. Development is clustered close to SR 89 and includes structures on both sides of the roadway. Existing development limits views of the lake and mountains from the roadway; however, there are areas of unobstructed views from SR 89. The community of Homewood in the Project vicinity is primarily residential with single-family homes interspersed among large pine and fir trees. The ski resort is the largest tourist/recreation feature in the area and small lodges, restaurants, boating operations, and other small retail or commercial offices are scattered along SR 89 near the Project area.

The Tahoe Maritime Museum is located adjacent to the North Base area on the mountain side of SR 89. The West Shore Café/Lodge, which includes six hotel suites, and The Homewood Hi and Dri Marina occupy the lakefront across from the North Base area. North of the Café, there are three existing interval ownership units and an additional six units are under development on the lakefront. Between the North and South Base areas the commercial core of Homewood includes the Post Office, small restaurants, Obexer's Marina and other commercial uses.

Homewood lacks a dense commercial core area, so the roadside view consists mostly of natural vegetation and topography mixed with single-family homes, often set back from the roadway, with both natural and "residential" landscaping.

Vehicle, pedestrian, and bicycle traffic is relatively low compared to more densely developed and heavily used tourist areas on the north and south shores of Lake Tahoe.

10.1.3 TRPA Scenic Resource Inventories

The TRPA established a baseline inventory of the scenic resources in the Lake Tahoe Basin (Wagstaff and Brady 1983, TRPA 1993). The Basin was divided up into separate roadway, shoreline, and recreation area scenic units, and each unit was given a scenic resource rating and threshold. Scenic resource thresholds were developed using an inventory of subcomponents for specific types of scenic resources within each roadway, shoreline, and recreation area unit. The TRPA prepared a *Scenic Quality Improvement Program for the Lake Tahoe Basin* (SQIP) to maintain or upgrade the scenic quality of recreation areas, roadway views, and Lake Tahoe (TRPA 1989a) which consist of the following:

SR-1 Travel Route Ratings

The TRPA travel route ratings track long-term, cumulative changes to views from State and federal highways in urban, transition, and natural visual environments in the region. The ratings track changes to shoreline views from the surface of Lake Tahoe. Roadways are divided into 53 travel segments (called "travel units"), each representing a continuous, two-directional viewshed of similar visual character. Lake Tahoe's shoreline is divided into 33 shoreline units. TRPA uses the following six criteria to determine travel route ratings for each Roadway Travel Unit. Criteria 1, 5, and 6 are used in rating Shoreline Travel Units. Roadway units have a possible score of 30 (5 points for each criteria) and shoreline units have a possible score of 15.

1. Human-made features along roadways and shoreline;
2. Physical distractions to driving along roadways;
3. Roadway characteristics;
4. Views of the lake from roadways;
5. General landscape views from roadways and shoreline;
6. Variety of scenery from roadways and shoreline.

SR-2 Scenic Quality Ratings

The purpose of the TRPA scenic quality threshold is to maintain or enhance views of individual, existing scenic resources. The scenic resources in the Lake Tahoe region include:

- Foreground, middle-ground, and background views of the natural landscape from roadways;
- Views to Lake Tahoe from roadways;
- Views of Lake Tahoe and natural landscape from roadway entry points into the region;
- Unique landscape features, such as streams, beaches, and rock formations that add interest and variety, as seen from roadways;
- Views of the shoreline, the water's edge, and the foreground as seen from the lake;
- Views of the backdrop landscape, including the skyline, as seen from the lake; and
- Visual features seen from the lake that are points of particular visual interest on or near the shore.

Numerical scenic quality ratings are derived for each mapped scenic resource using four visual indicators as subcomponents of the composite rating:

1) Unity – the extent in which a landscape feature can be described as cohesive,
2) Vividness – a memorable or distinct quality,
3) Variety – the intermixture of interesting elements of a landscape unit, and
4) Intactness – the extent to which a landscape retains its natural condition.

These four indicators are each rated on a scale from zero (absent) to three (high), and summed to yield the scenic quality threshold rating. Each resource is defined by the length of the resource and the areas seen from that unit.

SR-3 Public Recreation Area Scenic Quality Thresholds

The TRPA public recreation area scenic quality threshold applies to specific public recreation areas, including beaches, campgrounds, ski areas, and segments of Class I bike trails and Class II bike lanes. Public recreation areas with views of scenic resources are valuable because they are major public gathering places, hold high scenic values, and are places where people are static (compared to people on the travel routes) and, therefore, have more time to focus their attention on the views and scenic resources. Public recreation area scenic quality threshold ratings consider the four criteria of unity, vividness, variety, and intactness. Scenic resources viewed from public recreation areas include:

- Views of the lake and natural landscape from the recreation area;
- Views of natural features in the recreation area; and
- Views of human-made features in or adjacent to the recreation area that influence the viewing experience.

SR-4 Community Design Threshold

The TRPA Community Design threshold policies apply to the built environment and are intended to ensure that design elements of buildings are compatible with the natural, scenic, and recreational values of the region. The community and redevelopment plan process can be used to develop design standards and guidelines specific to the needs and desires of individual communities. These standards and guidelines are considered “substitute” standards because they replace all or portions of TRPA Code of Ordinances (TRPA 1987) that would otherwise regulate the same subject. Site planning and design principles contained in the ordinances are implemented as part of individual development projects, and are reviewed and approved by TRPA and local governments.

Scenic Quality Improvement Program

The TRPA SQIP (TRPA 1989a) rates scenic quality to identify areas where scenic quality ratings in travel route corridors fall below adopted thresholds. Scenic quality ratings are scored on factors of unity, vividness, variety, and intactness, while travel route ratings are assigned based on six criteria: 1) man-made features; 2) roadway physical distractions; 3) road structures; 4) views of the lake; 5) landscape views; and 6) variety.

10.1.4 Viewer Sensitivity - TRPA Scenic Resource Units

The Project area is located in the following Scenic Resource Inventory Units:

- Scenic Roadway Unit 11 (Homewood),
- Shoreline Unit 12 (McKinney Bay);
- Scenic Recreational Resource Unit 20 (Ski Homewood) – HMR Ski Area North Base area, and
- Scenic Recreational Resource Unit 21 (Tahoe Ski Bowl) – HMR Ski Area South Base area.

The following is a summary of the baseline Scenic Resource Inventory and recent monitoring for each unit.

Scenic Roadway Unit 11 (Homewood)

The views on the west side of SR 89 in Roadway Unit 11 (Homewood) are dominated by the views of the HMR North Base area parking lot and lodge, and by dense conifer forests. Views on the east side of SR 89 include retail and commercial buildings, a marina, docks, homes, and a panorama of Lake Tahoe (Wagstaff and Brady 1983).

Roadway Unit 11 (Homewood) is categorized as a "rural transition visual environment." The HMR Ski Area is the most dominant feature and its steep, unforested slopes provide contrast with the otherwise enclosed corridor characteristic of the scenic unit (TRPA 1982, 1983, 1989a, 2001a). Commercial developments are the primary visual concern, including the HMR North Base area. Setbacks, building materials, signage, and landscaping generally do not meet current standards (TRPA 1989a). Inadequate parking, signage, and overhead utility lines are common problems in the commercial areas near HMR. Openings in the forest cover provide visual interest and variety, but the North Base area parking lot, general layout, and design of resort facilities have a negative visual impact (TRPA 1989a). The SQIP recommends ski area improvements such as landscaping along SR 89, the parking lot, and around buildings; creating a cohesive architectural style that is complementary to the natural setting and man-made environments; updating signage to comply with Codes of Ordinances Chapter 26; relocation of maintenance facilities to a less visible area; and undergrounding utility lines (TRPA 1989a).

TRPA monitoring has determined a threshold composite score of 12 for Scenic Roadway Unit 11 (Homewood). The Unit is in nonattainment and considered at risk. EIP Project 86 calls for improved architectural features, added landscaping and sidewalks, and undergrounded utilities in a portion of Unit 11 to improve the man-made features score and overall aesthetic character (TRPA 2007). The reduction in lake views due to new large residences at the north end of the unit and the unscreened modular structure at HMR produce negative effects on man-made features (TRPA 2007). Consequently, Roadway Unit 11 (Homewood) has a threshold composite score of 12, which is below the threshold attainment status, which requires a score of greater than 15 out of 30 points possible (TRPA 2007). Scenic quality travel route ratings are listed in Table 10-1. Figure 10-1 provides a map of Roadway Unit 11 (Homewood).

Figure 10-1: Roadway Unit 11

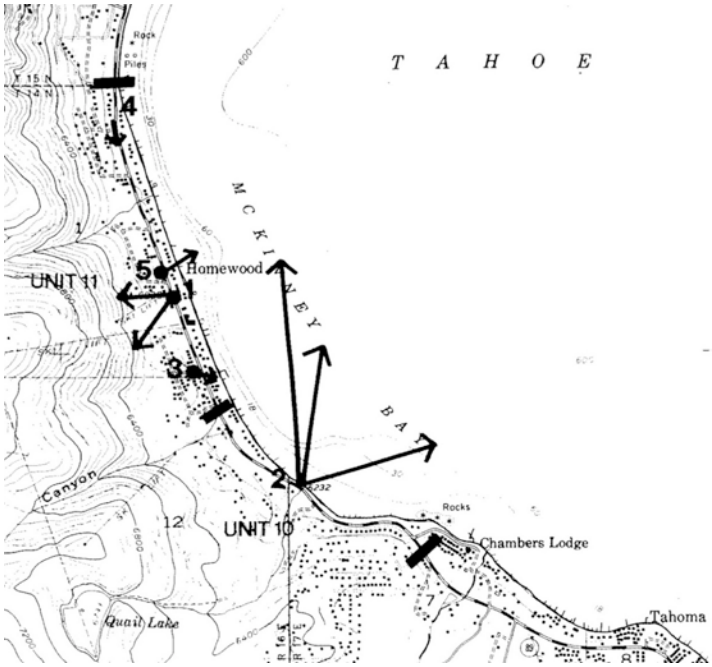


Table 10-1

Scenic Roadway Threshold Travel Route Ratings, Unit 11 (Homewood)

Criteria	Monitoring year					
	1982	1986	1991	1996	2001	2006
Man-made Features	2	2	2	2	2	2.5
Roadway Distractions	1	1	1	1	1	1
Road Structure	3	3	3	3	3	3
Lake Views	3	2	2	2	1.5	1.5
Landscape Views	2	2	2	2	2	2
Variety	2	2	2	2	2	2
Threshold Composite	**13**	**12**	**12**	**12**	**11.5**	**12.0**
Status	**Non-attainment**	**Non-attainment**	**Non-attainment**	**Non-attainment**	**Non-attainment**	**Non-attainment**

Source: TRPA 2007, 2001a.

Shoreline Unit 12 (McKinney Bay)

The shoreline unit rating is based on the values of the backdrop landscape or skyline or ridges and peaks, the character of the shoreline foreground, and natural and man-made feature of interests on or near the shore as viewed from Lake Tahoe (TRPA 1982, 1983, 1993, 2001b). Background views in Shoreline Unit 12 (McKinney Bay) consist of Rubicon Peaks, the HMR Ski Area slopes and lifts, and forested ridgelines. Shoreline views consist of gravel beaches and private residences among conifer trees, Obexer's Marina and marina buildings, small piers and boat houses, and segments of SR 89. Figure 10-2 provides a map of Shoreline Unit 12 (McKinney).

TRPA monitoring has determined that Shoreline Unit 12 (McKinney Bay) is in non-attainment with a threshold composite score of 8 out of a possible 15 (TRPA 2001b, 2007). Shoreline views are primarily of homes and other structures interspersed with trees, boat storage areas, and the mid- to upper mountain views of ski runs, lifts, and ridgelines. The large residences, boat storage, ski lifts, erosion, grasses and low shrubs, and road scars, in addition to an overall high density of manmade structures has resulted in moderate scenic quality ratings (TRPA 2007). Table 10-2 provides scenic resource ratings.

Figure 10-2: Shoreline Unit 12

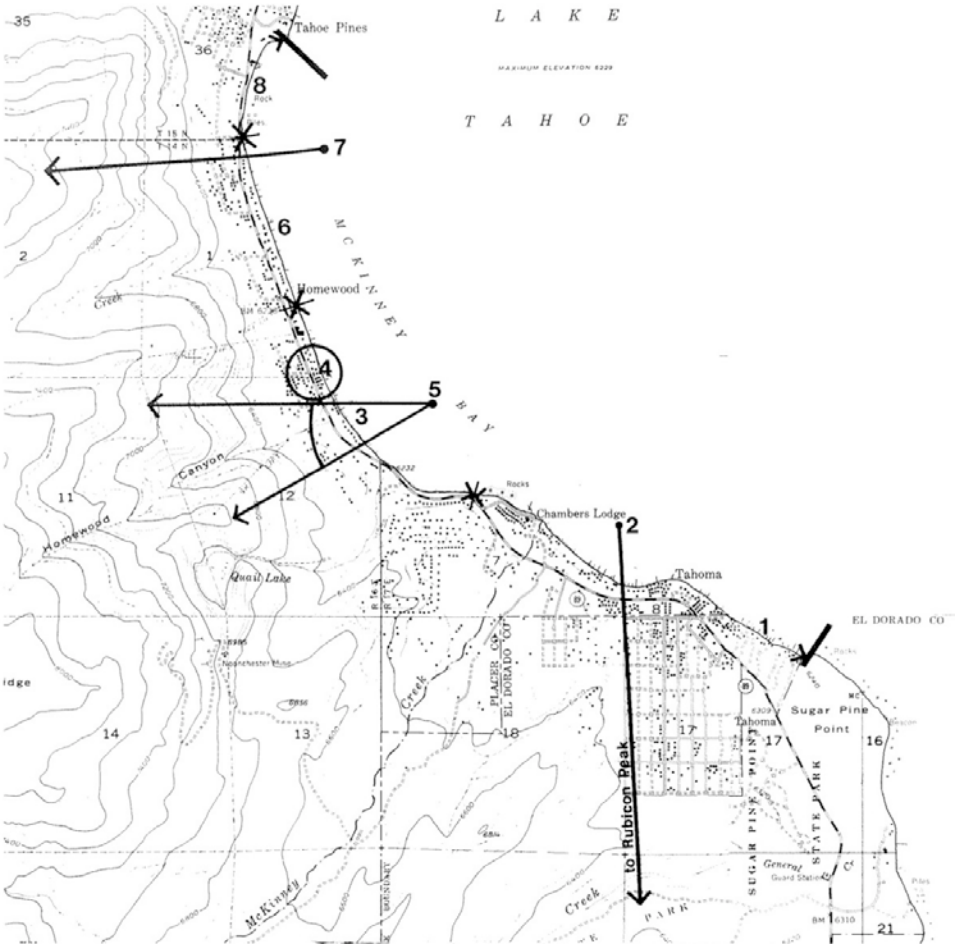


Table 10-2

Scenic Shoreline Threshold Travel Route Ratings, Unit 12 (McKinney Bay)

Criteria	Monitoring year					
	1982	1986	1991	1996	2001	2006
Man-made Features	3	3	3	3	2	2
Landscape Views	3	3	3	3	3	3
Variety	3	3	3	3	3	3
Threshold Composite	**9**	**9**	**9**	**9**	**8**	**8**
Status	**Attainment**	**Attainment**	**Attainment**	**Attainment**	**Non-attainment**	**Non-attainment**

Sources: TRPA 2007, 2001b.

Scenic Recreational Resource Unit 20 (Ski Homewood)

Scenic Recreational Resource Unit 20 (Ski Homewood) consists of the North Base area of the HMR Ski Area and is considered to be in attainment but does not possess outstanding scenic resources (TRPA 1982, 1993, 2001c). The 1993 Scenic Resource Evaluation of Unit 20 summarizes:

> "The Homewood Ski Area does not possess outstanding scenic resources. The ski slope and forest provide a pleasant but unremarkable backdrop and there are no significant views from the site. The dominance of the parking area creates a visually sterile and unwelcoming appearance. It also creates a predominantly man-made feel to the area, which is compounded by the proximity of Highway 89 and roadside development. The structures in the recreation area do not show a clear sense of organization or relationship to one another (TRPA 1993).

Elements contributing to the scenic quality of the Homewood Ski Area include the vertical rise of the ski slope, the dense conifer forest bordering the ski slope, and mature conifers in the parking area. Elements found to detract from scenic quality include the following (TRPA 1993):

- The expansive, visually dominant parking lot along SR 89;
- Overhead powerlines;
- Visually prominent bright blue ski lift towers, emphasizing the alterations to the natural landscape;
- The highly visible maintenance area with vehicles and equipment;
- Structures lacking coherent architecture and rational siting that compete with, rather than complement, the natural landscape;
- The lodge in need of repair; and

- Lack of buffering or screening between SR 89 and Ski Homewood, which negatively influences views from the roadway and the ski area because man-made elements are more visually prominent than natural features.

To maintain the scenic qualities of views to the north and south of Ski Homewood, the TRPA (1993) recommends preserving trees as visual screening, maintaining structures below tree canopy height, avoiding structures and vegetation removal that alter views of the ridgeline, using building materials that blend with the natural environment, such as non-reflective surfaces, hues of natural vegetation or earth tones, and color values darker than the surrounding landscape.

Within Ski Homewood itself, the TRPA (1993) recommends reducing the size and visual prominence of the parking lot by adding a landscaped buffer and parking strips, undergrounding utility lines, repainting lift towers to blend into the landscape, relocating the maintenance area to a less visually prominent site, creating a coherent architectural style, and upgrading architectural details. Table 10-3 provides scenic recreation area ratings for Scenic Recreational Resource Unit 20. Figure 10-3 provides a map of Scenic Recreational Resource Unit 20.

Scenic Recreational Resource Unit 21 (Tahoe Ski Bowl)

The former Tahoe Ski Bowl consists of the South Base area of the HMR Ski Area. Scenic Recreational Resource Unit 21 (Tahoe Ski Bowl) is considered to be in attainment and has moderate scenic quality (TRPA 1982, 1993, 2001c). The 1993 Scenic Resource Evaluation of Scenic Recreational Resource Unit 21 (Tahoe Ski Bowl) summarizes:

> The Tahoe Ski Bowl portion of Ski Homewood is an area of moderate scenic quality which lacks distinctive features necessary to make it truly memorable. The dominant visual feature is the dense conifer forest which encloses the recreation area. The forest, however, also ensures that there are no distant views out from the site. Little disturbance has occurred around the ski area, so that it is surrounded by landscape of good scenic quality. The recreation facilities are well designed and fit well into the surrounding environment, considering the alterations necessary to accommodate alpine skiing (TRPA 1993).

Elements contributing to the scenic quality of the Unit 21 include the vertical rise of ski slopes, the dense conifer forest surrounding the ski area, and stream and riparian vegetation along Homewood Creek. Elements found to detract from scenic quality include the following (TRPA 1993):

- The expansive parking lot undifferentiated from other areas;
- The highly visible private homes on the eastern edge of the parking lot;
- Visually prominent bright orange ski lift towers, emphasizing the alterations to the natural landscape;
- The abrupt transition from pavement to structure, lacking landscaping or other visual softening;

To maintain the scenic qualities of views to the north and south of Unit 21, the TRPA (1993) recommends preserving trees as visual screening, maintaining structures below tree canopy height, avoiding structures and vegetation removal that alter views of the ridgeline, using building materials that blend with the natural environment, such as non-reflective surfaces, hues of natural vegetation or earth tones, and color values darker than the surrounding landscape.

Within Unit 21, the TRPA (1993) recommends better defining the parking area with landscaped borders, a landscaped divider between the entry road and the parking area, vegetative screening between the parking area and private homes, foundation planting around buildings, and repainting lift towers to blend into the landscape. Table 10-3 provides scenic recreation area ratings for Scenic Recreational Resource Unit 21. Figure 10-3 provides a map of Scenic Recreational Resource Unit 21.

Figure 10-3: TRPA Recreation Units 20 (top image) and 21 (bottom image)

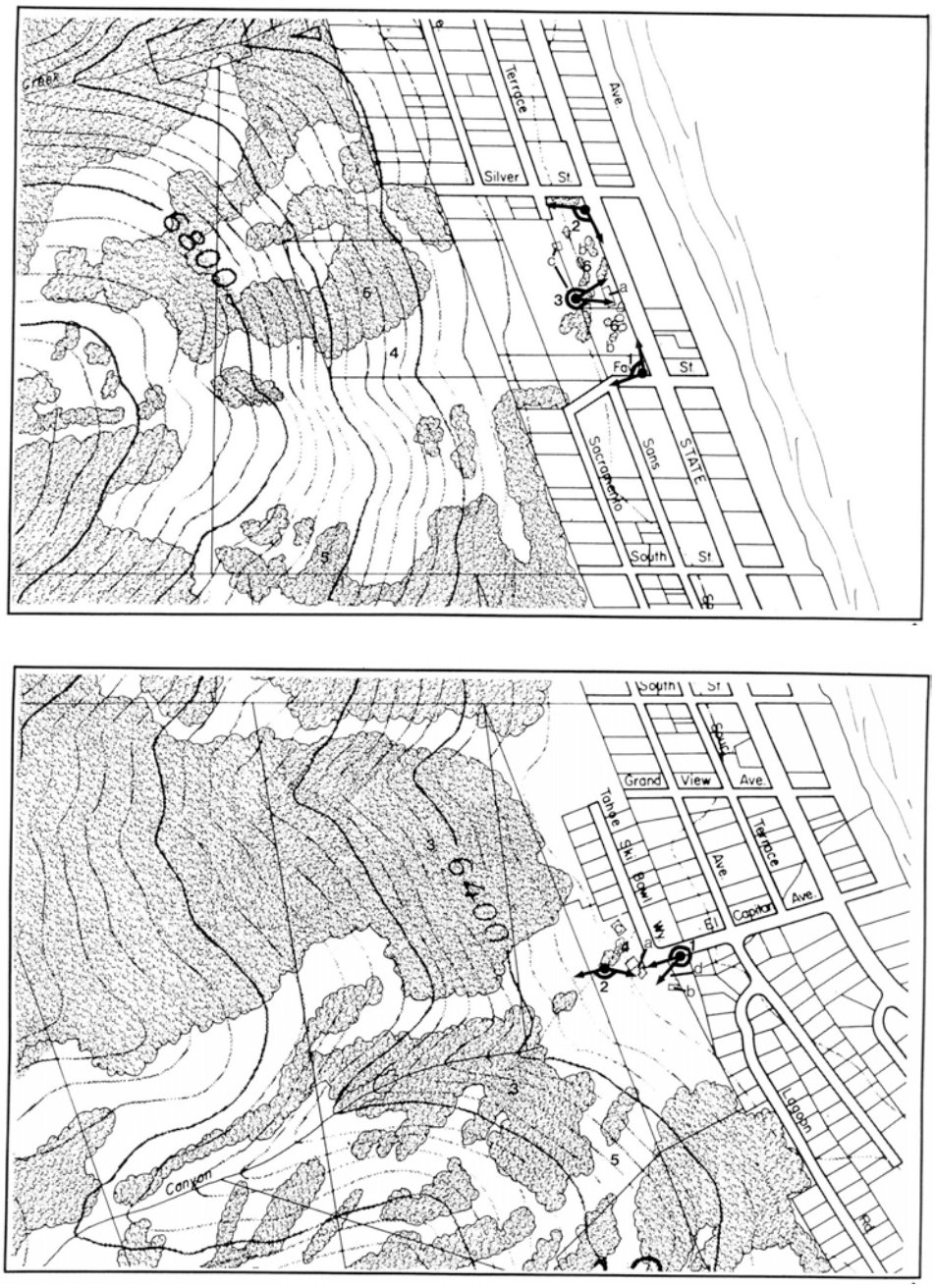


Table 10-3

2001 Scenic Recreational Area Ratings of Ski Homewood (Unit 20) and Tahoe Ski Bowl (Unit 21)

Views from the Recreation Area						
Scenic Unit	**Unity**	**Vividness**	**Variety**	**Intactness**	**Rating**	**Status**
20-1	2	2	3	2	9	Attainment
20-2	2	2	3	2	9	Attainment
20-3	2	2	3	1	8	Attainment
21-1	3	3	3	3	12	Attainment
21-2	3	4	3	3	14	Attainment
Natural Features of the Recreation Area						
Scenic Unit	**Unity**	**Vividness**	**Variety**	**Intactness**	**Rating**	**Status**
20-4	3	2	2	2	9	Attainment
20-5	3	3	3	2	11	Attainment
20-6	1	3	3	2	9	Attainment
21-3	4	4	3	3	14	Attainment
21-4	4	3	3	4	14	Attainment
21-5	4	3	3	2	12	Attainment
Man-made Features of the Recreation Area						
Scenic Unit	**Coherence**	**Condition**	**Compatibility**	**Design Quality**	**Rating**	**Status**
20-a	2	2	2	2	8	Attainment
20-b	2	3	2	2	9	Attainment
20-c	2	2	2	2	9	Attainment
21-a	4	4	4	4	16	Attainment
21-b	4	4	3	3	14	Attainment
21-c	4	4	4	4	16	Attainment
21-d	3	4	3	3	13	Attainment

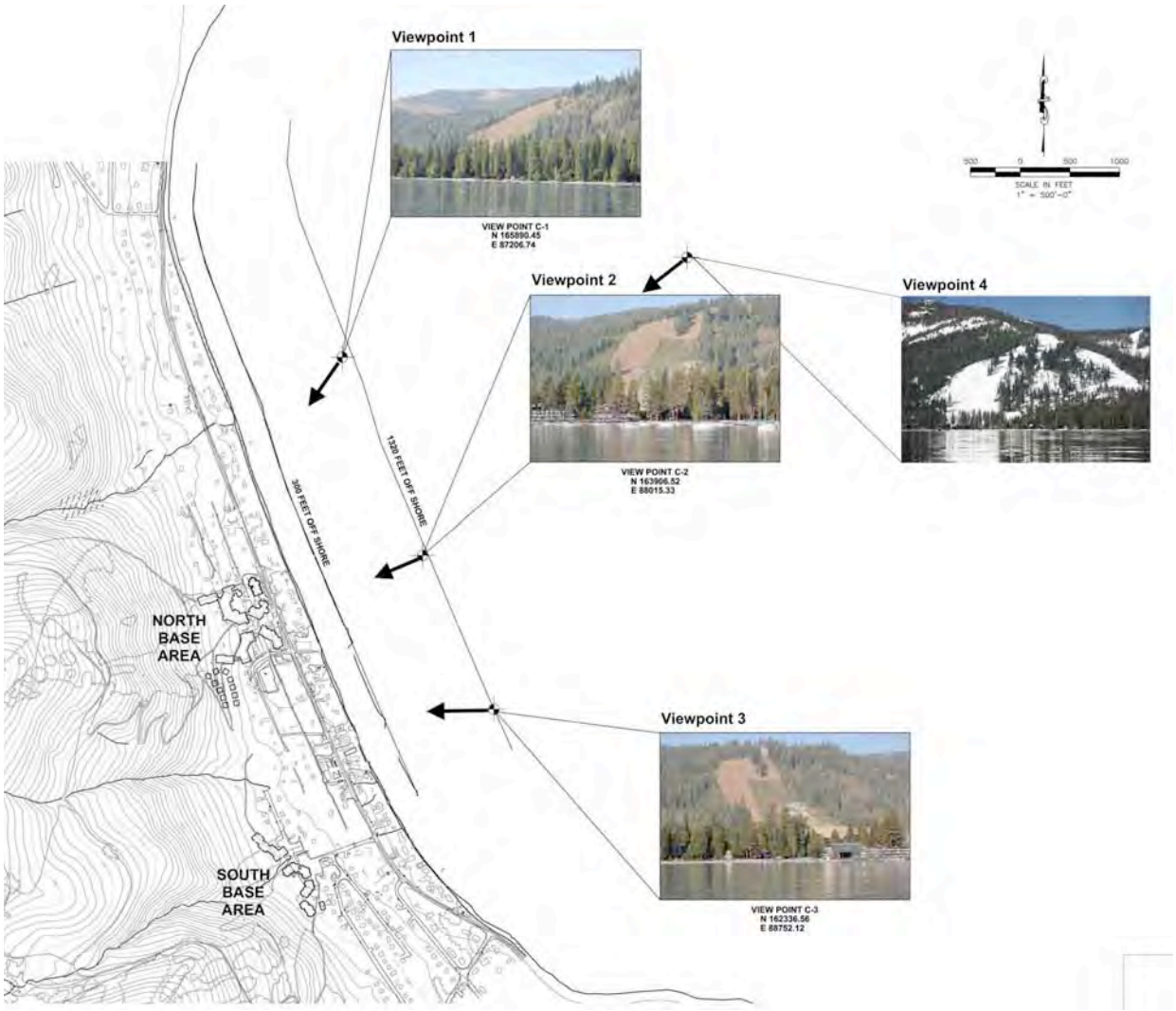
Sources: TRPA Threshold Ratings for Recreation Areas 2001 (TRPA 2001c, 2007).

10.1.5 Specific Landscape and Viewshed Conditions

A photographic inventory of the Project area and vicinity was conducted and reviewed with TRPA and Placer County staff to select viewpoints that illustrate existing conditions and allow for an evaluation of potential impacts to existing visual quality. Three viewpoints from SR 89 and four viewpoints from Lake Tahoe were selected to document views of proposed development at the North Base area and Mid

Mountain area. No viewpoints were selected for the South Base area, because development at the South Base area is not visible from identified scenic resources (e.g., SR 89 or Lake Tahoe). Figure 10-4 shows the locations of viewpoints from Lake Tahoe near Homewood, situated approximately 1,300 (viewpoints 1, 2 and 3) and 5,200 (viewpoint 4) feet from the shoreline. Figures 10-5 through 10-8 provide photographs of existing conditions and simulations of views with the Proposed Project (Alternative 1) from the selected viewpoints in Lake Tahoe.

Figure 10-4. Scenic Viewpoint Locations from Lake Tahoe



As seen from Lake Tahoe viewpoints 1-3 (Figures 10-5 through 10-7), the lower ski run "The Face" and the Madden Triple Chairlift towers immediately above the North Base are highly visible from Lake Tahoe. Conifer trees and structures between the North Base area and the shoreline obscure views of the existing base structures and parking areas. Forests and topography obscure views of other ski runs, lifts, and the existing Mid-Mountain Base area from viewpoints 1-3.

Figure 10-5. Lake Tahoe Scenic Viewpoint 1 (1,300 Feet from Shoreline) – Alternative 1.

Figure 10-6. Lake Tahoe Scenic Viewpoint 2 (1,300 Feet from Shoreline) – Alternative 1.

Figure 10-7. Lake Tahoe Scenic Viewpoint 3 (1,300 Feet from Shoreline) – Alternative 1.

From Lake Tahoe viewpoint 4 (Figure 10-8), The Face and Madden Chairlift remain visible. The Quail Chairlift and lower ski runs "Exhibition" and "Double Trouble" immediately above the South Base area are highly visible as well. The Mid-Mountain Base area is visible near the top of the ridgeline against a backdrop of conifers, along with the mid-mountain area ski run "Chute." The pine and fir forest and other urban development located between the HMR Project area and the shoreline obscures existing North Base area buildings and parking lots.

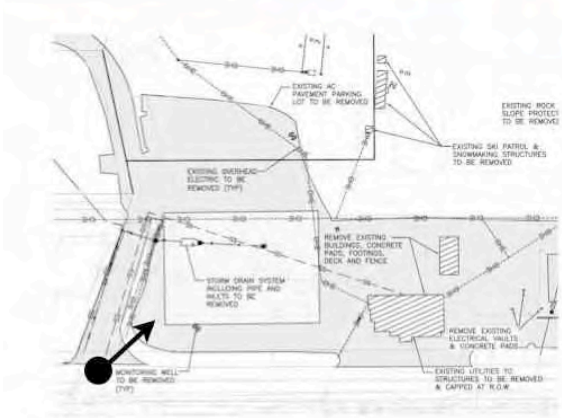
Figure 10-9 depicts viewpoints from SR 89, and Figures 10-10 through 10-13 provide photographs of existing conditions and simulations of views with the Project from the selected viewpoints.

With little vegetative screening, the existing HMR North Base area parking lot, lodge, ski trails, ski lifts, and aboveground utility lines are clearly viewed from SR 89 under existing conditions. The 700-space paved expanse of the parking lot dominates the foreground views from SR 89 and further opens views from the roadway. Views of the South Base area structures and ski runs are obscured from SR 89. The South Base area is set back 0.25 mile from the roadway, and dense forest vegetation obscures views from this segment of SR 89. Consequently, no photographs or simulated views of the South Base area from SR 89 are provided.

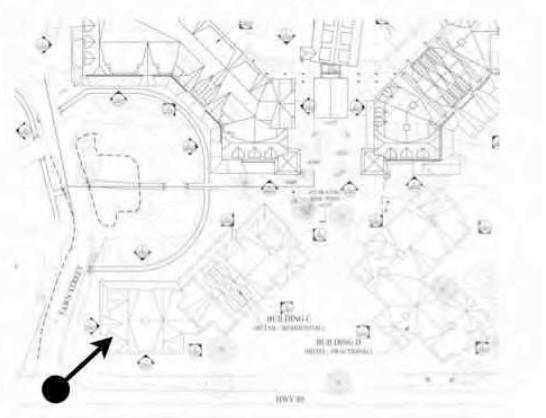
Figure 10-8. Lake Tahoe Scenic Viewpoint 4 (5,200 Feet from Shoreline) – Alternative 1.

Figure 10-9. Scenic Viewpoint Locations from SR 89.

Figure 10-10. SR 89 Scenic Viewpoint 1 of North Base Area – Alternative 1.



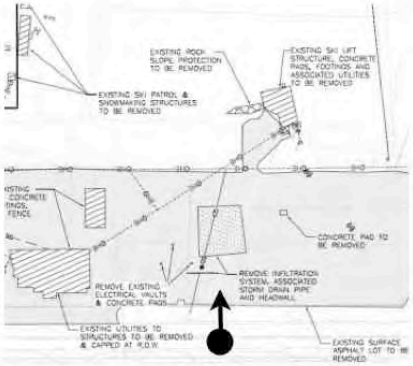
Existing Conditions



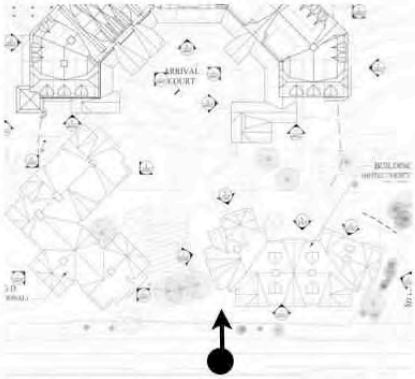
Proposed Conditions

Figure 10-11. SR 89 Scenic Viewpoint 2 of North Base Area – Alternative 1.

Existing Conditions



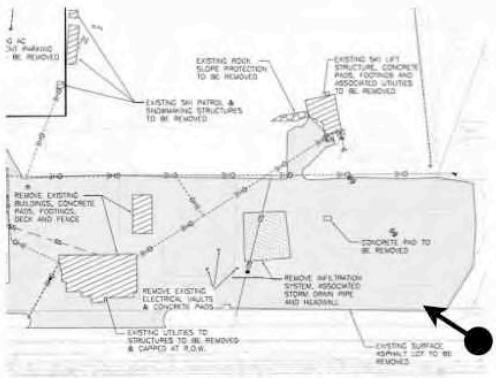
Existing Conditions



Proposed Conditions

Proposed Conditions

Figure 10-12. SR 89 Scenic Viewpoint 3 of North Base Area – Alternative 1.

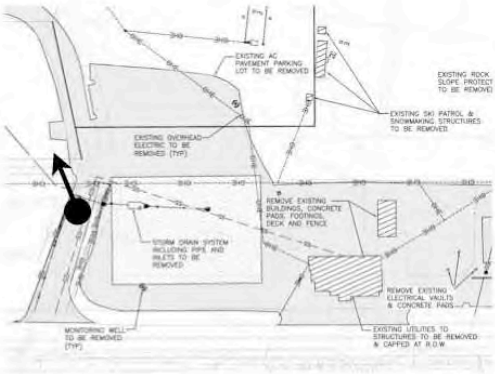


Existing Conditions

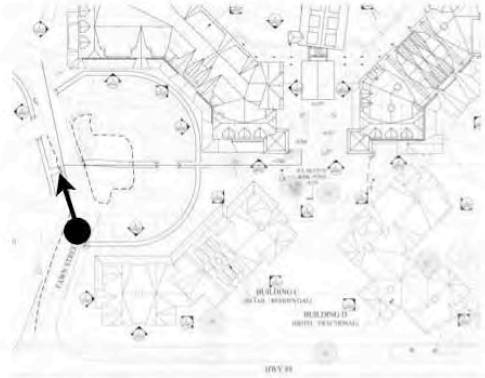
Proposed Conditions

Figure 10-13. Scenic Viewpoint 4 of North Base Parking Structure – Alternative 1.

Existing Conditions



Existing Conditions



Proposed Conditions

Proposed Conditions

10.2 REGULATORY SETTING

10.2.1 Tahoe Regional Planning Agency

The TRPA Regional Plan establishes Environmental Threshold Carrying Capacities (ETCCs) for scenic resources and sets forth policies, programs, and ordinances to ensure that these standards and capacities will be achieved and maintained. The SQIP (TRPA 1989a), Design Review Guidelines (TRPA 1989b), and the TRPA Code of Ordinances (TRPA 1987) provide scenic standards applicable to the Project. TRPA scenic quality thresholds represent the minimum standards for scenic quality in the Basin. The SQIP provides a comprehensive threshold attainment program to improve the overall visual quality of the built environment in roadway and shoreline scenic units that do not meet the scenic quality threshold. Scenic goals and policies are also addressed in Chapter 4.0, Relationship to Existing Land Use Plans, Goals and Policies.

TRPA Thresholds

TRPA adopted ETCCs in August 1982 to maintain and improve resources of the Lake Tahoe Basin (TRPA 1982). Specific thresholds were developed to improve and protect the scenic resources of the area. Where attainment of thresholds has been reached, TRPA standards require maintenance of threshold rating values and compatibility with the natural environment for roadway and shoreline travel routes, recreation area scenic resources and individually mapped scenic resources. For non-attainment areas, TRPA standards require mitigation actions to contribute to reaching attainment.

Scenic Quality Improvement Program

The TRPA SQIP identifies areas where scenic quality ratings in travel route corridors fall below adopted thresholds and prescribes scenic improvements required to improve the scenic quality ratings.

TRPA Code of Ordinances

Signage

Chapter 26 of the TRPA Code of Ordinances (TRPA 1987) provides regulations for signage. Under §26.10.A, primary use signage may be 1.0 square feet per linear foot of building frontage up to a maximum of 40 square feet. Freestanding signs are allowed dependant upon project size, and nonconforming signs shall be removed if the business is modified or expanded.

Height

Allowable building heights are regulated under the TRPA Code of Ordinances, Chapter 22 – Height Standards (TRPA 1987). The maximum height of a building is the difference between the point of lowest natural ground elevation along an exterior wall of the building, and the elevation of the coping of the highest flat roof, the deck line of the highest mansard roof or the ridge of the highest hip, gable, gambrel, shed or other pitched roof, whichever is highest (§22.2.A). The standards mandate a maximum allowable building height of 26 feet unless specific criteria are met for additional height (§22.3.A(1)). Additional heights up to those listed in Chapter 22, Table A, are allowed if the TRPA makes a finding that the project is consistent with §22.7(1). Depending on the location and use of the proposed building, additional heights are allowed if the

TRPA makes a finding that the project is consistent with one or more criteria in §22.7. The list of findings applicable to this project required for additional height is provided below.

Residential building heights up to those listed in Table A for buildings with roof pitches of 5:12 may be allowed if the project is consistent with §22.7 findings 1, 2, and 8. The same additional heights for other buildings are allowed if the project is consistent with §22.7 findings 1, 2, 3, and 8 (§22.3.A.1).

Under §22.4.A(1), the TRPA allows heights above those listed in Table A, for tourist accommodation unit (TAU) buildings or buildings with a primary use related to downhill ski recreation. Building heights may be increased, up to a maximum height of 38 feet, for buildings with TAUs if the TRPA makes §22.7 findings 1, 2, and 3, and for buildings with downhill ski recreation use if the TRPA makes findings 1, 2, 3, 4, and 7. The TRPA also allows an additional foot in building height for every 5% reduction in land coverage by a project, up to a maximum building height of 42 feet, and if the TRPA makes §22.7 findings 1, 2, 3, and 5 (§22.4.A(2)).

Under §22.4.A(3), the TRPA allows buildings with recreation uses to reach 42 feet in height if they are not visible from Lake Tahoe and are not within 1,000 feet of a Scenic Highway Corridor (e.g., SR 89 pursuant to TRPA Code of Ordinances, Chapter 22 – Design Standards, §30.13).

In adopted ski area master plans, recreation building heights may be increased above Table A heights if they are not visible from Lake Tahoe and are not within 1,000 feet of a Scenic Highway Corridor (e.g., SR 89 pursuant to TRPA Code of Ordinances, Chapter 22 – Design Standards, §30.13), and if the TRPA makes §22.7 findings 1, 3, 4, 7, and 8 (§22.4.A(4)). Building heights may be increased by 14 feet up to a maximum of 56 feet, if the project applicant demonstrates that snow depths make the additional height necessary. Building heights may be increased by 10 feet up to a maximum of 56 feet, if the project applicant demonstrates that a roof pitch in excess of 4:12 is necessary.

<u>TRPA Code of Ordinances, Chapter 22 – Height Standards, §22.7 List Of Findings (TRPA 1987):</u>

> (1) When viewed from major arterials, scenic turnouts, public recreation areas or the waters of Lake Tahoe, from a distance of 300 feet, the additional height will not cause a building to extend above the forest canopy, when present, or a ridgeline. For height greater than that set forth in Table A for a 5:12 pitch, the additional height shall not increase the visual magnitude beyond that permitted for structures in the shoreland as set forth in Section 30.15.G, Additional Visual Magnitude, or Appendix H, Visual Assessment Tool, of the Design Review Guidelines.
>
> (2) When outside a community plan, the additional height is consistent with the surrounding uses.
>
> (3) With respect to that portion of the building which is permitted the additional height, the building has been designed to minimize interference with existing views within the area to the extent practicable.
>
> (4) The function of the structure requires a greater maximum height than otherwise provided for in this chapter.
>
> (5) That portion of the building which is permitted the additional height, is adequately screened, as seen from major arterials, the waters of lakes, and other public areas from which the building is frequently viewed. In determining the adequacy of screening, consideration shall be given to the degree to which a combination of the following features causes the building to blend or merge with the background:
>
> > (a) The horizontal distance from which the building is viewed;
> >
> > (b) The extent of screening; and

(c) Proposed exterior colors and building materials.

(6) The building is located within an approved community plan, which identifies the project area as being suit able for the additional height being proposed.

(7) The additional height is the minimum necessary to feasibly implement the project and there are no feasible alternatives requiring less additional height.

(8) The maximum height at any corner of two exterior walls of the building is not greater than 90% of the maximum building height. The maximum height at the corner of two exterior walls is the difference between the point of lowest natural ground elevation along an exterior wall of the building, and point at which the corner of the same exterior wall meets the roof. This standard shall not apply to an architectural feature described as a prow.

(9) When viewed from a TRPA scenic threshold travel route, the additional height granted a building or structure shall not result in the net loss of views to a scenic resource identified in the 1982 Lake Tahoe Basin Scenic Resource Inventory. TRPA shall specify the method used to evaluate potential view loss.

Design Standards

Chapter 30 of the TRPA Code of Ordinances (TRPA 1987) includes numerous design standards to ensure that projects are designed and constructed consistent with the Community Design Subelement of the Land Use Element and related elements of the Goals and Policies.

Community Enhancement Program

Projects must meet specific criteria to be accepted as a Community Enhancement Program (CEP) project. In regard to height and design, the greatest height must be significantly set back from streets and located toward the center of the development. Based on the CEP Resolution for Homewood, the "TRPA may consider an alternative method of measuring height in sloped situations" and that "Site context, varying step backs, roof pitch, and articulation must be considered for additional height to be appropriate for this location". A maximum height of 50 feet at the highest envelope/slope may be appropriate depending on the elevation and slope. Substantial land coverage reductions must occur to compensate for the additional height and a scenic analysis demonstrating how the project enhances the scenic travel route rating and mitigates potential impacts is required.

Tree Removal, Vegetation Protection and Revegetation

Chapters 65 and 71 of the TRPA Code of Ordinances (TRPA 1987) set forth standards for tree removal and protection, while Chapter 77 establishes revegetation standards. Chapter 71 states that tree removal for the purposes of development may be approved by TRPA and must be accomplished according to TRPA management techniques. Under §65.2E of Chapter 65 of the Code of Ordinances, trees may be removed when approved for construction activities involving soil compaction, excavation or paving encroachment into more than 25% of a tree's dripline. Chapter 77 requires revegetation plans for areas that are damaged by project development. These plans must include: descriptions of the site; the number, size, and types of plants to be used for revegetation; descriptions and schedules of revegetation methodology; and specifications for long-term care. Revegetation plant species must be TRPA approved and appropriate BMPs must be employed.

Placer County West Shore Area General Plan

The 1998 West Shore Area General Plan (County of Placer 1998) provides guidance for development within the West Shore Area of Lake Tahoe, including Homewood. In terms of scenic assessment and guidance, the West Shore Area General Plan defers to TRPA guidelines and does not include direction specific for the West Shore Area. An analysis of the consistency of the Project with West Shore Area Plan goals and policies is provided in Chapter 4 of this EIR.

Placer County General Plan

The 1994 Placer County General Plan sets forth goals and policies for visual resources related to the siting and design of development, and preservation of natural resources, in Placer County. An analysis of the consistency of the Project with General Plan goals and policies is provided in Chapter 4 of this EIR.

Placer County Standards and Guidelines for Signage, Parking, and Design

In 1994, Placer County and the TRPA adopted the *Placer County Standards and Guidelines for Signage, Parking, and Design in the Lake Tahoe Region* (County of Placer 1994b, adopted March 7, 1994 by Placer County and February 24, 1994 by the TRPA). The document includes standards and/or guidelines for site design, grading and drainage, landscaping, lighting, architecture, snow design, energy conservation, utility and service areas, historic buildings, scenic highway corridors, shorezones, parking, access, circulation, parking lot landscaping, disabled parking, loading areas, and signs. These standards and guidelines reflect those established in the TRPA Design Guidelines (TRPA 1989b, 1987).

10.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

Table 10-4 presents the evaluation criteria for Scenic Resources. These criteria are drawn primarily from local plans, adapted where necessary to reflect CEQA and TRPA requirements. For the purpose of this analysis, the stated applicable points of significance determine whether implementing the Project will result in a significant impact. These points of significance are based upon Appendix G of the State of California CEQA Guidelines and the TRPA Initial Environmental Checklist. A Scenic Resource impact is significant if implementation of the Project exceeds the point of significance shown in Table 10-4.

Table 10-4

Evaluation Criteria with Point of Significance - Scenic Resources

Evaluation Criteria	Significance Threshold	Justification
SCENIC-1. Will the Project be inconsistent with a County General Plan or TRPA thresholds, regulations, standards, or guidelines applicable to the Project area?	Non-compliance with TRPA or Placer County scenic resource thresholds, goals, policies, standards or ordinances.	TRPA Initial Environmental Checklist II (18d, e); CEQA Appendix G Checklist I (a); TRPA Regional Plan, Goals and Policies, Chapter II, Community Design Subelement; TRPA Threshold Carrying Capacities (Resolution # 82-11); TRPA SQIP; TRPA Design Review Guidelines; TRPA Code of Ordinances Chapters 22 (Height Standards) and 30 (Design Standards).
SCENIC-2. Will the Project be visible from or cause an adverse effect on foreground or middle ground views from a high volume travel way[5], recreation use area[6], or other public use area[7], including Lake Tahoe, TRPA designated bike trail, or State or federal highway?	a) Creation of a strong visual contrast[1] b) Reduction in scenic vista viewed area[2] from foreground[3] or middleground[3] c) Degradation in visual quality or elimination of a specific scenic resource[4] d) Reduction of adopted scenic thresholds or standards (e.g., TRPA scenic travel route ratings).	a) CEQA Appendix G Checklist I (c); TRPA Initial Environmental Checklist II (18e); TRPA SQIP; TRPA Design Review Guidelines; b) CEQA Appendix G Checklist I (a, c); TRPA Initial Environmental Checklist II (18a, b, c); TRPA SQIP; c) CEQA Appendix G Checklist I (b); TRPA Initial Environmental Checklist II (18c, e); TRPA SQIP; d) TRPA Initial Environmental Checklist II (18e); TRPA Threshold Carrying Capacities (Resolution # 82-11); TRPA SQIP.
SCENIC-3. Will the Project create an unacceptable new light source or cause glare or affect day or nighttime views in the area?	a) Substantial increase in night lighting or glare entering adjacent residences.	a) CEQA Appendix G Checklist I (d); TRPA Initial Environmental Checklist II (7 a, b, c, and d); TRPA Design Review Guidelines.

Source: Hauge Brueck Associates 2009.

1 Strong Visual Contrast - (one or more of the following) regraded land forms are flat with little to no contour: line of major ridgeline is altered and not consistent with surrounding ridgelines or minor ridgelines are eliminated; inconsistent color with adjacent landscape character; elimination of landscape texture created by exposed soil or removal of vegetation; form of project grossly exceeds scale of natural land forms.

2 Viewed area defined as area of landscape (i.e., everything except sky) as shown in a photograph from the closest sensitive viewpoint, taken with a normal (50 mm) lens.

3 Foreground: 0-1/2 mile; middleground: 1/2-3 miles

4 Specific Scenic Resource - (one or more of the following) landscape component that creates striking feature; Landform - steep (>60%) undulating/dissected slopes, distinctive rock outcrops, or pronounced ridgelines; Water - major bodies of water that provide reflective qualities and irregular shorelines, or major/permanent streams/rivers with diversity of meanders, flows, rapids, rock outcrops, or river-banks; Vegetation - mature stands of native or cultural species (conifers and

aspen) in natural groves or distinct planted patterns (i.e. trees along roads or as planted wind breaks); Man-made development - historic structures;

5 High volume travelways: State highways and 2-lane County highways serving direct connections with settlements named on United States Geological Service 7½-minute topographic quadrangle maps;

6 Recreation use areas: Designated recreation sites, parks, trails, or other areas managed for public recreation.

7 Public use area: Downtown areas, cemeteries, community centers, attracting the public on a daily or regular basis.

10.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

Impact: **SCENIC-1. Will the Project be inconsistent with a County General Plan or TRPA thresholds, regulations, standards, or guidelines applicable to the Project area?**

Analysis: *Significant Impact; Alternative 2 (No Project)*

No changes to existing conditions will occur under the No Project (Alternative 2). Existing structures and site layout will remain in their current configuration and architecture. The existing site layout, design, and landscaping do not comply with TRPA Design Guidelines (TRPA 1989b) or the Placer County West Shore Area General Plan (County of Placer 1998). Structures lack character, relation to each other, or design quality prescribed for the area in the Design Guidelines and General Plan goals and policies. Landscaping is not present for aesthetic quality or screening. The parking lots are the dominant visual features of the North Base and South Base areas, and maintenance areas are highly visible.

The Project area does not meet thresholds for attainment of ETCC's for scenic resources. The Scenic Roadway Threshold Travel Route Rating for Unit 11 (Homewood), and the Scenic Shoreline Threshold Travel Route Rating for Unit 12 (McKinney Bay) are below the attainment threshold (TRPA 2007, 2001a, 2001b). Although there is no action to address the existing visual issues on the site to bring the site into attainment status with TRPA scenic resource standards, the No Project (Alternative 2) creates no changes or new inconsistencies with existing plan documents. However, this impact is considered to be significant and unavoidable because of inconsistencies with existing standards and guidelines.

Mitigation: No mitigation is possible.

After Mitigation: *Significant and Unavoidable Impact; Alternative 2 (No Project)*

Since no action is proposed under the No Project (Alternative 2), no changes to the existing conditions will occur. The existing features and structures that are not in compliance with current TRPA and Placer County regulations, standards, and guidelines will persist.

Analysis: *Significant Impact; Alternative 1*

Proposed Project (Alternative 1) building heights do not comply with TRPA Code of Ordinances Chapter 22 – Height Standards (TRPA 1987). Consequently, the Proposed Project (Alternative 1) is not consistent with existing TRPA Regional Plan Goals and Policies, Land Use Element, Community Design Subelement, Goal 2, Policy 1 (TRPA 1986). However, a height amendment to TRPA Code of Ordinances Chapter 22 is

proposed that includes a new height calculation methodology for sloped areas. The buildings included in the Proposed Project (Alternative 1) would be in compliance with the amended height standards. The analysis below concludes that the Proposed Project would not result in adverse impacts on scenic quality, but would result in improvements to existing scenic quality ratings for SR 89 to help move the existing TRPA roadway travel route unit towards threshold attainment.

The Proposed Project (Alternative 1) is consistent with other applicable goals and policies related to visual resources, community design, and scenic corridors in the TRPA Regional Plan, Placer County General Plan, and West Shore Area General Plan. Tables 4.1, 4.2, and 4.3 in Chapter 4 - Relationship to Existing Land Use Plans, Goals and Policies, provide evaluations of Project consistency with applicable goals and policies. The Proposed Project (Alternative 1) is consistent with the following elements of the *Placer County Design Standards and Guidelines for the Lake Tahoe Region Including the Community Plan Areas* (Placer County 1994): 1) Site Plan, 2) Grading and Drainage, 3) Landscaping, 5) Architecture, 6) Design for Snow, 7) Energy Conservation, 8) Utility and Service Area, 9) Historic Buildings, 10) Scenic Highway Corridors, 11) Shorezone, 12) Parking, 13) Access, 14) Circulation, 15) Parking Lot Landscaping, 16) Parking for Disabled Persons, and 17) Loading (County of Placer 1994b).

Although specific lighting and signage materials, dimensions, and locations are not currently identified, it is assumed that the Proposed Project will comply with TRPA and Placer County standards in order to obtain necessary approvals and permits prior to construction. As analyzed in Chapter 4, it is assumed that the Proposed Project (Alternative 1) is consistent with policies related to 4) Lighting and 18) Signs.

To address compliance with height standards, the Proposed Project (Alternative 1) proposes to amend TRPA Code of Ordinances Chapter 22 – Height Standards by adding new §22.4.G and amending §22.7(6) to allow additional building heights for special projects located in a Ski Area Master Plan and designated through TRPA Governing Board Resolution 2008-11. A copy of the proposed Chapter 22 amendment is provided in Appendix F. Table 10-5 provides data on the heights for individual buildings with the Proposed Project (Alternative 1) in relation to the proposed amendments to Chapter 22.

The height amendment, if approved, will allow building heights up to 77 feet as currently measured using TRPA Code Chapter 22 height measurement methods. However, the amendment proposes an alternative method for measuring height in circumstances where large footprint buildings are stair stepped up a hillside. The proposed amendment to chapter 22 would adopt the Placer County methodology of measuring height. Under this method, the height would be measured at the point of average natural grade (point between highest and lowest grade along the building footprint) and height would be the distance from the ground elevation at that average point of natural grade to the peak of the highest ridge or roof line of the building. Using the proposed method to measure height (taking the difference between highest roof ridge and average natural grade rather than lowest point of natural grade), no proposed building would exceed 50 feet in height. As shown in Figure 10-14, the visual impact of large attached buildings located on a slope is similar to detached buildings located on the same slope. Revising the height calculation methodology to use the average slope to roof pitch instead of the lowest grade to roof pitch, results in a similar overall visual effect, but would allow one large building rather than smaller buildings stepped up the hillside. Therefore, the amendment will not allow greater visual impact or overall height, rather it revises the calculation methods to

better reflect the true height of large footprint/attached buildings on sloped areas. The amendment is limited to qualifying ski area master plan areas addressed by TRPA Governing Board Resolution 2008-11, which solely includes the HMR Ski Area. Consequently, the code amendment would not apply to other parts of the Lake Tahoe Basin.

Under the amendment, new structures requesting additional height along SR 89 need to be setback at least 40 feet from the edge of SR 89 pavement. Two- to three-story buildings would be allowed closest to SR 89, while buildings up to four stories would be allowed at the rear of the site. Under the proposed height measurement methodology, no building would be allowed to exceed 50 feet in height. Using the proposed measurement method for the HMR Ski Area, the proposed amendment would allow maximum permissible height for structures with a minimum setback of 40 feet from the SR 89 edge of pavement to be 42 feet, with a minimum roof pitch of 5:12. Buildings setback at least 200 feet, but not more than 675 feet, would be allowed to have heights up to 50 feet, with a minimum roof pitch of 2:12. The South Base area would have a maximum height of 50 feet, with a minimum roof pitch of 5:12. The maximum height for structures located in the Mid-Mountain Base area would be 35 feet, with a minimum roof pitch of 2:12.

To qualify for additional height under the proposed §22.4.G amendment, buildings must meet the eligibility requirements included in the amendment and comply with §22.7 findings 1, 3, 6 (with proposed amendment to allow additional height in ski area master plans as well as Community Plan areas), 8, and 9. The Proposed Project (Alternative 1) must also meet the following required conditions included in the Ski Area Master Plan to be eligible for additional building height under the amendment:

Additional Height Eligibility Criteria	Alternative 1 Compliance
1. The project incorporates Pedestrian Transit-Oriented Design Features consistent with Subsection 13.7.D(3) (specifically a-e), including buildings to be oriented to the street, sidewalks, alternative parking strategies, mixed uses, integration of the private and public open spaces and circulation routes.	Master Plan proposes an alternative transportation plan that increases pedestrian and bike paths and improved alternative mode choices other than the private automobile. Mixed uses and buildings oriented to the public street are also proposed.
2. The project located within the Special Height District retains and treats the 50-year, one-hour storm utilizing on-site and off-site systems incorporating best available technologies.	Master Plan Alternative 1 proposes a stormwater system to treat the 50-year, one-hour storm event. Stormwater treatment systems are proposed for the North Base, South Base, Tahoe Ski Bowl Way extension, Mid-Mountain area and off-site Caltrans/Placer County/HMR EIP project.
3. The project shall implement a minimum of two Environmental Improvement Program (EIP) projects.	Master Plan proposes to implement or contribute to EIP projects #86, 632, 725, 775, 855, and 996.
4. The project shall be certified under the United States Green Building Council's Leadership I Energy and Environment Design (LEED) or under an equivalent sustainable/green building program.	The Master Plan proposes to pursue LEED certification. The North Base area has been accepted into and will be designed under the Leadership in Energy and Environmental Design (LEED) for Neighborhood Development Pilot Program as an example of exemplary green and sustainable

	development. The South Base area, although not a part of the LEED for Neighborhood Pilot Program, will be designed to stringent sustainable development standards using the LEED criteria as a template.
5. The project shall ensure the required public benefit(s) set forth above and in the master plan are implemented consistent with the provisions of Subsection 22.4.D(5) of the TRPA Code of Ordinances.	The Master Plan proposes to obtain necessary permits and funding prior to construction. HMR will provide TRPA with assurances regarding the intent and ability to complete the project prior to permit acknowledgement.
6. The project results in a permanent reduction of no less than 10 percent of existing land coverage within the project area.	Master Plan proposes a minimum of 13 % land coverage reduction. At least 10% of the land coverage reduction will be permanently retired.

With the Proposed Project (Alternative 1), North Base Buildings A (skier services), B (hotel/lodge), and P (parking structure/affordable housing) are set back more than 200 feet from SR 89 and meet the criteria for the 50-foot height limit. These buildings would be 47, 47, and 48 feet in height as measured using proposed Codes. Project Buildings C, D, and E are setback at least 40 feet, and would have allowable heights up to 42 feet. These buildings would be 42, 31, and 33 feet in height (Table 10-5). South Base area Buildings A, A1, and B are not visible from SR 89 and are located more than 650 feet from the edge of pavement. Therefore, these 49-foot buildings meet the conditions for the 50-foot height limit in the proposed height amendment.

Table 10-5

Proposed Project (Alternative 1) Building Heights in Relation to Amended TRPA Height Standards (§22.4.G).

Building	SR 89 setback[1]	Maximum allowed height with setback[2]	Proposed Building height	Meets required findings for additional height under §22.7 (Y/N)?				
				1	3	6[3]	8	9
North Base Area								
A (Skier Services/ Residential)	283	50	47	Y	Y	Y	Y	Y
B (Hotel/ Residential)	248	50	47	Y	Y	Y	Y	Y
C (Retail/ Residential/Fractional)	53	42	42	Y	Y	Y	Y	Y
D (Residential/ Fractional)	42	42	31	Y	Y	Y	Y	Y
E (Residential/ Fractional)	45	42	33	Y	Y	Y	Y	Y
P (Parking/Affordable Housing)	237	50	48	Y	Y	Y	Y	Y
South Base Area								
A (Residential/Skier Services)	650-1,200	50	49	Y	Y	Y	Y	Y
A1 (Residential)	650-1,200	50	49	Y	Y	Y	Y	Y
B (Residential)	650-1,200	50	49	Y	Y	Y	Y	Y
Mid-Mountain Base Area								
Gondola	n/a	35	24	Y	Y	Y	Y	Y
Gondola Entry/ Skier Services	n/a	35	33	Y	Y	Y	Y	Y
Restaurant	n/a	35	31	Y	Y	Y	Y	Y

Source: HMR and Hauge Brueck Associates, 2010

Notes.

1. Setback as measured from edge of pavement.
2. Maximum building heights with setbacks as provided in proposed §22.4.G. amendment.
3. Pursuant to finding 6 in §22.7A(6) as under the proposed amendment.

To allow additional height per the proposed amendment, findings 1, 3, 6, 8, and 9 under TRPA Code §22.7 must be made. A discussion of potential findings for the Proposed Project (Alternative 1) are provided below:

TRPA Code §22.7 Findings for the Proposed Project (Alternative 1)

1. When viewed from major arterials, scenic turnouts, public recreation areas of the waters of Lake Tahoe, from a distance of 300 feet, the additional height will not cause a building to extend above the forest canopy, when present, or a ridgeline. For height greater than that set forth in Table A for a 5:12 pitch, the additional height shall not increase the visual magnitude beyond that permitted for structures in the shoreland as set forth in Section 30.15, Additional Visual Magnitude, or Appendix H, Visual Assessment Tool, of the Design Review Guidelines.

The Proposed Project (Alternative 1) is not located within the shoreland as set forth in Section 30.15. The visual simulations documented in Figures 10-5 through 10-8 are from viewpoints in Lake Tahoe, and Figures 10-10 through 10-13 depict simulated views from SR 89. As shown, Project buildings will not exceed the forest canopy level or be visible above a ridgeline as viewed from a distance of 1,300 feet. As a result, the Proposed Project (Alternative 1) buildings are consistent with finding 1.

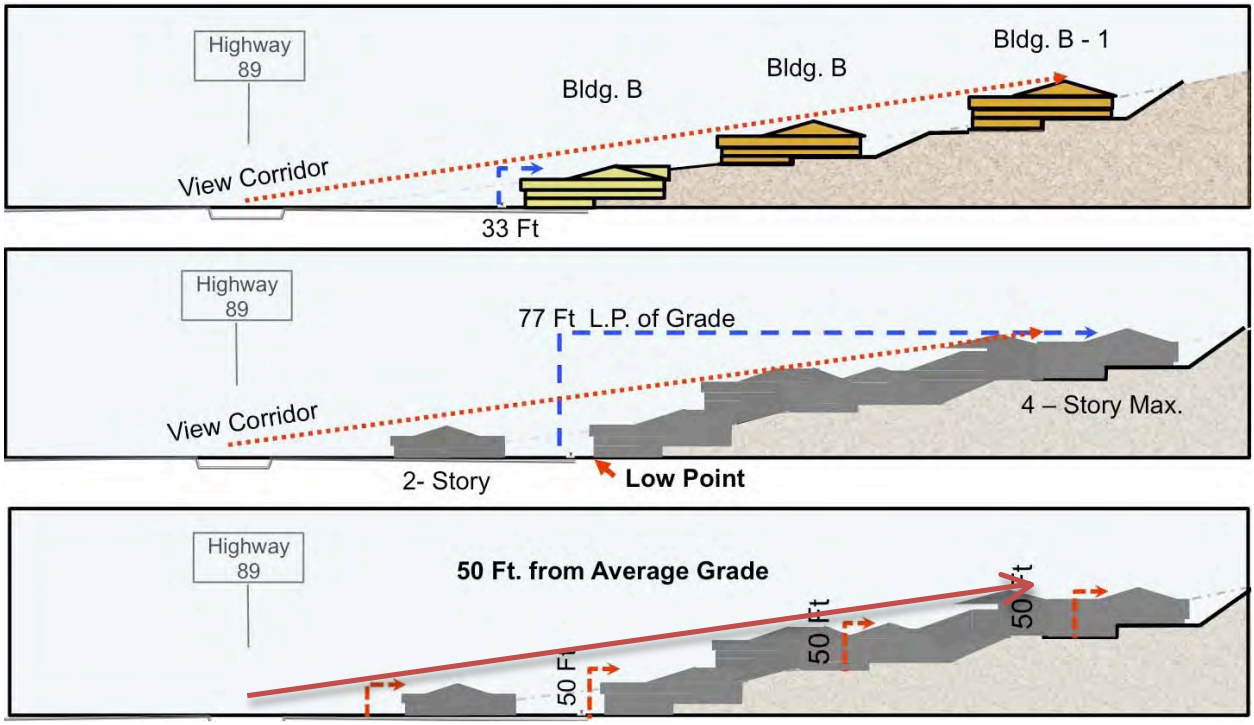
3. With respect to that portion of the building which is permitted the additional height, the building has been designed to minimize interference with existing views within the area to the extent practicable.

The Proposed Project (Alternative 1) scenario places shorter, two- and three-story buildings adjacent to SR 89 and larger 3.5-storied buildings graduated up the base of the mountain slope. Since the larger buildings are stepped up the naturally occurring slope, the proposed development avoids view interference within and from the public ROW toward the mountain. Structures are angled to afford views into the ski area without creating a long wall that blocks existing views through the Project area. The proposed parking structure and employee housing units to be located within the existing gravel parking lot are depicted in Figure 10-13. The structure would modify existing views toward Lake Tahoe from adjacent residential home sites located along Fawn Street, but would not block existing views of Lake Tahoe because intervening trees and other structures currently block views of the lake. As a result, the Proposed Project (Alternative 1) buildings are consistent with finding 3.

6. The building is located within an approved community plan or Ski Area Master Plan, which identifies the Project area as being suitable for the additional height being proposed.

The Project area will encompass the proposed HMR Ski Area Master Plan boundary, and consequently will meet the amended finding 6. The Master Plan states that a height amendment is needed to allow structures of an adequate size to serve the recreational and accommodation needs of the community and tourists, while reducing the amount of land disturbance that would otherwise be needed. Since the site is located on mountain slopes, the topography limits building structure and requires buildings to step up slopes. Based on how height is currently calculated by TRPA, structures are calculated to be taller than the actual height of any one exterior wall location. Figure 10-14 provides an example of how a large attached building stepped up a hillside can visually appear the same as a group of smaller detached buildings placed at intervals up the hill under TRPA's existing height measurement methods. The Proposed Project (Alternative 1) buildings are consistent with finding 6 under the proposed Code amendment.

Figure 10-14 Height Calculation Examples



8. The maximum height at any corner of two exterior walls of the building is not greater than 90% of the maximum building height. The maximum height at the corner of two exterior walls is the difference between the point of lowest natural ground elevation along an exterior wall of the building, and the point at which the corner of the same exterior wall meets the roof. This standard shall not apply to an architectural feature described as a prow.

Based on a review of Project Building elevations, no corner of two exterior walls of a building will be more than 90 percent of the proposed building height. Project buildings are consistent with finding 8.

9. When viewed from a TRPA scenic threshold travel route, the additional height granted a building or a structure shall not result in the net loss of views to a scenic resource identified in the 1982 Lake Tahoe Basin Scenic Resource Inventory. TRPA shall specify the method used to evaluate potential view loss.

Project buildings are consistent with finding 9 under the amended code. Travel Route Unit 11 is currently a nonattainment area. Identified features that detract from the scenic quality include the parking lot and existing structures at HMR as well as overhead utility lines (TRPA 1989, 1993, 2001a, 2007). The amended building height standard will not adversely affect scenic roadway or shoreline travel route ratings for the following reasons.

- The amendment is limited to the HMR Ski Area Master Plan project, and would not be available for other projects in the Basin;
- The amendment requires taller Project buildings to be setback a substantial distance from SR 89 (at least 200 feet for the North base area);

- Views from Lake Tahoe and SR 89 of buildings at the South Base area are obscured by dense conifer forest, as illustrate in Figures 10-5 to 10-8;
- North Base area Buildings C, D, and E are closest to and most visible from SR 89 and are limited to two- to three-story buildings, consistent with adjacent development to the north, east, and south;
- Buildings C, D, and E and landscaping would predominate views from SR 89 and obscure views of taller Buildings A and B under the amendment;
- Buildings A and B are stepped up the slopes at the base of the ski area, and so views of the buildings would be set against the more prominent backdrop of ski slopes and forested hillsides;
- The photosimulations prepared for the Project (Figures 10-5 to 10-8) show that North Base area buildings are largely obscured from Lake Tahoe viewpoints by conifer trees and existing shoreline structures; and
- The Proposed Project incorporates several elements that would address existing deficiencies in the scenic quality of the Project area as identified by the TRPA (1989, 2001a, 2007), including
    - Removal of existing sub-standard buildings,
    - Design and construction of buildings with a cohesive architectural theme that complements the natural landscape and setting of HMR,
    - Removal of existing surface parking and installation of vegetative screening,
    - Relocation of maintenance facilities,
    - SEZ restoration, and
    - Upgrading ski lifts.

In addition to lighting, signage and height standards, and visual resource goals and policies, tree removal policies should also be considered in relation to visual impacts and policy compliance. Tree removal can alter the character of a site and increase views of structures. Tree removal, as discussed in Chapter 8, is considered to be a significant impact. Table 8-6 identifies a total of 33 trees 30” or greater for removal for the Proposed Project (Alternative 1). Of these 33 trees, a total of nine trees have been noted to be saved in the North Base area based on a memorandum from Nichols Consulting Engineers dated May 21, 2009. However, at present, it cannot be determined with certainty that these trees can be retained based on potential modifications to construction activities or building locations and potential damage to tree roots and adjacent topography.

TRPA Code Section 71.2.A(6) allows the removal of trees larger than 30 inches dbh within existing TRPA-approved master plans for facilities that are consistent with that master plan. Trees may be removed when it is demonstrated that the removal is necessary for the activity. Section 71.2.C can also be applied, which states a private landowner may follow Section 71.2.A or one of the listed planning processes to achieve or maintain old growth thresholds, goals, and policies. The planning processes include the preparation of a limited forest plan if 10% or less of the trees over 30 inches dbh are proposed to be cut in the life of the plan.

The removal of 33 trees larger than 30" dbh would be much less than 10% of the total large trees in the Project area and therefore Subsection 71.2.C(2) could be applied for the Project. However, because a limited forest plan has not been generated for the Project area, this impact is considered significant and mitigation is required.

Mitigation: **BIO-10: Prepare Forest Plan and Tree Protection Plan For Homewood Mountain Resort**

Details of the proposed mitigation measure are found under Impact BIO-10 in Chapter 8, Biological Resources.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1)*

Implementation of mitigation measure BIO-10 will ensure Homewood Mountain Resort will comply with TRPA regulations regarding removal of trees larger than 30" dbh prior to construction. This impact will be less than significant after mitigation.

Analysis: *Significant Impact; Alternative 3*

The Alternative 3 (No Code Amendment for Height) is consistent with a majority of goals and policies related to visual resources, community design, and scenic corridors in the TRPA Regional Plan, Placer County General Plan, and West Shore Area General Plan. Tables 4.1, 4.2, and 4.3 in Chapter 4 - Relationship to Existing Land Use Plans, Goals and Policies, provide evaluations of consistency with applicable goals and policies. Alternative 3 is consistent with the following elements of the *Placer County Design Standards and Guidelines for the Lake Tahoe Region Including the Community Plan Areas* (Placer County 1994): 1) Site Plan, 2) Grading and Drainage, 3) Landscaping, 5) Architecture, 6) Design for Snow, 7) Energy Conservation, 8) Utility and Service Area, 9) Historic Buildings, 10) Scenic Highway Corridors, 11) Shorezone, 12) Parking, 13) Access, 14) Circulation, 15) Parking Lot Landscaping, 16) Parking for Disabled Persons, and17) Loading. Although specific lighting and signage materials, dimensions, and locations are not currently identified, it is assumed that Alternative 3 will comply with TRPA and Placer County standards in order to obtain necessary approvals and permits prior to construction. As analyzed in Chapter 4, it is assumed that Alternative 3 is consistent with policies related to 4) Lighting and 18) Signs.

No height amendment is proposed under Alternative 3. Building designs are intended to comply with existing TRPA Code of Ordinances Chapter 22 - Height Standards (TRPA 1987). Table 10-6 shows building heights under Alternative 3 in relationship to TRPA standards. Under §22.4.A, additional height above established base heights may be granted with appropriate findings. An additional four feet for buildings not exceeding 38 feet may be granted under §22.4.A (1) if findings 1, 2, and 3 are made for TAU buildings or findings 1, 2, 3, 4, and 7 are made for recreation facilities. Up to two feet of additional height, not to exceed 42 feet, for tourist accommodation and certain recreation buildings is available under §22.4.A (2) if TRPA can also make §22.7 finding 5. As demonstrated in Table 10-6, proposed building heights comply with maximum building heights currently allowed in Section 22.4.A of the TRPA Code of Ordinances.

North Base area buildings A, B, and P have either recreational uses or include TAUs and are eligible for additional height, while Buildings C, D, and E are primarily residential and not eligible for additional height. South Base area residential condominiums do not

include recreational or tourist uses, and are not eligible for additional height. Required findings for Alternative 3 are provided below:

TRPA Code §22.7 Findings for the Alternative 3 (No Code Amendment for Height)

1. When viewed from major arterials, scenic turnouts, public recreation areas of the waters of Lake Tahoe, from a distance of 300 feet, the additional height will not cause a building to extend above the forest canopy, when present, or a ridgeline. For height greater than that set forth in Table A for a 5:12 pitch, the additional height shall not increase the visual magnitude beyond that permitted for structures in the shoreland as set forth in Section 30.15, Additional Visual Magnitude, or Appendix H, Visual Assessment Tool, of the Design Review Guidelines.

The visual simulations for the Project in Figures 10-5 to 10-8 are from viewpoints in Lake Tahoe, and Figures 10-10 to 10-13 depict simulated views from SR 89. As shown, Proposed Project (Alternative 1) buildings will not exceed the forest canopy level or be visible on a ridgeline as viewed from a distance of 1,300 feet. With building heights equal to, or less than proposed Project buildings, Alternative 3 buildings are expected to be further below the tree canopy as Project buildings shown in the simulations. Alternative 3 buildings are consistent with finding 1.

2. When outside a community plan, the additional height is consistent with the surrounding uses.

The Project area is not located within a community plan; therefore, the additional height must be consistent with the surrounding uses. Building heights proposed for Alternative 3 would be similar to height for adjacent commercial buildings, and would be consistent with structures and surrounding uses in the Project vicinity. As a result, Alternative 3 is consistent with finding 2.

3. With respect to that portion of the building which is permitted the additional height, the building has been designed to minimize interference with existing views within the area to the extent practicable.

Similar to the Proposed Project (Alternative 1), Alternative 3 has shorter, predominantly two-story buildings near the roadway and larger buildings located behind and graduated with the mountain slope. Buildings C, D, and E are located near SR 89 and will not block views of the mountain due to setbacks from the road. Buildings C, D, and E are angled to afford views into the ski area and hillsides and avoid creating a structural wall that blocks views. Alternative 3 buildings are consistent with finding 3.

4. The function of the structure requires a greater maximum height than otherwise provided for in this chapter.

As a destination resort with high intensity, mixed uses, the structures require additional height to meet project objectives, accommodate intended uses, and to reduce the existing land coverage. Alternative 3 buildings are consistent with finding 4.

7. The additional height is the minimum necessary to feasibly implement the project and there are no feasible alternatives requiring less additional height.

Alternative 3 was designed with a greater number of shorter buildings than Alternative 1 to reduce the height of proposed buildings. As a result, Alternative 3 requires a greater area (and land coverage) to accommodate the development levels proposed for the Master

Plan. In order to keep buildings within the location of previous development at the North and South Base areas, Alternative 3 buildings need the maximum additional height available under existing Code Chapter 22.4. The Alternative 3 buildings have been designed with the minimum height necessary to substantially meet project objectives while avoiding development on steeper hillsides above the existing base areas. As documented in Table 10-6, building designs comply with existing height limitations. Therefore, Alternative 3 buildings are consistent with finding 7.

8. The maximum height at any corner of two exterior walls of the building is not greater than 90% of the maximum building height. The maximum height at the corner of two exterior walls is the difference between the point of lowest natural ground elevation along an exterior wall of the building, and point at which the corner of the same exterior wall meets the roof. This standard shall not apply to an architectural feature described as a prow.

Based on a review of Alternative 3 Building elevations, no corner of two exterior walls of a building will be more than 90 percent of the proposed building height. Alternative 3 buildings are consistent with finding 8.

Based on the existing code requirements and findings, Alternative 3 buildings would comply with existing TRPA Height Standards and would be designed to comply with TRPA Code and Design Guidelines and the Placer County West Shore Area General Plan regarding appropriate building size and layout, landscaping, tree preservation, screening, lighting, signage, parking and circulation design, energy conservation, grading and drainage, and architecture. This is considered a less than significant impact for compliance.

Although the proposed height of Alternative 3 buildings are less than significant, tree removal, as discussed in Chapter 8, is significant. Table 8-6 identifies a total of 33 trees 30” or greater for removal for Alternative 3. Of these 33 trees, a total of nine trees have been noted to be saved in the North Base area based on a memorandum from Nichols Consulting Engineers dated May 21, 2009. However, at present, it cannot be determined with certainty that these trees can be retained based on potential modifications to construction activities or building locations.

TRPA Code Section 71.2.A(6) allows the removal of trees larger than 30 inches dbh within existing TRPA-approved master plans for facilities that are consistent with that master plan. Trees may be removed when it is demonstrated that the removal is necessary for the activity. Section 71.2.C can also be applied, which states a private landowner may follow Section 71.2.A or one of the listed planning processes to achieve or maintain old growth thresholds, goals, and policies. The planning processes include the preparation of a limited forest plan if 10% or less of the trees over 30 inches dbh are proposed to be cut in the life of the plan.

The removal of 33 trees larger than 30” dbh would be much less than 10% of the total large trees in the Project area and therefore Subsection 71.2.C(2) could be applied for the Project. However, because a limited forest plan has not been generated for the Project area, this impact is considered significant and mitigation is required.

Table 10-6

Alternative 3 (No Code Amendment for Height) Building Heights in Relation to Existing TRPA Height Standards

Building	Slope (%)	Roof pitch	Max. Ht. under §22.3, Table A[1]	Primary Building type[2]	Eligible for additional height under §22.4.A (Y/N)?[3]	Meets §22.7 findings (Y/N)? 1	2	3	4	5	7		Allowed Additional Height and Code	Maximum building height with findings	Proposed Building Height
North Base Area[5]															
A	15%	6:12	34’-08”	**S**	**Yes**	Y	Y	Y	Y	Y	Y		4’ - §22.4.A(1) 2’ - §22.4.A(2)	40’-08”	40
A1	20%	6:12	36’-02”	**S**	**Yes**	Y	Y	Y	Y	Y	Y		4’ - §22.4.A(1) 2’ - §22.4.A(2)	42’-00”	33
B	11%	3:12	30’-01”	**T**	**Yes**	Y	Y	Y	-	Y	-		4’ - §22.4.A(1) 2’ - §22.4.A(2)	36’-01”	36
B1	11%	3:12	30’-01”	**T**	**Yes**	Y	Y	Y	-	Y	-		4’ - §22.4.A(1) 2’ - §22.4.A(2)	36’-01”	36
B2	20%	3:12	32’-07”	**T**	**Yes**	Y	Y	Y	-	Y	-		4’ - §22.4.A(1) 2’ - §22.4.A(2)	38’-07”	38
B3	18%	3:12	32’-01”	**T**	**Yes**	Y	Y	Y	-	Y	-		4’ - §22.4.A(1) 2’ - §22.4.A(2)	38’-01”	38
C	3%	6:12	31’-08”	**R**	**No**	-	-	-	-	-	-			31’-08”	31
D	2%	6:12	31’-08”	**R**	**No**	-	-	-	-	-	-			31’-08”	31
E	1%	6:12	31’-02”	**R**	**No**	-	-	-	-	-	-			31’-02”	31
P	1%	2:12	26’-05”	**S**	**Yes**	Y	Y	Y	Y	Y	Y		4’ - §22.4.A(1) 2’ - §22.4.A(2)	32’-05”	32
South Base Area															
A	4%	6:12	32’-02”	**S**	**Yes**	Y	Y	Y	Y	Y	Y		4’ - §22.4.A(1) 2’ - §22.4.A(2)	38’-02”	38
A1	6%	6:12	32’-08”	**R**	**No**	-	-	-	-	-	-			32’-08”	32
A2	25%	6:12	37’-02”	**R**	**No**	-	-	-	-	-	-			37’-02”	37
A3	25%	6:12	37’-02”	**R**	**No**	-	-	-	-	-	-			37’-02”	37
B	5%	6:12	32’-02”	**R**	**No**	-	-	-	-	-	-			32’-02”	32
B1	25%	6:12	37’-02”	**R**	**No**	-	-	-	-	-	-			37’-02”	37

Building	Slope (%)	Roof pitch	Max. Ht. under §22.3, Table A[1]	Primary Building type[2]	Eligible for additional height under §22.4.A (Y/N)?[3]	Meets §22.7 findings (Y/N)? 1	2	3	4	5	7		Allowed Additional Height and Code	Maximum building height with findings	Proposed Building Height
Mid-Mountain Base Area															
Gondola	23%	2:12	31’-11”	**S**	**Yes**	Y	Y	Y	Y	Y	Y		4’ - §22.4.A(1) 2’ - §22.4.A(2)	37’-11”	34
Gondola Entry/ Skier Services	23%	2:12	31’-11”	**S**	**Yes**	Y	Y	Y	Y	Y	Y		4’ - §22.4.A(1) 2’ - §22.4.A(2)	37’-11”	37
Restaurant	23%	6:12	36’-08”	**S**	**Yes**	Y	Y	Y	Y	Y	Y		4’ - §22.4.A(1) 2’ - §22.4.A(2)	42’-00”	42

Notes.

1. Allowable additional height per TRPA Code of Ordinances Chapter 22 – Height Standards, §22.3 (TRPA 1987), Table A for buildings in compliance with TRPA Code of Ordinances Chapter 30, §30.12, to maintain or improve Roadway and Shoreline Unit Scenic Quality Ratings in 1982 Scenic Resources Inventory (Wagstaff and Brady 1983).
2. Building primary use type: S = recreation downhill ski facilities; T = tourist accommodation; R = residential, as defined under TRPA Code of Ordinances Chapter 22 – Height Standards, §22.4.A.
3. Additional height for tourist accommodation and certain recreation buildings is available under §22.4.A (1) if TRPA can make §22.7 findings 1, 2, and 3 for tourist accommodation uses and findings 1, 2, 3, 4, and 7 for recreation uses. Additional height for tourist accommodation and certain recreation buildings is available under §22.4.A (2) if TRPA can also make §22.7 finding 5.

Mitigation: **BIO-10: Prepare Forest Plan and Tree Protection Plan For Homewood Mountain Resort**

After Mitigation: *Less than Significant Impact; Alternative 3*

Implementation of mitigation measure BIO-10 will ensure Homewood Mountain Resort will comply with TRPA regulations regarding removal of trees larger than 30" dbh prior to construction. This impact will be less than significant after mitigation.

Analysis: *Significant Impact; Alternative 4*

Alternative 4 will result in closure of HMR and the establishment of 16 residential estate lots and one commercial lot. The commercial lot fronts SR 89 and would be highly visible from the roadway. Some residential lots may be visible from SR 89, and some residential structures may be visible from the lake. However, no structural designs are established for these lots and any proposed structures by future applicants will be subject to design standards and guidelines established by TRPA. No height amendment is proposed under Alternative 4. Since no structural designs have been established, there are no features by which to measure compliance of the commercial development or the individual homes with design regulations, standards, or guidelines. Although specific materials, dimensions, and locations are not currently identified, it is assumed that Alternative 4 will comply with TRPA and Placer County standards in order to obtain necessary approvals and permits prior to construction, as analyzed in Chapter 4. This impact is less than significant because Alternative 4 must comply with the TRPA Code and Design Guidelines and the Placer County West Shore Area General Plan regarding appropriate building size and layout, landscaping, tree preservation, screening, lighting, signage, parking and circulation design, energy conservation, grading and drainage, and architecture. In addition structures would be designed to include the following:

- The commercial structure would include appropriate setbacks from SR 89 to accommodate pedestrian oriented design and include extensive vegetative landscaping and screening within the parking areas, service areas, and along the SR 89 frontage.
- Utilities would be placed underground.
- Landscaping would surround and screen structures where needed.
- The commercial development and residences would reflect the "Old Tahoe" architectural style and include natural materials, exposed beams, and natural, dark colors.
- Reflective materials would not be used. Structures would use non-reflective materials and low reflective windows. Residential structures would include architectural details, such as overhangs, that reduce window reflectivity.
- Decommissioned ski resort facilities and structures would be removed and former ski runs revegetated with an appropriate mix of native trees, shrubs, and ground cover.

Although Alternative 4 is anticipated to comply with County and TRPA visual thresholds, guidelines, policies, and standards, tree removal, as discussed in Chapter 8,

has the potential to be significant. Since no building designs or footprints have been established, the number and size of trees to be removed is unknown. As discussed for Alternatives 1 and 3, Section 71.2.C can be applied, which states a private landowner may follow Section 71.2.A or one of the listed planning processes to achieve or maintain old growth thresholds, goals, and policies. The planning processes include the preparation of a limited forest plan if 10% or less of the trees over 30 inches dbh are proposed to be cut in the life of the plan.

It is anticipated that the number of trees larger than 30 inches dbh would be much less than 10% of the total large trees in the Project area and therefore Subsection 71.2.C(2) could be applied for the Project. However, because a limited forest plan has not been generated for the Project area, this impact is considered significant and mitigation is required.

Mitigation: **BIO-10: Prepare Forest Plan and Tree Protection Plan For Homewood Mountain Resort**

After Mitigation: *Less than Significant Impact; Alternative 4*

Implementation of mitigation measure BIO-10 will ensure Homewood Mountain Resort will comply with TRPA regulations regarding removal of trees larger than 30" dbh prior to construction. This impact will be less than significant after mitigation.

Analysis: *Significant Impact; Alternative 5*

Alternative 5 building heights do not comply with TRPA Code of Ordinances Chapter 22 – Height Standards (TRPA 1987). Consequently, Alternative 5 is not consistent with TRPA Regional Plan Goals and Policies, Land Use Element, Community Design Subelement, Goal 2, Policy 1 (TRPA 1986). However, a height amendment to TRPA Code of Ordinances Chapter 22 is proposed that includes a new height calculation methodology for sloped areas. Building heights and locations (e.g., four story buildings immediately adjacent to SR 89) proposed for the North Base area under Alternative 5 would not be consistent with findings required for the amended height standards.

Alternative 5 is consistent with other applicable goals and policies related to visual resources, community design, and scenic corridors in the TRPA Regional Plan, Placer County General Plan, and West Shore Area General Plan. Tables 4.1, 4.2, and 4.3 in Chapter 4 - Relationship to Existing Land Use Plans, Goals and Policies, provide evaluations of Project consistency with applicable goals and policies. The Project is consistent with the following elements of the *Placer County Design Standards and Guidelines for the Lake Tahoe Region Including the Community Plan Areas* (Placer County 1994): 1) Site Plan, 2) Grading and Drainage, 3) Landscaping, 5) Architecture, 6) Design for Snow, 7) Energy Conservation, 8) Utility and Service Area, 9) Historic Buildings, 10) Scenic Highway Corridors, 11) Shorezone, 12) Parking, 13) Access, 14) Circulation, 15) Parking Lot Landscaping, 16) Parking for Disabled Persons, and 17) Loading (County of Placer 1994b).

Although specific lighting and signage materials, dimensions, and locations are not currently identified, it is assumed that Alternative 5 will comply with TRPA and Placer County standards in order to obtain necessary approvals and permits prior to construction. As analyzed in Chapter 4, it is assumed that Alternative 5 is consistent with policies related to 4) Lighting and 18) Signs.

To address compliance with height standards, Alternative 5 proposes to amend TRPA Code of Ordinances Chapter 22 height standards by adding new §22.4.G and amending §22.7(6) to allow additional building heights for special projects located in a Ski Area Master Plan consistent with TRPA Resolution 2008-11. A copy of the proposed Chapter 22 amendment is provided in Appendix F. Table 10-7 provides data on the heights for individual buildings with Alternative 5 in relation to the proposed amendments to Chapter 22.

The height amendment, if approved, will allow building heights up to 50 feet with minimum setbacks from SR 89 and if the building height is stepped up slopes. However, the amendment also proposes an alternative method for measuring height in circumstances where buildings are stair stepped up a hillside. As discussed in the analysis for Alternative 1, the proposed amendment to Chapter 22 would adopt the Placer County methodology of measuring height. This method takes the difference between highest ridge or roof line of the building and average point of natural grade rather than lowest point of natural grade. As shown in Figure 10-14, the visual impact of attached buildings on a slope is similar to detached buildings on a slope. Revising the height calculation methodology to use the average slope to roof pitch instead of the lowest grade to roof pitch, results in a similar overall visual effect. Therefore, the amendment will not allow greater visual impact or overall height, rather it revises the calculation methods to allow large footprint/attached buildings on sloped areas. Using the proposed method to measure height, no proposed building would exceed 54 feet in height; however, the amendment limits the maximum height to 50 feet and some Alternative 5 buildings are not in compliance as discussed further below. The amendment is limited to qualifying ski area master plan areas addressed by TRPA Governing Board Resolution 2008-11, which solely includes the HMR Ski Area. Consequently, the code amendment would not apply to other parts of the Lake Tahoe Basin.

Under the amendment, new structures requesting additional height along SR 89 need to be setback at least 40 feet from the edge of SR 89 pavement. Using the new measurement method, no building would be allowed to exceed 50 feet in height. Under the proposed height methodology, the proposed amendment would allow maximum permissible height for structures with a minimum setback of 40 feet from SR 89 edge of pavement to be 42 feet, with a minimum roof pitch of 5:12. Buildings setback at least 200 feet but not more than 675 would be allowed to have heights up to 50 feet, with a minimum roof pitch of 2:12. The South Base area would have a maximum height of 50 feet, with a minimum roof pitch of 5:12. The maximum height for structures located in the Mid-Mountain Base area would be 35 feet, with a minimum roof pitch of 2:12.

To qualify for additional height under the proposed §22.4.G amendment, buildings must meet the eligibility requirements included in the amendment and comply with §22.7 findings 1, 3, 6 (with proposed amendment to allow height in ski area master plans), 8, and 9. Alternative 5 does not meet each of the following required conditions to be eligible for additional building height under the amendment:

Additional Height Eligibility Criteria	Alternative 5 Compliance
1. The project incorporates Pedestrian Transit-Oriented Design Features consistent with Subsection 13.7.D(3) (specifically a-e), including buildings to be oriented to the street, sidewalks, alternative parking strategies, mixed uses, integration of the private and public open spaces and circulation routes	Master Plan proposes an alternative transportation plan that increases pedestrian and bike paths and improved alternatives to the private automobile. Mixed uses and buildings oriented to the street are also proposed.
2. The project located within the Special Height District retains and treats the 50-year, one-hour storm utilizing on-site and off-site systems incorporating best available technologies	Master Plan Alternative 1 proposes a stormwater system to treat the 50-year, one-hour storm event. Stormwater treatment systems are proposed for the North Base, South Base, Tahoe Ski Bowl Way extension, Mid-Mountain area and off-site Caltrans/Placer County/HMR EIP project.
3. The project shall implement a minimum of two Environmental Improvement Program (EIP) projects	Master Plan proposes to implement or contribute to EIP projects #86, 632, 725, 775, 855, and 996.
4. The project shall be certified under the United States Green Building Council's Leadership I Energy and Environment Design (LEED) or under an equivalent sustainable/green building program	The Master Plan proposes to pursue LEED certification. The North Base area has been accepted into and will be designed under the Leadership in Energy and Environmental Design (LEED) for Neighborhood Development Pilot Program as an example of exemplary green and sustainable development. The South Base area, although not a part of the LEED for Neighborhood Pilot Program, will be designed to stringent sustainable development standards using the LEED criteria as a template.
5. The project shall ensure the required public benefit(s) set forth above and in the master plan are implemented consistent with the provisions of Subsection 22.4.D(5) of the TRPA Code of Ordinances	The Master Plan proposes to obtain necessary permits and funding prior to construction, and provides TRPA will assurances regarding the intent and ability to complete the project.
6. The project results in a permanent reduction of no less than 10 percent of existing land coverage within the project area. Existing land coverage must be reduced by 10% and permanently retired	Master Plan proposes a minimum of 23 % land coverage reduction.

Under Alternative 5, North Base Buildings A (skier services), B (hotel/lodge), C (residential) and P (parking/affordable housing) are set back at least 200 feet from SR 89 and Buildings A, B, and P meet the criteria for the 50-foot height limit. These buildings would be 27, 20, 54 and 37 feet in height, respectively, as measured using proposed Codes. Since Building C would be 54 feet, it would exceed the 50-foot height limit. Alternative 5 Buildings D (retail/residential) and E (residential) are setback 40 feet, and would have allowable heights up to 42 feet; however, these buildings would be 54 and 50

feet in height (Table 10-7). The Mid-Mountain Base area gondola, gondola entry and restaurant buildings under Alternative 5 would be identical to Alternative 1 and 3 and would be 24, 33, and 31 feet in height, respectively. The South Base area would be subdivided into 16 individual single family residential lots and there are no specific building plans or designs available for review. However, building heights for the single family homes would be permitted consistent with existing building height standards.

Table 10-7

Alternative 5 Building Heights in Relation to Amended TRPA Height Standards (§22.4.G).

Building	SR 89 setback[1]	Allowed height with setback[2]	Building height	Meets findings for additional height under §22.7 (Y/N)?				
				1	3	6[3]	8	9
North Base Area								
A (Skier Services)	283	50	27	Y	Y	Y	Y	Y
B (Hotel/Lodge)	248	50	20	Y	Y	Y	Y	Y
C (Southern Most Residential)	247	50	54	Y	**NO**[4]	Y	Y	Y
D (Retail/Residential)	41	42	54	Y	**NO**[4]	Y	Y	Y
E (Residential)	41	42	50	Y	**NO**[4]	Y	Y	Y
P (Parking/ Affordable Housing)	237	50	37	Y	Y	Y	Y	Y
Mid-Mountain Base Area								
Gondola	n/a	35	24	Y	Y	Y	Y	Y
Gondola Entry/ Skier Services	n/a	35	33	Y	Y	Y	Y	Y
Restaurant	n/a	35	31	Y	Y	Y	Y	Y

Source: HMR and Hauge Brueck Associates, 2010

Notes.
1. Setback as measured from edge of pavement.
2. Maximum building heights with setbacks as provided in proposed §22.4.G.
3. Pursuant to finding 6 in §22.7A(6) as under the proposed amendment.
4. In order to use previously disturbed areas (e.g., existing parking lots) for all of the residential units, the Alternative 5 design places residential Buildings D and E along SR 89 in the location of the existing paved parking lot, and Building C in the existing gravel parking lot. Because there would be fewer uses in buildings above the existing parking areas, Alternative 5 results in lower height structures (skier services Building A and hotel Building B) away from SR 89. Placement of taller structures near SR 89 blocks views through the Project area to the ski terrain and mountain side views associated with the ski resort. Buildings C, D, and E also exceed proposed height limits included in the Code Chapter 22 amendment.

To allow additional height per the amendment, findings 1, 3, 6, 8, and 9 under TRPA Code §22.7 must be made. To allow the additional height under existing Code Section 22.4.A.1, findings 1, 2, 3, 4, 5, and 7 are required, depending on the type of building (e.g., recreation or tourist accommodation). Findings for Alternative 5 are provided below:

TRPA Code §22.7 Findings for Alternative 5

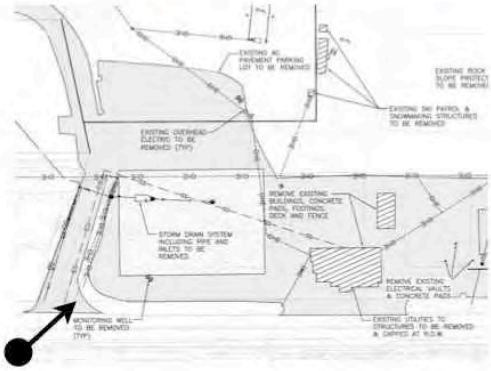
1. When viewed from major arterials, scenic turnouts, public recreation areas of the waters of Lake Tahoe, from a distance of 300 feet, the additional height will not cause a building to extend above the forest canopy, when present, or a ridgeline. For height greater than that set forth in Table A for a 5:12 pitch, the additional height shall not increase the visual magnitude beyond that permitted for structures in the shoreland as set forth in Section 30.15, Additional Visual Magnitude, or Appendix H, Visual Assessment Tool, of the Design Review Guidelines.

Alternative 5 is not located within the shoreland as set forth in Section 30.15. The visual simulations in Figures 10-5 through 10-8 are of the Project from viewpoints in Lake Tahoe, and Figures 10-15 through 10-17 depict simulated views of Alternative 5 from SR 89. As shown, Project buildings will not exceed the forest canopy level or project above a ridgeline as viewed from a minimum distance of 1,300 feet. This is true for Alternative 5 as well. As a result, Alternative 5 buildings are consistent with finding 1.

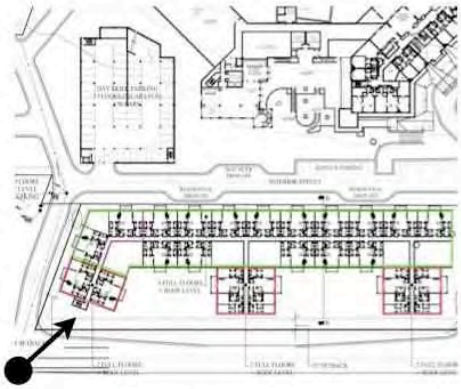
3. With respect to that portion of the building which is permitted the additional height, the building has been designed to minimize interference with existing views within the area to the extent practicable.

Under Alternative 5, taller residential structures D and E are placed adjacent to SR 89, with lower buildings farther up the hill behind the residential structures. In order to use previously disturbed areas (e.g., existing parking lots) for all residential uses, the Alternative 5 design places tall residential Buildings D and E along SR 89 in the location of the existing paved parking lot, and Building C in the existing gravel parking lot located behind the Maritime Museum. Because there would be fewer uses in buildings above the location of the existing parking areas, Alternative 5 locates shorter structures, skier services Building A and hotel Building B, away from SR 89. Placement of taller structures near SR 89 blocks views through the Project area to the ski terrain associated with the ski resort. In addition, Buildings C and D with heights of 54 feet exceed the maximum amended height limit of 50 feet. When considering setback limitations, Buildings D and E should not exceed 42 feet, yet they are 54 and 50 feet, respectively. Consequently, Alternative 5 would create more interference with existing views as compared to the Proposed Project and Alternative 3. As a result, Alternative 5 Buildings C, D, and E are not consistent with finding 3.

Figure 10-15. SR 89 Scenic Viewpoint 1 of North Base Area – Alternative 5.

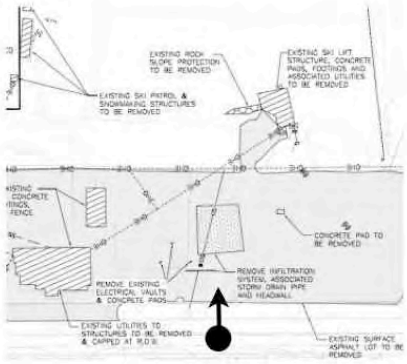


Existing Conditions

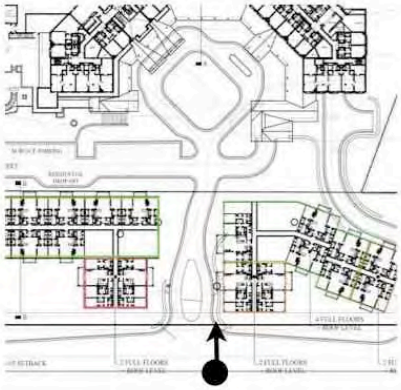


Proposed Conditions

Figure 10-16. SR 89 Scenic Viewpoint 2 of North Base Area – Alternative 5.

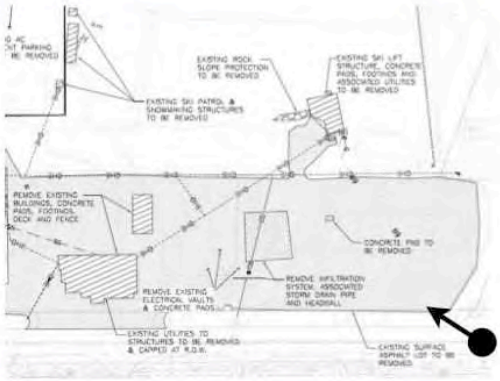


Existing Conditions



Proposed Conditions

Figure 10-17. SR 89 Scenic Viewpoint 3 of North Base Area – Alternative 5.



Existing Conditions

Proposed Conditions

6. The building is located within an approved community plan or Ski Area Master Plan, which identifies the Project area as being suitable for the additional height being proposed.

The Alternative 5 Project area is located within the proposed HMR Ski Area Master Plan boundary, and consequently will meet the amended finding 6. The Master Plan states that a height amendment is needed to allow structures of an adequate size to serve the recreational and accommodation needs of the community and tourists. Since the site is located on mountain slopes, the topography requires buildings to step up the slope. Based on how height is currently calculated by TRPA, structures are calculated to be taller than the actual height of exterior walls. Figure 10-14 provides an example of how a large attached building located on a hillside can visually appear the same as a group of smaller detached buildings placed at intervals up the hill under TRPA's existing height measurement methods. Alternative 5 buildings are consistent with finding 6 under the proposed amended code.

8. The maximum height at any corner of two exterior walls of the building is not greater than 90% of the maximum building height. The maximum height at the corner of two exterior walls is the difference between the point of lowest natural ground elevation along an exterior wall of the building, and the point at which the corner of the same exterior wall meets the roof. This standard shall not apply to an architectural feature described as a prow.

Based on a review of Alternative 5 building specifications (e.g., proposed roof pitches), no corner of two exterior walls of a building will be more than 90 percent of the proposed building height. Building P includes affordable housing units and a parking structure with horizontal barriers located on the top level of the parking structure. However, the building also includes elevated roofing over the stair and elevator shafts to break up the horizontal features of the parking levels. As such, Alternative 5 buildings are consistent with finding 8.

9. When viewed from a TRPA scenic threshold travel route, the additional height granted a building or a structure shall not result in the net loss of views to a scenic resource identified in the 1982 Lake Tahoe Basin Scenic Resource Inventory. TRPA shall specify the method used to evaluate potential view loss.

As documented above for the Proposed Project (Alternative 1), Alternative 5 buildings are generally consistent with TRPA goals and policies. However, the placement of four-story plus buildings immediately adjacent to SR 89 under Alternative 5 would decrease scenic travel route ratings. Alternative 5 Buildings D and E are setback approximately 40 feet from SR 89, which is not sufficient to mitigate view degradation from buildings of 54 and 50 feet in height (the project area in this location is relatively flat). This is considered a significant impact, and mitigation is required under Alternative 5.

In addition to height compliance impacts, tree removal, as discussed in Chapter 8, is potentially significant. Table 8-6 identifies a total of 33 trees 30" or greater for removal for Alternative 5. Of these 33 trees, a total of nine trees have been noted to be saved in the North Base area based on a memorandum from Nichols Consulting Engineers dated May 21, 2009. However, at present, it cannot be determined with certainty that these trees can be retained based on potential modifications to construction activities or building locations.

TRPA Code Section 71.2.A(6) allows the removal of trees larger than 30 inches dbh within existing TRPA-approved master plans for facilities that are consistent with that master plan. Trees may be removed when it is demonstrated that the removal is necessary for the activity. Section 71.2.C can also be applied, which states a private landowner may follow Section 71.2.A or one of the listed planning processes to achieve or maintain old growth thresholds, goals, and policies. The planning processes include the preparation of a limited forest plan if 10% or less of the trees over 30 inches dbh are proposed to be cut in the life of the plan.

The removal of 33 trees larger than 30" dbh would be much less than 10% of the total large trees in the Project area and therefore Subsection 71.2.C(2) could be applied for the Project. However, because a limited forest plan has not been generated for the Project area, this impact is considered significant and mitigation is required.

Mitigation: **SCENIC-1a. Alternative 5 North Base Area Building Height Reductions**

To comply with the proposed Chapter 22 Code amendment, Alternative 5 Buildings D and E shall be redesigned to be no more than 42 feet in height due to their setback distances of 40 feet from SR 89. In addition, the buildings shall be redesigned to include an additional view corridor through the project area from SR 89. There are several feasible approaches that may reduce the height and visibility of these buildings, including removing one or more floors, decreasing roof pitch, or greater excavation of the foundation. New designs shall be submitted to TRPA for review and approval prior to the issuance of building permits for Alternative 5.

BIO-10: Prepare Forest Plan and Tree Protection Plan For Homewood Mountain Resort

After Mitigation: *Less than Significant Impact; Alternative 5*

Implementation of Mitigation Measure SCENIC-1a would bring Alternative 5 North Base structures into compliance with TRPA and Placer County design standards and regulations such that Alternative 5 would be consistent with goals and policies related to scenic resources in the TRPA Regional Plan, Placer County General Plan, and West Shore Area General Plan.

Implementation of mitigation measure BIO-10 will ensure Homewood Mountain Resort will comply with TRPA regulations regarding removal of trees larger than 30" dbh prior to construction. This impact will be less than significant after mitigation.

Analysis: *Significant Impact; Alternative 6*

Alternative 6 building heights do not comply with TRPA Code of Ordinances Chapter 22 – Height Standards (TRPA 1987). Consequently, Alternative 6 is not consistent with TRPA Regional Plan Goals and Policies, Land Use Element, Community Design Subelement, Goal 2, Policy 1 (TRPA 1986). However, a height amendment to TRPA Code of Ordinances Chapter 22 is proposed that includes a new height calculation methodology for sloped areas. Alternative 6 would be in compliance with the amended height standards.

Alternative 6 is consistent with other applicable goals and policies related to visual resources, community design, and scenic corridors in the TRPA Regional Plan, Placer

County General Plan, and West Shore Area General Plan. Tables 4.1, 4.2, and 4.3 in Chapter 4 - Relationship to Existing Land Use Plans, Goals and Policies, provide evaluations of Project consistency with applicable goals and policies. Alternative 6 is consistent with the following elements of the *Placer County Design Standards and Guidelines for the Lake Tahoe Region Including the Community Plan Areas* (Placer County 1994): 1) Site Plan, 2) Grading and Drainage, 3) Landscaping, 5) Architecture, 6) Design for Snow, 7) Energy Conservation, 8) Utility and Service Area, 9) Historic Buildings, 10) Scenic Highway Corridors, 11) Shorezone, 12) Parking, 13) Access, 14) Circulation, 15) Parking Lot Landscaping, 16) Parking for Disabled Persons, and 17) Loading (County of Placer 1994b).

Although specific lighting and signage materials, dimensions, and locations are not currently identified, it is assumed that Alternative 6 will comply with TRPA and Placer County standards in order to obtain necessary approvals and permits prior to construction. As analyzed in Chapter 4, it is assumed that Alternative 6 is consistent with policies related to 4) Lighting and 18) Signs.

To address compliance with height standards, Alternative 6 proposes to amend TRPA Code of Ordinances Chapter 22 – Height Standards by adding new §22.4.G and amending §22.7(6) to allow additional building heights for special projects located in a Ski Area Master Plan consistent with TRPA Governing Board Resolution 2008-11. A copy of the proposed Chapter 22 amendment is provided in Appendix F. Table 10-8 provides data on the heights for individual buildings with Alternative 6 in relation to the proposed amendments to Chapter 22.

As discussed under Alternative 1, the height amendment, if approved, will allow building heights up to 50 feet with minimum setbacks from SR 89 and if the building height is stepped up slopes. As shown in Figure 10-14, the visual impact of attached buildings on a slope is similar to detached buildings on a slope using this method. Revising the height calculation methodology to use the average slope to roof pitch instead of the lowest grade to roof pitch, results in a similar overall visual effect. Therefore, the amendment will not allow greater visual impact or overall height, rather it revises the calculation methods to allow large footprint/attached buildings on sloped areas.

Under the amendment, new structures requesting additional height along SR 89 need to be setback at least 40 feet from the edge of SR 89 pavement. Using the new measurement method, no building would be allowed to exceed 50 feet in height. Under the proposed height methodology, the amendment would allow maximum permissible height for structures with a minimum setback of 40 feet from the SR 89 edge of pavement to be 42 feet, with a minimum roof pitch of 5:12. Buildings setback at least 200 feet but not more than 675 feet would be allowed to have heights up to 50 feet, with a minimum roof pitch of 2:12. The South Base area would have a maximum height of 50 feet, with a minimum roof pitch of 5:12. The maximum height for structures located in the Mid-Mountain Base area would be 35 feet, with a minimum roof pitch of 2:12.

To qualify for additional height under the proposed §22.4.G amendment, buildings must meet the eligibility requirements included in the amendment and comply with §22.7 findings 1, 3, 6 (with proposed amendment to allow additional height in ski area master plans), 8, and 9. Alternative 6 meets each of the following required conditions to be eligible for additional building height under the amendment:

Additional Height Eligibility Criteria	Alternative 6 Compliance
1. The project incorporates Pedestrian Transit-Oriented Design Features consistent with Subsection 13.7.D(3) (specifically a-e), including buildings to be oriented to the street, sidewalks, alternative parking strategies, mixed uses, integration of the private and public open spaces and circulation routes	Master Plan proposes an alternative transportation plan that increases pedestrian and bike paths and improved alternatives to the private automobile. Mixed uses and buildings oriented to the street are also proposed.
2. The project located within the Special Height District retains and treats the 50-year, one-hour storm utilizing on-site and off-site systems incorporating best available technologies	Master Plan Alternative 1 proposes a stormwater system to treat the 50-year, one-hour storm event. Stormwater treatment systems are proposed for the North Base, South Base, Tahoe Ski Bowl Way extension, Mid-Mountain area and off-site Caltrans/Placer County/HMR EIP project.
3. The project shall implement a minimum of two Environmental Improvement Program (EIP) projects	Master Plan proposes to implement or contribute to EIP projects #86, 632, 725, 775, 855, and 996.
4. The project shall be certified under the United States Green Building Council's Leadership I Energy and Environment Design (LEED) or under an equivalent sustainable/green building program	The Master Plan proposes to pursue LEED certification. The North Base area has been accepted into and will be designed under the Leadership in Energy and Environmental Design (LEED) for Neighborhood Development Pilot Program as an example of exemplary green and sustainable development. The South Base area, although not a part of the LEED for Neighborhood Pilot Program, will be designed to stringent sustainable development standards using the LEED criteria as a template.
5. The project shall ensure the required public benefit(s) set forth above and in the master plan are implemented consistent with the provisions of Subsection 22.4.D(5) of the TRPA Code of Ordinances	The Master Plan proposes to obtain necessary permits and funding prior to construction, and provides TRPA will assurances regarding the intent and ability to complete the project.
6. The project results in a permanent reduction of no less than 10 percent of existing land coverage within the project area. Existing land coverage must be reduced by 10% and permanently retired	Master Plan proposes a minimum of 20 % land coverage reduction.

With Alternative 6, North Base Buildings A (skier services), B (hotel/lodge), C (residential) and P (parking structure/affordable housing) are set back more than 200 feet from SR 89 and meet the criteria for the 50-foot height limit. These buildings would be 47, 40, 42, and 37 feet in height, respectively, as measured using the proposed Codes. Project Buildings D, and E are setback at least 40 feet, and would have allowable heights up to 42 feet. These buildings would be 42 and 38 feet in height (Table 10-8). South Base area Building B, which is not visible from SR 89, would be 49 feet. The Mid-

Mountain Base area buildings measure 24, 33, and 31 feet, all of which are below the 35 feet maximum height for that area. Each of the Alternative 6 buildings meets the limits proposed in the height amendment.

Table 10-8

Alternative 6 Building Heights in Relation to Amended TRPA Height Standards (§22.4.G).

Building	SR 89 setback[1]	Maximum allowed height with setback[2]	Building height	Meets required findings for additional height under §22.7 (Y/N)?				
				1	3	6[3]	8	9
North Base Area								
A (Skier Services/ Residential)	283	50	47	Y	Y	Y	Y	Y
B (Hotel/ Residential)	248	50	40	Y	Y	Y	Y	Y
C (Retail/ Residential/Fractional)	53	42	42	Y	Y	Y	Y	Y
D (Residential/ Fractional)	42	42	42	Y	Y	Y	Y	Y
E (Residential/ Fractional)	45	42	38	Y	Y	Y	Y	Y
P (Parking/Affordable Housing)	237	50	37	Y	Y	Y	Y	Y
South Base Area								
B (Residential)	650-1,200	50	49	Y	Y	Y	Y	Y
Mid-Mountain Base Area								
Gondola	n/a	35	24	Y	Y	Y	Y	Y
Gondola Entry/ Skier Services	n/a	35	33	Y	Y	Y	Y	Y
Restaurant	n/a	35	31	Y	Y	Y	Y	Y

Source: HMR and Hauge Brueck Associates, 2010

Notes.

1. Setback as measured from edge of SR 89 pavement.
2. Maximum building heights with setbacks as provided in proposed §22.4.G.
3. Pursuant to finding 6 in §22.7A(6) as under the proposed amendment.

To allow additional height per the proposed amendment, findings 1, 3, 6, 8, and 9 under TRPA Code §22.7 must be made. A discussion of potential findings for Alternative 6 are provided below:

TRPA Code §22.7 Findings for Alternative 6

1. When viewed from major arterials, scenic turnouts, public recreation areas of the waters of Lake Tahoe, from a distance of 300 feet, the additional height will not cause a building to extend above the forest canopy, when present, or a ridgeline. For height greater than that set forth in Table A for a 5:12 pitch, the additional height shall not increase the visual magnitude beyond that permitted for structures in the shoreland as set forth in Section 30.15, Additional Visual Magnitude, or Appendix H, Visual Assessment Tool, of the Design Review Guidelines.

Alternative 6 is not located within the shoreland as set forth in Section 30.15. The visual simulations documented in Figures 10-5 through 10-8 are of the Project from viewpoints in Lake Tahoe, and Figures 10-15 through 10-17 depict simulated views of Alternative 5 from SR 89. As shown, Project buildings will not exceed the forest canopy level or be visible above a ridgeline as viewed from a distance of 1,300 feet and the taller Alternative 5 buildings will not exceed the forest canopy as viewed from SR 89. As a result, Alternative 6 buildings are consistent with finding 1.

3. With respect to that portion of the building which is permitted the additional height, the building has been designed to minimize interference with existing views within the area to the extent practicable.

Similar to the design concept for Alternative 1, the Alternative 6 scenario mostly places shorter, two- and three-story buildings adjacent to SR 89 and larger multi-storied buildings graduated up the base of the existing ski resort mountain slope. Building D would be located closest to SR 89 and would measure 42 feet, which is taller than some buildings that would be located further from the road. However, most of the North Base area buildings would be similar in height, only looking taller from some viewpoints based on their location up the slope (e.g., Building A). Since the larger buildings are stepped up the naturally occurring slope, the proposed development avoids view interference within and from the public ROW toward the mountain. However, under Alternative 6, structures are larger and more linear along SR 89, blocking a greater amount of views into the ski area than Alternative 1. As a result, Alternative 6 buildings D and E are not consistent with finding 3 and mitigation is required.

6. The building is located within an approved community plan <u>or Ski Area Master Plan</u>, which identifies the Project area as being suitable for the additional height being proposed.

The Project area will encompass the proposed HMR Ski Area Master Plan boundary, and consequently will meet the amended finding 6. The Master Plan states that a height amendment is needed to allow structures of an adequate size to serve the recreational and accommodation needs of the community and tourists, while reducing the amount of land disturbance that would otherwise be needed. Since the site is located on mountain slopes, the topography limits building structure and requires buildings to step up slopes. Based on how height is currently calculated by TRPA, structures are calculated to be taller than the actual height of exterior walls. Figure 10-14 provides an example of how a large attached building stepped up a hillside can visually appear the same as a group of smaller detached buildings placed at intervals up the hill under TRPA's existing height

measurement methods. Alternative 6 buildings are consistent with finding 6 under the proposed amended code.

8. The maximum height at any corner of two exterior walls of the building is not greater than 90% of the maximum building height. The maximum height at the corner of two exterior walls is the difference between the point of lowest natural ground elevation along an exterior wall of the building, and the point at which the corner of the same exterior wall meets the roof. This standard shall not apply to an architectural feature described as a prow.

Based on a review of Alternative 6 building specifications (e.g., proposed roof pitches), no corner of two exterior walls of a building will be more than 90 percent of the proposed building height. Building P includes affordable housing units and a parking structure with horizontal barriers located on the top level of the parking structure. However, the building also includes elevated roofing over the stair and elevator shafts to break up the horizontal features of the parking levels. As such, Alternative 6 buildings are consistent with finding 8.

9. When viewed from a TRPA scenic threshold travel route, the additional height granted a building or a structure shall not result in the net loss of views to a scenic resource identified in the 1982 Lake Tahoe Basin Scenic Resource Inventory. TRPA shall specify the method used to evaluate potential view loss.

Alternative 6 buildings are consistent with finding 9 under the amended code. Travel Route Unit 11 is currently a nonattainment area. Identified features that detract from the scenic quality include the parking lot and existing structures at HMR as well as overhead utility lines (TRPA 1989, 1993, 2001a, 2007). The amended building height standard is not expected to adversely affect scenic roadway or shoreline travel route ratings for the following reasons.

- The amendment is limited to the HMR Ski Area Master Plan project, and would not be available for other projects in the Basin;
- The amendment requires taller (greater than 42 feet) buildings to be setback a substantial distance from SR 89 (200 for the North base area);
- Views from Lake Tahoe and SR 89 of buildings at the South Base area are obscured by dense conifer forest, as illustrate in Figures 10-5 to 10-8;
- North Base area Buildings D and E are closest to and most visible from SR 89 and are limited to two- to three-story buildings, consistent with adjacent development to the north, east, and south;
- Buildings D, and E and landscaping would predominate views from SR 89 and obscure views of taller Buildings A and B under the amendment;
- Buildings A and B are stepped up the slopes at the base of the ski area, and so views of the buildings would be set against the more prominent backdrop of ski slopes and forested hillsides;
- The photosimulations prepared for the Project (Figures 10-5 to 10-8) show that North Base area buildings are largely obscured from Lake Tahoe viewpoints by conifer trees and existing shoreline structures (Alternative 6 buildings would not exceed the heights of Alternative 1 buildings from the simulated viewpoints); and

- Alternative 6 incorporates several elements that would address existing deficiencies in the scenic quality of the Project area as identified by the TRPA (1989, 2001a, 2007), including
  - Removal of existing sub-standard buildings,
  - Design and construction of buildings with a cohesive architectural theme that complements the natural landscape and setting of HMR,
  - Removal of existing surface parking and installation of vegetative screening,
  - Relocation of maintenance facilities,
  - SEZ restoration, and
  - Upgrading ski lifts.

In addition to height compliance impacts, tree removal, as discussed in Chapter 8, is potentially significant. Table 8-6 identifies a total of 33 trees 30" or greater for removal for Alternative 6. Of these 33 trees, a total of nine trees have been noted to be saved in the North Base area based on a memorandum from Nichols Consulting Engineers dated May 21, 2009. However, at present, it cannot be determined with certainty that these trees can be retained based on potential modifications to construction activities or building locations.

TRPA Code Section 71.2.A(6) allows the removal of trees larger than 30 inches dbh within existing TRPA-approved master plans for facilities that are consistent with that master plan. Trees may be removed when it is demonstrated that the removal is necessary for the activity. Section 71.2.C can also be applied, which states a private landowner may follow Section 71.2.A or one of the listed planning processes to achieve or maintain old growth thresholds, goals, and policies. The planning processes include the preparation of a limited forest plan if 10% or less of the trees over 30 inches dbh are proposed to be cut in the life of the plan.

The removal of 33 trees larger than 30" dbh would be much less than 10% of the total large trees in the Project area and therefore Subsection 71.2.C(2) could be applied for the Project. However, because a limited forest plan has not been generated for the Project area, this impact is considered significant and mitigation is required.

Mitigation: **SCENIC-1b. Alternative 6 North Base Area Building Redesign**

To comply with the proposed Chapter 22 Code amendment, Alternative 6 Building D shall be redesigned to include an additional view corridor through the project area from SR 89. New designs shall be submitted to TRPA for review and approval prior to the issuance of building permits for Alternative 6.

BIO-10: Prepare Forest Plan and Tree Protection Plan For Homewood Mountain Resort

After Mitigation: *Less than Significant Impact; Alternative 6*

Implementation of Mitigation Measure SCENIC-1b would bring Alternative 6 North Base structures into compliance with TRPA and Placer County design standards and regulations such that the Alternative 6 would be consistent with goals and policies related to scenic resources in the TRPA Regional Plan, Placer County General Plan, and West Shore Area General Plan.

Implementation of mitigation measure BIO-10 will ensure Homewood Mountain Resort will comply with TRPA regulations regarding removal of trees larger than 30" dbh prior to construction. This impact will be less than significant after mitigation.

Impact: SCENIC-2. Will the Project be visible from or cause an adverse effect on foreground or middle ground views from a high volume travel way, recreation use area, or other public use area, including Lake Tahoe, TRPA designated bike trail, or State or federal highway?

Analysis: *Significant Impact; Alternative 2*

Under the No Project (Alternative 2), no change will occur to the scenic quality of the area. The Scenic Roadway Travel Route Rating along SR 89 in Homewood is in a non-attainment area, and the TRPA has identified recommended actions in the SQIP to improve scenic quality (TRPA 1989, 1993, 2001a, 2001b, 2007). Recommendations include landscaping the parking area and frontage, architectural improvements and unification, relocation of maintenance facilities, undergrounding utility lines, and signage improvements. Under the No Project Alternative, scenic quality improvements would not be implemented and the non-attainment status would remain. Therefore, this impact would remain significant under the No Project Alternative.

Mitigation: No mitigation is possible.

After Mitigation: *Significant and Unavoidable Impact; Alternative 2 (No Project)*

Since no action is proposed under the No Project (Alternative 2), no changes to the existing conditions will occur. The existing features and structures that result in non-attainment of scenic quality ratings will persist.

Analysis: *Significant Impact; Alternatives 1, 3, and 6*

Relative to existing conditions, the changes to scenic quality with the Proposed Project (Alternative 1), Alternative 3, and Alternative 6 are expected to be similar, and the impacts are addressed together. For Alternatives 1 and 3, the buildings located closest to SR 89 are of similar height and design and buildings farther away from SR 89 are at a similar roof top elevation, but laid out differently as depicted in Figure 10-14. Alternative 6 also places shorter buildings closer to SR 89, and taller buildings farther away from SR 89; however, the buildings closest to the road under Alternative 6 are taller than similarly located buildings under Alternatives 1 and 3. The Proposed Project (Alternative 1), Alternative 3, and Alternative 6 include new structures that are visible from scenic resources and include recommended actions identified by the TRPA to improve the scenic quality of the area (TRPA 1989, 1993, 2001a, 2001b, 2007; Wagstaff and Brady 1983).

Alternative 3 will include the same uses identified under the Proposed Project (Alternative 1), but will result in a larger building area with additional structures due to reduced building heights. Compared to the Proposed Project (Alternative 1), four additional structures will be developed upslope of Buildings A and B at the North Base area. Two additional structures will be developed upslope of Buildings A and B at the South Base area.

Alternative 6 will include a different mix of uses proposed for Alternatives 1 and 3. More residential condominiums would be located at the North Base area and fewer hotel (TAU) units would be located in that area. At the South Base, single family residential lots would replace most of the condominiums proposed for Alternatives 1 and 3. Building D, which would be located along SR 89, would be longer and slightly taller under Alternative 6. Building heights would be taller as compared to Alternative 3, but fewer structures would be present.

As shown in Figures 10-5 through 10-8 and 10-10 through 10-13, the Project area is visible from Scenic Roadway Travel Unit 11 (Homewood) and Scenic Shoreline Travel Unit 12 (McKinney Bay). These units currently do not meet scenic quality thresholds for attainment (TRPA 2001, 2007). The Project area is located in TRPA Recreation Areas 20 (Ski Homewood) and 21 (Tahoe Ski Bowl). Dense conifer forest is expected to obscure views of the South Base area from Lake Tahoe and SR 89, but the North Base area is visually prominent along SR 89. From Lake Tahoe, the North Base area is mostly obscured by existing shoreline development and conifer forest, and is minimally visible. The Mid-Mountain Base area is not visible from SR 89, but is partially visible through the conifer forest from one of the four analyzed viewpoints from Lake Tahoe. The Mid Mountain lodge and gondola top station are not visible from the three closest Lake Tahoe viewpoints because of intervening topography.

The TRPA recommends the following actions to improve scenic resources at HMR and to bring Scenic Roadway Travel Unit 11 (Homewood) and Scenic Shoreline Travel Unit 12 (McKinney Bay) into attainment (TRPA 1989a, 1993):

- Landscaping in and around parking lots and buildings;
- Reduce size and visual prominence of parking lots;
- Architectural improvements and cohesiveness, including the use of materials and designs to current design standards to complement the natural landscape;
- Removal of structures that do not meet design standards;
- Paint ski lift towers to reduce visibility;
- Relocation of maintenance facilities;
- Undergrounding utilities; and
- Signage improvements.

Table 10-9 analyzes the consistency of the Proposed Project (Alternative 1) and Alternatives 3 and 6 with the recommendations listed above.

Variation in the location of the ski lifts, particularly the gondola, would not alter the visual character, particularly since many ski runs or portions of runs to remain in use would be rehabilitated and improved with vegetation. The bike path along SR 89 also would not result in a substantial visual change. The location of the path parallel to the

roadway and the proposed structures would reflect the travel corridor and the urban development. The addition of landscaping along the path would improve views while expanding the public viewshed. No adverse impacts are anticipated as a result of ski lift development or removal or the development of the bike path.

Table 10-9

Evaluation of Consistency with Scenic Improvement Recommendations

Recommendation	Alternatives 1, 3, and 6 Improvement Actions
1. Reduce visibility of parking lot with landscaping and size reduction	Most parking will be underground. Each Alternative will include 50 surface parking spaces at the North Base area located between the proposed retail uses in Building C and the skier drop off area at Building A. The lot will include landscaping around and within the lot, and will be mostly screened from SR 89 viewpoints by buildings fronting SR 89.
2. Landscape screening between residential and recreation areas	North and South Base area buildings and parking areas include landscaping to screen structures and complement the natural setting.
3. Underground utilities	Utilities on the site and along SR 89 will be placed underground.
4. Ski lift tower color improvements	Lifts located at the North Base area will either be removed or replaced. New lifts will conform to TRPA color guidelines.
5. Maintenance area relocation and screening	The maintenance area will be relocated to a screened area at the Mid-Mountain Base area.
6. Architectural improvements	Old structures will be removed and new structures will integrate the "Old Tahoe" architectural style with hipped/gabled roofs, dormers, exposed timber, and natural materials. New structures will be clustered and set at angles to reduce their visual prominence, complement the natural setting, and preserve views.
7. Screening between residences and ski area	North and South Base area buildings and parking areas include landscaping to screen structures and complement the natural setting. Tree removal is minimized.
8. Structures below tree canopy	As shown in the simulations, new structures are located below the tree canopy height.
9. Ridgelines	No facilities are proposed at a ridgeline or that visually obstructs or interrupts ridgeline views. The Mid-Mountain Base area is located on a slope, and where it is visible from Lake Tahoe, it is seen against a backdrop of a forested slope and ridgeline.
10. Non-reflective and appropriately hued building materials and colors	Natural materials and dark colors that conform to Chapter 30 – Design Standards (TRPA 1987) will be used on resort structures.

Source: HBA 2010

Roadway Unit 11 has an overall scenic quality rating of 2 (TRPA 1989a). Scenic quality rating indicators are rated 2 for unity and 1 for the remaining three indicators which include: 1) Unity – the extent in which a landscape feature can be described as cohesive, 2) Vividness – a memorable or distinct quality, 3) Variety – the intermixture of

interesting elements of a landscape unit, and 4) Intactness – the extent to which a landscape retains its natural condition. Based on the improvements to urban design within the Project area, the overall increase in building mass will not decrease existing scenic quality ratings, and the rating for variety will improve. The unity of the natural landscape can be described as intermixed with urban development. Under the Proposed Project (Alternative 1) and Alternatives 3 and 6, unity will not change substantially, as the site remains predominantly urban, but new landscaping and undergrounding utilities will result in improvement along SR 89.

The vividness of the area will not change substantially with the proposed development. Within the Project area, the distinct character is mixed-use development. The Proposed Project (Alternative 1) and Alternatives 3 and 6 will improve this indicator with architecture that meets TRPA Chapter 30 – Design Guidelines (TRPA 1987), complements the natural setting, and is enhanced with landscape improvements.

The Proposed Project (Alternative 1) and Alternatives 3 and 6 will improve variety in Roadway Unit 11. The new buildings, relocation, and minimization of the parking lot, and landscaping will improve the quality of the urban character. The replacement of existing surface parking lots and existing structures with new buildings and landscaping that will have a cohesive architectural style and meet TRPA Chapter 30 – Design Guidelines (TRPA 1987) will increase interest for passing pedestrians and motorists. Intactness will remain the same. Undergrounding existing utilities and landscaping will also help maintain this indicator. Each Alternative may also remove informal parking along SR 89 used for boat trailers during summer by allowing adjacent marina businesses to store boat trailers in the proposed parking structure.

Implementing TRPA recommendations will enhance scenic quality at HMR (TRPA 1989a, 1993). Design improvements and architectural unity along with landscaping and utility undergrounding will improve the quality along SR 89. Unified structures with cohesive architectural character will replace the barren parking lot and mismatched buildings. The integration of landscaping with the structures will create visual interest while reflecting the natural vegetation and beauty of the Project area.

Table 10-10 documents the changes to scenic roadway and shoreline unit travel route ratings for Alternatives 1 and 3. Roadway Unit 11 will have a 2-point improvement to the threshold composite rating with the increased scoring for man-made features, roadway distractions, and landscape views. The man-made features travel route rating will improve from 2.5 to 3.5 as a result of the removal of man-made distractions including overhead utilities, the large non-landscaped surface parking lot, and the existing non-uniform and unsightly buildings (uses). This improvement is limited to 1 point because of the increase in overall man-made features, including buildings along SR 89 frontage. The landscape views rating will improve from 2 to 2.5 as a result of the proposed landscaping along SR 89. The roadway distractions travel route rating criteria will improve from 1 to 1.5 with redesigned access and pedestrian amenities along SR 89 that will improve pedestrian-auto safety.

Table 10-11 documents the changes to scenic roadway and shoreline unit travel route ratings for Alternative 6. Roadway Unit 11 composite will have a 1 point improvement for a slight increase in the scoring for man-made features and roadway distractions. The man-made features travel route rating will improve from 2.5 to 3.0 as a result of the removal of man-made distractions including overhead utilities, the large non-landscaped parking lot, and the existing non-uniform and unsightly buildings (uses). This improvement is limited to 0.5 point because of the increase in overall man-made features,

including linear building massing and height along SR 89 frontage. The roadway distractions travel route rating criteria will improve from 1 to 1.5 with redesigned access and pedestrian amenities along SR 89 that will improve pedestrian-auto safety. Other ratings will remain unchanged even though the overall project will replace aging and dilapidated structures with new and unified development. The increased massing of the buildings in Alternative 6 offsets some of the improvements that are realized under Alternatives 1 and 3.

The rating for Shoreline Unit 12 will remain unchanged as shown in Tables 10-10 and 10-11. The visible structures at the North Base area and Mid-Mountain Base area will not adversely impact the "man-made features" and "landscape views" ratings because the visible portion of the structures will not dominate existing views of shorezone vegetation in the foreground and the cleared ski resort trails located in the background. Views of the Project area from the shoreline (e.g., approximately 1,300 feet from the shoreline) will include glimpses of the structures at the North Base area through the trees and between existing shoreline buildings. The tops of the buildings will be below the existing tree canopy and the colors used on the structures will blend with the color of the surrounding trees and other vegetation.

Table 10-10

Proposed Project (Alternative 1) and Alternative 3 Scenic Roadway and Shoreline Unit Travel Route Ratings Changes

	Roadway Unit 11		Shoreline Unit 12	
	Existing Rating	With Project and Alt. 3	Existing Rating	With Project and Alt. 3
Man-made Features	2.5	3.5	2	2
Roadway Distractions	1	1.5	--	--
Road Structure	3	3	--	--
Lake Views	1.5	1.5	--	--
Landscape Views	2	2.5	3	3
Variety	2	2	3	3
Threshold Composite	12.0	14.0	8	8
Status	Non-attainment	Non-attainment	Non-attainment	Non-attainment

Sources: TRPA 2001a, 2001b, 2007; Hauge Brueck Associates 2009

Table 10-11

Alternative 6 Scenic Roadway and Shoreline Unit Travel Route Ratings Changes

	Roadway Unit 11		Shoreline Unit 12	
	Existing Rating	With Alt. 6	Existing Rating	With Alt. 6
Man-made Features	2.5	3	2	2
Roadway Distractions	1	1.5	--	--
Road Structure	3	3	--	--
Lake Views	1.5	1.5	--	--
Landscape Views	2	2	3	3
Variety	2	2	3	3
Threshold Composite	12.0	13.0	8	8
Status	Non-attainment	Non-attainment	Non-attainment	Non-attainment

Sources: TRPA 2001a, 2001b, 2007; Hauge Brueck Associates 2009

The Mid-Mountain Base area will be visible from one of the four viewpoints from Lake Tahoe, which is located approximately 5,200 feet from the shoreline. The gabled roofs, exposed timber, and dark color of the proposed building blend well into the surrounding forested area and make the structure less dominant. However, the lodge will not be completely hidden by intervening topography or screened by trees. Although the structures at the base areas will not substantially alter views from the lake, they will increase the amount of man-made structures visible in the viewshed. Views of the rest of the mountain will remain relatively unchanged because of limited ski resort facility improvements and will see continued improvement to vegetative cover on the previously cleared ski runs based on the proposed on-mountain vegetation restoration program included in the Master Plan. However, without the introduction of large trees common in the adjacent forested areas, ski runs will remain visually prominent because of the color and texture contrast with the surrounding forests and will likely remain a prominent visual feature as long as HMR is operated and tree growth is restricted on ski runs.

The Proposed Project (Alternative 1) and Alternatives 3 and 6 will result in changes to the Scenic Recreation Area ratings for TRPA Recreation Area Units 20 and 21. Building development will result in positive changes to man-made features. Removal of existing substandard structures and large expanses of surface parking, and the development of new buildings with a cohesive architectural theme that meets current design standards will improve ratings of coherence, condition, compatibility, and design quality to a level of 4. The addition of the Mid-Mountain area structures will create a new man-made feature. While the condition and design quality of the building will get high ratings, the placement and massing of the structure at a prominent location slightly reduce the coherence and compatibility ratings. The ski slopes and stream rating will not change (Units 20-4, 21-4, and 21-5). Little noticeable change will occur to the trees at the base slope or edge forest (Units 20-5 and 21-3) and the ratings to unity, vividness, variety, and intactness will be retained.

Views from the recreation areas (Units 20-1, 20-2, and 20-3, and 21-1 and 21-2) will experience change due to building development. Currently, there are few structures, particularly at the North Base area to obstruct views. Units 20-1 and 20-2 contain views across the parking lot, which consists of random buildings, pavement, scattered trees, and views of the treeless ski slopes. The presence of two-story (Alternative 1 and 3) and two- and three-story (Alternative 6) structures will limit views of the bottom slope area; however, these buildings will improve the overall unity, vividness, and variety of the view. This scenario will be the same for Units 21-1 of the South Base area parking lot and 21-2 of the South Base ski runs. Unit 20-3 addresses views from the mid-portion of the North Base area parking lot toward the lake. Views of the lake from this position will be more obscured by landscaping and structures; however, views of the lake from this point are already limited by existing shorezone development and vegetation screening. Unity and variety will increase while intactness will not change. While there are primarily positive changes, site alterations and presence of clustered structures in a relatively open area will result in future changes to areas that are defined as scenic units within the recreation area. Some of the existing units will cease to exist and will be replaced with new units and viewpoints. Overall, the existing ratings for Units 20 and 21 will not be adversely affected.

Development of the Proposed Project (Alternative 1) and Alternatives 3 and 6 is expected to improve the scenic quality ratings of Roadway Unit 11 (Homewood), and Recreation Areas 20 (Ski Homewood) and 21 (Tahoe Ski Bowl). The rating for Scenic Shoreline Travel Unit 12 (McKinney Bay) will not change, but the Proposed Project (Alternative 1) and Alternatives 3 and 6 will increase the visibility of man made structures at the North Base and Mid-Mountain areas as viewed from Lake Tahoe. As such, the visibility of the Mid Mountain lodge from distant Lake Tahoe viewpoints should be reduced to ensure it stays visually subordinate to the natural landscape. Because of the potential for the Mid Mountain area lodge and gondola top station development to dominate the natural landscape, this impact is considered to be significant.

Mitigation: **SCENIC-2a. Slope Vegetation Management**

To reduce the prominence of man-made features as viewed from Lake Tahoe viewpoints, HMR shall implement management actions to improve the visual quality of the existing Face ski run (located just above the North Base area) as viewed from Lake Tahoe. These measures shall include vegetation management with the goal of matching vegetation patterns of the northern (dark green) portion of the ski run (as seen in Figures 10-5 through 10-7). The Face ski run has well established vegetation but is more visually prominent as viewed from Lake Tahoe when the vegetation is cut back on portions of the ski run and the vegetation color changes from dark green to light brown in color. During future permitting for vegetation management, HMR shall work with agency staff to develop procedures to ensure that the entirety of the Face ski run appears more uniform in color/texture when viewed from Lake Tahoe viewpoints.

SCENIC-2b. Mid-Mountain Lodge Redesign

The Mid-Mountain Lodge design shall be finalized with a goal of reducing the reflectivity of glass panes and roofing materials, and placement of landscaping to reduce its visibility from Lake Tahoe. Building materials shall be pre-approved by TRPA and Placer County planning staff consistent with existing design review guidelines. Natural materials and dark colors that conform to Chapter 30 – Design Standards (TRPA 1987) will be used on resort structures. Placement of new trees directly downslope of the

structure, as feasible among existing ski trails, will reduce its visual dominance from identified lake views.

After Mitigation: *Less than Significant Impact; Alternatives 1, 3 and 6*

Implementation of Mitigation Measures SCENIC-2a and SCENIC-2b will address visual quality issues identified for the shoreline unit and reduce potential impacts to a level that is less than significant by maintaining the existing scenic quality ratings. The Proposed Project (Alternative 1) and Alternatives 3 and 6 would address several of the recommended actions in the SQIP to improve scenic quality, including landscaping, cohesive architecture, and undergrounding utilities. These improvements, along with avoidance or minimization of impacts from new development, will maintain or improve existing scenic quality ratings.

Analysis: *Less than Significant Impact; Alternative 4*

Alternative 4 will close HMR and create 16 residential estate lots and one commercial lot. The commercial lot will replace the parking lot at the North Base area adjacent to SR 89, while the residential lots will be located on the lower (eastern) portion of the Project area. The lots will accommodate one home per lot, leaving large natural areas between residences. No architectural plans identifying the size, style, or other features of the residences or commercial structure have been established; however, each structure will be subject to design review by TRPA for compliance with TRPA Codes and Ordinances Chapter 22 – Height Standards, Chapter 30 – Design Standards, and other applicable codes and policies (TRPA 1987, 1986).

Decommissioning HMR will result in the elimination of Scenic Recreation Areas 20 and 21 and therefore would not affect the recreation unit ratings. No ski lift additions or bike trails would occur under this alternative.

Views of the Project area from SR 89 will consist primarily of the commercial development proposed at the North Base area. Partial views of several new residences located above the North Base area will be likely. The commercial lot will include surface parking; however there is no detail established as to the location of parking, landscaping treatments, signage, architectural treatments, utilities, or other features that affect scenic quality ratings.

Alternative 4 would improve Scenic Roadway Unit 11 rating and would maintain Shoreline Unit 12 ratings as shown in Table 10-12 because of required compliance with TRPA Code and Design Guidelines as well as Placer County standards. Based on the likely improvements to the North Base area urban design through the use of “Alpine Elegance” architecture or other architectural features approved by the TRPA on a new commercial use, the overall increase in building mass will not decrease existing scenic quality ratings for Roadway Unit 11, and the rating for variety may improve.

Roadway Unit 11 will see at least a 1-point improvement to the threshold composite with the increased scoring for man-made features, roadway distractions, and landscape views. The Roadway Unit 11 man-made features travel route rating criteria will improve from 2.5 to 3.0 as a result of the removal of distractions including the large, barren parking lot, and the existing non-uniform and unsightly buildings. This improvement is limited to 0.5 point because the architecture and layout of Alternative 4 structures is unknown. The parking lot closest to SR 89 will be a commercial lot and built as one development, so the architecture and building relation and orientation will be in new condition and cohesive

based on the TRPA Design and Planning Statement Guidelines, which will improve the man-made features rating. With closure of the ski facilities, shrubs and conifer trees are expected to increase along ski runs, generally reducing the visual contrast between the ski runs and the forested areas and improving the landscape rating from 2 to 2.5 with vegetation restoration on the mountain.

Table 10-12

Alternative 4 - Scenic Roadway and Shoreline Unit Travel Route Ratings Changes

	Roadway Unit 11		Shoreline Unit 12	
	Existing Rating	With Alt. 4	Existing Rating	With Alt. 4
Man-made Features	2.5	3	2	2
Roadway Distractions	1	1	--	--
Road Structure	3	3	--	--
Lake Views	1.5	1.5	--	--
Landscape Views	2	2.5	3	3
Variety	2	2	3	3
Threshold Composite	12.0	13.0	8	8
Status	Non-attainment	Non-attainment	Non-attainment	Non-attainment

Source: TRPA 2001a, 2001b, 2007; Hauge Brueck Associates, 2009

Changes in views from Lake Tahoe would consist primarily of new residences. With the closure of the HMR, the increase in vegetation on the hillside will reduce the appearance of erosion and scarring from active management of the ski trails. However, it is important to consider that estate residences will likely be designed to maximize views of the lake. This could result in the increased visibility of structures in the Project area from Lake Tahoe and potential for scarring as a result of cut and fill areas to take advantage of views, if design guidelines and standards are not followed. Windows and reflective materials may further alter the view, creating glare visible from the lake at certain hours of the day. There will be an opportunity to improve the shoreline unit view through vegetation restoration, and to avoid adverse visual effects by complying with TRPA Code and Design Guidelines and Placer County standards. Without designs of proposed homes or structural design and details for Alternative 4, it is assumed that structures will comply with design guidelines and standards to maintain the man-made feature rating of Shoreline Unit 12. Impacts associated with scenic ratings are therefore less than significant.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternative 5*

Alternative 5 includes new structures that are visible from scenic resources and includes recommended actions identified by the TRPA to improve the scenic quality of the area (TRPA 1989, 1993, 2001a, 2001b, 2007; Wagstaff and Brady 1983).

Alternative 5 differs from the Proposed Project (Alternative 1) and Alternatives 3 and 6 by including 16 single-family residential lots and a small skier services structure in the South Base area, while the North Base area would be developed at a greater density with a hotel, residential condominiums, commercial and skier services, and a small surface parking lot. Residential condominiums and retail structures will be located closest to SR 89, with some surface parking, skier services and the hotel located behind these structures. Alternative 5 is more dense than Alternatives 1, 3, and 6 due to the more confined layout of residential structures at the North Base area and as a result, has greater height for buildings fronting SR 89. The Mid Mountain area would be the same as Alternatives 1 and 3.

Variation in the location of the ski lifts, particularly the gondola, would not alter the visual character, particularly since many ski runs or portions of runs to remain in use would be rehabilitated and improved with vegetation. The bike path along SR 89 also would not result in a substantial visual change. The location of the path parallel to the roadway and the proposed structures would reflect the travel corridor and the urban development. The addition of landscaping along the path would improve views while expanding the public viewshed. No adverse impacts are anticipated as a result of ski lift development or removal or the development of the bike path.

As shown in Figures 10-5 through 10-8 and 10-15 through 10-17, Alternative 5 is visible from Scenic Roadway Travel Unit 11 (Homewood) and Scenic Shoreline Travel Unit 12 (McKinney Bay). These units do not meet scenic quality thresholds for attainment (TRPA 2001, 2007). The Project area is located in Recreation Areas 20 (Ski Homewood) and 21 (Tahoe Ski Bowl). Dense conifer forest is expected to obscure views of the South Base area from Lake Tahoe and SR 89, but the North Base area is visually prominent along SR 89. From Lake Tahoe, the North Base area is mostly obscured by existing shoreline development and conifer forest, and is minimally visible. The Mid-Mountain Base area is not visible form SR 89, but is partially visible through the conifer forest from one of the four analyzed viewpoints in Lake Tahoe. The Mid Mountain lodge and gondola top station is not visible from the three closest Lake Tahoe viewpoints because of intervening topography.

The TRPA recommends the actions listed in Table 10-13 to improve scenic resources at HMR and to bring Scenic Roadway Travel Unit 11 (Homewood) and Scenic Shoreline Travel Unit 12 (McKinney Bay) into attainment (TRPA 1989a, 1993). Table 10-13 analyzes the consistency of Alternative 5 with the recommendations.

Roadway Unit 11 has an overall scenic quality rating of 2 (TRPA 1989a). Scenic quality rating indicators are rated 2 for unity and 1 for the remaining three indicators which include: 1) Unity – the extent in which a landscape feature can be described as cohesive, 2) Vividness – a memorable or distinct quality, 3) Variety – the intermixture of interesting elements of a landscape unit, and 4) Intactness – the extent to which a landscape retains its natural condition. Based on the improvements to urban design within the Project area, the overall increase in building mass will not change most existing scenic quality ratings, as discussed below, although the rating for intactness may worsen. The unity of the natural landscape can be described as intermixed with urban development. Under Alternative 5, unity will not change substantially, as the site remains predominantly urban, but new landscaping and undergrounding utilities will result in slight improvement along SR 89.

The vividness of the area will not change substantially with development. Within the Project area, the distinct quality is mixed-use development. Alternative 5 will improve

this indicator with architecture that meets TRPA Chapter 30 – Design Guidelines (TRPA 1987), complements the natural setting, and is enhanced with landscape improvements.

Table 10-13

Evaluation of Consistency with Scenic Improvement Recommendations

Recommendation	Alternative 5 Improvement Actions
1. Reduce visibility of parking lot with landscaping and size reduction	Most parking will be underground and surface parking would be located behind residential buildings that front SR 89. The surface parking lot will include landscaping around and within the lot, and will be mostly screened from SR 89 viewpoints by buildings fronting SR 89.
2. Landscape screening between residential and recreation areas	North Base area buildings and parking areas include landscaping to screen structures and complement the natural setting.
3. Underground utilities	Utilities on the site and along SR 89 will be placed underground.
4. Ski lift tower color improvements	Lifts located at the North Base area will either be removed or replaced. New lifts will conform to TRPA color guidelines.
5. Maintenance area relocation and screening	The maintenance area will be relocated to a screened area at the Mid-Mountain Base area.
6. Architectural improvements	Old structures will be removed and new structures will integrate the "Old Tahoe" architectural style with hipped/gabled roofs, dormers, exposed timber, and natural materials.
7. Screening between residences and ski area	North and South Base area buildings and parking areas include landscaping to screen structures and complement the natural setting. Tree removal is minimized.
8. Structures below tree canopy	As shown in the simulations, new structures are located below the tree canopy height.
9. Ridgelines	No facilities are proposed at a ridgeline or that visually obstructs or interrupts ridgeline views. The Mid-Mountain Base area is located on a slope, and where it is visible from Lake Tahoe, it is seen against a backdrop of a forested slope and ridgeline.
10. Non-reflective and appropriately hued building materials and colors	Natural materials and dark colors that conform to Chapter 30 – Design Standards (TRPA 1987) will be used on resort structures.

Source: HBA 2010

Alternative 5 will improve variety in Roadway Unit 11. The new buildings, relocation, and minimization of the parking lot, and landscaping will improve the quality of the urban character. The replacement of existing surface parking lots and existing structures with new buildings and landscaping that will have a cohesive architectural style and meet TRPA Chapter 30 – Design Guidelines (TRPA 1987) will increase interest for passing pedestrians and motorists. However, under Alternative 5, Intactness will not improve and may worsen. Undergrounding existing utilities and proposed landscaping improvements will help improve this indicator, but the additional massing and height of buildings proposed along SR 89 under Alternative 5 will dominate the views into the Project area and obscure the natural landscape to the west.

Table 10-14 documents the changes to scenic roadway and shoreline unit travel route ratings for Alternative 5. Roadway Unit 11 composite will remain unchanged but will see a slight increase in the scoring for man-made features, and slight decrease for landscape views. The man-made features travel route rating will improve from 2.5 to 3.0 as a result of the removal of man-made distractions including overhead utilities, the large non-landscaped parking lot, and the existing non-uniform and unsightly buildings (uses). This improvement is limited to 0.5 point because of the increase in overall man-made features, including substantial building massing and height along SR 89 frontage. The landscape views rating will decrease from 2 to 1.5 as a result of the building mass and height located along SR 89 and its effect on views of the natural landscape to the west of the North Base area. Other ratings will remain unchanged even though the overall project will replace aging and dilapidated structures with new and unified development. The overall massing of the buildings in Alternative 5 offsets the improvements that are realized under Alternatives 1 and 3.

Table 10-14

Alternative 5 Scenic Roadway and Shoreline Unit Travel Route Ratings Changes

	Roadway Unit 11		Shoreline Unit 12	
	Existing Rating	With Alt. 5	Existing Rating	With Alt. 5
Man-made Features	2.5	3	2	2
Roadway Distractions	1	1	--	--
Road Structure	3	3	--	--
Lake Views	1.5	1.5	--	--
Landscape Views	2	1.5	3	3
Variety	2	2	3	3
Threshold Composite	12.0	12.0	8	8
Status	Non-attainment	Non-attainment	Non-attainment	Non-attainment

Sources: TRPA 2001a, 2001b, 2007; Hauge Brueck Associates 2009

The rating for Shoreline Unit 12 will remain unchanged as shown in Table 10-14. The visible structures at the North Base area and Mid-Mountain Base area will not adversely impact the “man-made features” and “landscape views” ratings because the visible portion of the structures will not dominate existing views of shorezone vegetation in the foreground and ski resort trails located in the background. Views of the Project area from the shoreline (e.g., approximately 1,300 feet from the shoreline) will include glimpses of the structures at the North Base area through the trees and between existing shoreline buildings. The tops of the buildings will be well below the existing tree canopy and the colors used on the structures will blend with the color of the surrounding trees and other vegetation.

The Mid-Mountain Base area will be visible from one of the four viewpoints in Lake Tahoe, which is located approximately 5,200 feet from the shoreline. The gabled roofs, exposed timber, and dark color of the proposed building blends well into the surrounding

forested area and make the structure less dominant. However, the lodge will not be completely hidden by intervening topography or trees. Although the structures at the base areas will not substantially alter views from the lake, they will increase the amount of man-made structures visible in the viewshed. Views of the rest of the mountain will remain relatively unchanged because of limited ski resort facility improvements and will see continued improvement to vegetative cover on the previously cleared ski runs based on the proposed on-mountain restoration program included in the Master Plan. However, without the introduction of large trees, ski runs will remain visually prominent because of the color and texture contrast with the surrounding forests and will likely remain a prominent visual feature as long as HMR is operated and tree growth is restricted on ski runs.

Alternative 5 will result in changes to the Scenic Recreation Area ratings for Recreation Area Units 20 and 21. Building development will result in positive changes to man-made features. Removal of existing substandard structures and large expanses of surface parking, and the development of new buildings with a cohesive architectural theme that meets current design standards will improve ratings of coherence, condition, compatibility, and design quality to a level of 4. The addition of the structures at the Mid-Mountain Base area will create a new man-made feature. While the condition and design quality of the building will get high ratings, the placement and massing of the structure at a prominent location slightly reduce the coherence and compatibility ratings. The ski slopes and stream rating will not change (Units 20-4, 21-4, and 21-5). Little noticeable change will occur to the trees at the base slope or edge forest (Units 20-5 and 21-3) and the ratings to unity, vividness, variety, and intactness will be retained.

Views from the recreation areas (Units 20-1, 20-2, and 20-3, and 21-1 and 21-2) will experience change due to building development. Currently, there are few structures, particularly at the North Base area to obstruct views. Units 20-1 and 20-2 contain views across the parking lot, which consists of random buildings, pavement, scattered trees, and views of the denuded ski slopes. The presence of four-story structures will limit views of the bottom slope area; however, these buildings will improve the overall unity, vividness, and variety of the view. This scenario will be the same for Units 21-1 of the South Base area parking lot and 21-2 of the South Base ski runs, which will improve with the removal of surface parking and old lodge structures. Unit 20-3 addresses views from the mid-portion of the North Base area parking lot toward the lake. Views of the lake from this position will be more obscured by taller structures located closer to the Lake under Alternative 5 than under Alternatives 1 and 3. Unity and variety will increase while intactness will not change. While there are primarily positive changes, site alterations and presence of clustered structures in a relatively open area will result in future changes to areas that are defined as scenic units within the recreation area. Some of the existing units will cease to exist and will be replaced with new units and viewpoints. Overall, the existing ratings for Units 20 and 21 will not be adversely affected because the existing conditions at the base areas are so poor.

Development of Alternative 5 is expected to maintain the existing scenic quality ratings of Roadway Unit 11 (Homewood) and Shoreline Travel Unit 12 (McKinney Bay). However, Alternative 5 will increase the visibility and massing of man made structures at the North Base area compared to Alternatives 1 and 3 and will have similar impacts at the Mid-Mountain Base area. As such, the building massing and height of structures along SR 89 at the North Base area and the visibility of the Mid Mountain lodge from distant views in Lake Tahoe should be reduced to ensure it stays visually subordinate to the natural landscape. This is considered a significant impact.

Mitigation: **SCENIC-1a. Alternative 5 North Base Area Building Height Reductions**

SCENIC-2a. Slope Vegetation Management

SCENIC-2b. Mid-Mountain Lodge Redesign

After Mitigation: *Less than Significant Impact; Alternative 5*

Implementation of Mitigation Measures SCENIC-1a, SCENIC-2a and SCENIC-2b will address visual quality issues identified for the shoreline unit and reduce potential impacts to a level that is less than significant by maintaining or improving the existing scenic quality ratings. Alternative 5 would address several of the recommended actions in the SQIP to improve scenic quality, including landscaping, cohesive architecture, and undergrounding utilities. These improvements, along with avoidance or minimization of impacts from new development, such as avoidance of tree removal or other natural features, are expected to maintain or improve existing scenic quality ratings.

Impact: SCENIC-3. Will the Project create an unacceptable new light source or cause glare or affect day or nighttime views in the area?

Analysis: *No Impact; Alternative 2*

No change from existing conditions will occur under the No Project (Alternative 2). Existing lighting fixtures, structural elements, and building materials will remain the same. Therefore, there will be no new light sources or glare that could change day or nighttime views. No impact will occur under the No Project (Alternative 2).

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternatives 1, 3, 4, 5, and 6*

Although a list of building materials is not defined, the Proposed Project (Alternative 1) will pursue LEED certification and will utilize green materials for the North Base mixed development area. This will include high efficiency, low reflective windows to reduce glare on-site. In compliance with the TRPA Design Guidelines (TRPA 1989b) and Placer County West Shore Area General Plan (County of Placer 1998), non-reflective roofing materials will be used. Landscaping trees and architectural elements such as balconies, overhangs, and shutters will reduce the overall visual presence, reflectivity, and glare caused by windows.

Windows can be reflective, and the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 could result in a higher intensity of reflection since there are very few existing windows in the Project area. To avoid or minimize this effect, Alternatives 1, 3, 5, and 6 use setbacks and variations in the upper floor plan of most buildings, and overhangs and other architectural details to reduce reflectivity. Non-reflective glass may also be required based on compliance with TRPA and Placer County design standards. Designs for residential and commercial structures under Alternative 4 have not been developed; however, it is assumed these or similar architectural features would be used for residential estates because they must comply with TRPA Code and design guidelines and Placer County standards. Overall building development density will be much less under Alternative 4 than the other action alternatives.

Lighting fixtures will add glare and affect nighttime views in the Project area. Minimal lighting currently exists on the Project area, and the amount of lighting will substantially

increase with development under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6. Lighting will be located on structures for safety and will be located at building entrance and exit locations, along the internal streets, at parking lot entrances and within the residential and commercial areas. The increased number of structures will increase the amount of light emitted within the Project area. Use of multistory landscaping, particularly tall trees and the preservation of tall trees on site will help to reduce negative effects of increased night lighting by screening lit views from the travel route and lake and reducing light splay. Because the types of fixtures and materials used, as well as their placement, must comply with TRPA Code and design guidelines and Placer County standards, this impact is considered to be less than significant.

Mitigation: No mitigation is required.

10.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact: SCENIC-C1: Will the Project have significant cumulative impacts to scenic resources?

Analysis: *Less than Significant Impact; Alternative* 2

Various developments and redevelopments are proposed throughout the west and north shores of Lake Tahoe. Combined, these projects have the potential to improve the overall scenic quality of the area or greatly alter the natural character and scenic quality of the area. The No Project (Alternative 2) will not result in a change to existing conditions. Since no improvements will be made, the No Project (Alternative 2) will not contribute to a cumulative scenic benefit where a combined architectural and urban scenic quality is achieved. While it will not impede the ability of other projects to achieve this goal, it also will not contribute to that goal and retains the qualities that detract from scenic resources along the west shore and in the Basin.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternatives 1, 3, 4, 5, and 6*

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will result in improvements to the west shore urban area along SR 89 and when combined with other projects in the Homewood area, has the potential to improve the overall urban character of the west shore. Existing development in the Project area detracts from the scenic quality with poorly designed and unattractive structures that reflect a lack of architectural unity and character, and that do not meet current TRPA design standards (TRPA 1989b, 1987). By redeveloping the Project area in the "Old Tahoe" style and implementing appropriate site design and landscaping, the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will contribute to the trend toward traditional and characteristic architecture of Lake Tahoe and bring the site design into compliance with design standards and guidelines.

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will include structures visible from Lake Tahoe. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 will construct the Mid-Mountain Base area and Alternative 4 will result in new on-mountain estate residences visible from the lake. North Base area buildings will be partially screened by conifer trees and existing structures on the shoreline. However, the proposed structures will contribute to a general feeling of urbanization of the lake environment. While the visibility of one or two additional

structures at one location may not result in a considerable change in the overall views from the Lake on the west shore, the increased visibility of structures around the lake creates a noticeable effect. Combined with other nearby planned, proposed, or recently completed projects that may also be visible from the lake, the urban view will intensify and the natural beauty of the area must compete with these structures. This is considered a cumulatively considerable impact.

Mitigation: **SCENIC-1a. Alternative 5 North Base Area Building Height Reductions**

SCENIC-1b. Alternative 6 North Base Area Building Redesign

SCENIC-2a. Slope Vegetation Management

SCENIC-2b. Mid-Mountain Lodge Redesign

After Mitigation: *Less than Significant Impact; Alternatives 1, 3, 4, 5, and 6*

Implementation of the mitigation measures listed above will reduce the visual presence of structures from the lake view. Through implementation of recommended actions designed to improve scenic quality in the Project area (TRPA 1989, 1993, 2001a, 2001b, 2001c, 2007), elements of Alternatives 1, 3, 4, 5, and 6 are expected to maintain and improve the scenic quality ratings in the Project area. Implementation of scenic resource mitigation measures is expected to avoid or minimize potential adverse scenic quality impacts from new development, and therefore maintain scenic quality ratings. By making structures secondary to the natural environment and concealing their presence with appropriate design features and landscaping, the action alternatives will not contribute to an adverse cumulative impact on scenic resources.

10.6 REFERENCES

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11.0 TRANSPORTATION, PARKING AND CIRCULATION

11.1 ENVIRONMENTAL SETTING

The Homewood Mountain Resort (HMR) Master Plan area (Project area) is located in Homewood, California on the west shore of Lake Tahoe. The site is accessed by State Route 89 (SR 89) and intersecting local roadways. The main guest parking lot is located on the west side of SR 89 between Silver Street and Fawn Street. There are additional existing parking spaces located on Tahoe Ski Bowl Way. Currently the HMR consists of a day-use ski resort, with 62 ski trails covering 411 acres.

11.1.1 Roadway Setting

Figure 11-1 shows the existing applicable roadway segments and intersections along SR 89 that provide access to Project area. The major roadways included in the analyses are described as follows:

California State Route 89 (SR 89) is the primary roadway that borders the west side of Lake Tahoe. SR 89 intersects Interstate 80 (I-80) to the north in Truckee, California, SR 28 in Tahoe City, California, and U.S. 50 at Lake Tahoe Boulevard in South Lake Tahoe. The speed limit on SR 89 near the Project area varies from 25 to 40 mph. SR 89 is a two-lane roadway with left-turn pockets at major intersections. The West Shore Trail parallels SR 89 and is a mixed-use path for bicycle and pedestrian travel.

State Route 28 (SR 28) is the primary roadway that borders the north side of Lake Tahoe. SR 28 intersects U.S. Highway 50 in Douglas County, Nevada on the east side of Lake Tahoe, and SR 89 in Tahoe City, California on the west side of Lake Tahoe. Within Tahoe City, SR 28 is a two-lane roadway with a center left-turn lane and a speed limit of 25 mph.

Granlibakken Road is a two-lane roadway that intersects SR 89 north of the Project area and south of Tahoe City. The posted speed limit on Granlibakken Road is 25 mph. The West Shore Trail crosses Granlibakken Road west of SR 89.

Sequoia Avenue is an unstriped, two-lane roadway with a 25 mph speed limit. Sequoia Avenue terminates at the William Kent Campground west of SR 89.

Pineland Drive is a two-lane roadway with a 25 mph speed limit.

Grand Avenue is an unstriped, two-lane, residential roadway. There is no posted speed limit. The West Shore Trail crosses Grand Avenue east of SR 89.

Park Avenue is an unstriped, two-lane, residential roadway. There is no posted speed limit. The West Shore Trail crosses Park Avenue east of SR 89.

Silver Street is an unstriped, two-lane, residential roadway. There is no posted speed limit. Silver Street terminates at the 'Public Access Lake Overlook' driveway east of SR 89.

Figure 11-1. Project Area Access Roadways and Intersections

FEHR & PEERS
TRANSPORTATION CONSULTANTS

Homewood Moutain Resort Master Plan
Existing Roadway Segments and Intersections
Figure 11-1

Fawn Street is an unstriped, two-lane roadway that provides access to an existing paved North Base parking lot to the north, and a gravel "over-flow" parking lot to the south. Fawn Street provides access to a Lake Tahoe marina east of SR 89.

Tahoe Ski Bowl Way is an unstriped, two-lane roadway with no posted speed limit. The West Shore Trail crosses Tahoe Ski Bowl Way west of SR 89.

Elm Street is a two-lane roadway with a posted speed limit of 35 mph. The West Shore Trail crosses Elm Street on the south side of the SR 89/Elm Street intersection.

Pine Street is a two-lane roadway with a 25 mph speed limit. Pine Street terminates at Lake Tahoe to the east. The West Shore Trail crosses Pine Street west of SR 89.

11.1.2 Existing Traffic Volumes

Summer Traffic Volumes

Intersection turning movement counts were collected in late August and early September 2008 during the Friday PM (3:00 PM – 6:00 PM) and the Saturday Midday (12:00 PM - 2:00 PM) peak traffic periods at the intersections listed below.

- SR 89/SR 28: Friday 8-22-2008; Saturday 8-23-2008
- SR 89/Fanny Bridge Pedestrian Signal (Pedestrian Signal):
  - Friday 8-22-2008; Saturday 8-30-2008
- SR 89/Granlibakken Road: Friday 8-29-2008; Saturday 8-30-2008
- SR 89/Sequoia Avenue: Friday 8-22-2008; Saturday 8-23-2008
- SR 89/Pineland Drive: Friday 8-29-2008; Saturday 8-30-2008
- SR 89/Grand Avenue: Friday 8-22-2008; Saturday 9-6-2008
- SR 89/Park Avenue: Friday 8-29-2008; Saturday 9-6-2008
- SR 89/Silver Street: Friday 8-29-2008; Saturday 8-30-2008
- SR 89/Homewood Entrance: Friday 9-5-2008; Saturday 8-23-2008
- SR 89/Fawn Street: Friday 8-29-2008; Saturday 9-6-2008
- SR 89/Tahoe Ski Bowl Way: Friday 9-5-2008; Saturday 9-6-2008
- SR 89/Elm Street: Friday 8-22-2008; Saturday 9-6-2008 (Summer Only)
- SR 89/Pine Street: Friday 8-29-2008; Saturday 8-30-2008 (Summer Only)

During the summer, the Friday PM peak hour is typically evaluated because this is generally when peak traffic volumes occur on the roadways. At most study intersections, traffic volumes were higher on Friday than Saturday, and volumes on SR 89 were higher on Friday; therefore, the summer analysis was performed for Friday conditions. Table 11-1 shows the existing intersection turning movement counts at the study intersections for the Friday PM peak period during summer. Existing intersection lane configurations, control types, and turning movement volumes are displayed on Figure 11-2.

Table 11-1

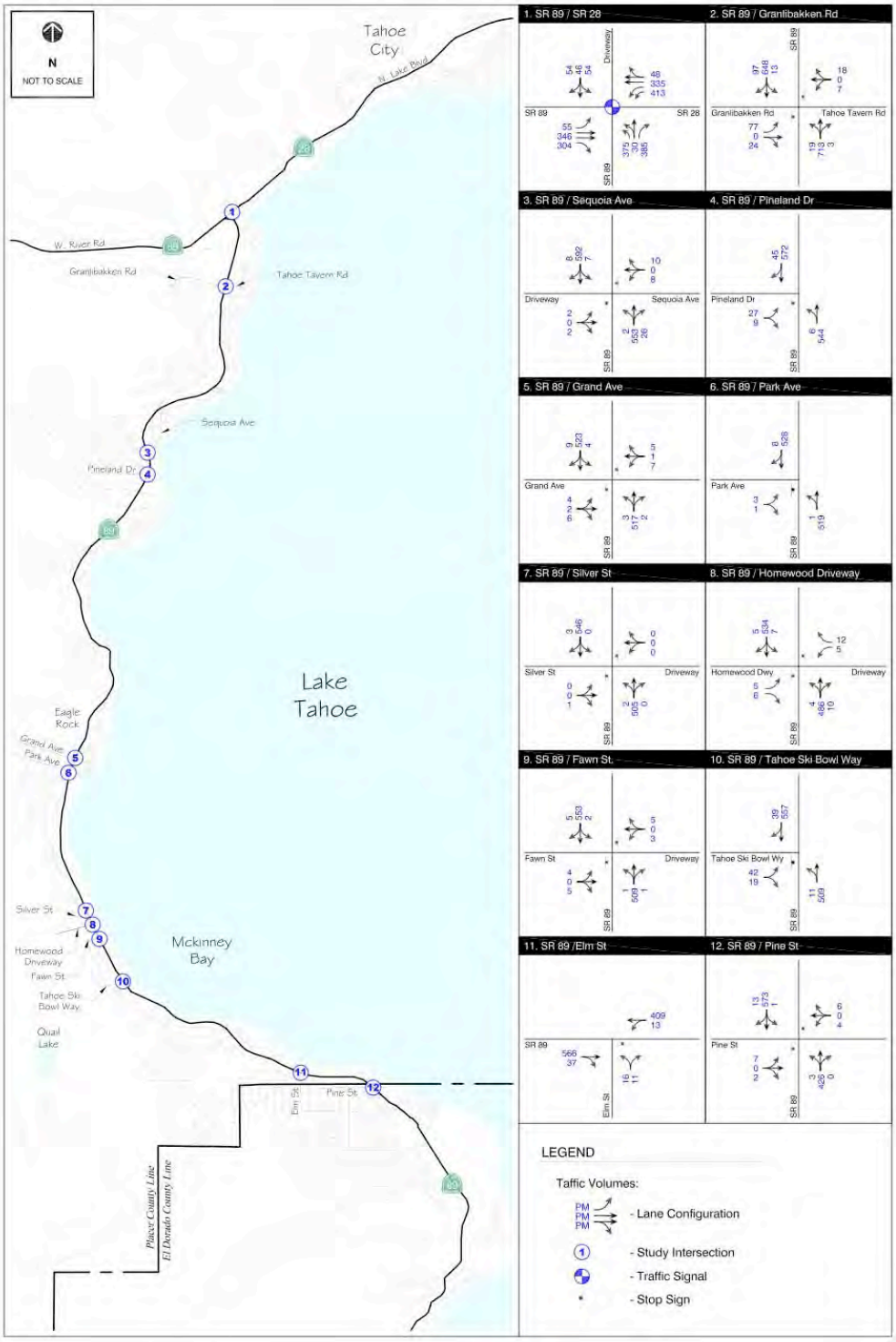
Existing Intersection Turning Movement Counts – Friday PM Peak Hour (Summer)

Intersection	Turning Movement Volume											
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
SR 89/SR 28	375	30	385	54	46	54	55	346	304	413	335	48
SR 89/ Granlibakken Road	19	713	3	13	648	97	77	0	24	7	0	18
SR 89/Sequoia Avenue	2	553	26	7	592	8	2	0	2	8	0	10
SR 89/Pineland Drive	6	544	--	--	572	45	27	--	9	--	--	--
SR 89/Grand Avenue	3	517	2	4	523	9	4	2	6	7	1	5
SR 89/Park Avenue	1	519	--	--	528	8	3	--	1	--	--	--
SR 89/Silver Street	2	505	0	0	546	3	0	0	1	0	0	0
SR 89/Homewood Entrance	4	486	10	7	534	5	5	0	6	5	0	12
SR 89/Fawn Street	1	509	1	2	553	5	4	0	5	3	0	5
SR 89/Tahoe Ski Bowl Way	11	509	--	--	557	39	42	--	19	--	--	--
SR 89/Elm Street	16	--	11	--	--	--	--	566	37	13	409	--
SR 89/Pine Street	3	426	0	1	573	13	7	0	2	6	0	4

Source: Fehr & Peers 2009

Notes: Count data was collected in August and September 2008 and balanced between intersections. Raw count data is provided in Appendix J.

Figure 11-2. Existing Summer Traffic Volumes, Lane Configurations, and Control Types



Winter Traffic Volumes

Intersection turning movement counts were estimated at the study intersections using a ratio comparing summer and winter volumes. California Department of Transportation (Caltrans) monthly average daily traffic (ADT) volumes for August, at locations on SR 89 and SR 28, were compared to ADT volumes collected in February (peak winter month) at the same locations, to develop a ratio comparing summer and winter months (Caltrans 2008). Analysis shows that the winter volumes near the Project area are approximately 75% of the summer volumes at the same locations. This ratio primarily effects through movement volumes on SR 89 and SR 28. Summer SR 89 and SR 28 through movement counts, and turning movement counts at the SR 89/SR 28 intersection (the "Wye") were factored by 75% to develop background winter conditions volumes.

The intersection turning movement counts collected during the summer do not reflect the peak operating conditions of the Project area during the winter season. Trips were generated separately for the Project area and added to the background winter volumes at the HMR access driveways for existing winter conditions analysis. The Friday PM peak hour was analyzed during the winter because the Project is expected to have the biggest change in operations compared to existing conditions during this period.

Existing winter traffic volumes generated by HMR were developed for the Friday PM peak hour using traffic counts and parking data collected by the Project Applicant. The existing winter trip generation (shown in Table 11-2) was developed using the following steps:

1. Counts were collected by a consultant hired by the Project Applicant at driveways and access roads to the Project area during the AM and PM peak periods on Saturday, December 30, 2006. The PM peak hour volumes at the driveways are shown in Table 11-2, as well as the total two-way volume during the count periods (8:15-10:00 AM and 2:15-5:00 PM).

2. HMR collects daily peak parking data on a regular basis. This data shows that on the day the traffic counts were collected at the driveways (Saturday), 789 parking spaces were occupied. Parking data collected during the 2007-2008 and 2008-2009 ski seasons (including holidays) was reviewed to determine the peak Friday attendance at the existing Project area. The five highest Fridays of parking space occupancy for each of the 2007-2008 and 2008-2009 ski seasons were averaged. The results show that on a typical peak Friday, approximately 532 parking spaces are occupied. Detailed parking data is provided in Appendix K-1.

3. The ratio of average peak Friday parking space occupancy over occupied parking spaces on the day of the traffic counts (532/789 = 0.67) was used to factor the two-way volume during the count period, and estimate PM peak hour traffic volumes on a peak Friday.

4. Data collected at Heavenly Mountain Resort in South Lake Tahoe provided the hourly variation of ski area traffic over the course of a day. The Heavenly data was used because it was best available, Tahoe Basin specific data. This information was used to determine the total daily traffic volumes based on the peak period volumes collected at HMR.

5. Fawn Drive and Tahoe Ski Bowl Way provide access for residential units (permanently occupied and recreational homes), as well as the Project area. Trip generation estimates

were calculated using *Trip Generation, 8th Edition and ITE Informational Report* (Institute of Transportation Engineers, 2008) for the units and subtracted from the ski area trip generation estimates.

Table 11-2

Existing Winter Trip Generation

	Calculation Factors	Daily Trips	PM Peak Hour Trips	
			In	Out
Traffic Volumes Counted at Driveways (Saturday - 12/30/06)			194	550
Total Two-Way Volume in Count Periods (8:15-10:00 AM, 2:15-5:00 PM)	2,347			
Ski Area Parking Count on Date of Count	789			
Average Peak Friday Parking for 2007-2008 and 2008-2009 Ski Seasons	532			
Ratio of Friday Parking vs. Parking on Date of Count	0.67			
Estimated Traffic Volume on Peak Friday	1,572		130	369
Ratio of Total Daily Traffic to Traffic During Count Period	1.79			
Total Daily Traffic on Peak Friday		2,815		
Traffic Generated by Other Land Uses in Count Area		(-280)	(-15)	(-12)
Total Estimated Friday Traffic Generation of Existing Ski Area		2,535	115	357

Source: Fehr & Peers 2009

The existing Project area generates 2,535 daily trips on the typical peak Friday, and 472 PM peak hour trips. Table 11-3 shows the estimated existing intersection turning movement counts at the study intersections for the Friday PM peak period during winter. The existing intersection lane configurations, control types, and turning movement volumes are displayed on Figure 11-3.

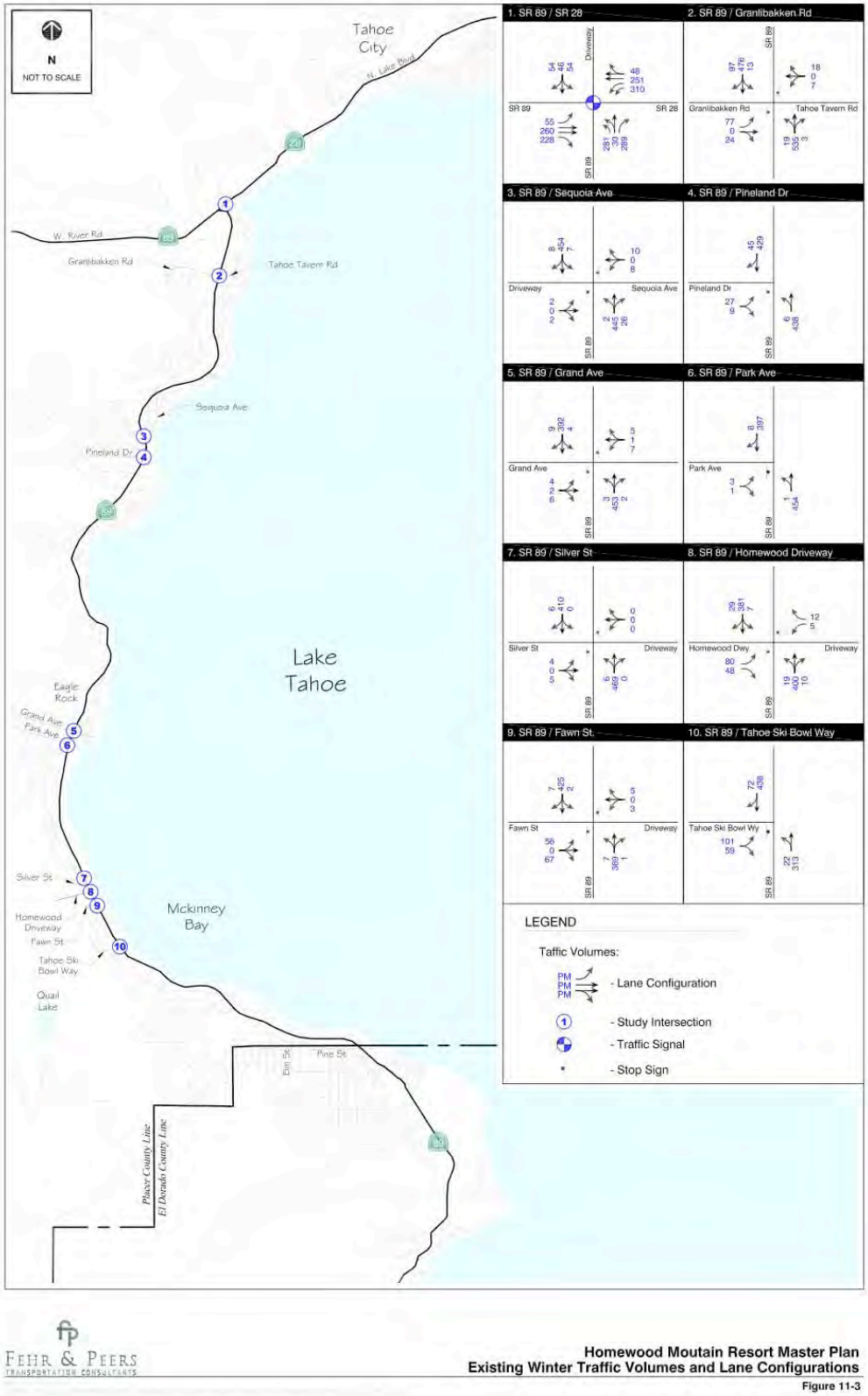
Table 11-3

Existing Intersection Turning Movement Counts – Friday PM Peak Hour (Winter)

Intersection	Turning Movement Volume											
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
SR 89/SR 28	281	30	289	54	46	54	55	260	228	310	251	48
SR 89/ Granlibakken Road	19	535	3	13	476	97	77	0	24	7	0	18
SR 89/Sequoia Avenue	2	445	26	7	454	8	2	0	2	8	0	10
SR 89/Pineland Drive	6	438	--	--	429	45	27	--	9	--	--	--
SR 89/Grand Avenue	3	453	2	4	392	9	4	2	6	7	1	5
SR 89/Park Avenue	1	454	--	--	397	8	3	--	1	--	--	--
SR 89/Silver Street	6	469	0	0	410	6	4	0	5	0	0	0
SR 89/Homewood Entrance	19	400	10	7	381	29	80	0	48	5	0	12
SR 89/Fawn Street	7	369	1	2	425	7	56	0	67	3	0	5
SR 89/Tahoe Ski Bowl Way	22	313	--	--	438	72	101	--	59	--	--	--

Source: Fehr & Peers 2009

Figure 11-3. Existing Winter Traffic Volumes, Lane Configurations, and Control Types



11.1.3 Historic Traffic Volumes

Table 11-4 illustrates ADT volumes from 1999 to 2008. ADT volumes on SR 28 have decreased from approximately 1% to 2.3% per year during this time frame. Between 1999 and 2008, traffic volumes on SR 89 in the Homewood area fell a total of 19.8%, while traffic volumes on SR 89 at the Tahoe City Wye fell 17.0%.

Table 11-4

Historic Average Daily Traffic Volumes – SR 28

Segment	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average Annual Growth
SR 28 East of Lake Forest Dr	12100	12100	12100	12100	12100	12100	11500	11300	11300	11000	**-1.01%**
SR 28 East of Grove St	16700	16700	16700	16700	16700	16700	15900	15800	15800	15200	**-1.00%**
SR 28 East of SR 89	17000	17000	17000	17000	17000	17000	16200	16000	16000	14000	**-1.96%**
SR 89 at SR 28	15300	15500	15500	15500	15500	16000	16200	12700	12700	12700	**-1.89%**
SR 89 North of Fir Ave	15600	15600	15600	15600	15800	16300	16300	13200	13200	13200	**-1.71%**
SR 89 North of Ward Creek Bridge	9500	9500	9500	9500	9500	9800	9800	8200	8200	7800	**-1.99%**
SR 89 North of McKinney Creek Rd	8100	8300	8300	8300	7700	8000	8000	6900	6900	6500	**-2.19%**
SR 89 North El Dorado/ Placer County Line	6000	6000	6000	6000	6000	6200	6200	5500	5500	5200	**-1.48%**

Sources: Caltrans Traffic Data Branch, 2008

11.1.4 Existing Traffic Conditions

Intersection Operations

Level of service (LOS) is a term used to refer to the operating performance of an intersection or roadway. LOS is measured on a scale from A to F, with A representing the best performance and F the worst and is based on the average time a vehicle's travel is delayed due to intersection control. Detailed descriptions of unsignalized and signalized LOS standards established in the

Highway Capacity Manual (HCM) 2000 (Transportation Research Board, 2000) are provided in Table 11-5.

Table 11-5

Intersection LOS Criteria

LOS Description		Signalized Intersections (Avg. Control Delay)[1]	Unsignalized Intersections (Avg. Control Delay)[2]
A	Represents free flow. Individual users are virtually unaffected by others in the traffic stream.	0 to ≤ 10.0 sec/veh	0 to ≤ 10.0 sec/veh
B	Stable flow, but the presence of other users in the traffic stream begins to be noticeable.	>10.0 to ≤ 20.0 sec/veh	>10.0 to ≤ 15.0 sec/veh
C	Stable flow, but the operation of individual users becomes significantly affected by interactions with others in the traffic stream.	>20.0 to ≤ 35.0 sec/veh	>15.0 to ≤ 25.0 sec/veh
D	Represents high-density, but stable flow.	>35.0 to ≤ 55.0 sec/veh	>25.0 to ≤ 35.0 sec/veh
E	Represents operating conditions at or near the capacity level.	>55.0 to ≤ 80.0 sec/veh	>35.0 to ≤ 50.0 sec/veh
F	Represents forced or breakdown flow.	>80.0 sec/veh	>50.0 sec/veh

Source: Highway Capacity Manual 2000

The LOS standards for the jurisdictions with regulatory authority in the Lake Tahoe Basin are described below in the Regulatory Setting section of this chapter.

The Friday PM peak hour was analyzed during the summer because this is generally when peak traffic volumes occur on the roadways. The Project is a major winter trip generator due to the ski area operations; therefore, winter conditions were also evaluated.

The existing summer and winter intersection LOS and delay were calculated for the study intersections for the Project area using Synchro, Version 6 software (Trafficware, 2003). Table 11-6 presents the LOS results for the study intersections under existing conditions.

As shown in Table 11-6, the SR 89/Granlibakken Road intersection operates at an unacceptable LOS during the summer and winter. The remaining study intersections operate at acceptable LOS during the summer and winter.

Table 11-6

LOS Results – Existing Conditions

Intersection	Control Type [1]	Winter		Summer	
		Friday PM Peak		Friday PM Peak	
		Delay [2]	LOS	Delay [2]	LOS
SR 89/SR 28	Signal	27.3	C	35.2	D
SR 89/Pedestrian Signal	Signal	2.3	A	4.3	A
SR 89/Granlibakken Road	SSSC	5.2 **(>50)**	A **(F)**	24.4 **(>50)**	C **(F)**
SR 89/Sequoia Avenue	SSSC	0.5 (17.9)	A (C)	0.7 (30.1)	A (D)
SR 89/Pineland Drive	SSSC	0.8 (19.5)	A (C)	0.9 (28.0)	A (D)
SR 89/Grand Avenue	SSSC	0.6 (17.7)	A (C)	0.6 (21.6)	A (C)
SR 89/Park Avenue	SSSC	0.1 (16.0)	A (C)	0.1 (21.5)	A (C)
SR 89/Silver Street	SSSC	0.3 (15.8)	A (C)	0.0 (12.2)	A (B)
SR 89/Homewood Entrance	SSSC	3.6 (23.5)	D (C)	0.7 (23.4)	A (C)
SR 89/Fawn Street	SSSC	3.0 (20.7)	A (C)	0.3 (19.3)	A (C)
SR 89/Tahoe Ski Bowl Way	SSSC	4.3 (25.1)	C (D)	1.5 (26.1)	A (D)
SR 89/Elm Street	SSSC	--	--	0.7 (18.6)	A (C)
SR 89/Pine Street	SSSC	--	--	0.5 (26.4)	A (D)

Source: Fehr & Peers 2009

Notes: [1] SSSC = Side Street Stop Control

[2] Delay is reported in seconds per vehicle for the overall intersection for signalized intersections, and for the overall intersection (worst movement) for unsignalized intersections.

-- Intersection not analyzed under winter conditions.

11.1.5 Existing Ground Transit Facilities

The Tahoe Area Regional Transit (TART), which is operated by Placer County, provides hourly service along the north and west shores of Lake Tahoe seven days per week. Routes run from 6:00 AM to 7:00 PM along SR 28 and SR 89. TART buses provide bike racks during the summer months. Existing ground transit facilities and routes are shown on the exhibits below in Figures 11-4 and 11-5.

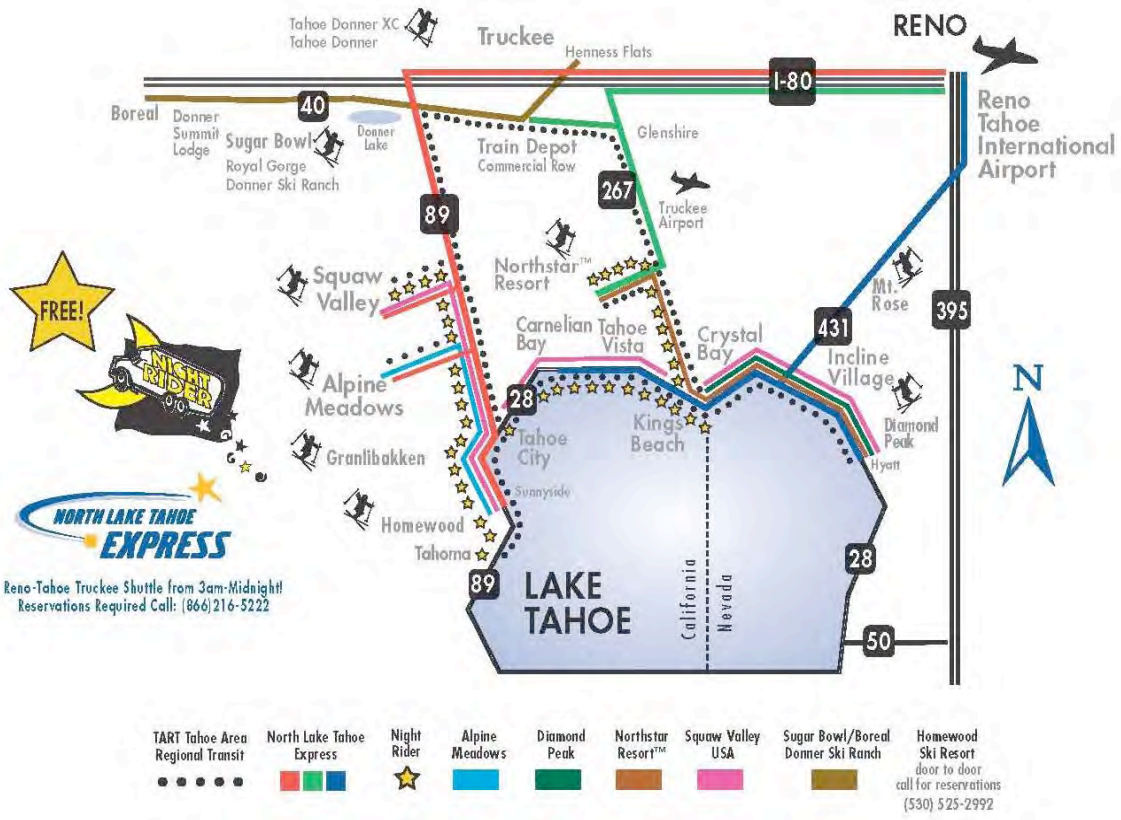
The Tahoe Trolley Free Night Service runs from Squaw Valley USA to Incline Village. Hourly service is provided from 7:00 PM to 12:00 AM (midnight).

The North Lake Tahoe Express provides daily airport service from 3:30 AM to 12:00 AM (midnight) from the North Lake Tahoe and Truckee region to the Reno-Tahoe International Airport. Passengers must pay a fee for this service, and are required to make reservations in advance. The North Lake Tahoe Express offers three route lines – Red Line, Green Line, and Blue Line (shown on the winter route map, Figure 11-5), and operates from December through April.

Figure 11-4. Existing Ground Transit Facilities and Routes (Summer 2010)

Source: www.laketahoetransit.com

Figure 11-5. North Lake Tahoe Express Routes (Winter 2009-2010 Map)



Source: www.laketahoetransit.com

The Night Rider – Free Night Service shuttle provides service along the west shore of Lake Tahoe from Squaw Valley, through Tahoe City, to Tahoma, and along the north shore from Tahoe City to the Tahoe Biltmore. The Night Rider also offers and route along SR 267 to the north shore of Lake Tahoe to Northstar. The Night Rider offers hourly service from7:00 PM to12:00 AM, from December to April.

Homewood offers a free shuttle service with advance reservations from Tahoe City to Homewood. Scheduled pick-ups are offered from 8:30 AM to 5:00 PM. Door-to-door service is also available with advance reservation made the day before.

11.1.6 Existing Waterborne Transit Facilities

The Tahoe Metropolitan Planning Organization has initiated an intra-regional planning effort to assess additional waterborne transit services in the Lake Tahoe Basin. The Tahoe Transportation District is potentially launching a pilot waterborne transit project in 2012.

11.1.7 Existing Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities exist around much of the Lake Tahoe perimeter. The West Shore Trail runs along SR 89 and SR 28 in Tahoe City and continues through Homewood, California terminating just north of Meeks Bay on the west side of Lake Tahoe. The path is a mixed-use path, designated for

bicycles and pedestrians. The bicycle and pedestrian path is separated from the roadway throughout most of its route; however there are several locations where the path crosses the roadway at marked crosswalks. At one location in particular, the path crosses SR 89 at signalized intersection actuated by pedestrians/bicyclists. The trail includes a small gap between Fawn Street and Cherry Street 0.9 miles to the north.

Existing bicycle and pedestrian facilities in the Homewood and Tahoe City, California areas are shown on Figure 11-6.

Figure 11-6. Existing Bicycle and Pedestrian Facilities

Source: www.tahoebike.org

11.1.8 Existing Parking Facilities

The Project area has approximately 942 on-site parking spaces in seven surface parking lots. Approximately 280 additional on-street parking spaces are within the public right-of-way on SR 89 and the neighboring residential streets, however these spaces are not considered part of the Homewood property, and are not included in the official parking space count for the site. Parking is not legally allowed on Placer County roadways from November 1st through April 30th; however, parking is legal along SR 89.

11.2 REGULATORY SETTING

Numerous transportation-related standards and criteria apply to the Project area, reflecting the number of jurisdictions with regulatory authority over transportation conditions. Overall transportation system standards and performance targets applicable to the Project area are identified in Mobility 2030: Lake Tahoe Basin Regional Transportation Plan, August 27, 2008 (Mobility 2030) which is a long range planning document that shapes the future of the Lake Tahoe Basin transportation system.

The Tahoe Regional Planning Agency (TRPA) has jurisdiction over aspects of transportation planning in the Lake Tahoe Basin with Caltrans overseeing California's State highway system. An overview of the transportation and circulation standards applicable to the Project is identified in Table 11-7.

Table 11-7

Applicable Transportation, Parking and Circulation Standards

Jurisdiction/ Plan/Policy	Standard/Criteria
Tahoe Regional Planning Compact	The goal of transportation planning shall be: (A) To reduce the dependency on the automobile by making more effective use of existing transportation modes and public transit to move people and goods within the region; and (B) To reduce to the extent feasible air pollution which is caused by motor vehicles.
Mobility 2030: Lake Tahoe Basin Regional Transportation Plan (Mobility 2030)	The Goals and Policies of the Mobility 2030 reflect the consideration of environmental, social and economic factors in making transportation-related decisions. Specific goals of Mobility 2030 include the following: 1) reduce reliance on the private automobile; 2) provide for alternative modes of transportation; 3) serve the basic transportation needs of the citizens of Lake Tahoe; 4) support the economic base of the region; and 5) minimize adverse impacts on man and the environment.
Federal Planning Guidelines	In 1999, the Lake Tahoe Basin became a federal metropolitan planning organization (MPO). Federal regulations, pertaining to transportation, require that the MPO planning process provide for the consideration of projects and strategies that will: - increase the safety and security of the transportation system for motorized and non-motorized users; - enhance the integration and connectivity of the transportation system, across and between modes, for people and freight; - promote efficient system management and operation; - emphasize the preservation of the existing transportation system.

Table 11-7

Applicable Transportation, Parking and Circulation Standards

Jurisdiction/ Plan/Policy	Standard/Criteria
TRPA Goals and Policies	Establish LOS criteria for various roadway categories and signalized intersections. LOS criteria during peak periods shall be: - LOS C on rural recreational/scenic roads; - LOS D on rural developed area roads; - LOS D on urban developed area roads; - LOS D for signalized intersections; - LOS E may be acceptable during peak periods in urban areas, not to exceed four hours/ day. The policies and objectives of this document also place high priority on constructing pedestrian and bicycle facilities in urbanized areas and encouraging waterborne transportation measures.
TRPA Thresholds	TRPA has nine threshold categories: water quality, air quality, noise, scenic, vegetation, soils, wildlife, recreation, and fisheries. There is no threshold for transportation; however transportation system projects in the Lake Tahoe Basin can not degrade any of the thresholds. Rather, TRPA must make findings that projects attain or maintain existing thresholds.
TRPA Thresholds: Air Quality	Air Quality has two transportation related standards: vehicle miles traveled (VMT) and traffic volumes on US 50. - AQ-5 US 50 Traffic Volumes – 7% reduction in traffic volume on the US 50 corridor from 1981 base year values, winter, 4 p.m. to 12 a.m. (25,173 vehicles at the US 50/Park Avenue intersection.) - AQ-7 VMT – 10% reduction in VMT in the Lake Tahoe Basin from 1981 base year values. (1,648,466 VMT for a peak summer day.)
TRPA Code of Ordinances	Adherence to Chapter 14 requirements for traffic considerations, including VMT reduction policies and LOS goals for street and highway traffic, and Chapter 93 requirements for traffic analyses; the Code sections require reducing significant impacts to a less than significant level.
Tahoe City Community Plan	The Plan's overall goal for transportation is to reduce dependency on the automobile and improve the movement of people, goods, and services within Tahoe City and the Region consistent with the economic and environmental goals of the Community Plan.
West Shore Area General Plan	The Circulation Element of the West Shore Area General Plan provides transportation objectives and policies associated with communities on the west shore of Lake Tahoe in Placer County. The objectives and policies are generally consistent with other applicable plans.
Caltrans District 3 Thresholds	Requires that measures be identified to mitigate significant impacts caused by project traffic on State highways. The following are considered to be significant impacts: - Vehicle queues at intersections exceeding the existing storage lane length; - Project impacts that cause the highway or intersection LOS to deteriorate beyond LOS D. If LOS is already "E" or "F", then quantitative measure of increased queue lengths and delay should be used to determine appropriate mitigation measures.
Placer County	Minimum parking spaces required.

Table 11-7

Applicable Transportation, Parking and Circulation Standards

Jurisdiction/ Plan/Policy	Standard/Criteria
Other	Signal warrant criteria as established by the Federal Highway Administration Manual on Uniform Traffic Control Devices.

Source: Fehr & Peers 2009

11.2.1 Key Transportation Impact Areas

The TRPA Environmental Checklist for transportation and circulation and CEQA Appendix G Checklist are provided below. These checklists were used to develop the key transportation impact areas and significance criteria.

TRPA Environmental Checklist

Will the Project:

- Result in the generation of 100 or more new Daily Vehicle Trip Ends (DVTE)?
- Result in an increase in VMT?
- Result in changes to existing parking facilities, or demand for new parking?
- Result in a substantial impact upon the existing transportation systems, including roadways and intersections, transit, bicycle or pedestrian facilities?
- Result in a substantial impact upon the existing transportation systems due to construction traffic?
- Result in alterations to present patterns of circulation or movement of people and/or goods?
- Result in an increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?

CEQA Appendix G Checklist

Will the Project:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

- Result in inadequate emergency access?

- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

11.2.2 LOS Standards

Generally, Caltrans is responsible for the operation of the State Highway system and Placer County is responsible for the County roadways. Each jurisdiction has defined LOS standards for their facilities; however, TRPA has jurisdictional authority of roadways within the Lake Tahoe Basin. TRPA LOS standards were used to determine significant impacts for the project. Based on TRPA standards, LOS D was used as the threshold.

TRPA Standards

Regional traffic operations and LOS standards for the Lake Tahoe basin, established in Chapter 24 – Transportation Element of the TRPA Goals and Policies, require that peak-period traffic flow not exceed the following:

- LOS C on rural recreational/scenic roads
- LOS D on rural developed area roads
- LOS D on urban developed area roads
- LOS D for signalized intersections
- LOS E may be acceptable during peak periods in urban areas, not to exceed four hours per day

TRPA currently has no adopted standard for unsignalized intersections.

Tahoe City Community Plan

For intersections and roadway segments within the Tahoe City Community Plan area, the Transportation Objectives and Policies section states:

> The LOS on major roadways (i.e., arterial and collector routes) shall be LOS D, and signalized intersections shall be at LOS D. (LOS “E” may be acceptable during peak periods, not to exceed 4 hours per day.)

West Shore Area General Plan

The Circulation Element of the West Shore Area General Plan states:

Strive to maintain a Level of Service D or better conditions on the Plan area roadways. Due to the high degree of peak recreation travel through the area, LOS E may be acceptable during peak periods, not to exceed 4 hours per day.

Caltrans Guide for Preparation of Traffic Impact Studies

Caltrans Guide for Preparation of Traffic Impact Studies states:

> "Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE (measures of effectiveness) should be maintained."

Caltrans District 3

For roadways and intersections in California, Caltrans District 3 considers the following to be significant project impacts:

- Deterioration of State highway or intersection LOS beyond LOS D.

Caltrans has prepared Transportation Concept Reports (TCR) for each State Route (SR). The TCR defines existing level of service by segment and provides the concept (target) level of service by segment. The SR 89 TCR (Caltrans District 3, August 2001) and the SR 28 TCR (Caltrans District 3, July 2004) identify the following existing and concept level of service for segments within the Project area:

- SR 89 – Just South of Camp Richardson to the Placer County/El Dorado County Line: Existing LOS D; 20 year Concept LOS D
- SR 89 – Placer County/El Dorado County Line to the Y in Tahoe City: Existing LOS F; 20 year Concept LOS F.
- SR 89 – Y in Tahoe City to Placer County/Nevada County Line: Existing LOS F; 20 year Concept LOS F.
- SR 28 – Y in Tahoe City to Estates Drive in Tahoe Vista: Existing LOS E; 20 year Concept LOS F.

Placer County

Placer County requires LOS C on rural and urban/suburban roadways, except within 0.5 mile of State highways where the standard is LOS D, as stated in the Placer County General Plan.

11.2.3 Air Quality and Vehicle Miles of Travel

VMT is a computed value, which correlates to the extent of an area's reliance on private automobile for trip-making. The TRPA transportation model forecasts the number of trips made on the highway network and the distance between trip origins and destinations for each trip purpose. Total VMT is the sum of all these trip lengths. VMT is often used to estimate vehicle emissions and impacts to air quality.

TRPA Thresholds Evaluation Report Standards

The 2006 Threshold Evaluation Report (TRPA) includes the following two air quality management threshold standards that relate to transportation facilities in the Region: 1) a reduction in VMT by 10% from the 1981 base year conditions to reduce nitrate deposition, and 2) a reduction in VMT by 10% from 1981 base year conditions to improve visibility.

The Tahoe Metropolitan Planning Organization (TMPO) "utilizes a new GIS-based traffic model package (TransCAD) that began development in 2004. The model utilizes an activity-based model that was informed by an extensive travel survey that collected household travel data as well as travel diary information from over 1,200 households. The survey effort focused on residents, overnight-visitors, and day-visitors within the summer and winter months to capture seasonality patterns" (Mobility 2030).

Previously, an older, less detailed TranPlan model was used to calculate VMT based the number of trips made on the highway network and the distance between trip origins and trip destinations. Based on the previous travel demand model, TRPA's assessment of VMT indicates that the 1981 level of 1,648,466 VMT on a peak summer day decreased by approximately 4% to 1,580,000 in 2004. To attain the desired 10% reduction, a target of 1,483,619 VMT, based on the original model, must be attained.

TRPA's "new TransCAD model is based on an expanded and more complex street network than the old TranPlan model. For that reason, the new model results are not directly comparable to the old model and should be considered a worse case VMT analysis. Future forecasts will be made using the new model, but comparisons to past VMT estimates must be made using an updated method to the old model. Using actual traffic counts to update previous estimates, VMT has been estimated to have decreased by 6.5% from 1981 levels" (Mobility 2030).

TRPA Code of Ordinances

The TRPA Code of Ordinances – Chapter 93 implements TRPA's Air Quality Plan. The TRPA Code of Ordinances states that a "significant increase" is an increase of more than 200 daily vehicle trips, a "minor increase" is an increase of 100 to 200 daily vehicle trips, and an "insignificant increase" is an increase of less than 100 daily trips. If a project results in a significant increase in daily vehicle trips, all traffic and air quality impacts must be mitigated consistent with the environmental thresholds, the Goals and Policies, the Regional Transportation Plan and the 1992 Air Quality Plan.

11.2.4 Project Access and Circulations Standards

TRPA Standards

Mobility 2030 states that driveways shall be designed and sited to minimize impacts to regional traffic flow and safety, as well as on public transportation, adjacent roadways and intersections,

and bicycle and pedestrian facilities. Limiting or controlling access to major regional travel routes and major local roadways shall reduce traffic conflicts.

11.2.5 Bicycle and Pedestrian Circulation

TRPA Standards

The goal of Mobility 2030 is to promote redevelopment that encourages walking, bicycling, and easy access to transit.

Mobility 2030 also states that intersections and driveways shall be designed and sited to minimize impacts on public transportation, adjacent roadways and intersections, and conflicts with bicycle and pedestrian facilities. Bicycle and pedestrian linkages shall be provided between residential and non-residential areas.

Placer County

The goal of the Placer County 2027 Regional Transportation Plan is to promote a safe, convenient, and efficient non-motorized transportation system, for bicyclists, pedestrians, and users of low speed vehicles, as part of a balanced overall transportation system.

The Placer County General Plan states that the County will continue to require developers to finance and install pedestrian walkways, equestrian trail, and multi-purpose paths in new developments, as appropriate.

West Shore Area General Plan

The Circulation Element of the West Shoure Area General Plan states:

Pedestrian and bicycle facilities/amenities shall be encouraged where appropriate.

11.2.6 Transit Access

TRPA Standards

Mobility 2030 actively encourages the development and implementation of services and programs to expand the operation and use of environmentally conscious public transit in the Lake Tahoe region. Public or private mass transit shall be given preference in mitigating traffic and transportation related impacts for new projects or redevelopment areas.

Mobility 2030 also states that transit service shall be provided to major summer and winter recreational areas, and the expansion of private and public transit excursion services shall be encouraged in the region.

Placer County

The goal of the Placer County 2027 Regional Transportation Plan is to provide effective, convenient, regionally and locally coordinated transit service that connects residential areas with employment centers, serves key activity centers and facilities, and offers a viable option to the drive-alone commute.

The Placer County General Plan states that the County shall require development of transit services by ski resorts and other recreational providers in the Sierra to meet existing and future recreational demand.

The County shall also, where appropriate, require new development to provide sheltered public transit stops, with turnouts.

11.2.7 Construction Traffic

TRPA Standards

Construction activity may result in a significant impact if it generates traffic above that which will be generated under normal operation. If construction traffic exceeds traffic generated in the normal operating condition, LOS must be analyzed for the construction condition. Site grading in the Lake Tahoe basin is strictly regulated by TRPA Code of Ordinances, Chapter 64, and not allowed during the winter season from October 15 to May 1. Construction activity is a temporary condition and will not permanently affect the environmental setting.

11.2.8 Parking Requirements

TRPA Standards

TRPA's *Mobility 2030* expresses the desire for parking to be screened from street view (behind structures) and structured within buildings below grade. In addition, the Parking Goal is to "develop parking management strategies for the Lake Tahoe region, including minimum/maximum parking standards, shared parking, bicycle parking, among others.

Placer County

The Placer County General Plan states that new developments shall be required to provide off-street parking, either on-site or in consolidated lots or structures. The County supports the development of parking areas near access to hiking and equestrian trails.

11.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

Based on the environmental thresholds, standards, and transportation related criteria of the TRPA, Caltrans, and Placer County, Table 11-8 presents the evaluation criteria and significance thresholds used to analyze the Project. An impact is considered significant if conditions presented in Table 11-8 are met or exceeded.

Table 11-8

Evaluation Criteria with Point of Significance – Transportation, Parking and Circulation

Evaluation Criteria	Significance Threshold	Justification
TRANS-1. Will the Project result in generation of 200 or more new Daily Vehicle Trip Ends (DVTE)?	An increase of 200 or more new daily vehicle trips	TRPA Code of Ordinances – Chapter 93; TRPA Initial Environmental Checklist II-13a
TRANS-2. Will the Project result in changes to existing parking facilities, or demand for new parking?	a) Unsightly visual predominance of parking lots and asphalt b) Parking management that does not recognize minimum and maximum parking standards, shared parking between uses, handicapped-disabled parking, bicycle parking and the implementation of localized parking management programs that focus on transit, bicycle, and pedestrian improvements c) Adequate off-street parking not provided either on-site or in consolidated lots or structures based on Placer County minimum requirements for project land uses	a) TRPA Initial Environmental Checklist II-13b b) TRPA Mobility 2030 c) Placer County Code Chapter 17, Zoning
TRANS-3. Will the Project result in a substantial impact upon the existing transportation systems, including roadways and intersections?	Signalized and Unsignalized Intersections: a) Deterioration of LOS to unacceptable levels (LOS E for more than 4 hours during peak travel periods or LOS F). b) If an intersection is already operating unacceptably, any increase in delay is unacceptable and the intersection must be mitigated to the 'before project' level c) Vehicle queues at intersections that exceed existing turn lane storage	a and b) TRPA Regional Plan, Goals and Policies, Chapter 3; TCCP, Chapter 3; Caltrans District 3; TRPA Initial Environmental Checklist II-13c; CEQA Appendix G Checklist XVI (a, b); Placer County General Plan Chapter 3, West Shore Area General Plan c) Caltrans, District 3
TRANS-4. Will the Project result in a substantial impact upon the existing transportation systems, including transit facilities?	a) Creates impacts or delays to transit services b) Adequate transit not provided for major summer and winter recreational activities c) Transit service does not meet demand of ski resort d) Conflicts with adopted policies, plans, or programs supporting alternative transportation	a) TRPA Initial Environmental Checklist II-13c, e; TRPA Regional Plan, Goals and Policies, Chapter 3; CEQA Appendix G Checklist XVI (a) b) TRPA Mobility 2030 c) Placer County General Plan Chapter 3 d) CEQA Appendix G Checklist XVI (f)

Table 11-8

Evaluation Criteria with Point of Significance – Transportation, Parking and Circulation

Evaluation Criteria	Significance Threshold	Justification
TRANS-5. Will the Project result in a substantial impact upon the existing transportation systems, including bicycle or pedestrian facilities?	a) Creates conflicts between bicycles/pedestrians and vehicles b) Impedes planned bicycle and pedestrian plans c) Adequate pedestrian walkways and multi-purpose paths not provided	a and b) TRPA Mobility 2030; TRPA Initial Environmental Checklist II-13c; CEQA Appendix G Checklist XVI (f) c) Placer County General Plan Chapter 3
TRANS-6. Will the Project result in a temporary impact upon existing transportation systems due to construction traffic?	Construction related traffic causes unacceptable LOS at study intersections	CEQA Appendix G Checklist XVI (a)
TRANS-7. Will the Project result in alterations to the present patterns of circulation or movement of people and/or goods?	Driveway interference with regional traffic flow, safety, public transportation, adjacent roadways and intersections, and bicycle and pedestrian facilities	TRPA Mobility 2030; TRPA Initial Environmental Checklist II-13d
TRANS-8. Will the Project result in an increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?	a) Inadequate intersection and driveway design that causes impacts on public transportation, adjacent roadways and intersections, conflicts with bicycle and pedestrian facilities, traffic flow and safety b) Substantially increase hazards due to a design feature or incompatible uses c) Results in inadequate emergency access	a) TRPA Mobility 2030; Engineering standards, professional judgment b) CEQA Appendix G Checklist XVI (d) c) CEQA Appendix G Checklist XVI (e)

Source: Fehr & Peers 2009

11.4 PROJECT ANALYSIS METHODOLOGY

11.4.1 Summer Trip Generation

Summer Study Period

Typically, traffic volumes in the Lake Tahoe Basin are highest during the summer months. The Friday PM peak hour is usually selected for analysis, as it is generally when peak traffic volumes occur on the roadways. In addition, the TRPA regional transportation model evaluates traffic on a typical summer Friday.

Project (Alternative 1) Land Uses

The following land uses were included in the summer trip generation analysis of the Project (Alternative 1):

North Base

- Hotel - 75 rooms

  Accessory uses include: Meeting Space – 3,005 square feet (sf)

  Fitness Center/Spa –10,590 sf

  Restaurant – 1,800 sf

  Bar – 1,260 sf

- Condo/Hotel Rooms – 60 units (40 units, 20 2-bedroom units with lock-off units assumed to be 100% locked off)
- Penthouse Condos – 30 units
- Residential Condos – 36 units
- Fractional Condos (Timeshares) - 20 units
- Townhomes – 16 units
- Apartment (Workforce Housing – 2 bedroom units) – 13 units
- Retail – 25,000 sf (CFA)
- Miniature Golf Course – 12 holes
- North Base Lodge/Skier Services – 30,000 sf (winter only)
- Outdoor Amphitheater – 1,500 seats (special events only – infrequent use)

South Base

- Residential Condos – 99 units
- Skier Services – 2,000 sf (winter only)

Mid-Mountain

- Day Lodge – 15,000 sf (winter only)

Trip Generation Rates/Characteristics

Vehicle trips were generated for the Project area using trip generation rates from *Trip Generation, Eighth Edition* (Institute of Transportation Engineers (ITE), 2008) and the TRPA Trip Table (Tahoe Regional Planning Agency 2004).

A daily trip generation rate is not provided by TRPA or ITE for a Miniature Golf Course (summer only land use). It is a typical practice methodology to assume that the PM peak hour rate is 10% of the daily rate; therefore, this assumption was used to determine the daily trip generation rate for the Miniature Golf Course.

The ITE description of the hotel land use category includes accessory uses such as restaurants, cocktail lounges, meeting and banquet rooms or convention facilities, limited recreational

facilities (pool, fitness room), and/or other retail and service shops. Based on this definition, the restaurant, bar, meeting space, and fitness center/spa uses were included as accessory uses to the hotel for analysis purposes.

Analysis Methodology

Trip generation estimates for the Project area were developed through comprehensive evaluation of the variety of land uses within the resort, the internal interaction of these uses, and the interaction between the Project and the surrounding community. The assumptions and trip generation process are intended to provide a worst-case scenario evaluation of the Project (Alternative 1) trip generation.

The following steps were taken to develop summer trip generation estimates for the Project (Alternative 1):

- The first step to developing summer trip generation is to consider resort occupancy and the fluctuation or "turnover" of resort residents and guests. This study takes a conservative approach and assumes that 100% of the lodging units are occupied on peak weekends. Monday and Thursday occupancy rates are estimated at 50% with mid-week occupancies around 35%. Data collected by the Park City Chamber of Commerce (and referenced in the *Dyer Mountain Resort Transportation Impact Analysis*, Fehr & Peers, 2005) indicates that the length of a typical stay at a ski resort is 3 to 5 days, with most arrivals on Fridays and the majority of departures on Sundays. Based on this information, it was assumed that 50% of the lodging guests will arrive at the resort on Friday. To present a conservative analysis, it was further assumed that 50% of the lodging guests arriving on Friday (25% of the total lodging guests) will arrive during the PM peak hour. A trip generation rate of 1.5 vehicles per lodging unit was estimated, based on average parking rates for a Resort Hotel, Rental Townhouse, and Condominium in *Shared Parking, 2nd Edition* (Urban Land Institute, 2005). Note that the *Homewood Mountain Resort Parking Study* (LSC Transporation Consultants, 2011) provides an average parking demand of 1.2 spaces per hotel and condo-hotel lodging unit; therefore, the trip generation of 1.5 accounts for lodging guests arriving at the resort, as well as the potential for these guests to make an additional trip the same day that they arrive.
- Trips were generated for the remaining 50% of lodging units (not arriving on Friday) and the residential units using typical TRPA and ITE trip generation rates. Trips were also generated for the retail uses using these rates. Internal capture, pass-by trips, and transit trip reductions were applied as appropriate.
- The North Base Lodge, Mid-Mountain Day Lodge, and other skier services buildings are generally winter-only uses. Any summer operation of these uses is expected to be 100% internalized. The purpose of these uses is to accommodate skiers (in the winter) and resort guests.

Internal Capture

In a mixed-use development, it is expected that some trips will be made internally within the Project area. For example, people who live in the residential units on-site will travel to the retail

or restaurant uses, and then return home. Their trip making activity never ventures to the external roadway network. By applying an internal capture reduction rate to the overall trip generation, the number of estimated vehicle trips added to the surrounding roadway network is reduced.

The National Household Travel Survey was used as the basis for determining how the mix of land uses will interact with each other. The survey provides information about the type of trips people make from home. The survey results indicate that for residential uses 18% of trips are work related, 27% of trips are for social or recreational purposes, 45% of trips are for personal business (e.g. errands and shopping), and 10% are school or church related.

The residential land uses were analyzed using this breakdown of trip type, as well as the following assumptions:

Residential Units

- 18% - work/work-related
  - 25% of trips are made internally
  - 75% of trips are made externally
- 27% - recreational/social
  - 60% of trips are made internally (includes walking and bicycling recreational trips that occur within the Project area such as hiking or using the bicycle share program)
  - 40% of trips are made externally
- 45% - personal business
  - 40% of trips are made internally (includes trips to the on-site commercial/retail uses)
  - 60% of trips are made externally
- 10% - school or church related
  - 100% of trips are made externally

Total Internal Trip Reduction (Residential): 39%

Employee Housing Units

- 18% - work/work-related
  - 100% of trips are made internally
- 27% - recreational/social
  - 60% of trips are made internally (includes walking and bicycling recreational trips)
  - 40% of trips are made externally
- 45% - personal business
  - 40% of trips are made internally (includes trips to the on-site commercial/retail uses)
  - 60% of trips are made externally
- 10% - school or church related
  - 100% of trips are made externally

Total Internal Trip Reduction (Employee Housing): 52%

The lodging units were analyzed under the assumption that 50% of trips would be for social or recreational purposes, and 50% of trips would be for other personal business (e.g. shopping).

Lodging Units

- 50% - recreational/social (includes walking and bicycling trips)
    - 50% of trips are made internally (includes walking and bicycling on-site such as hiking or using the bicycle share program)
    - 50% of trips are made externally
- 50% - personal business
    - 40% of trips are made internally
    - 60% of trips are made externally

Total Internal Trip Reduction (Lodging): 45%

The internalized retail trips were determined based on the number of trips internalized by the residential and lodging units that go to the retail use. For example, 20% of the lodging trips are internal to the retail uses (50% of trips are made for personal business x 40% of personal business trips are internal). Therefore, the trips generated by the lodging units were multiplied by 20% to determine the number of internal trips to the retail uses.

The overall internal capture reduction for the Project (Alternative 1), during the Friday PM peak hour, is approximately 30%, which is lower than the above internal capture rates for the project land uses because the overall project trip generation includes the lodging guests arriving during the peak hour that do not have internal trips associated with them.

Alternative Modes of Travel

Alternative modes of travel are also considered when analyzing Project areas that are located near accessible bicycle and pedestrian paths and transit stops. Alternative mode reductions account for trips that are made by means other than a personal vehicle.

HMR is proposing to provide a shuttle service between Homewood and Tahoe City, a Dial-A-Ride service, a water taxi, and a free bike-share service during the summer season. The number of personal vehicle trips reduced by these services was calculated assuming an average vehicle occupancy of 1.82 for visitors, and 1.42 for residents, based on the TRPA travel demand model. The number of vehicle trips created by these travel modes was also calculated and accounted for in the trip generation analysis.

The HMR shuttle service will operate one bus, hourly from 7:00 AM to 11:00 PM (16 hours). Trips generated at the HMR driveways by the shuttle service (32 daily trips, 2 PM peak hour trips) were added to the trip generation estimates. The reduction in vehicle trips due to the operation of the shuttle service was also calculated and subtracted from the overall trip generation. Assuming a shuttle capacity of 12 passengers, 50% occupancy during the two peak hours (AM and PM), 25% occupancy during the 14 off-peak hours, and a visitor vehicle occupancy rate 1.82, it was estimated that daily vehicle trips will be reduced by 59, and PM peak hour trips will be reduced by 7.

A Dial-A-Ride service will be provided and will include the operation of three, 20-passenger buses. The service will be provided for 10 hours per day (8:00 AM to 6:00 PM). It is estimated that 1 roundtrip will be made each hour by each bus, creating 6 new peak hour trips, and 60 new daily trips on the roadways. Assuming each bus is 25% occupied (5 people per bus per trip), and an average vehicle occupancy rate of 1.82, the reduction in vehicle trips will include 165 daily trips and 16 PM peak hour trips.

The operation of a water taxi on Lake Tahoe will not produce additional vehicle trips on the roadway network, but will decrease vehicle trips during the daily and PM peak hour analysis periods. One water taxi, with a 25-passenger capacity, will operate hourly from 9:00 AM to 8:00 PM (11 hours). It is reasonable to assume that the taxi will be at least 50% occupied during the two peak hours (AM and PM), and 25% occupied during the 9 off-peak hours. Again, using a vehicle occupancy rate of 1.82 (based on the TRPA travel demand model), the reduction in daily vehicle trips will be 86, and the reduction in PM peak hour trips will be 13.

HMR will provide free bicycles for guests and residents, to borrow for up to a week at a time, through a bike-sharing program. The Project (Alternative 1) will also integrate a Tahoe City Public Utility District (TCPUD) bike path into the North Base area. Walking and bicycling trips created were accounted for in the internal capture analysis as residential to recreational, or lodging to recreational trips.

Pass-By

Pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination without a route diversion. For example, someone who regularly drives on SR 89 to go home from work stops at the retail use and then continues on their regular route would be considered a pass-by trip. No additional vehicle trips are added to the external roadway network.

The following pass-by rate, presented in Table 5.4 of the Trip Generation Handbook (ITE 2004), was used for the analysis:

- Shopping Center – 34%.

The pass-by rate is only applied to the shopping center use and not to any other use within the project.

Summer Trip Generation Summary

Tables 11-9 through 11-12 present summer trip generation summaries for the Project (Alternative 1) and Alternatives 3, 4, 5, and 6, including internal capture, mode splits, and pass-by reductions. Alternative 2 (No Project) will not include any changes to the existing Homewood Mountain Resort. The primary existing use at Homewood is a day-use ski resort with complimentary skier services buildings. The following special events occur during the summer months: Lake Tahoe Music Festival, outdoor wedding ceremonies, farmers' markets, outdoor arts and crafts fairs, and private parties.

Please see Appendix K-2 for the complete trip generation spreadsheets for each alternative.

Table 11-9

Proposed Project (Alternative 1) and Alternative 3 – Summer Trip Generation

Land Use (ITE Code)	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
North Base									
*50% of lodging guests arrive on Friday **									
Hotel	38 rooms	1.5	0.75	100%	0%	57	29	29	0
Condo/Hotel	30 rooms	1.5	0.75	100%	0%	45	23	23	0
Penthouse Condos	15 units	1.5	0.75	100%	0%	23	11	11	0
Timeshare	10 units	1.5	0.75	100%	0%	15	8	8	0
Remaining 50% of lodging units, all residential units, and retail use analyzed using typical TRPA and ITE trip generation rates									
Hotel (310)	37 rooms	8.92	0.7	49%	51%	330	26	13	13
Condo/Hotel (310)	30 rooms	8.92	0.7	49%	51%	268	21	10	11
Penthouse Condos (230)	15 units	5.86	0.52	67%	33%	88	8	5	3
Timeshare (265)	10 units	10.1	0.79	40%	60%	101	8	3	5
Residential Condos/ Townhomes (230)	52 units	5.86	0.52	67%	33%	305	27	18	9
Apartment (220)	13 units	6.72	0.62	65%	35%	87	8	5	3
Shopping Center (820)	25 ksf	42.94	3.75	48%	52%	1,074	95	45	49
Meeting Space	3.005 ksf	Accessory Use to Hotel							
Fitness Center/Spa	10.59 ksf	Accessory Use to Hotel							
Restaurant	1.80 ksf	Accessory Use to Hotel							
Bar	1.26 ksf	Accessory Use to Hotel							
Miniature Golf Course (431)	12 holes	3.30	0.33	33%	67%	40	4	1	3
South Base									
Residential Condos (230)	99 units	5.86	0.52	67%	33%	580	51	34	17
Total "Raw" Trip Generation						3,013	319	205	113
Internal Capture Trips						(-1,121)	(-94)	(-57)	(-39)
External Project Trips						1,892	225	148	74
Alternative Mode Trips						(-218)	(-31)	(-16)	(-15)
External Vehicle Trips						1,674	194	132	59
Pass-By Trips [4] (Shopping Center – 34%)						(-208)	(-18)	(-8)	(-11)
Total Net New External Roadway Trips						**1,466**	**176**	**124**	**48**

Source: Fehr & Peers 2009

Notes:
[1] ksf = 1,000 sf
[2] Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates.
[3] Numbers may differ slightly from the trip generation spreadsheet due to rounding.
[4] Pass-By trips were calculated after internal capture and alternative mode trips were subtracted from the total retail trips.

Table 11-10

Alternative 4 – Summer Trip Generation

Land Use (ITE Code)	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
North Base									
Single Family Residential (210)	8 units	10	1.01	63%	37%	80	8	5	3
Shopping Center (820)	15 ksf	42.94	3.75	48%	52%	644	56	27	29
South Base									
Single Family Residential (210)	8 units	10	1.01	63%	37%	80	8	5	3
Total "Raw" Trip Generation						804	72	37	35
Internal Capture Trips						(-82)	(-8)	(-5)	(-3)
External Project Trips						722	64	32	32
Alternative Mode Trips (5%)						(-36)	(-3)	(-2)	(-2)
External Vehicle Trips						686	61	30	30
Pass-By Trips [4] (Shopping Center – 34%)						(-196)	(-17)	(-8)	(-9)
Total Net New External Roadway Trips						**490**	**44**	**22**	**21**

Source: Fehr & Peers 2009

Notes:
[1] ksf = 1,000 sf
[2] Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates.
[3] Numbers may differ slightly from the trip generation spreadsheet due to rounding.
[4] Pass-By trips were calculated after internal capture and alternative mode trips were subtracted from the total retail trips.

Table 11-11

Alternative 5 – Summer Trip Generation

Land Use (ITE Code)	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
North Base									
*50% of lodging guests arrive on Friday **									
Hotel	38 rooms	1.5	0.75	100%	0%	57	29	29	0
Remaining 50% of lodging units, all residential units, and retail use analyzed using typical TRPA and ITE trip generation rates									
Hotel (310)	37 rooms	8.92	0.7	49%	51%	330	26	13	13
Residential Condos (230)	225 units	5.86	0.52	67%	33%	1,319	117	78	39
Shopping Center (820)	25 ksf	42.94	3.75	48%	52%	1,074	95	45	49
South Base									
Single Family Residential (210)	16 units	10	1.01	63%	37%	160	16	10	6
Total "Raw" Trip Generation						2,940	283	175	107
Internal Capture Trips						(-1,131)	(-99)	(-63)	(-36)
External Project Trips						1,809	184	112	71
Alternative Mode Trips						(-218)	(-31)	(-16)	(-15)
External Vehicle Trips						1,591	153	96	56
Pass-By Trips [4] (Shopping Center – 34%)						(-200)	(-17)	(-7)	(-11)
Total Net New External Roadway Trips						**1,391**	**136**	**89**	**45**

Source: Fehr & Peers 2009

Notes:
[1] ksf = 1,000 sf
[2] Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates.
[3] Numbers may differ slightly from the trip generation spreadsheet due to rounding.
[4] Pass-By trips were calculated after internal capture and alternative mode trips were subtracted from the total retail trips.

Following completion of trip generation modeling, Alternative 5 was modified to include 12 Employee Housing units that were not included in the original traffic analysis. As a result of the addition of 12 affordable housing units, Alternative 5 summer trip generation will increase by 25 daily trips and 2 Friday PM peak hour trips. This increase in trip generation over what is reported in Table 11-11 will not adversely affect operations at the study intersections.

Table 11-12

Alternative 6 – Summer Trip Generation

Land Use (ITE Code)	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
North Base									
*50% of lodging guests arrive on Friday **									
Hotel	25 rooms	1.5	0.75	100%	0%	38	19	19	0
Condo/Hotel	13 rooms	1.5	0.75	100%	0%	20	10	10	0
Remaining 50% of lodging units, all residential units, and retail use analyzed using typical TRPA and ITE trip generation rates									
Hotel (310)	25 rooms	8.92	0.7	49%	51%	223	18	9	9
Condo/Hotel (310)	12 rooms	8.92	0.7	49%	51%	107	8	4	4
Residential Condos (230)	145 units	5.86	0.52	67%	33%	850	75	50	25
Apartment (220)	12 units	6.72	0.62	65%	35%	81	8	5	3
Shopping Center (820)	25 ksf	42.94	3.75	48%	52%	1,074	95	45	49
South Base									
Residential Condos (230)	50 units	5.86	0.52	67%	33%	293	26	17	9
Single Family Residential (210)	14 units	10	1.01	63%	37%	140	14	9	5
Total "Raw" Trip Generation						2,826	273	168	104
Internal Capture Trips						(-1,071)	(-94)	(-60)	(-35)
External Project Trips						1,755	179	108	69
Alternative Mode Trips						(-218)	(-31)	(-16)	(-15)
External Vehicle Trips						1,537	148	92	54
Pass-By Trips [4] (Shopping Center – 34%)						(-206)	(-18)	(-7)	(-11)
Total Net New External Roadway Trips						**1,331**	**130**	**85**	**43**

Source: Fehr & Peers 2009

Notes:
[1] ksf = 1,000 sf
[2] Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates.
[3] Numbers may differ slightly from the trip generation spreadsheet due to rounding.
[4] Pass-By trips were calculated after internal capture and alternative mode trips were subtracted from the total retail trips.

11.4.2 Winter Trip Generation

Winter Study Period

Typically, traffic volumes in the Lake Tahoe Basin are highest during the summer months; therefore, traffic analysis is usually performed for the summer condition. However, the Project (Alternative 1) is a major winter trip generator due to the ski operation. Therefore, the winter trip generation was evaluated. Three winter study periods were considered for analysis of the Project – Friday, Saturday, and Sunday. Each study period was qualitatively evaluated to determine which period would result in the highest net new trip generation.

- Friday - The Friday PM peak hour is expected to have the biggest change in operations compared to existing conditions. Currently the resort is occupied by day skiers who arrive in the morning and leave in the afternoon/evening. The Project will include skier accommodations, residential and lodging units, and retail uses. These uses will change the distribution of vehicle trips in to and out of the Project area. Currently, the majority of vehicle trips exit the resort during the PM peak hour; however, with the Project, the day skiers will still leave at the end of the day, but a large portion of the lodging guests will arrive during the Friday PM peak hour.
- Saturday - The Project is expected to generate fewer trips than the existing HMR on Saturday. The number of day skier parking spaces will be reduced by approximately 55%. The ski resort is expected to be occupied primarily by resort guests and residents who will not generate new vehicle trips on Saturday, as they will already be at the resort. Additionally, the majority of hotel guests will likely arrive and leave, prior to and after, Saturday.
- Sunday – As mentioned, the number of day skier parking spaces will be reduced by approximately 55%, and the Project is expected to generate fewer vehicle trips due to the mix of attendees. Currently, all of the skiers are day skiers who leave the resort at the end of the day. With the Project, the smaller number of day skiers will still be leaving during the Sunday peak hour, as well as the people who are lodging at the Project area. The trip generation on a winter Sunday will be similar for the Project and the existing facility; therefore, the Project will not result in new trips to the roadway network.

Based on this qualitative assessment, Friday PM peak hour conditions were analyzed for winter conditions.

Assumed Accessory Uses

The ITE description of the hotel land use category includes accessory uses such as restaurants, cocktail lounges, meeting and banquet rooms or convention facilities, limited recreational facilities (pool, fitness room), and/or other retail and service shops; therefore, the restaurant, bar, meeting space, and fitness center/spa uses were included as accessory uses to the hotel for analysis purposes.

Project (Alternative 1) Land Uses

The following land uses were included in the winter trip generation analysis of the Project (Alternative 1):

North Base

- Hotel - 75 rooms
- Accessory uses include: Meeting Space – 3,005 sf
  Fitness Center/Spa –10,590 sf
  Restaurant – 1,800 sf
  Bar – 1,260 sf
- Condo/Hotel Rooms – 60 units (40 units, 20 with lock-offs)
- Penthouse Condos – 30 units
- Residential Condos – 36 units
- Fractional Condos (Timeshares) - 20 units
- Townhomes – 16 units
- Apartment (Workforce Housing) – 13 units
- Retail – 25,000 sf
- Miniature Golf Course – 12 holes (summer only)
- North Base Lodge/Skier Services – 30,000 sf
- Outdoor Amphitheater – 1,500 seats (summer only)
- Day Skier Parking – 400 spaces

South Base

- Residential Condos – 99 units
- Skier Services – 2,000 sf

Mid-Mountain

- Day Lodge – 15,000 sf

Trip Generation Rates/Characteristics

Vehicle trips were generated for the Project area using trip generation rates from *Trip Generation, Eighth Edition* (Institute of Transportation Engineers 2008) and the TRPA Trip Table (Tahoe Regional Planning Agency 2004).

Standard trip generation rates are not available for a destination ski resort; therefore, the foundation for winter season trip generation calculations in this analysis is resort occupancy, maximum carrying capacity of the mountain, the fluctuation or "turnover" of resort residents and guests, and trips generated by other land uses on the Project area.

The ITE description of the hotel land use category includes accessory uses such as restaurants, cocktail lounges, meeting and banquet rooms or convention facilities, limited recreational facilities (pool, fitness room), and/or other retail and service shops; therefore, the restaurant, bar, meeting space, and fitness center/spa uses were included as accessory uses to the hotel for analysis purposes.

Analysis Methodology

Winter trip generation estimates for the Project (Alternative 1) were developed through comprehensive evaluation of the variety of land uses within the Project area, the internal interaction of these uses, and the interaction between the Project and the surrounding community. Standard trip generation rates are not available for a destination ski resort, and therefore land use specific trip analysis considering internal trip making is necessary for the Project (Alternative 1).

The foundation for trip generation calculations in this analysis is resort occupancy, skier characteristics and accommodations, and the fluctuation or "turnover" of resort residents and guests. This study takes a conservative approach and assumes that 100% of the lodging units are occupied on peak weekends. Monday and Thursday occupancy rates are estimated at 50% with mid-week occupancies around 35%. Based on data collected by the Park City Chamber of Commerce, the length of a typical stay at a ski resort is 3 to 5 days, with most arrivals on Fridays and the majority of departures on Sundays.

The number of day skier parking spaces will be reduced to 400 (approximately 55% of existing). This indicates that the majority of skiers at the Project area will also be lodging at the resort, or residents on the property.

The following steps were taken to develop winter trip generation estimates for the Project (Alternative 1):

- Day skier trip generation was calculated assuming the 400 day skier parking spaces are fully occupied on a peak Friday. A daily trip generation rate of 2 was used to account for the entering trip and exiting trip made by each vehicle. The PM peak hour trip generation estimate was determined using driveway count data collected at the existing HMR site by a consultant hired by the project applicant (LSC Transportation Consultants) in 2006. (The driveway count data is provided in Appendix K2 and shown in Table 11-2.) The driveway count data indicates that 789 vehicles were parked in the day skier parking lot the day the counts were collected. During the PM peak hour 356 vehicles associated with day skiers parked on site during the day exited the parking lot. The PM peak hour trip generation rate used for the day skier parking lot was 0.45 (356 / 789 = 0.45). In addition, day skiers will be dropped-off in the morning and picked-up in the afternoon. Given current drop-off/pick-up activity at HMR, 100 day skiers (2 per vehicle) are assumed to be dropped-off/picked-up (i.e. during the morning 50 vehicles enter the site, drop off skiers, and leave the site and return in the afternoon to pick up the skiers).
- It is assumed that 50% of the lodging guests will arrive at the resort on Friday. To present a conservative analysis, it was further assumed that all 50% of the lodging guests will arrive during the PM peak hour. A trip generation rate of 1.5 trips per lodging unit was estimated, based on average parking rates for a Resort Hotel, Rental Townhouse, and Condominium in *Shared Parking, 2nd Edition* (Urban Land Institute, 2005). Note that the *Homewood Mountain Resort Parking Study* (LSC Transporation Consultants, 2011) provides an average parking demand of 1.2 spaces per hotel and condo-hotel lodging unit; therefore, the trip generation of 1.5 accounts for lodging guests arriving at the resort, as well as the potential for these guests to make an additional trip the same day that they arrive.

- Trips were generated for the remaining 50% of lodging units and the residential units using typical TRPA and ITE trip generation rates. Trips were generated for the retail uses using these rates.
- Trips generated by the North Base Lodge, Mid-Mountain Day Lodge, and other skier services buildings are expected to be 100% internalized. The purpose of these uses is to accommodate skiers and resort guests.
- The same methodology used for summer trip generation was used to determine the internal capture, alternative mode, and pass-by reductions for the winter analysis.

Internal Capture

The mix of land uses for the Project (Alternative 1) is expected to create internal trip making opportunities. The National Household Travel Survey was used as the basis for determining how the mix of land uses will interact with each other. The survey provides information about the type of trips people make from home. The survey results indicate that for residential uses 18% of trips are work related, 27% of trips are for social or recreational purposes, 45% of trips are for personal business (e.g. errands and shopping), and 10% are school or church related.

The residential land uses were analyzed using this breakdown of trip type, as well as the following assumptions:

Residential Units

- 18% - work/work-related
  - 25% of trips are made internally
  - 75% of trips are made externally
- 27% - recreational/social
  - 60% of trips are made internally (includes trips to the ski resort)
  - 40% of trips are made externally
- 45% - personal business
  - 40% of trips are made internally
  - 60% of trips are made externally
- 10% - school or church related
  - 100% of trips are made externally

Total Internal Trip Reduction (Residential): 39%

Employee Housing Units

- 18% - work/work-related
  - 100% of trips are made internally
- 27% - recreational/social (includes trips to the ski resort)
  - 60% of trips are made internally
  - 40% of trips are made externally
- 45% - personal business
  - 40% of trips are made internally

    - 60% of trips are made externally
- 10% - school or church related
    - 100% of trips are made externally

Total Internal Trip Reduction (Employee Housing): 52%

The lodging units were analyzed under the assumption that 50% of trips would be for social or recreational purposes, and 50% of trips would be for other personal business (e.g., shopping).

Lodging Units

- 50% - recreational/social
    - 70% of trips are made internally (includes trips to the ski resort)
    - 30% of trips are made externally
- 50% - personal business
    - 40% of trips are made internally
    - 60% of trips are made externally

Total Internal Trip Reduction (Lodging): 55%

The internalized retail trips were determined based on the number of trips internalized by the residential and lodging units that go to the retail use. For example, 20% of the lodging trips are internal to the retail uses (50% of trips are made for personal business x 40% of personal business trips are internal). Therefore, the trips generated by the lodging units were multiplied by 20% to determine the number of internal trips to the retail uses.

The overall internal capture reduction for the Project (Alternative 1), during the Friday PM peak hour, is approximately 18%, which is lower than the above internal capture rates for the project land uses because the overall project trip generation includes the lodging guests arriving during the PM peak hour and day skiers leaving during the PM peak hour that do not have internal trips associated with them.

Alternative Modes of Travel

HMR is proposing to provide alternative transportation modes to guests and residents, thereby reducing the number of personal vehicle trips created by the Project (Alternative 1)

HMR is proposing to provide a skier shuttle service and a Dial-A-Ride service during the winter season. The number of personal vehicle trips reduced by these services was calculated assuming an average vehicle occupancy (persons per vehicle) of 1.82 for visitors, and 1.42 for residents, based on the TRPA travel demand model. The number of vehicle trips created by these travel modes was also calculated and accounted for in the trip generation analysis.

The HMR shuttle service will operate one bus, hourly from 7:00 AM to 11:00 PM (16 hours). Trips generated at the HMR driveways by the shuttle service (32 daily trips, 2 PM peak hour trips) were added to the trip generation estimates. The reduction in vehicle trips due to the operation of the shuttle service was also calculated and subtracted from the overall trip generation. Assuming a shuttle capacity of 12 passengers, 50% occupancy during the two peak

hours (AM and PM), 25% occupancy during the 14 off-peak hours, and a visitor vehicle occupancy rate 1.82, it was estimated that daily vehicle trips will be reduced by 59, and PM peak hour trips will be reduced by 7.

A Dial-A-Ride service will be provided and will include the operation of up to ten, 20-passenger buses. The service will be provided for 10.5 hours per day (8:00 AM to 6:30 PM). It is estimated that 1 roundtrip will be made each hour by each operating bus, with all 10 buses in operation during the peak hours (AM and PM) and 5 buses in operation during the off-peak hours. The Dial-A-Ride buses will create 20 new peak hour trips, and 125 new daily trips on the roadways. Assuming each bus is 50% occupied during the two peak hours 25% occupied during the 8.5 off-peak hours, and an average vehicle occupancy rate of 1.82, the reduction in vehicle trips will include 453 daily trips and 110 PM peak hour trips.

Pass-By

Pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination without a route diversion. The following pass-by rate, presented in Table 5.4 of the Trip Generation Handbook (ITE, 2004), was used for the Project (Alternative 1).

- Shopping Center – 34%.

The pass-by rate is only applied to the shopping center use and not to any other use within the project.

Winter Trip Generation Summary

Tables 11-13 through 11-16 present winter trip generation summaries for the Project (Alternative 1) and Alternatives 3, 4, 5, and 6 including internal capture, alternative modes of travel, and pass-by reductions. Alternative 2 (No Project) will not include any changes to the existing Homewood Mountain Resort. The existing Homewood site consists of a day-use ski resort and complimentary skier services buildings such as a rental and repair shop, food service, and ticket sales. Based on information in Table 11-2, the existing Homewood Mountain Resort generates approximately 2,535 daily vehicle trips, and 472 PM peak hour trips. Please see the Appendix K-2 for the complete trip generation spreadsheets for each alternative.

Table 11-13

Project (Alternative 1) and Alternative 3 – Winter Trip Generation

Land Use	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
North Base									
*50% of lodging guests arrive on Friday**									
Hotel	38 rooms	1.5	0.75	100%	0%	57	29	29	0
Condo/Hotel	30 rooms	1.5	0.75	100%	0%	45	23	23	0
Penthouse Condos	15 units	1.5	0.75	100%	0%	23	11	11	0
Timeshare	10 units	1.5	0.75	100%	0%	15	8	8	0

Table 11-13

Project (Alternative 1) and Alternative 3 – Winter Trip Generation

Land Use	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
Remaining 50% of lodging units, all residential units, and retail use analyzed using typical TRPA and ITE trip generation rates									
Hotel (310)	37 rooms	8.92	0.70	49%	51%	330	26	13	13
Condo/Hotel (310)	30 rooms	8.92	0.70	49%	51%	268	21	10	11
Penthouse Condos (230)	15 units	5.86	0.52	67%	33%	88	8	5	3
Timeshare (265)	10 units	10.1	0.79	40%	60%	101	8	3	5
Residential Condos/ Townhomes (230)	52 units	5.86	0.52	67%	33%	305	27	18	9
Apartment (220)	13 units	6.72	0.62	65%	35%	87	8	5	3
Shopping Center (820)	25 ksf	42.94	3.75	48%	52%	1,074	95	45	49
Meeting Space	3.005 ksf	Accessory Use to Hotel							
Fitness Center/Spa	10.59 ksf	Accessory Use to Hotel							
Restaurant	1.80 ksf	Accessory Use to Hotel							
Bar	1.26 ksf	Accessory Use to Hotel							
Day Skier Parking	400 spaces	2.0	0.45	0%	100%	800	180	0	180
South Base									
Residential Condos	99 units	5.86	0.52	67%	33%	580	51	34	17
Skier Drop Off/ Pick Up	100 skiers (2 skiers per vehicle)	2	1	50%	50%	200	100	50	50
Total "Raw" Trip Generation						3,973	595	254	340
Internal Capture Trips						(-1,205)	(-102)	(-60)	(-42)
External Project Trips						*2,768*	*493*	*194*	*298*
Alternative Mode Trips						(-355)	(-95)	(-48)	(-47)
External Vehicle Trips						*2,413*	*398*	*146*	*251*
Pass-By Trips [4] (Shopping Center - 34%)						(-205)	(-18)	(-8)	(-11)
Total New Project Trips						**2,208**	**380**	**138**	**240**
Existing Homewood Volumes						(-2,535)	(-472)	(-115)	(-357)
Total Net New External Roadway Trips						**(-327)**	**(-92)**	**23**	**(-117)**

Source: Fehr & Peers 2009

Notes:
* An average of 1.5 vehicles per unit was assumed.
[1] ksf = 1,000 sf
[2] Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates.
[3] Numbers may differ slightly from the trip generation spreadsheet due to rounding.
[4] Pass-By trips were calculated after internal capture and alternative mode trips were subtracted from the total retail trips.

Table 11-14

Alternative 4 – Winter Trip Generation

Land Use (ITE Code)	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
North Base									
Single Family Residential (210)	8 units	10	1.01	63%	37%	80	8	5	3
Shopping Center (820)	15 ksf	42.94	3.75	48%	52%	644	56	27	29
South Base									
Single Family Residential (210)	8 units	10	1.01	63%	37%	80	8	5	3
Total "Raw" Trip Generation						804	72	37	35
Internal Capture Trips						(-82)	(-8)	(-5)	(-3)
External Project Trips						722	64	32	32
Alternative Mode Trips (5%)						(-36)	(-3)	(-2)	(-2)
External Vehicle Trips						686	61	30	30
Pass-By Trips[4] (Shopping Center – 34%)						(-196)	(-17)	(-8)	(-9)
Total Net New External Roadway Trips						**490**	**44**	**22**	**21**
Existing Homewood Volumes						(-2,535)	(-472)	(-115)	(-357)
Total Net New External Roadway Trips						**(-2,045)**	**(-428)**	**(-93)**	**(-336)**

Source: Fehr & Peers 2009

Notes:
[1] ksf = 1,000 sf
[2] Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates. The casino rate was developed based on other studies.
[3] Numbers may differ slightly from the trip generation spreadsheet due to rounding.
[4] Pass-By trips were calculated after internal capture and alternative mode trips were subtracted from the total retail trips.

Table 11-15

Alternative 5 – Winter Trip Generation

Land Use (ITE Code)	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
North Base									
*50% of lodging guests arrive on Friday **									
Hotel	38 rooms	1.5	0.75	100%	0%	57	29	29	0
Remaining 50% of lodging units, all residential units, and retail use analyzed using typical TRPA and ITE trip generation rates									
Hotel (310)	37 rooms	8.92	0.7	49%	51%	330	26	13	13
Residential Condos (230)	225 units	5.86	0.52	67%	33%	1,319	117	78	39
Apartment (220)	12 units	6.72	0.62	65%	35%	81	7	5	3
Shopping Center (820)	25 ksf	42.94	3.75	48%	52%	1,074	95	45	49
Skier Parking Spaces	400 spaces	2.0	0.45	0%	100%	800	180	0	180
South Base									
Single Family Residential (210)	16 units	10	1.01	63%	37%	160	16	10	6
Skier Drop Off/ Pick Up	100 skiers (2 skiers per vehicle)	2	1	50%	50%	200	100	50	50
Total "Raw" Trip Generation						4,021	570	230	340
Internal Capture Trips						(-1,225)	(-108)	(-68)	(-40)
External Project Trips						2,796	462	162	300
Alternative Mode Trips						(-355)	(-95)	(-48)	(-47)
External Vehicle Trips						2,441	367	114	253
Pass-By Trips [4] (Shopping Center – 34%)						(-192)	(-17)	(-6)	(-10)
Total External Roadway Trips						**2,249**	**350**	**108**	**243**
Existing Homewood Volumes						(-2,535)	(-472)	(-115)	(-357)
Total Net New External Roadway Trips						**(-286)**	**(-122)**	**(-7)**	**(-114)**

Source: Fehr & Peers 2009

Notes:
[1] ksf = 1,000 sf
[2] Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates. The casino rate was developed based on other studies.
[3] Numbers may differ slightly from the trip generation spreadsheet due to rounding.
[4] Pass-By trips were calculated after internal capture and alternative mode trips were subtracted from the total retail trips.

Table 11-16

Alternative 6 – Winter Trip Generation

Land Use (ITE Code)	Density[1]	Rates[2]				Trips[3]			
		Daily	PM	PM In	PM Out	Daily	PM	PM In	PM Out
North Base									
*50% of lodging guests arrive on Friday **									
Hotel	25 rooms	1.5	0.75	100%	0%	38	19	19	0
Condo/Hotel	13 rooms	1.5	0.75	100%	0%	20	10	10	0
Remaining 50% of lodging units, all residential units, and retail use analyzed using typical TRPA and ITE trip generation rates									
Hotel (310)	25 rooms	8.92	0.7	49%	51%	223	18	9	9
Condo/Hotel (310)	12 rooms	8.92	0.7	49%	51%	107	8	4	4
Residential Condos (230)	145 units	5.86	0.52	67%	33%	850	75	50	25
Apartment (220)	12 units	6.72	0.62	65%	35%	81	8	5	3
Shopping Center (820)	25 ksf	42.94	3.75	48%	52%	1,074	95	45	49
Skier Parking Spaces	400 spaces	2.0	0.45	0%	100%	800	180	0	180
South Base									
Residential Condos (230)	50 units	5.86	0.52	67%	33%	293	26	17	9
Single Family Residential (210)	14 units	10	1.01	63%	37%	140	14	9	5
Skier Drop Off/ Pick Up	100 skiers (2 skiers per vehicle)	2	1	50%	50%	200	100	50	50
Total "Raw" Trip Generation						3,826	553	218	334
Internal Capture Trips						(-1,085)	(-95)	(-60)	(-35)
External Project Trips						2,741	458	158	299
Alternative Mode Trips						(-355)	(-95)	(-48)	(-47)
External Vehicle Trips						2,386	363	110	252
Pass-By Trips [4] (Shopping Center – 34%)						(-211)	(-18)	(-7)	(-11)
Total Net New External Roadway Trips						**2,175**	**345**	**103**	**241**
Existing Homewood Volumes						(-2,535)	(-472)	(-115)	(-357)
Total Net New External Roadway Trips						**(-360)**	**(-127)**	**(-12)**	**(-116)**

Source: Fehr & Peers 2009

Notes:

[1] ksf = 1,000 sf

[2] Daily rates are from the TRPA Trip Table and PM rates are from ITE. ITE Daily rates were used where the TRPA Trip Table did not provide rates. The casino rate was developed based on other studies.

[3] Numbers may differ slightly from the trip generation spreadsheet due to rounding.

[4] Pass-By trips were calculated after internal capture and alternative mode trips were subtracted from the total retail trips.

Following completion of trip generation modeling, Alternative 5 was modified to include 12 Employee Housing units that were not included in the original traffic analysis. As a result of the addition of 12 affordable housing units, Alternative 5 winter trip generation will increase by 25 daily trips and 3 Friday PM peak hour trips. This increase in trip generation over what is reported in Table 11-15 will not adversely affect operations at the study intersections

11.4.3 Total Trip Generation Summary

Table 11-17 outlines the trip generation totals, a summary of summer and winter trip generation, for the Project (Alternative 1) and Alternatives 3, 4, 5, and 6.

Table 11-17

Project Alternatives Trip Generation Summary

Trip Generation	Alternative				
	1	3	4	5	6
Summer					
"Raw" Daily Project Trip Generation	3,013	3,013	804	2,940	2,826
Daily Internal Capture and Alternative Mode Trips	(-1,339)	(-1,339)	(-118)	(-1,349)	(-1,289)
Daily Pass-By Trips	(-208)	(-208)	(-196)	(-200)	(-206)
Net New External Daily Project Trips	**1,466**	**1,466**	**490**	**1,391**	**1,331**
"Raw" PM Peak Project Trip Generation	319	319	72	283	273
PM Peak Internal Capture and Alternative Mode Trips	(-125)	(-125)	(-11)	(-130)	(-125)
PM Peak Pass-By Trips	(-18)	(-18)	(-17)	(-17)	(-18)
Net New External PM Peak Project Trips	**176**	**176**	**44**	**136**	**130**
Winter					
"Raw" Daily Project Trip Generation	3,973	3,973	804	4,021	3,826
Daily Internal Capture and Alternative Mode Trips	(-1,560)	(-1,560)	(-118)	(-1,580)	(-1,440)
Daily Pass-By Trips	(-205)	(-205)	(-196)	(-192)	(-211)
Net New Project Trips	*2,208*	*2,208*	*490*	*2,249*	*2,175*
Existing Daily Homewood Trip Generation	(-2,535)	(-2,535)	(-2,535)	(-2,535)	(-2,535)
Net New External Daily Project Trips	**(-327)**	**(-327)**	**(-2,045)**	**(-286)**	**(-360)**
"Raw" PM Peak Project Trip Generation	595	595	72	570	553
PM Peak Internal Capture and Alternative Mode Trips	(-197)	(-197)	(-11)	(-203)	(-190)
PM Peak Pass-By Trips	(-18)	(-18)	(-17)	(-17)	(-18)
Net New External PM Peak Project Trips	*380*	*380*	*44*	*350*	*345*
Existing PM Peak Homewood Trip Generation	(-472)	(-472)	(-472)	(-472)	(-472)
Net New External PM Peak Project Trips	**(-92)**	**(-92)**	**(-428)**	**(-122)**	**(-127)**

. Source: Fehr & Peers 2009

Notes: Detailed trip generation spreadsheets for Alternatives 1, 3, 4, 5, and 6 are provided in Tables 11-9 to 11-16.

11.4.4 Trip Distribution

Vehicle trips generated by the Project (Alternative 1) were distributed to the roadway network based on travel patterns in the study area and locations of complementary land uses. Based on the types of land uses, it was assumed that the different land uses would have different trip distribution patterns. The locations of complimentary land uses, including existing households and recreational/tourist opportunities were evaluated. Aerial photography and US Census data was used to determine the locations and densities of households near Homewood (primarily for the purposes of determining the trip distribution for the commercial/retail uses). Seasonal variations in trip distribution patterns were also evaluated based on weather and road conditions in the area. The trip distribution for the Project (Alternative 1) land uses during the summer and winter is described below:

Summer

Residential/Lodging Units (filled prior to the Friday PM peak hour)

- 35% enter/exit from/to the south on SR 89
- 5% enter/exit from/to the north on SR 89 between Homewood and Tahoe City
- 60% enter/exit from/to the north on SR 89
    - 40% enter/exit from/to the west on SR 89
    - 60% enter/exit from/to the east on SR 28

  This directional split is based on the location of land uses that are desirable to guests staying in the lodging units. Most trips by resort guests during the PM peak hour are assumed to be recreational based (to beaches, trails, retail, restaurants, etc.). Many of these uses are on SR 28 (in Tahoe City, Kings Beach, Tahoe Vista, etc.). The destinations that would be accessed via SR 89 are Truckee and Squaw Valley.

Commercial/Retail

- 60% enter/exit from/to the south on SR 89
- 35% enter/exit from/to the north on SR 89 between Homewood and Tahoe City
- 5% enter/exit from/to the north on SR 89 (Tahoe City)

Lodging Guests Arriving on Friday

- 35% enter/exit from/to the south on SR 89
- 65% enter/exit from/to the north on SR 89
    - 80% enter/exit from/to the west on SR 89
    - 20% enter/exit from/to the east on SR 28

Winter

Residential/Lodging Units (filled prior to the Friday PM peak hour)

- 10% enter/exit from/to the south on SR 89

- 5% enter/exit from/to the north on SR 89 between Homewood and Tahoe City
- 85% enter/exit from/to the north on SR 89
    - 40% enter/exit from/to the west on SR 89
    - 60% enter/exit from/to the east on SR 28

Commercial/Retail

- 60% enter/exit from/to the south on SR 89
- 35% enter/exit from/to the north on SR 89 between Homewood and Tahoe City
- 5% enter/exit from/to the north on SR 89 (Tahoe City)

Lodging Guests Arriving on Friday

- 10% enter/exit from/to the south on SR 89
- 90% enter/exit from/to the north on SR 89
    - 80% enter/exit from/to the west on SR 89
    - 20% enter/exit from/to the east on SR 28

Day Skiers

- 25% enter/exit from/to the south on SR 89
- 60% enter/exit from/to the north on SR 89 between Homewood and Tahoe City
- 15% enter/exit from/to the north on SR 89
    - 25% enter/exit from/to the west on SR 89
    - 75% enter/exit from/to the east on SR 28

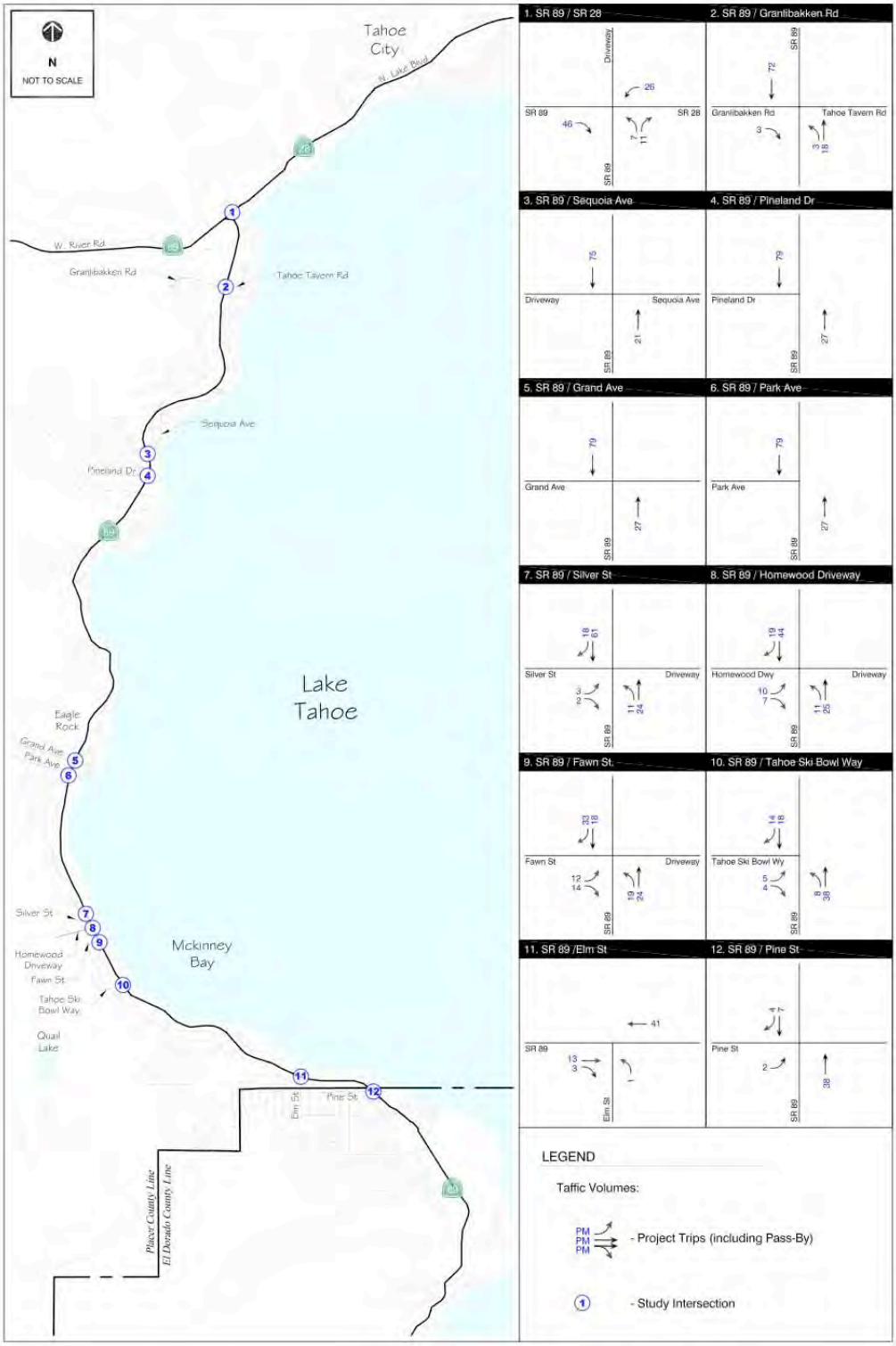
The proposed project caters primarily to skiers staying at the resort, not day skiers. Therefore, since the day skiing is not the main use, it was assumed that the majority of day skiers will be locals who know the mountain and can easily get to the resort.

Vehicle trips entering and exiting the driveway access points of the Project area were distributed based on the locations of the land uses and parking facilities on site.

Part of the Project area commercial use will include a grocery store and potentially a hardware store; therefore, the existing traffic volumes were adjusted to account for residents who currently shop in Tahoe City that will change their patterns to shop at Homewood instead. This effect will reduce vehicle trips on SR 89 south of SR 28 by 20 during the PM peak hour for the Project.

Figures 11-7 through 11-10 show the summer project trips at the study intersections for Alternatives 1, 3, 4, 5, and 6. Figures 11-11 through 11-14 show the winter project trips at the study intersection for Alternatives 1, 3, 4, 5, and 6.

Figure 11-7. Alternatives 1 and 3 Summer Project Trips (including Pass-By)



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Homewood Moutain Resort Master Plan
Alternatives 1 and 3 Summer Project Trips (including Pass-By)
Figure 11-7

Figure 11-8. Alternative 4 Summer Project Trips (including Pass-By)

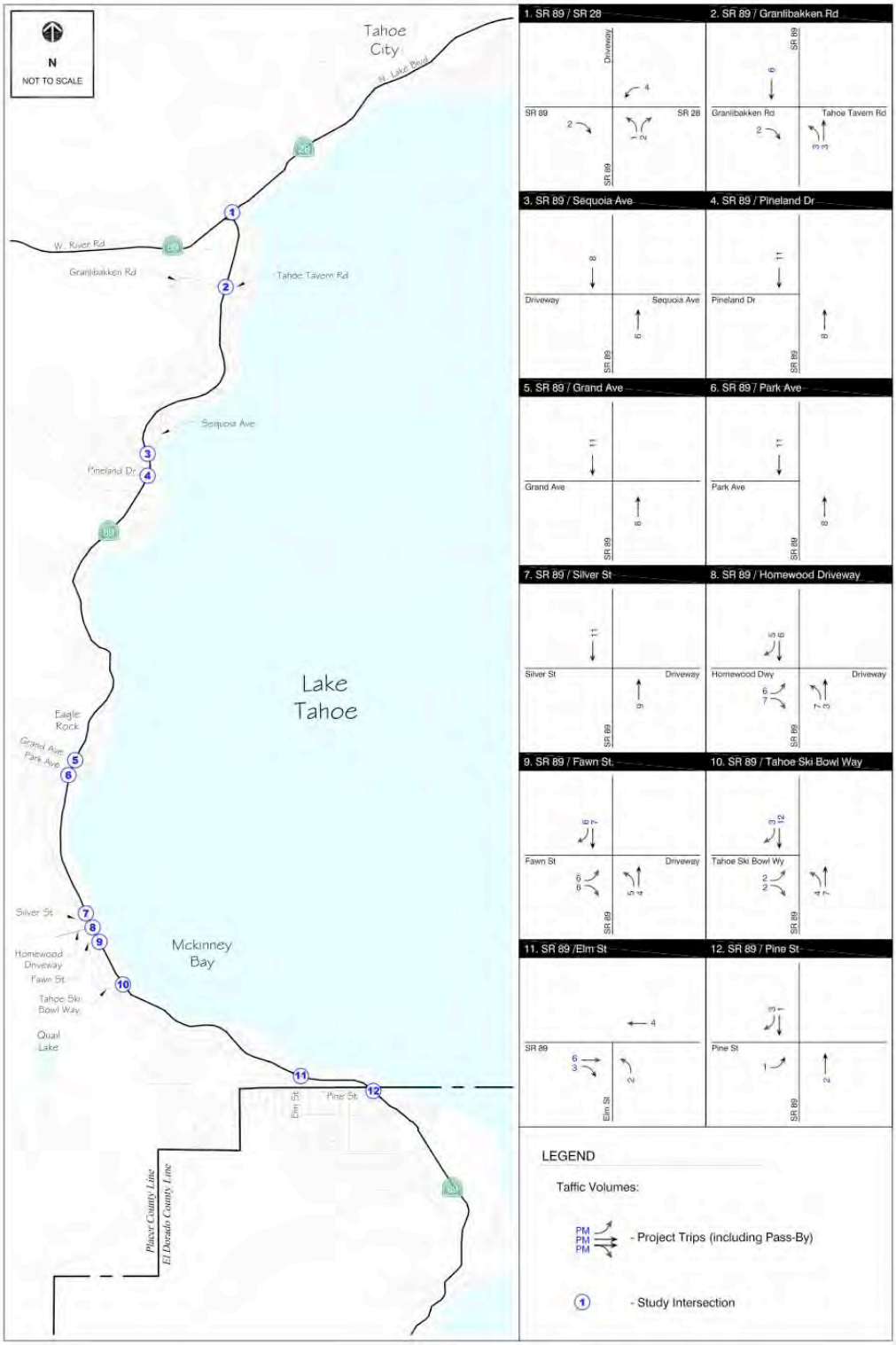
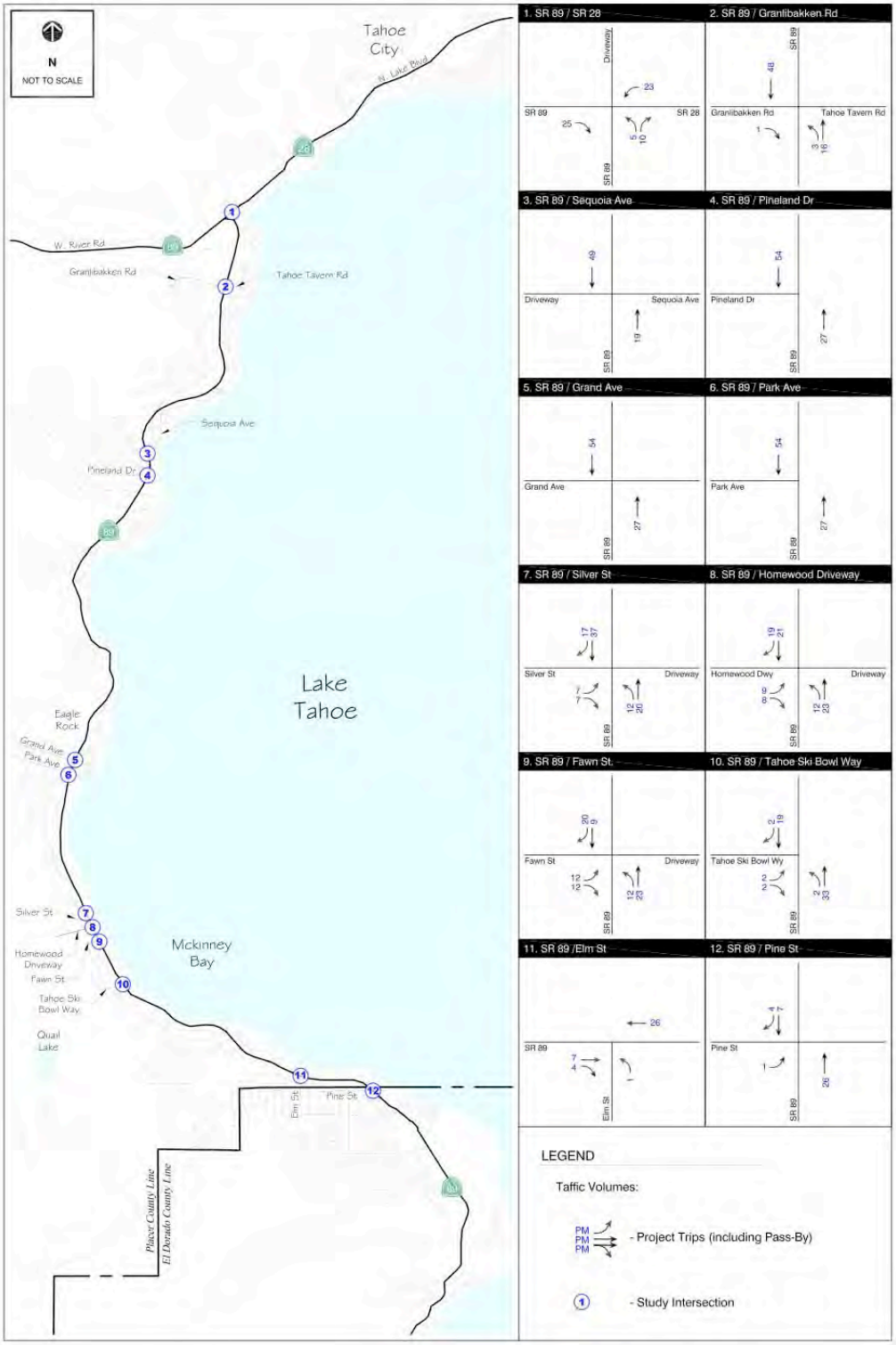


Figure 11-9. Alternative 5 Summer Project Trips (including Pass-By)



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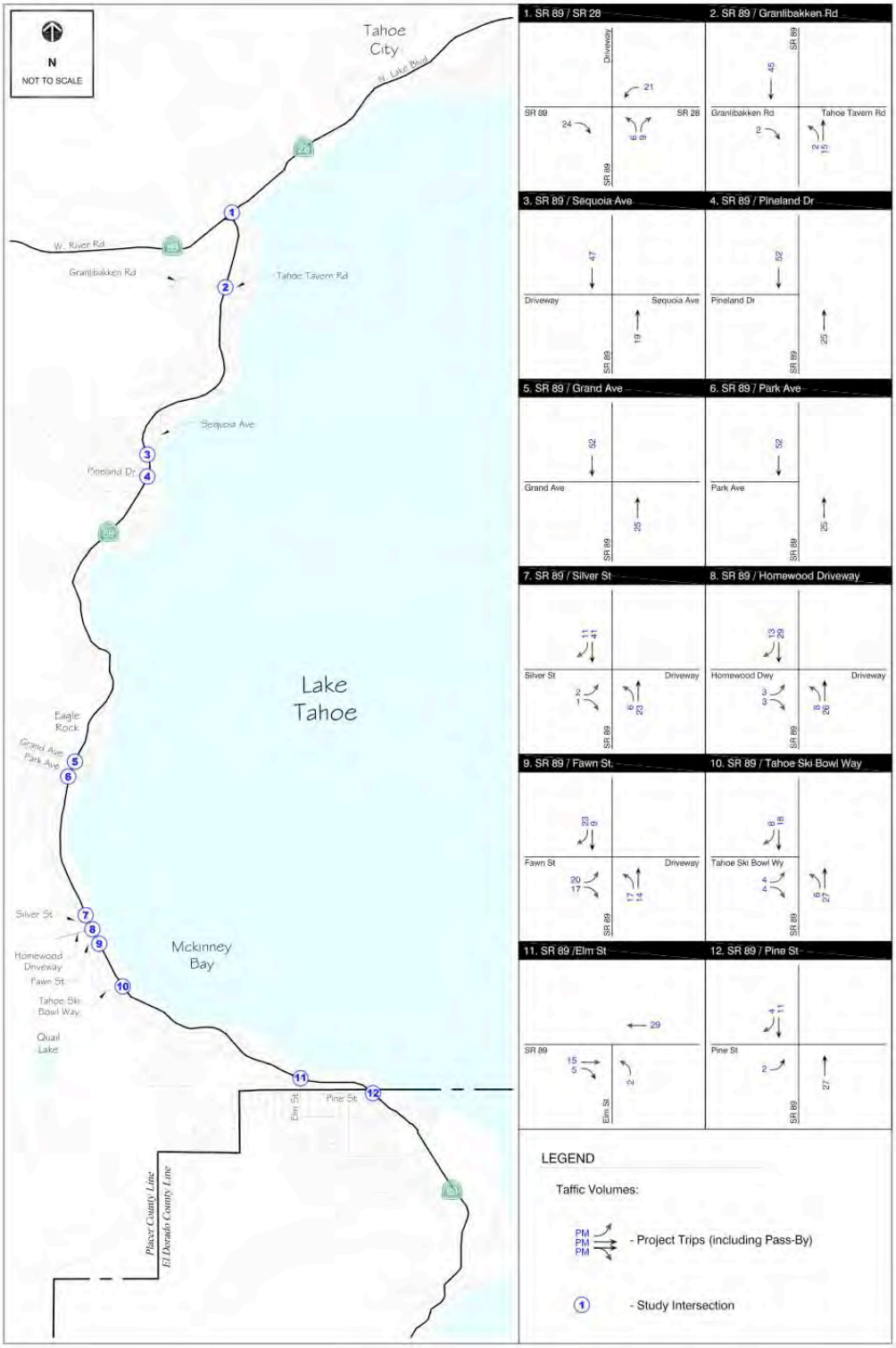
Homewood Moutain Resort Master Plan
Alternative 5 Summer Project Trips (including Pass-By)
Figure 11-9

Figure 11-10. Alternative 6 Summer Project Trips (including Pass-By)



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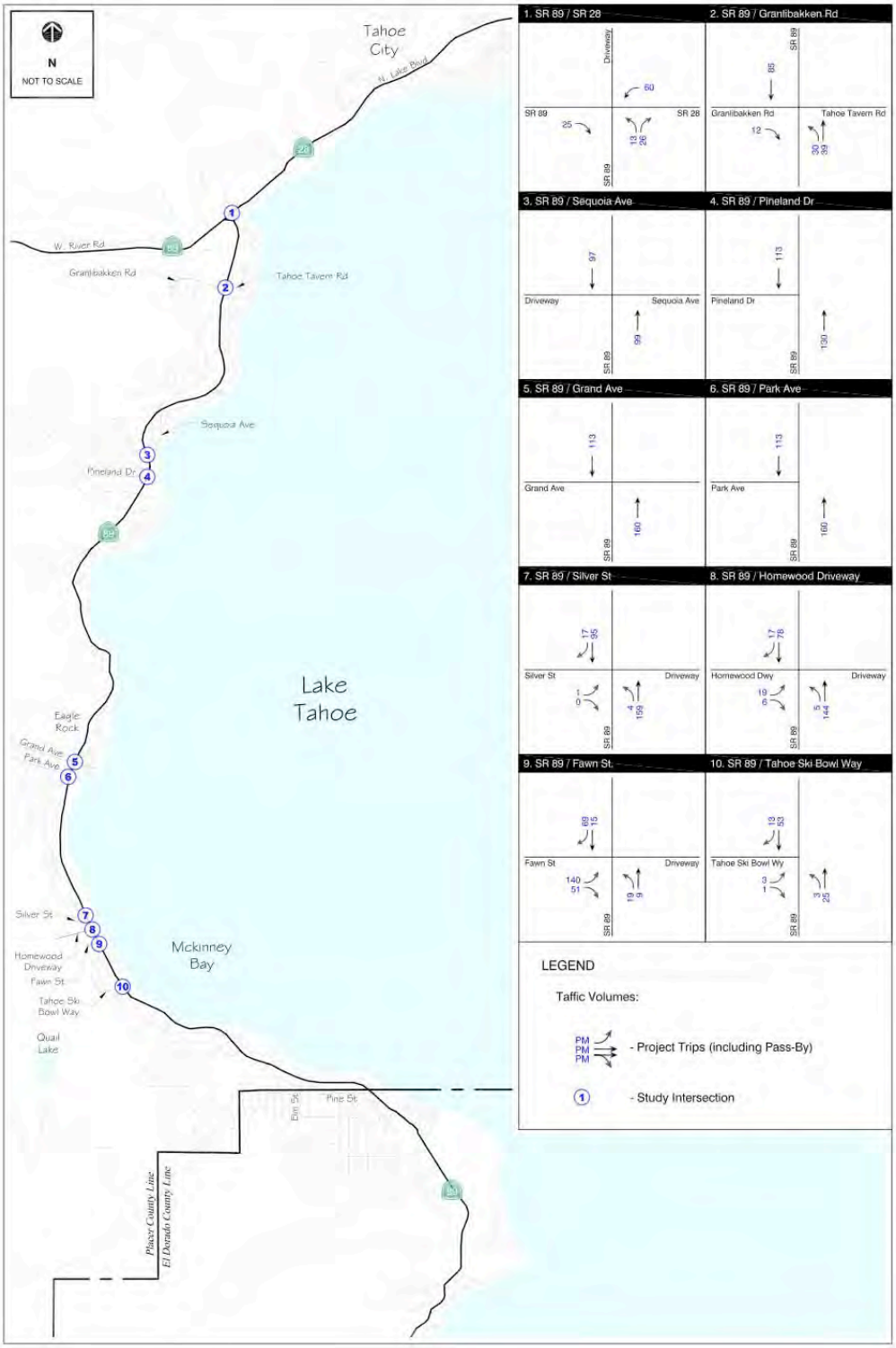
Homewood Moutain Resort Master Plan
Alternative 6 Summer Project Trips (including Pass-By)
Figure 11-10

Figure 11-11. Alternatives 1 and 3 Winter Project Trips (including Pass-By)



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Homewood Moutain Resort Master Plan
Alternatives 1 and 3 Winter Project Trips (including Pass-By)
Figure 11-11

Figure 11-12. Alternative 4 Winter Project Trips (including Pass-By)

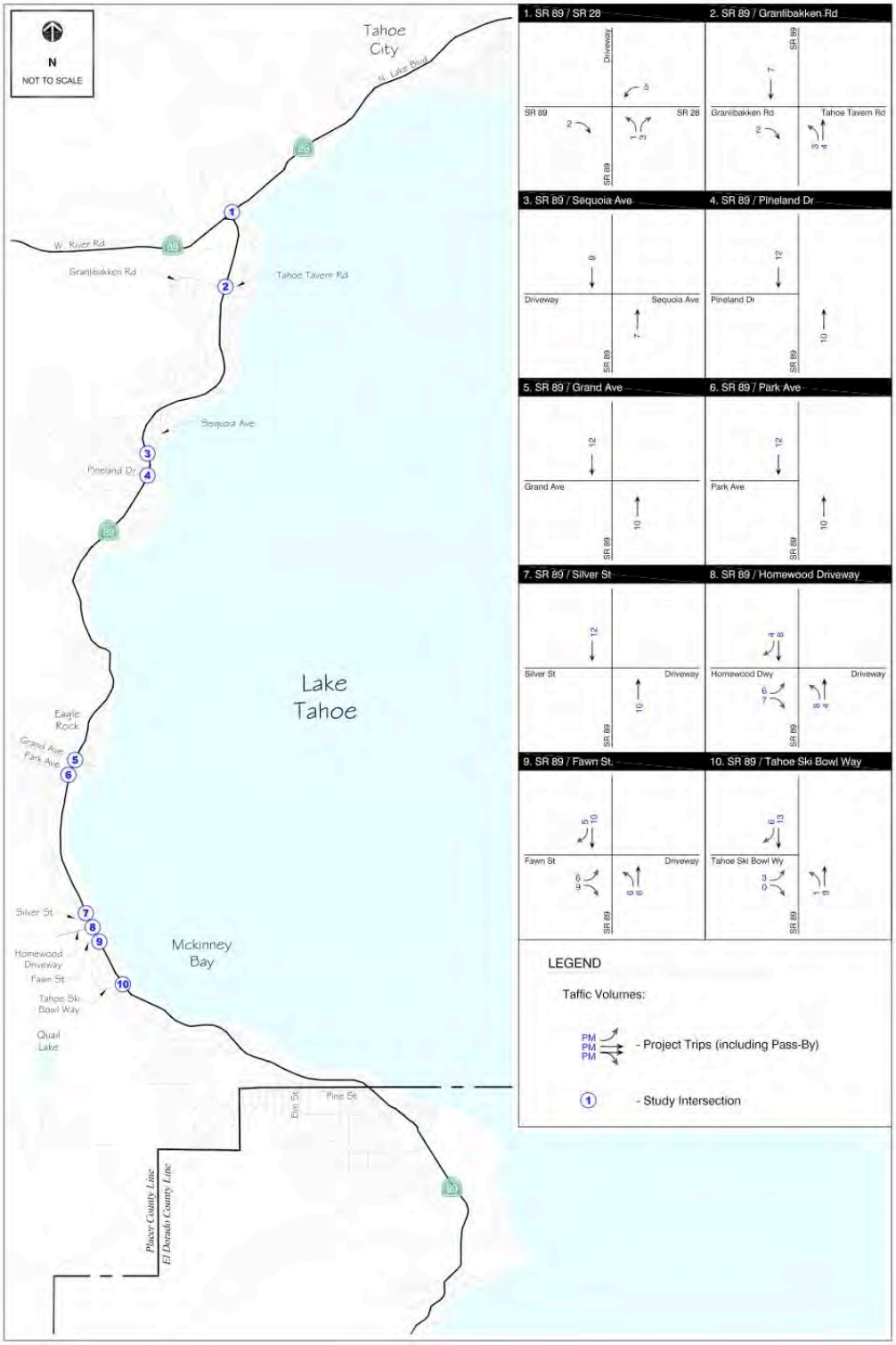
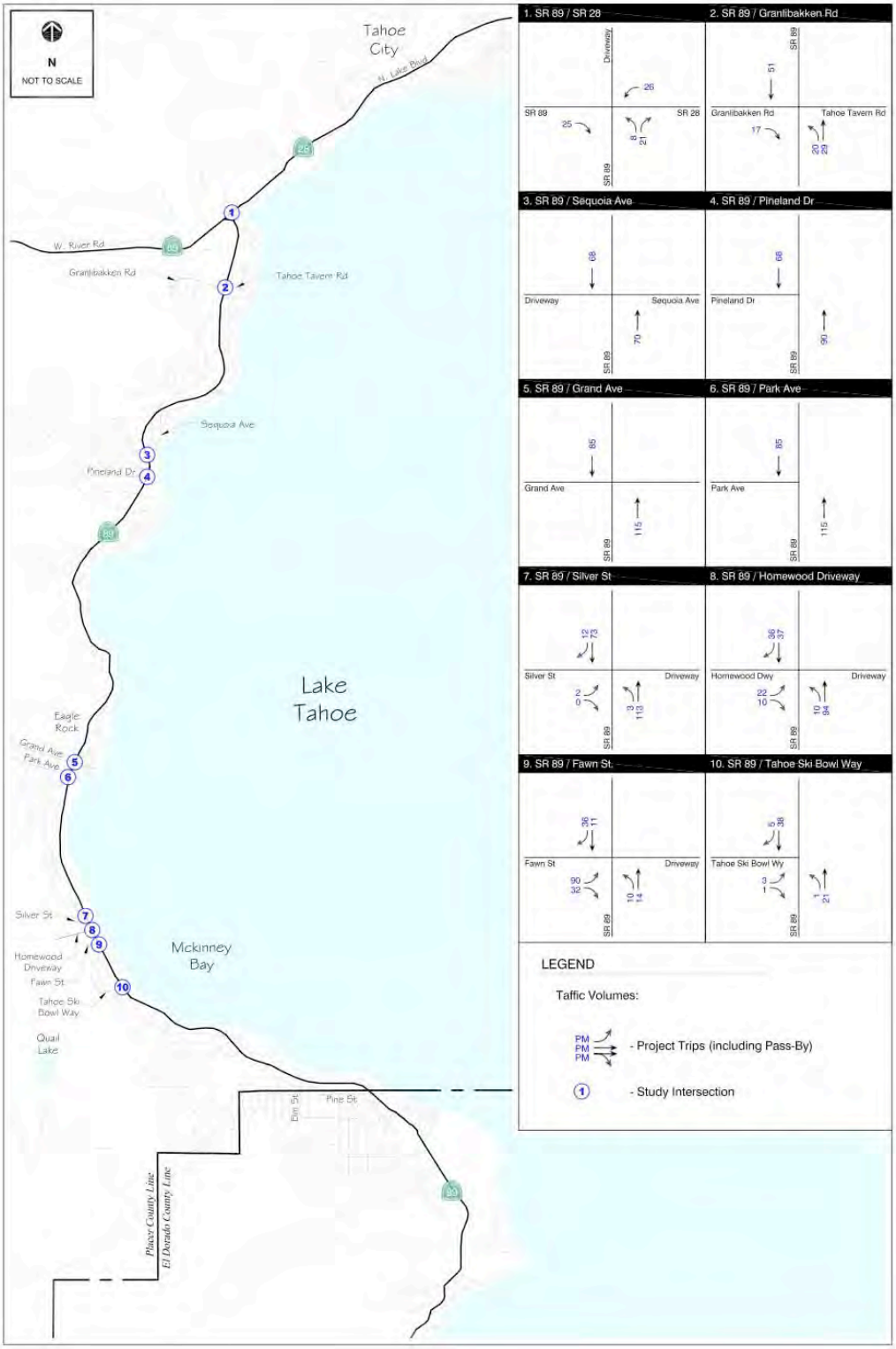


Figure 11-13. Alternative 5 Winter Project Trips (including Pass-By)



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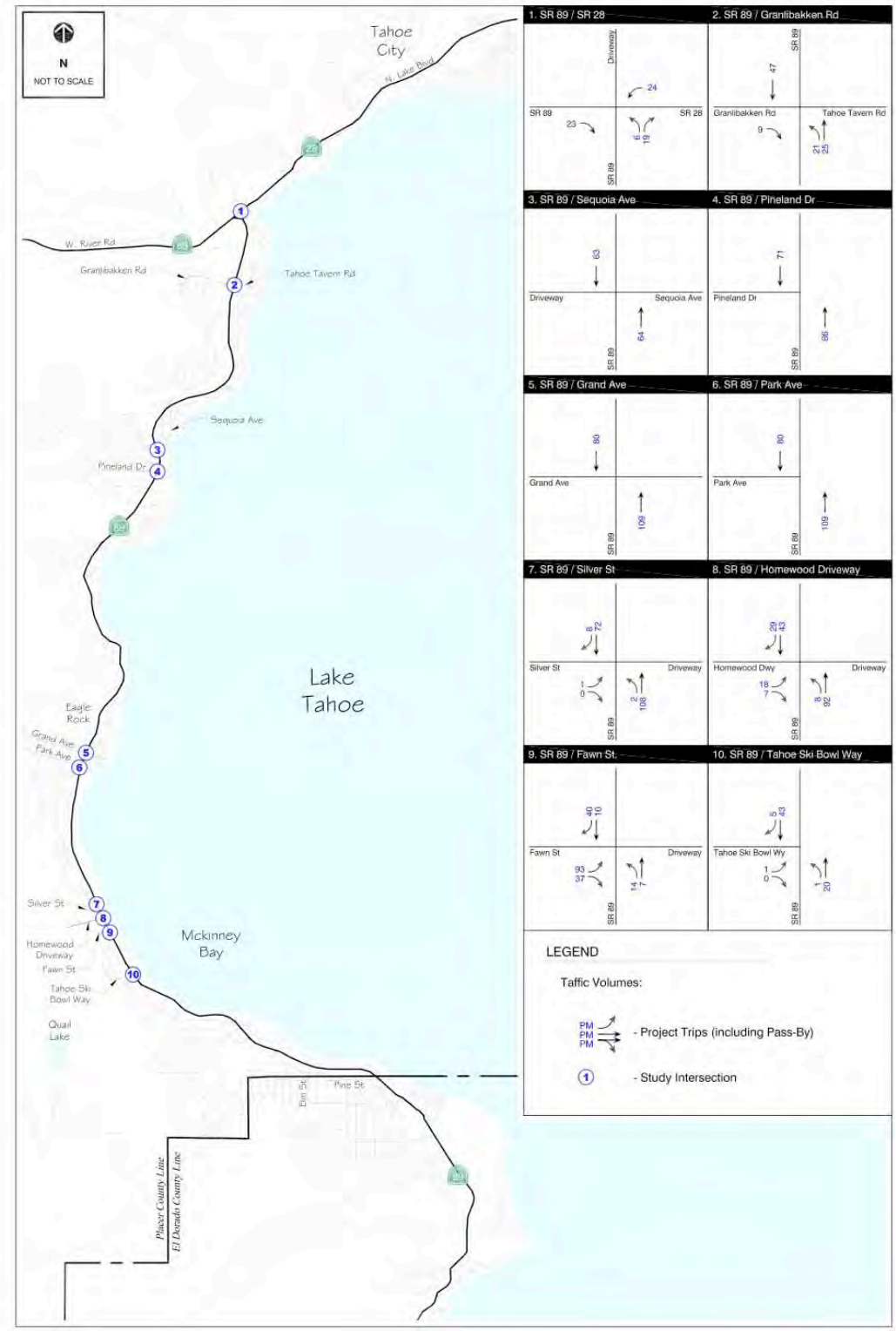
Homewood Moutain Resort Master Plan
Alternative 5 Winter Project Trips (including Pass-By)
Figure 11-13

Figure 11-14. Alternative 6 Winter Project Trips (including Pass-By)



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Homewood Moutain Resort Master Plan
Alternative 6 Winter Project Trips (including Pass-By)
Figure 11-14

11.4.4 VMT Analysis

VMT calculations were conducted using the daily trip generation results for the Project and Alternatives and average trip length numbers from the TRPA travel demand model (provided by TRPA staff). An average trip length of 4.42 miles was used for residential trips and 7.77 miles was used for visitor trips. Assumptions were made regarding the percentage of retail and recreational trips associated with residential trip making versus visitor trip making. The following assumptions were made for each land use type, based on the general characteristics of the Project (Alternative 1):

Summer

- Residential – 100% residential, 0% visitor
- Lodging – 0% residential, 100% visitor
- Retail - 85% residential, 15% visitor
- Recreational – 50% residential, 50% visitor

Winter

- Residential – 100% residential, 0% visitor
- Lodging – 0% residential, 100% visitor
- Retail - 85% residential, 15% visitor
- Recreational – 75% residential, 25% visitor

VMT was calculated for land use, accounting for internal capture, alternative modes of travel, and pass-by trips. Table 11-18 shows the summer and winter VMT results for the Project and Alternatives. Detailed VMT calculations can be found in Appendix L-1.

11.5 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

Following completion of trip generation modeling, Alternative 5 was modified to include 12 Employee Housing units that were not included in the original traffic analysis. As a result of the addition of 12 affordable housing units, the Alternative 5 summer trip generation will increase by 25 daily trips and and 2 Friday PM peak hour trips. This increase in trip generation over what is reported in Tables 11-11will not adversely affect operations at the study intersections. Note: The winter trip generation and LOS analysis includes the 12 affordable housing units.

Table 11-18

VMT Analysis Comparison – Summer/Winter

Project Alternative	Net New Daily Trip Generation	Existing Homewood VMT	Net New Project VMT
Summer			
1 and 3	1,466	0	8,431
2 (No Project)	0	0	0
4	490	0	2,362
5	1,391	0	7,045
6	1,328	0	6,796
Winter			
1 and 3	(-327)	13,328	(-1,232)
2 (No Project)	0	13,328	0
4	(-2,045)	13,328	(-10,966)
5	(-286)	13,328	(-1,869)
6	(-360)	13,328	(-2,172)

Source: Fehr & Peers 2009

IMPACT: TRANS-1. Will the Project result in generation of 200 or more new Daily Vehicle Trip Ends?

Analysis: *No Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will not include changes to the existing land uses, densities, and roadway network; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

As shown in Table 11-17, the Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will not generate more than 200 net new daily vehicle trip ends during the winter months:

- Alternatives 1 and 3: -327 net new daily trips;
- Alternative 4: -2,045 net new daily trips;
- Alternative 5: -286 net new daily trips; and
- Alternative 6: -360 net new daily trips.

During the summer months, the Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will generate more than 200 net new daily vehicle trip ends (Table 11-17):

- Alternatives 1 and 3: 1,466 net new daily trips;
- Alternative 4: 490 net new daily trips;
- Alternative 5: 1,391 net new daily trips; and
- Alternative 6: 1,331 net new daily trips.

The creation of more than 200 new daily trips during the summer months is a significant impact based on the evaluation criteria for TRANS-1.

The outdoor amphitheater was not included in the trip generation calculations for Alternatives 1, 3, 5, and 6 as it will only be used for special events, and not on a regular basis. HMR currently holds the same events that will be held in amphitheater; therefore, the addition of the amphitheater will not significantly change trip characteristics to and from the site.

Mitigation: **TRANS-1. Traffic and Air Quality Mitigation Program**

HMR shall pay the appropriate air quality mitigation fee in accordance with Chapter 93 – Traffic and Air Quality Mitigation Program of the TRPA Code of Ordinances. Fees generated by the air quality mitigation fee are used to support programs/improvements that reduce VMT, improve air quality, and encourage alternative modes of transportation.

After Mitigation: *Less than Significant Impact; Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

Implementation of mitigation measure TRANS-1 will reduce the impact to a less than significant level because fees generated by the air quality mitigation fee is used to support programs/improvements that reduce VMT, improve air quality, and encourage alternative mode of transportation.

IMPACT: TRANS-2. Will the Project result in changes to existing parking facilities, or demand for new parking?

The parking analysis was performed for the winter season because the resort operations plus day skier operations produce a higher demand for parking than during summer. The *Standards & Guidelines for Signage, Parking and Design for the Lake Tahoe Region of Placer County* allow for the required parking supply to be determined based on a parking demand analysis performed by a qualified parking professional. The *Homewood Mountain Resort Parking Study* prepared by LSC Transportation Consultants, Inc., and provided in Appendix K-3, provides the parking demand analysis results for Alternatives 1 and 3. The methodology used in LSC's study was used to calculate the parking demand for Alternatives 4, 5, and 6. Table 11-19 provides a summary of the parking supply and demand for each project alternative.

Table 11-19

HMR MP Parking Supply and Demand Summary

Parking Location	Alternatives 1 & 3		Alternative 4		Alternative 5		Alternative 6	
	Demand	Supply	Demand	Supply	Demand	Supply	Demand	Supply
North Base	862	729	46	700	965	646	856	646
South Base	128	117	0	0	0	0	68	65
Townhomes	64	64	NA	NA	NA	NA	NA	NA
Single Family Homes	NA	NA	64	64	64	64	56	56
Total	1,054	910	110	764	1,029	710	980	767

Source: LSC Transportation Consultants, 2011
Fehr & Peers 2011

Notes: NA = Not Applicable

Analysis: *No Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will not include changes to the existing parking supply or locations.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Project (Alternative 1) and Alternative 3*

The Project (Alternative 1) and Alternative 3 will include 729 parking spaces at the North Base, with a potential for up to 770 parking spaces based on final building parking layout design, 117 parking spaces at the South Base, with the potential for up to 150 parking spaces based on final building parking layout design, and a two-car garage and two driveway spaces with each townhome (64 spaces), for a total of 910 parking spaces for the Project area, with a potential for up to 984 on-site parking spaces. According to Table 1 of the *Homewood Mountain Resort Parking Study* (LSC Transportation Consultants, 2011), 62 ski area employees will park off-site during peak ski weekends, resulting in an on-site parking demand of 992 parking spaces for Alternatives 1 and 3.

Based on Table 11-19 the Project (Alternative 1) and Alternative 3 parking supply is less than the demand, therefore this impact is considered to be significant.

Mitigation: **TRANS-2. Provide Adequate Parking to Meet Placer County Requirements**

The project applicant shall implement a winter and summer Parking Management Plan to be reviewed and approved by the Development Review Committee (DRC) prior to Improvement Plan approval for any project phase. The Parking Management Plan shall address the proposed off-site peak ski day employee parking and any on-site parking

deficiencies. This plan shall be approved by the County and the TRPA and will ensure that adequate parking and shuttle service operations are maintained in order to accommodate the proposed off-site peak ski day employee parking. The applicant shall provide an employee shuttle service between the designated employee parking location(s) and Homewood Mountain Resort (HMR). If additional environmental impacts, other than those already identified, analyzed, and mitigated (if necessary) as part of this Draft EIR/EIS are created as a result of any of the proposed on-site or off-site parking areas or shuttle service operations, the Improvement Plans shall not be approved until subsequent environmental review has been completed.

The project applicant has committed to eliminating the existing day skier parking along SR 89 and along County roadways. The Parking Management Plan, to be approved by the County and the TRPA, shall outline the measures proposed to fulfill this commitment, including signage, parking enforcement, surveys of on-street parking during peak ski days, and annual reporting to Placer County by May 1 of each year that surveys are required. Surveys shall be required until two years after completion of any new development phase of the project. All costs associated with the surveys and parking management report are the responsibility of Homewood Mountain Resort.

Timing / Implementation: An agreement between the County, TRPA and the applicant to implement the Parking Management Program, along with the detailed plan, shall be signed before Improvement Plans for any project phase are approved.

After Mitigation: *Less than Significant Impact; Project (Alternative 1) and Alternative 3*

Implementation of mitigation measure TRANS-2 will insure adequate on-site and off-site parking management to eliminate any potential parking impacts.

Analysis: *Less than Significant Impact; Alternative 4*

Based on Table 11-19, Alternative 4 will provide 764 parking spaces for the retail and residential uses. The parking supply exceeds the parking demand of 110 spaces; therefore, the impact is less than significant.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternative 5*

Alternative 5 will include 646 parking spaces at the North Base, and at least a two-car garage and two driveway spaces with each single-family home (64 spaces) at the South Base for a total of 710 on-site parking spaces. Based on the parking demand analysis in Appendix K-3 (Table 1), 62 employees will park off-site during peak ski weekends, resulting in an on-site parking demand of 967 parking spaces for Alternative 5.

Based on Table 11-19, the Alternative 5 parking supply is less than the demand, therefore this impact is considered to be significant.

Mitigation: **TRANS-2. Provide Adequate Parking to Meet Placer County Requirements**

See description of mitigation measure TRANS-2 above under the impact analysis for Alternatives 1 and 3.

After Mitigation: *Less than Significant Impact; Alternative 5*

Implementation of mitigation measure TRANS-2 will insure adequate on-site and off-site parking management to eliminate any potential parking impacts.

Analysis: *Significant Impact; Alternative 6*

Alternative 6 will include 646 parking spaces at the North Base, 65 parking spaces at the South Base, and at least a two-car garage and two driveway spaces with each single-family home (56 spaces). Based on the parking demand analysis in Appendix K-3 (Table 1), 62 employees will park off-site during peak ski weekends, resulting in an on-site parking demand of 918 parking spaces for Alternative 6.

Based on Table 11-19 the Alternative 6 parking supply is less than the demand, therefore this impact is considered significant.

Mitigation: **TRANS-2. Provide Adequate Parking to Meet Placer County Requirements**

See description of mitigation measure TRANS-2 above under the impact analysis for Alternatives 1 and 3.

After Mitigation: *Less than Significant Impact; Alternative 6*

Implementation of mitigation measure TRANS-2 will insure adequate on-site and off-site parking management to eliminate any potential parking impacts.

IMPACT: TRANS-3. Will the Project result in a substantial impact upon existing transportation systems, including roadways and intersections?

Summer LOS Analysis

Table 11-20 presents a summary of the LOS at the study intersections for existing summer plus project conditions for the Project and Alternatives. Figures 11-15 through 11-18 show the existing plus project traffic volumes at the study intersections for Alternatives 1, 3, 4, 5, and 6.

Table 11-20

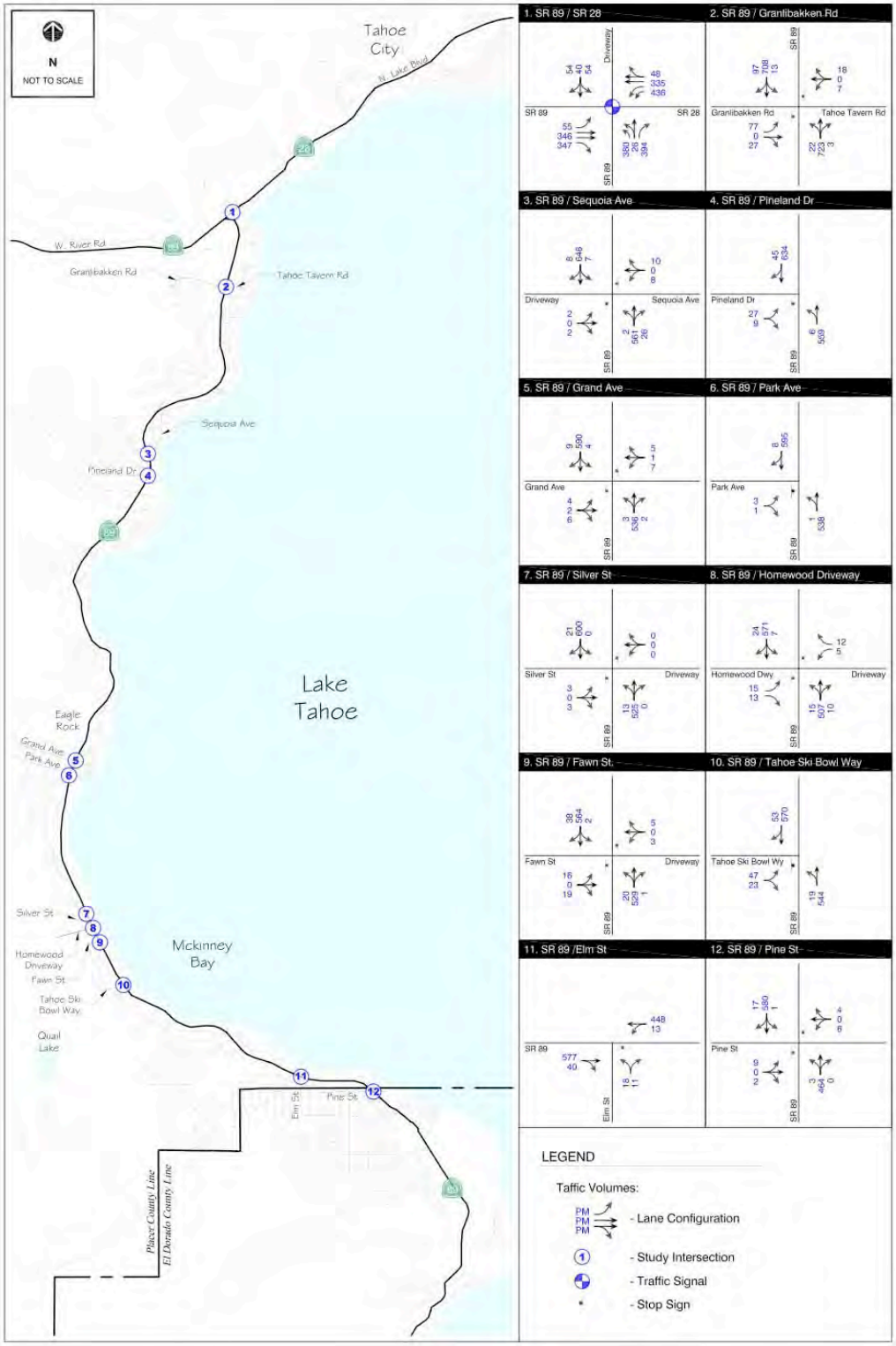
Summer LOS Results – Existing and Existing Plus Project
Summary of Project Alternatives

Intersection	Control Type [1]	Existing Conditions	Existing Plus Project Conditions				
			Alt. 1 & 3	Alt. 2	Alt. 4	Alt. 5	Alt. 6
		Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS
SR 89/SR 28	Signal	35.2 D	38.2 D	*	35.7 D	37.6 D	35.9 D
SR 89/ Pedestrian Signal	Signal	4.3 A	4.6 A	*	4.2 A	4.5 A	4.4 A
SR 89/ Granlibakken Road	SSSC	24.4 **(370.9)** C **(F)**	30.0 **(465.4)** D **(F)**	*	24.5 **(363.5)** C **(F)**	28.2 **(439.4)** D **(F)**	26.9 **(409.6)** D **(F)**
SR 89/Sequoia Avenue	SSSC	0.7 (30.1) A (D)	0.8 (33.5) A (D)	*	0.7 (30.4) A (D)	0.7 (32.1) A (D)	0.7 (32.0) A (D)
SR 89/Pineland Drive	SSSC	0.9 (28.0) A (D)	1.0 (31.8) A (D)	*	0.9 (27.8) A (D)	1.0 (30.5) A (D)	1.0 (30.5) A (D)
SR 89/Grand Avenue	SSSC	0.6 (21.6) A (C)	0.6 (24.0) A (C)	*	0.6 (21.6) A (C)	0.6 (23.3) A (C)	0.6 (23.2) A (C)
SR 89/Park Avenue	SSSC	0.1 (21.5) A (C)	0.1 (24.0) A (C)	*	0.1 (21.5) A (C)	0.1 (23.2) A (C)	0.1 (23.0) A (C)
SR 89/Silver Street	SSSC	0.0 (12.2) A (B)	0.3 (21.8) A (C)	*	0.0 (12.2) A (B)	0.5 (21.2) A (C)	0.2 (20.6) A (C)
SR 89/ Homewood Entrance	SSSC	0.7 (23.4) A (C)	1.5 (32.4) A (D)	*	1.2 (25.2) A (D)	1.4 (29.6) A (D)	1.1 (26.9) A (D)
SR 89/Fawn Street	SSSC	0.3 (19.3) A (B)	1.2 (24.2) A (C)	*	0.7 (21.0) A (C)	1.0 (23.6) A (C)	1.4 (26.0) A (D)
SR 89/Tahoe Ski Bowl Way	SSSC	1.5 (26.1) A (D)	2.0 (30.7) A (D)	*	1.7 (27.5) A (D)	1.7 (28.8) A (D)	1.9 (29.1) A (D)
SR 89/Elm Street	SSSC	0.7 (18.6) A (C)	0.7 (20.0) A (C)	*	0.7 (19.1) A (C)	0.7 (19.5) A (C)	0.7 (19.7) A (C)
SR 89/Pine Street	SSSC	0.5 (26.4) A (D)	0.6 (29.4) A (D)	*	0.5 (27.1) A (D)	0.6 (28.4) A (D)	0.5 (27.8) A (D)

Source: Fehr & Peers 2009

Notes:
[1] SSSC = Side Street Stop Control
[2] Delay is report in seconds per vehicle for the overall intersection for signalized intersections, and for the overall intersection (worst movement) for unsignalized intersections.
* No Project conditions – Same as existing conditions
Bold indicates deficient operations.

Figure 11-15. Existing Summer Plus Alternatives 1 and 3 Traffic Volumes



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Homewood Moutain Resort Master Plan
Existing Summer Plus Alternatives 1 and 3 Traffic Volumes
Figure 11-15

Figure 11-16. Existing Summer Plus Alternative 4 Traffic Volumes

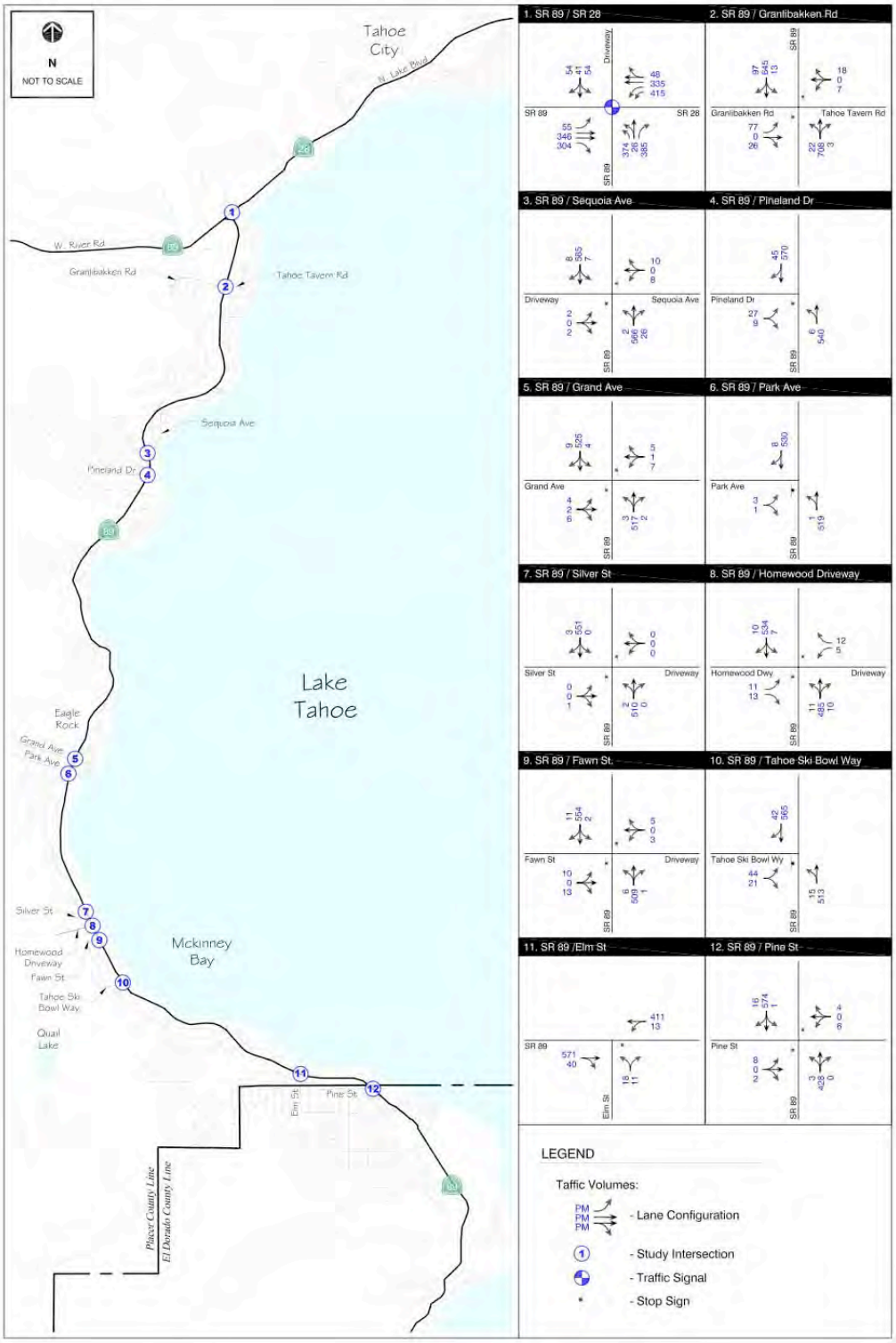


Figure 11-17. Existing Summer Plus Alternative 5 Traffic Volumes

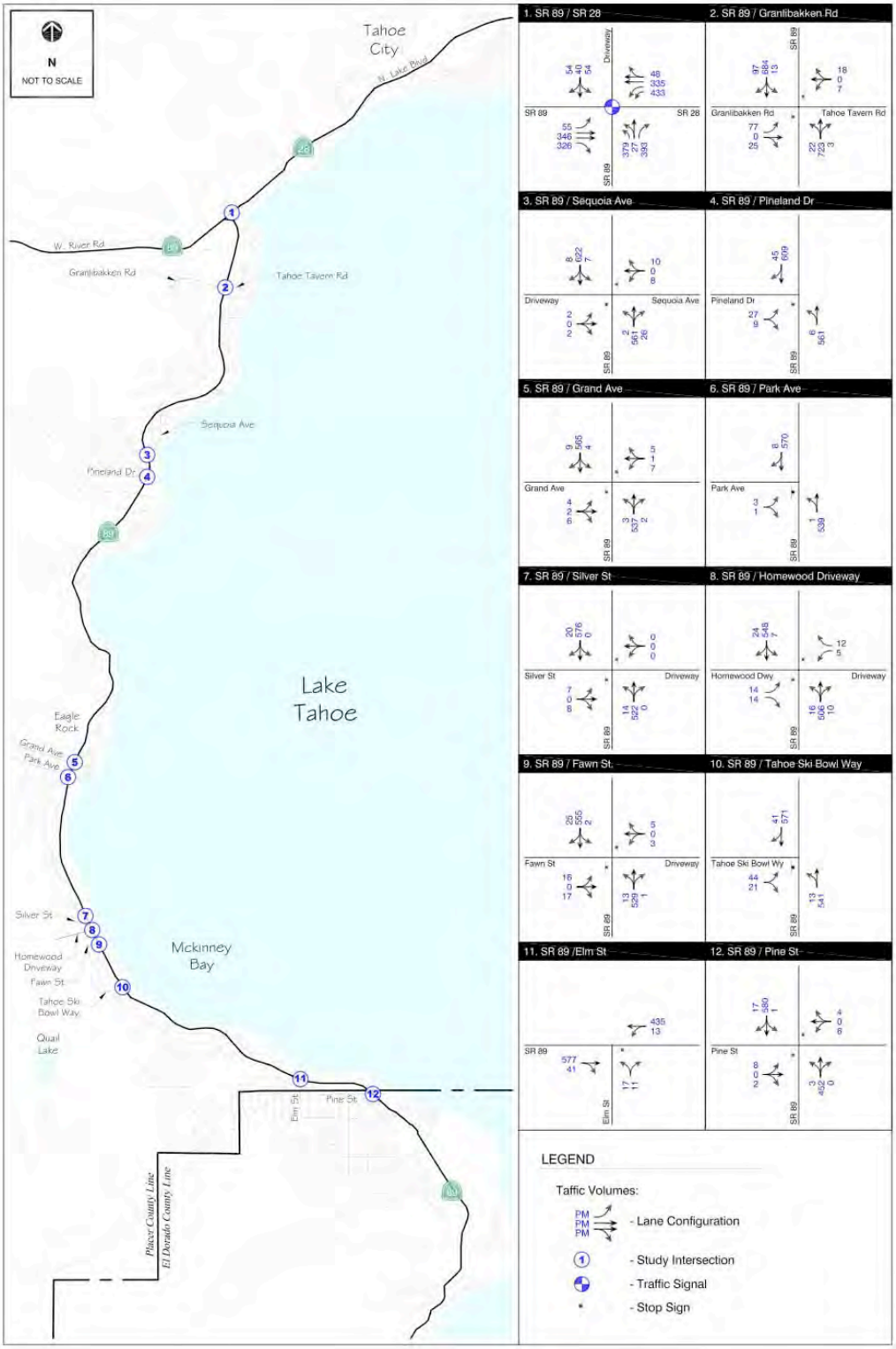
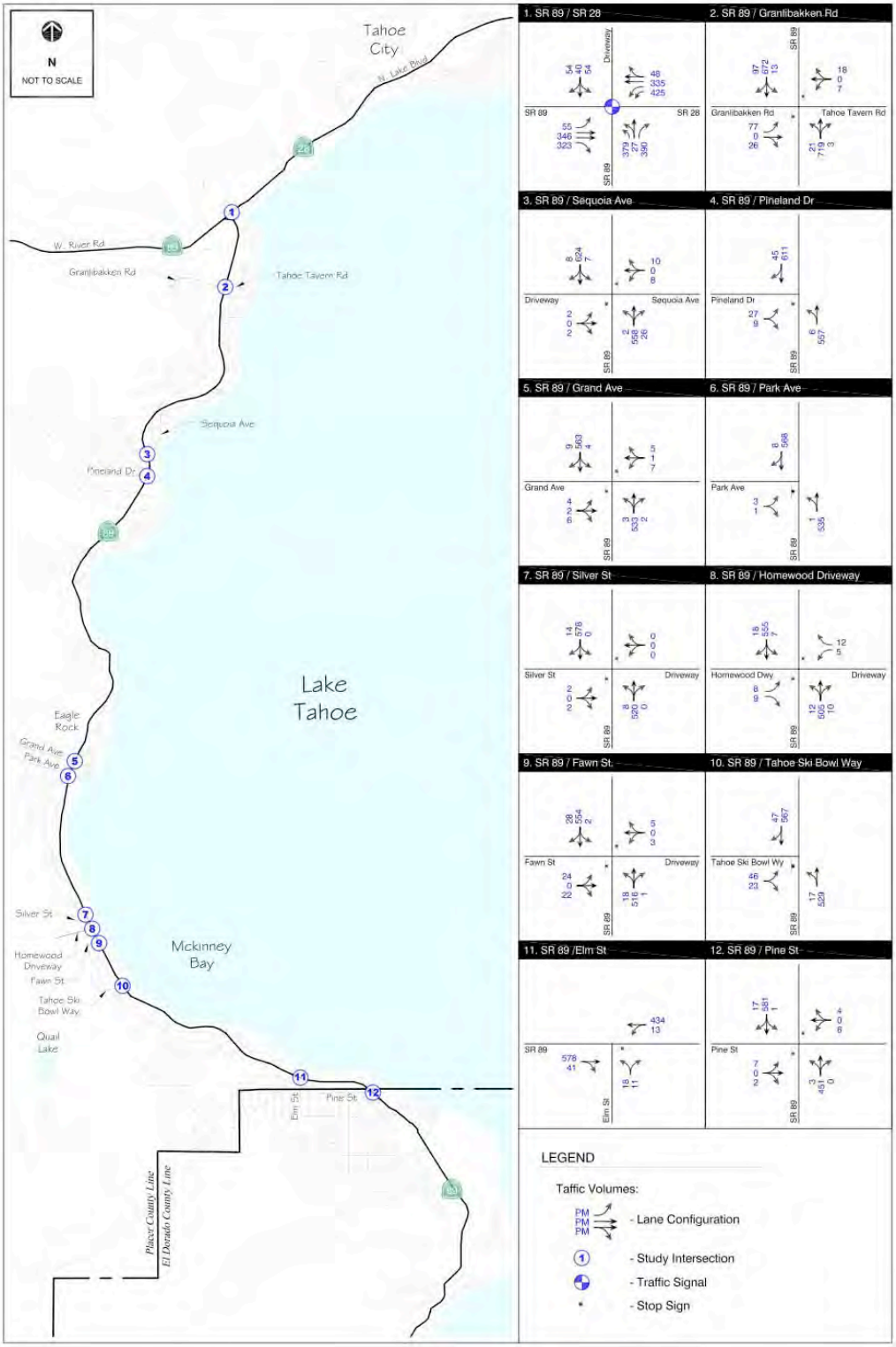


Figure 11-18. Existing Summer Plus Alternative 6 Traffic Volumes



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Homewood Moutain Resort Master Plan
Existing Summer Plus Alternative 6 Traffic Volumes
Figure 11-18

Analysis: *No Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will not include changes to the existing land uses, densities, and roadway network; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Project (Alternative 1) and Alternatives 3, 5, and 6*

The Project (Alternative 1) and Alternatives 3, 5, and 6 will have a significant impact at the SR 89/Granlibakken Road intersection. The overall intersection LOS is within the LOS standards (LOS C and D); however, the side-street approach (eastbound left-turn) operates at LOS F. The number of eastbound, left-turning vehicles for the Project (Alternative 1) and Alternatives 3, 5, and 6 for existing plus Project conditions is 77. The remaining study intersections are expected to operate at acceptable LOS with the addition of the Project and Alternatives.

Mitigation: **TRANS-3. Implement Intersection Improvements**

The Project shall construct the following intersection improvement at the SR 89/Granlibakken Road intersection: Add an acceleration lane or two-way left-turn lane (consistent with the *Placer 89 Environmental Improvement Project*, 2006) to SR 89 at Granlibakken Road. The mitigation measure will result in the following summer LOS:

- *Delay after mitigation: 3.4* ***(44.2)****, LOS: A* ***(E)****, Project and Alternative 3*
- *Delay after mitigation: 3.3* ***(41.9)****, LOS: A* ***(E)****, Alternative 5*
- *Delay after mitigation: 3.2* ***(40.7)****, LOS: A* ***(E)****, Alternative 6*

Note: A two-way left-turn lane has been environmentally cleared through a CEQA Mitigated Negative Declaration, NEPA Finding of No Significant Impact, and TRPA Programmatic Environmental Assessment, and is scheduled for construction at this location as part of the Caltrans' *Placer 89 Environmental Improvement Project*. Figures ESL 42 and ESL 43 from the *Placer 89 Environmental Improvement Project* show the proposed roadway improvements, and are provided in Appendix L-2. If construction of the improvement is in place prior to being needed by HMR, HMR shall no longer be responsible for the improvement.

The Project shall obtain an Encroachment Permit from Caltrans for any work within the State right-of-way. A copy of the permit shall be provided to the Placer County Engineering and Surveying department prior to the approval of Improvement Plans.

After Mitigation: *Less than Significant Impact; Project (Alternative 1) and Alternatives 3, 5, and 6*

Implementation of mitigation measure TRANS-3 will improve the LOS at the SR 89/Granlibakken Road intersection to better than existing conditions for the Project and Alternatives. This mitigation does not improve LOS to D or better at the side-street approach, but it does improve intersection operations to better than existing conditions.

Analysis: *Less than Significant Impact; Alternative 4*

Although the SR 89/Granlibakken Road intersection is expected to operate at unacceptable LOS with Project conditions for Alternative 4, the intersection delay decreases compared to existing conditions, and therefore is not considered a significant impact. The remaining study intersections are expected to operate at acceptable LOS with Alternative 4.

Summer Queuing Analysis

Queuing analysis was performed at the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections. Queuing issues currently exist in the area, particularly near the Fanny Bridge. The *SR 89 Fanny Bridge Alternatives Traffic Study* prepared by LSC Transportation Consultants, Inc. (2005) details the congestion issues on the bridge. The LSC study, as well as the LOS tables provided in this study, indicate that the congestion in the area is not caused by intersection operations, but rather by the "bottle neck" effect at the Fanny Bridge, and the high number of bicycles and pedestrians that use the bridge. As shown in Table 11-20, the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections operate at LOS D and LOS A, respectively, with and without the project. The *SR 89 Fanny Bridge Alternatives Traffic Study* presents five realignment alternatives to relieve congestion on the Fanny Bridge. Note that the queuing analysis includes the pedestrian signal on SR 89 south of the Fanny Bridge which was installed after the *SR 89 Fanny Bridge Alternatives Traffic Study* was completed. The pedestrian signal in conjunction with a barrier chain between the Fanny Bridge sidewalk and the northbound travel lane has significantly reduced the impact of pedestrian and bicycle activity on traffic conditions. The queuing analysis accounts for the vehicle delay resulting from the pedestrian signal.

Table 11-21 shows the Sim Traffic queuing analysis results for the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections during the summer for existing and existing plus project conditions. The Project alternatives were analyzed during the Friday PM peak hour; however, we understand that on peak weekends during summer months there is significant congestion at the Tahoe City "Wye", and the northbound queue can extend beyond the queue lengths shown in the analysis.

Analysis: *No Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will not include changes to the existing land uses, densities, and roadway network; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Table 11-21

Summer Queuing Analysis – Existing and Existing Plus Project
Summary of Project Alternatives

	Storage Length (ft)[1]	Average Summer Queue Lengths[2] (ft)[3]				
		Existing	Alts. 1 and 3	Alt. 4	Alt. 5	Alt. 6
SR 89/SR 28						
NBL	405	115	115	115	115	120
NBT	125	90	100	90	95	110
NBR	125	90	100	90	95	110
EBL	200	45	45	45	45	45
EBT	790	105	105	105	105	105
EBR	250	90	95	90	90	90
WBL	225	140	140	140	140	140
WBT	515	165	165	140	165	165
WBR	225	75	75	75	75	75
SR 89/Pedestrian Crossing						
NBT	515	230	240	205	230	230
SBT	225	110	125	115	130	125

Source: Fehr & Peers 2009

Notes: [1] Storage lengths are defined by the distance to the closest upstream intersection for through movements, and pockets lengths for turn movements.
[2] SimTraffic queuing results are a product of a simulation that is designed to represent "real-life" drivers to the best extent possible. Each simulation run represents a unique set of data. An average of 10 runs is shown in the results table.
[3] Typical practice methodology is to assume an average vehicle length of 25 feet for queuing analysis. A difference of 0-15 feet between scenarios is not considered a change in the number of vehicles.

Analysis: *Significant Impact; Project (Alternative 1) and Alternatives 3, 5, and 6*

Alternatives 1, 3, 5, and 6 will have a significant impact at the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections. Although not directly represented in the queuing analysis results in Table 11-21, it should be noted that the analysis does not include bicycle and pedestrian traffic that will contribute additional congestion to the area. Existing congestion at Fanny Bridge results in delays and vehicle queuing. The Fanny Bridge study (LSC, 2005) identifies the congestion issues, as well as improvements to alleviate the congestion. Alternatives 1, 3, 5, and 6 will contribute additional traffic volumes (Alternatives 1 and 3 add 70 vehicles to the intersection, 10 travelling northbound; Alternative 5 adds 45 vehicles to the intersection, 9 travelling northbound; and Alternative 6 adds 30 vehicles to the intersection, 6 travelling northbound) to this area of known congestion during the Friday PM peak hour. The queuing analysis results indicate that the project will increase the queue lengths at the SR 89/Pedestrian Crossing

intersection by approximately 10 feet (1 vehicle) in the northbound direction, and 15 to 20 feet in the southbound direction (1 vehicle). (Typical practice methodology is to assume an average vehicle length of 25 feet for queuing analysis.) The increase in traffic volumes and queue lengths (of one or more vehicles) is considered a significant impact.

Mitigation: No mitigation is possible.

After Mitigation: *Significant and Unavoidable Impact; Project (Alternative 1) and Alternatives 3, 5, and 6*

Other studies (e.g., SR 89 Fanny Bridge Alternatives Traffic Study) have identified improvement alternatives to relieve congestion and reduce queuing on Fanny Bridge. Once these improvements are implemented the Project impact will be less than significant; however, funding for the improvement project (particularly state funding) has not been secured; therefore, the impact is significant and unavoidable. It should be noted that the Fanny Bridge improvement project is identified in the Lake Tahoe Regional Transportation Plan's Project Strategies (Short Term), and is partially funded by two sources: the Federal Transportation Improvement Program for the work being done by the Tahoe Transportation District and Placer County Capital Improvement Program traffic impact fees.

The project applicant shall contribute a fair share contribution to the Fanny Bridge improvement alternative based on Placer County standards. Note that payment of fees does not mitigate an impact if there is no evidence in the record there is a funding program in place which will get the improvement built.

Analysis: *Less than Significant Impact; Alternative 4*

Alternative 4 will reduce traffic volumes at the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Winter LOS Analysis

Table 11-22 presents a summary of the LOS at the study intersections for existing winter conditions for the Project and Alternatives. Figures 11-19 through 11-22 show the existing plus project traffic volumes at the study intersections for Alternatives 1, 3, 4, 5, and 6.

Table 11-22

Winter LOS Results – Existing and Existing Plus Project
Summary of Project Alternatives

Intersection	Control Type [1]	Existing Conditions	Existing Plus Project Conditions				
			Alt. 1 & 3	Alt. 2	Alt. 4	Alt. 5	Alt. 6
		Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS
SR 89/SR 28	Signal	27.3 C	27.2 C	*	27.4 C	27.3 C	27.2 C
SR 89/ Pedestrian Signal	Signal	2.3 A	3.0 A	*	2.1 A	2.3 A	2.3 A
SR 89/ Granlibakken Road	SSSC	5.2 **(55.5)** A **(F)**	6.0 **(67.6)** A **(F)**	*	3.8 **(41.1)** A **(E)**	5.9 **(64.9)** A **(F)**	5.8 **(61.7)** A **(F)**
SR 89/Sequoia Avenue	SSSC	0.5 (17.9) A (C)	0.5 (17.8) A (C)	*	0.5 (15.1) A (C)	0.5 (17.2) A (C)	0.5 (17.1) A (C)
SR 89/Pineland Drive	SSSC	0.8 (19.5) A (C)	0.8 (19.2) A (C)	*	0.9 (15.1) A (C)	0.8 (18.4) A (C)	0.8 (18.4) A (C)
SR 89/Grand Avenue	SSSC	0.6 (17.7) A (C)	0.6 (17.4) A (C)	*	0.6 (13.1) A (B)	0.6 (17.1) A (C)	0.6 (16.8) A (C)
SR 89/Park Avenue	SSSC	0.1 (16.0) A (C)	0.1 (16.0) A (C)	*	0.1 (12.6) A (B)	0.1 (15.6) A (C)	0.1 (15.4) A (C)
SR 89/Silver Street	SSSC	0.3 (15.8) A (C)	0.1 (16.2) A (C)	*	0.1 (10.4) A (B)	0.1 (14.2) A (B)	0.1 (15.6) A (C)
SR 89/ Homewood Entrance	SSSC	3.6 (23.5) A (C)	1.2 (19.5) A (C)	*	1.0 (13.2) A (B)	1.5 (19.2) A (C)	1.3 (19.0) A (C)
SR 89/Fawn Street	SSSC	3.0 (20.7) A (C)	9.7 (38.8) A (E)[3]	*	0.7 (13.0) A (B)	8.1 (32.4) A (D)	8.6 (33.5) A (D)
SR 89/Tahoe Ski Bowl Way	SSSC	4.3 (25.1) A (D)	1.1 (15.6) A (C)	*	1.1 (14.5) A (B)	1.1 (15.5) A (C)	1.1 (15.5) A (C)

Source: Fehr & Peers 2009

Notes:

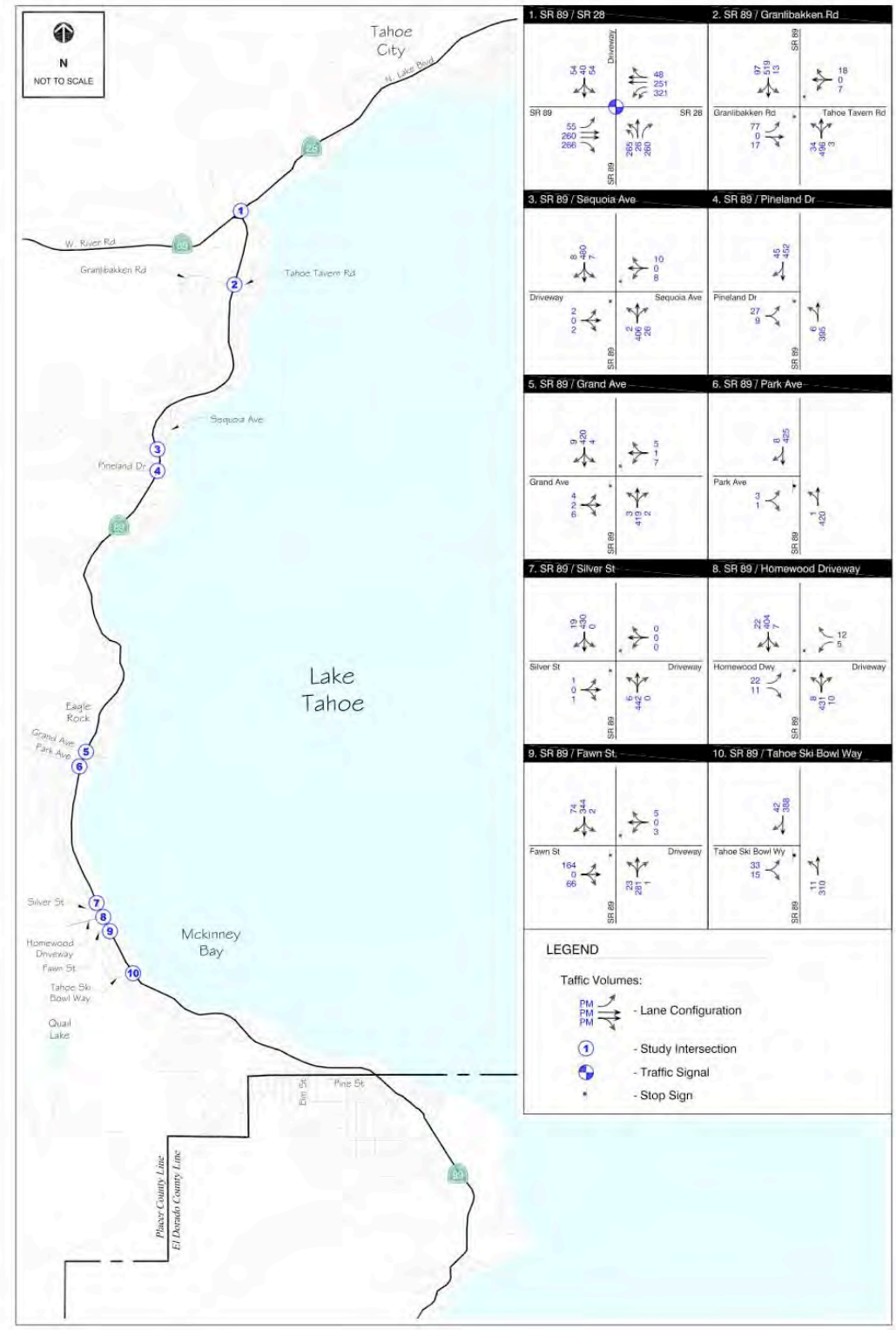
[1] SSSC = Side Street Stop Control

[2] Delay is report in seconds per vehicle for the overall intersection for signalized intersections, and for the overall intersection (worst movement) for unsignalized intersections.

* No project conditions – Same as existing conditions

Bold indicates deficient operations.

Figure 11-19. Existing Winter Plus Alternatives 1 and 3 Traffic Volumes



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Homewood Moutain Resort Master Plan
Existing Winter Plus Alternatives 1 and 3 Traffic Volumes
Figure 11-19

Figure 11-20. Existing Winter Plus Alternative 4 Traffic Volumes

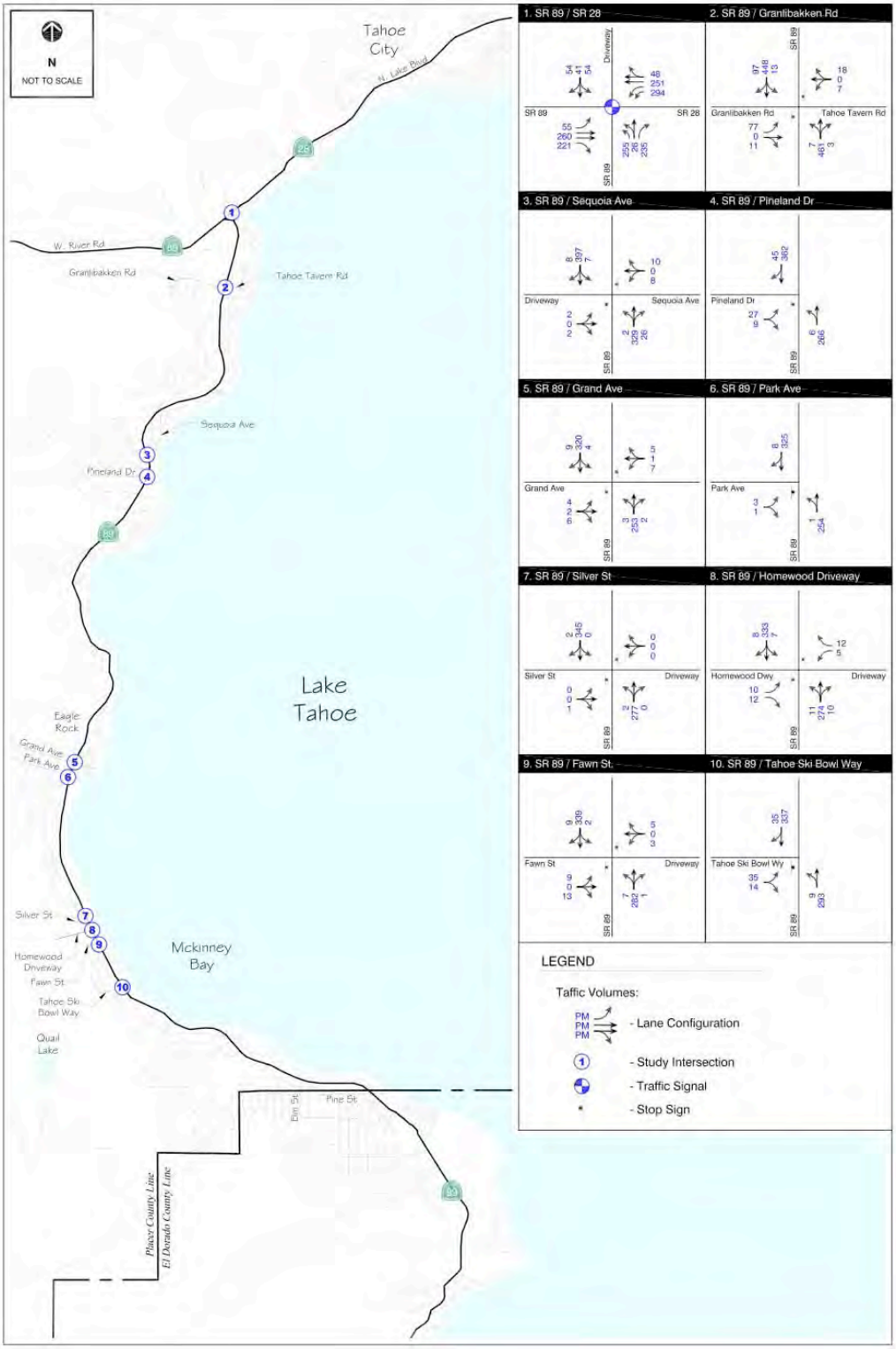
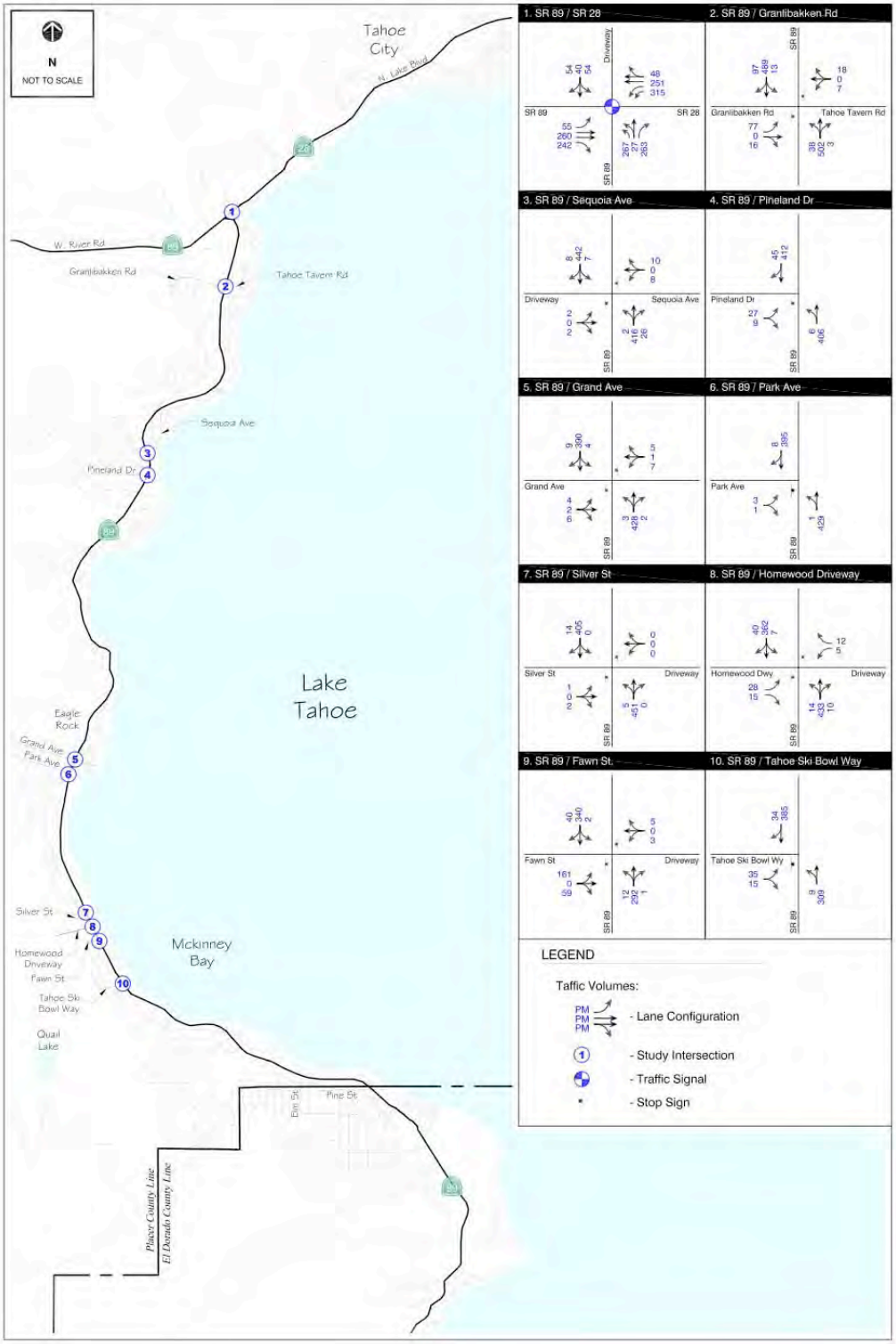


Figure 11-21. Existing Winter Plus Alternative 5 Traffic Volumes



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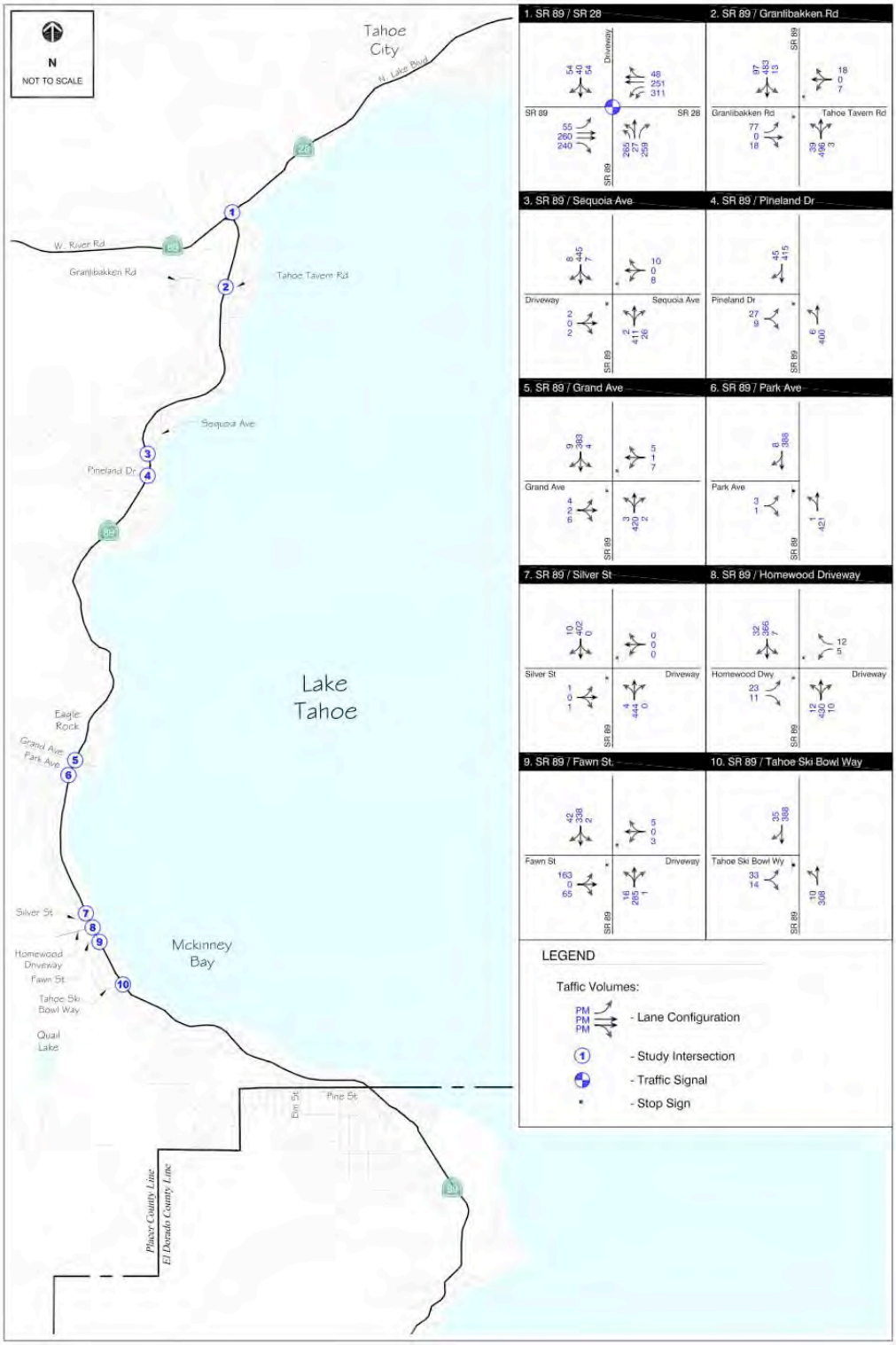
Homewood Moutain Resort Master Plan
Existing Winter Plus Alternative 5 Traffic Volumes
Figure 11-21

Figure 11-22. Existing Winter Plus Alternative 6 Traffic Volumes



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Homewood Moutain Resort Master Plan
Existing Winter Plus Alternative 6 Traffic Volumes
Figure 11-22

Analysis: *No Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will not include changes to the existing land uses, densities, and roadway network; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Project (Alternative 1) and Alternatives 3, 5, and 6*

The Project (Alternative 1) and Alternatives 3, 5, and 6 will have a significant impact at the SR 89/Granlibakken Road intersection. Although the overall trip generation for the Project and Alternatives 3, 5, and 6 is less than the existing HMR trip generation, the distribution of vehicle trips is expected to change, causing an increase in some turning movements at the SR 89/Granlibakken Road intersection. It should be noted that the overall intersection LOS is A for each alternative. The remaining study intersections are expected to operate at acceptable LOS with the addition of the Project and Alternatives.

Mitigation: **TRANS-3. Implement Intersection Improvements**

The Project shall construct the following intersection improvement at the SR 89/Granlibakken Road intersection: Add an acceleration lane or two-way left-turn lane (consistent with the *Placer 89 Environmental Improvement Project*, 2006) to SR 89 at Granlibakken Road. The mitigation will result in the following winter LOS:

- *Delay after mitigation: 2.4 (19.3), LOS: A (C), Project and Alternative 3*
- *Delay after mitigation: 2.5 (19.0), LOS: A (C), Alternative 5*
- *Delay after mitigation: 2.5 (18.9), LOS: A (C), Alternative 6*

Note: A two-way left-turn lane has been environmentally cleared through a CEQA Mitigated Negative Declaration, NEPA Finding of No Significant Impact, and TRPA Programmatic Environmental Assessment, and is scheduled for construction at this location as part of the Caltrans' *Placer 89 Environmental Improvement Project*. Figures ESL 42 and ESL 43 from the *Placer 89 Environmental Improvement Project* show the proposed roadway improvements, and are provided in Appendix L-2. If construction of the improvement is in place prior to being needed by HMR, HMR shall no longer be responsible for the improvement.

The Project shall obtain an Encroachment Permit from Caltrans for any work within the State right-of-way. A copy of the permit shall be provided to the Placer County Engineering and Surveying department prior to the approval of Improvement Plans.

After Mitigation: *Less than Significant Impact; Project (Alternative 1) and Alternatives 3, 5, and 6*

Implementation of mitigation measure TRANS-3 will improve the SR 89/Granlibakken Road intersection to an acceptable LOS.

Analysis: *Less than Significant Impact; Alternative 4*

Although the SR 89/Granlibakken Road intersection is expected to operate at unacceptable LOS under Alternative 4, the intersection delay decreases compared to existing conditions, and therefore is not considered a significant impact. The remaining study intersections are expected to operate at acceptable LOS under Alternative 4.

Mitigation: No mitigation is required.

Winter Queuing Analysis

Table 11-23 shows the storage and queue lengths for the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections during the winter.

Table 11-23

Winter Queuing Analysis – Existing and Existing Plus Project
Summary of Project Alternatives

	Storage Length (ft)	Average Winter Queue Lengths (ft)				
		Existing	Alt. 1 and 3	Alt. 4	Alt. 5	Alt. 6
SR 89/SR 28						
NBL	405	90	90	85	85	85
NBT	125	55	50	50	45	50
NBR	125	55	50	50	45	50
EBL	200	40	40	40	40	40
EBT	790	75	80	75	75	75
EBR	250	65	70	60	65	65
WBL	225	95	95	90	95	95
WBT	515	90	90	85	90	90
WBR	225	50	50	45	50	50
SR 89/Pedestrian Crossing						
NBT	515	165	120	120	135	135
SBT	225	120	120	100	120	120

Source: Fehr & Peers 2009

Notes: [1] Storage lengths are defined by the distance to the closest upstream intersection for through movements, and pockets lengths for turn movements.

Analysis: *No Impact; No Project (Alternative 2)*

Alternative 2 will not include changes to the existing land uses, densities, and roadway network; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

The queue lengths at the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections are not expected to exceed the existing storage lengths with the addition of project traffic from each alternative.

Mitigation: No mitigation is required.

IMPACT: TRANS-4. Will the Project result in a substantial impact upon the existing transportation systems, including transit facilities?

Analysis: *No Impact; No Project (Alternative 2) and Alternative 4*

The No Project (Alternative 2) and Alternative 4 will not include changes to the existing transit facilities on or near the Project area.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Project (Alternative 1) and Alternatives 3, 5, and 6*

The Project includes implementation of an Alternative Transportation Plan, which will include year-round, winter and summer elements, including:

- Employee Shuttle Bus;
- Employee Public Bus Transit Fares;
- Scheduled Shuttle Service;
- North Base-South Base Shuttle Service;
- Electric/Hybrid Car Rental Service;
- Free “Bicycle Share” Service;
- Summer and Winter West Shore Dial-a-Ride Service;
- Skier Intercept Shuttle Service; and
- Water Taxi Service.

Implementation of the Alternative Transportation Plan will result in increased access to and ridership on alternative modes of transportation. This is considered a less than significant impact.

A northbound TART transit shelter exists on SR 89 across the street from the existing Homewood Ski Resort. HMR will install a southbound TART transit pullout on SR 89 adjacent to the North Base.

Other options Homewood can consider to enhance alternative modes of transportation include participation in the TART Employee Pass program by supplying TART passes to their employees, and connecting the proposed shuttle and dial-a-ride services to the TART buses to extend the coverage of transportation services.

Mitigation: No mitigation is required.

IMPACT: TRANS-5. Will the Project result in a substantial impact upon the existing transportation systems, including bicycle and pedestrian facilities?

Analysis: *No Impact; No Project (Alternative 2) and Alternative 4*

The No Project (Alternative 2) and Alternative 4 will not include any changes to the existing bicycle and pedestrian facilities at the Project area.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Project (Alternative 1) and Alternatives 3, 5, and 6*

The Project (Alternative 1) and Alternatives 3, 5, and 6 will include an extension of the West Shore Bike Trail, and a free "Bicycle Share" program. The Project will also maintain five miles of existing hiking trails. This will improve access to and opportunities for bicycle and pedestrian uses. This is considered a less than significant impact.

Mitigation: No mitigation is required.

IMPACT: TRANS-6. Will the Project result in a temporary impact upon existing transportation systems due to construction traffic?

Analysis: *No Impact; No Project (Alternative 2) and Alternative 4*

The No Project (Alternative 2) and Alternative 4 will not require a substantial amount of cut or fill activities.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Project (Alternative 1) and Alternatives 3, 5 and 6*

Construction traffic will temporarily be present on the roadway network and study intersections. Construction traffic will access the Project area via SR 89. The heaviest construction period will occur during site grading. The grading plan indicates that substantial excavation will be required, resulting in the construction trips removing material from the site. If the material cannot be stored locally for use in future agency restoration work on the west shore of the Basin, it will be taken out of the Lake Tahoe Basin via SR 89 to Truckee, CA. Because there is no existing plan for storing and future use of the cut material by restoration agencies (e.g., California Tahoe Conservancy) at this time, this analysis assumes the material would be removed from the Basin, which equates to a worst case analysis for truck traffic. All construction staging and parking will occur on site.

Grading will occur over multiple construction seasons because the Project proposes two phase. Phase 1 will include grading for the North Base and Mid-Mountain facilities. Phase 2 will include grading for the South Base and Townhomes located above the North Base area. The total amount of excavation and fill varies by Alternative and is presented in Table 11-24. Table 11-24 also provides the estimated number of total trips associated

with the removal of net cut material, which is the maximum amount of material that would need to be removed from site if it could not be stored and used for other projects, or reapplied to the ski resort as part of soils restoration projects.

Trucks removing excavation material (i.e., arriving at the Project area empty and leaving with material) will generate up to approximately 146-192 trips per day. As a result, it is calculated that construction truck traffic will generate fewer trips than total vehicle trips calculated for Project operation. However, the character of the vehicles will be different. Heavy vehicles and trucks will dominate construction traffic. As required by the Traffic Control Plan (TCP), staging areas will be provided on-site and out of the public right-of-way to minimize heavy equipment trips on surrounding roadways.

Table 11-24

Grading Truck Trips – Alternatives 1, 3, 5 and 6

Alternative	Net Cut Material[1]	Truck Loads[2]	Trips per Day[3]
1	92,300 cubic yards	4,615	146 - 192
3	240,400 cubic yards	12,020	146 - 192
5	166,500 cubic yards	8,325	146 - 192
6	161,300 cubic yards	8,065	146 - 192

Source: Table 14-8, Soils, Geology and Seismicity Chapter; Fehr & Peers 2009

Notes:

1 Approximate amount of net cut material to be hauled off-site.

2 Long haul trucks would be capable of carrying 20 cubic yards of material. Typically, trucks can be loaded every five minutes, resulting in 96 loads per day. Based on the number of loads required to haul the material, and the number of work days (120), trucks will need to be loaded at least every 6.5 minutes (73 loads per day) to remove all material during one construction season. This trips per day estimate represents a worst case assumption because it is likely that Phase 1 would be constructed over multiple construction seasons.

3 These are two-way trips (includes loaded delivery trip and empty return trip).

Grading activity will be limited to the TRPA grading season (May 1 – October 15), which is approximately 120 workdays, assuming a 5-day workweek.

As required by existing regulations, the project applicant will prepare a TCP for review and approval by TRPA, Placer County Department of Public Works, and Caltrans prior to construction. The TCP will address project construction traffic and parking. At a minimum, the plan will address truck haul routes, truck turning movements at the project driveway(s), traffic control signage, bicycle and pedestrian traffic, restriction of hauling activities to off-peak periods, on-site circulation and staging areas, and monitoring of the in-place traffic control to implement traffic control revisions, if necessary. The necessary encroachment and transportation permits will be obtained by the project applicant and/or a representative of the applicant prior to construction. Implementation of the TCP is expected to result in a less than significant impact related to construction traffic.

Mitigation: No mitigation is required.

IMPACT: TRANS-7. Will the Project result in alterations to the present patterns of circulation or movement of people and/or goods?

Analysis: *No Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will not include any changes to the existing Project area, including the existing roadway network.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

The Project (Alternative 1) and Alternative 3 will provide access to the Project area via Silver Street, an exclusive Homewood Driveway, Fawn Street, and Tahoe Ski Bowl Way. Although the Project will add traffic to the existing streets, it will not increase the delay to beyond acceptable levels, as shown in the LOS tables (Tables 11-20 and 11-22), and therefore will have a less than significant impact.

Alternative 4 will provide access to the Project area via an exclusive Homewood Driveway, Fawn Street, and Tahoe Ski Bowl Way. Although the Project will add traffic to the existing streets, it will not increase the delay to beyond acceptable levels, as shown in the LOS tables (Tables 11-20 and 11-22), and therefore will have a less than significant impact.

Alternative 5 will provide access to the Project area via Silver Street, an exclusive Homewood Driveway, Fawn Street, and Tahoe Ski Bowl Way. Although the Project will add traffic to the existing streets, it will not increase the delay to beyond acceptable levels, as shown in the LOS tables (Tables 11-20 and 11-22), and therefore will have a less than significant impact.

Alternative 6 will provide access to the Project area via Silver Street, an exclusive Homewood Driveway, Fawn Street, and Tahoe Ski Bowl Way. Although the Project will add traffic to the existing streets, it will not increase the delay to beyond acceptable levels, as shown in the LOS tables (Tables 11-20 and 11-22), and therefore will have a less than significant impact.

Mitigation: No mitigation is required.

IMPACT: TRANS-8. Will the Project result in an increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?

Analysis: *No Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will not include any changes to the existing Project area, including the existing roadway network and bicycle and pedestrian facilities.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

The Project and Alternative 3 will utilize the existing roadway network to provide access to the Project area. As shown in the LOS tables (Tables 11-20 and 11-22), the increase in delay at the Project area access roads is less than 10 seconds during the summer, and less than 11 seconds during the winter, with the addition of the Project (Alternative 1) and Alternative 3 project traffic. The Project (Alternative 1) and Alternative 3 will include an extension of the West Shore bicycle trail, providing better connectivity for bicyclists and pedestrians. This will have a less than significant impact.

Alternative 4 will utilize the existing roadway network to provide access to the Project area. As shown in the LOS tables (Tables 11-20 and 11-22), the increase in delay at the access roads during the summer is less than 5 seconds with the addition of Alternative 4 project traffic. The traffic at the Project area access roads will decrease during the winter, reflecting the improvement of intersection operations shown in the LOS tables. This will have a less than significant impact

Alternative 5 will utilize the existing roadway network to provide access to the Project area. As shown in the LOS tables (Tables 11-20 and 11-22), the increase in delay at the Project area access roads during the summer is less than 10 seconds with the addition of Alternative 5 project traffic. Due to the change in distribution of traffic at the Project area access roads and the overall decrease in winter traffic volumes, the delay will increase by less than 1 second at the SR 89/Silver Street intersection, and either decrease or remain the same at the SR 89/Homewood Driveway, SR 89/Fawn Street, and SR 89/Tahoe Ski Bowl Way intersections. Alternative 5 will include an extension of the West Shore bicycle trail, providing better connectivity for bicyclists and pedestrians. This will have a less than significant impact.

Alternative 6 will utilize the existing roadway network to provide access to the Project area. As shown in the LOS tables (Tables 11-20 and 11-22), the increase in delay at the Project area access roads during the summer is less than 10 seconds with the addition of Alternative 6 project traffic. Due to the change in distribution of traffic at the Project area access roads and the overall decrease in winter traffic volumes, the delay will increase by less than 1 second at the SR 89/Fawn Street intersection, and decrease at the SR 89/Silver Street, SR 89/Homewood Driveway, and SR 89/Tahoe Ski Bowl Way intersections. Alternative 6 will include an extension of the West Shore bicycle trail, providing better connectivity for bicyclists and pedestrians. This will have a less than significant impact.

Mitigation: No mitigation is required.

11.6 CUMULATIVE CONDITIONS ANALYSIS METHODOLOGY

11.6.1 2030 Background Conditions

Volume Growth

2030 background traffic volumes were calculated using two resources, an annual growth rate developed from the current TRPA travel demand model and trips generated by all planned/approved projects in the area. An annual growth rate of 1.03% per year was provided by the TRPA travel demand model for the west shore of Lake Tahoe. The 1.03% growth rate accounts for all planned/approved projects in the area, including a portion of the Homewood Mountain Resort project. Since trips generated by all planned/approved projects were manually added to the existing traffic volumes, the 1.03% per year growth rate was reduced to avoid double-counting these trips, but still captures regional growth in the area. Table 20.1-1 in Chapter 20 – Mandated Environmental Review lists planned/approved projects included in the cumulative impact analysis. The 2030 background volumes were generated using the following steps:

1) The 1.03% per year growth rate was applied to existing traffic volumes (for comparison use).

2) Trips were generated for the planned/approved projects using the trip generation methodology discussed previously, and distributed to the roadway network according to the project land use, location, and complementary land uses.

3) The background traffic volumes generated using the 1.03% per year growth rate were compared to the trips generated by the planned/approved projects from step 2. The 1.03% per year growth rate was reduced to account for the trips generated by the planned/approved projects separately. Based on this comparison, 0.62% per year growth is attributed to the planned/approved projects and 0.41% per year growth is due to regional traffic increase. The growth rate of 0.41% per year was applied to the through movement volumes on the State highways (SR 89 and SR 28) to account for growth from areas outside of the west Lake Tahoe area.

4) The trips generated in step 2 were added to the trips generated using the growth rate in step 3 to obtain overall 2030 background traffic volumes for cumulative conditions analysis.

Figures 11-23 and 11-24 show the 2030 cumulative conditions traffic volumes for the summer and winter, respectively.

Planned Roadway Improvements

The *SR 89 Fanny Bridge Alternatives Traffic Study* prepared by LSC Transportation Consultants, Inc. discusses five possible realignment alternatives to alleviate congestion near the Tahoe City "Wye", and particularly across the Fanny Bridge. Improvements to the bridge will improve congestion and are necessary regardless of redevelopment of Homewood. The improvements to Fanny Bridge are not fully funded and do not have a defined timeline; therefore the improvements were not included in the 2030 cumulative conditions analysis.

Figure 11-23. 2030 Cumulative Summer Traffic Volumes, Lane Configurations, and Control Types

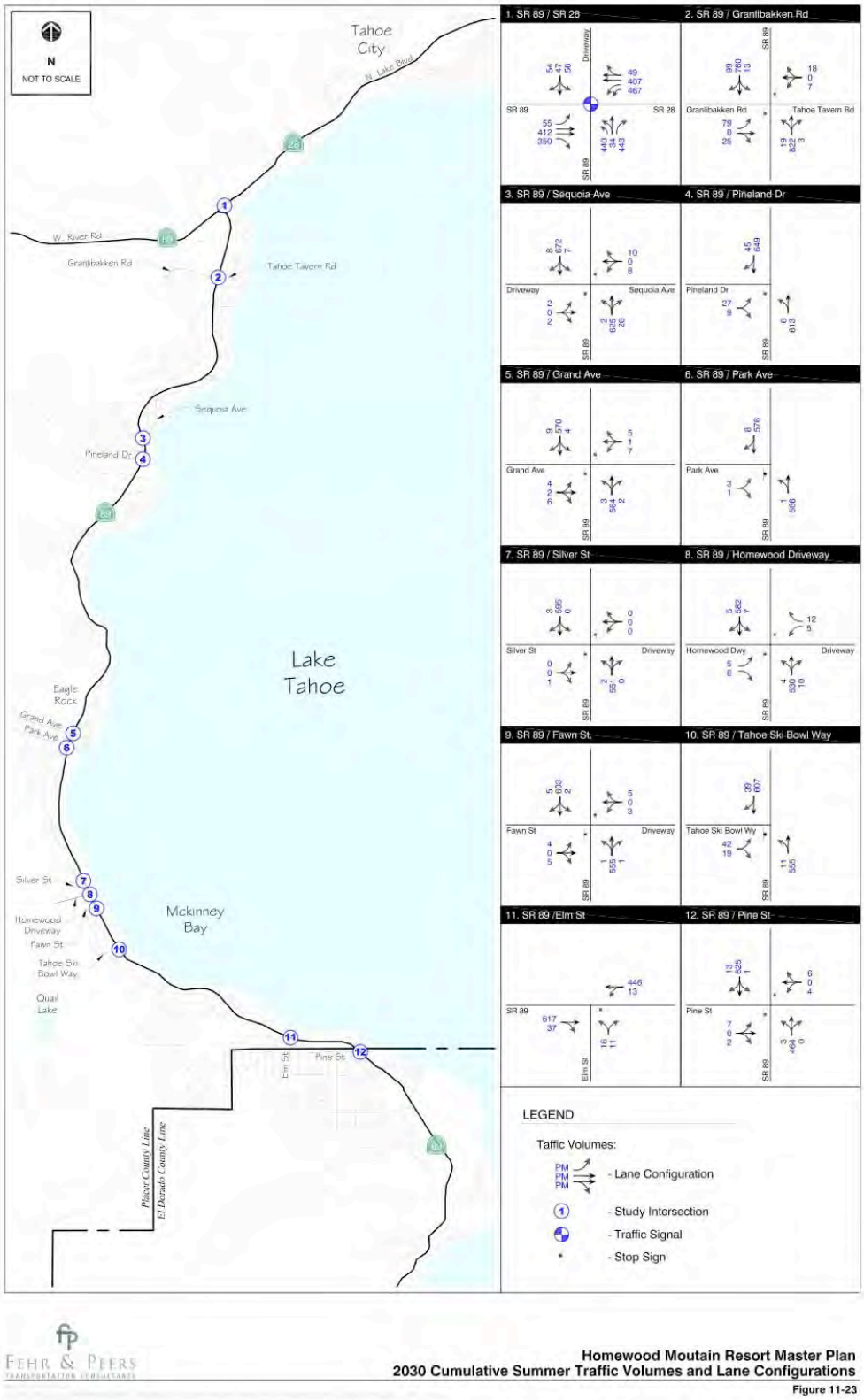
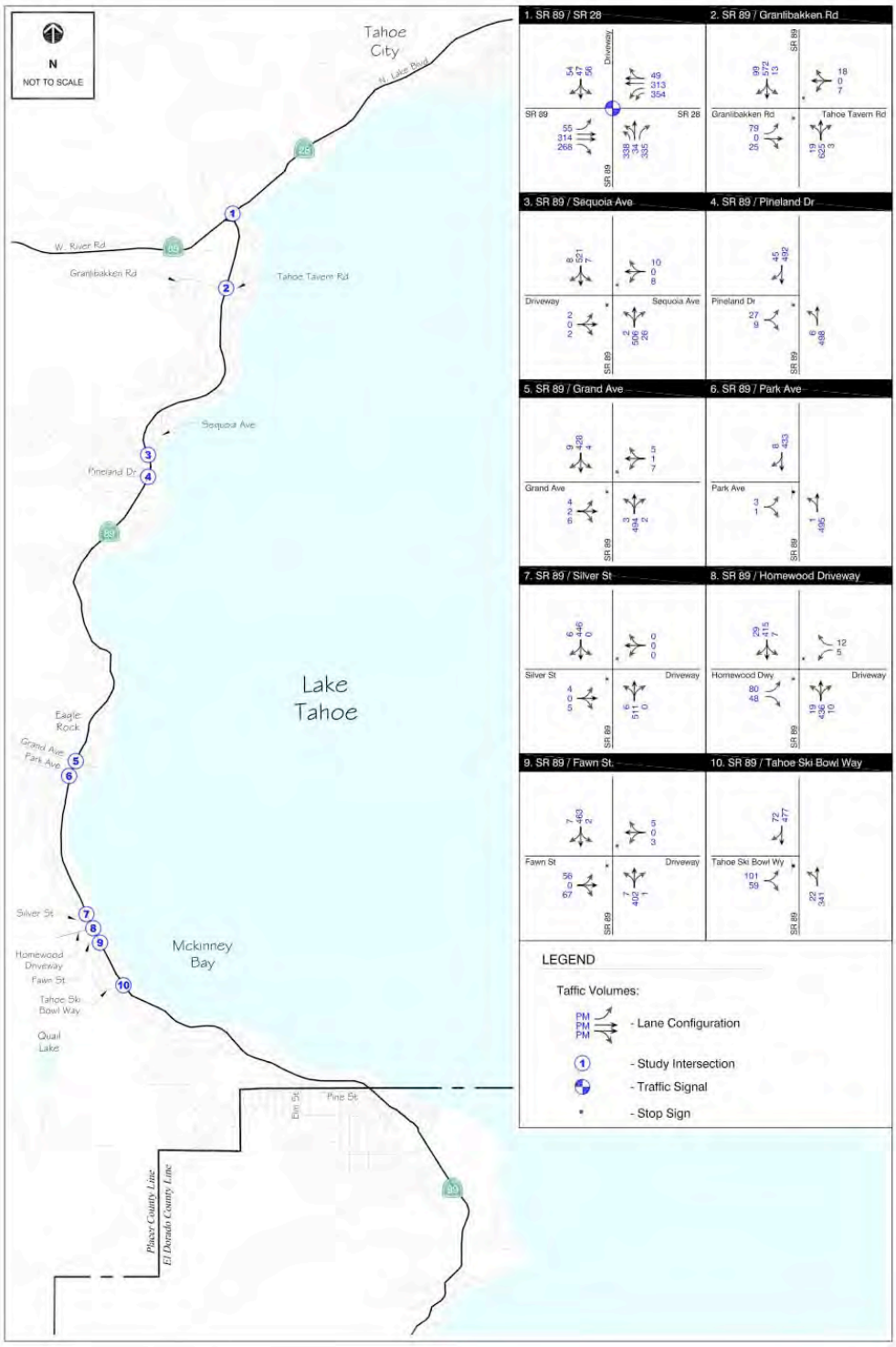


Figure 11-24. 2030 Cumulative Winter Traffic Volumes, Lane Configurations, and Control Types



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Homewood Moutain Resort Master Plan
2030 Cumulative Winter Traffic Volumes and Lane Configurations
Figure 11-24

LOS Analysis

LOS analysis was performed at the study intersections using Synchro software, which implements the methods of the Highway Capacity Manual (HCM) 2000. The Synchro output sheets for the cumulative and cumulative plus project alternatives conditions analysis are presented in Appendix L-1 for further reference. The LOS results are presented in Table 11-25.

As shown in Table 11-25, the side street approach at the SR 89/Granlibakken Road intersection will operate at unacceptable LOS during the summer and winter, Friday PM peak period under cumulative conditions. The SR 89/Pineland Road intersection is also expected to operate at an unacceptable LOS during the summer, Friday PM peak hour under cumulative conditions.

Table 11-25

LOS Results – 2030 Cumulative Conditions

Intersection	Control Type [1]	Winter		Summer	
		Friday PM Peak		Friday PM Peak	
		Delay [2]	LOS	Delay [2]	LOS
SR 89/SR 28	Signal	31.7	C	51.1	D
SR 89/Pedestrian Signal	Signal	3.6	A	5.3	A
SR 89/Granlibakken Road	SSSC	11.5 **(147.5)**	B **(F)**	33.4 **(567.5)**	D **(F)**
SR 89/Sequoia Avenue	SSSC	0.6 (21.7)	A (C)	0.7 (31.3)	A (D)
SR 89/Pineland Drive	SSSC	0.9 (24.2)	A (C)	1.1 (37.6)	A (E) [3]
SR 89/Grand Avenue	SSSC	0.6 (20.2)	A (C)	0.6 (26.9)	A (D)
SR 89/Park Avenue	SSSC	0.1 (17.9)	A (C)	0.1 (23.0)	A (C)
SR 89/Silver Street	SSSC	0.3 (17.7)	A (C)	0.0 (13.1)	A (B)
SR 89/Homewood Entrance	SSSC	4.2 (30.1)	A (D)	0.7 (22.8)	A (C)
SR 89/Fawn Street	SSSC	3.3 (25.4)	A (C)	0.4 (23.1)	A (C)
SR 89/Tahoe Ski Bowl Way	SSSC	5.1 (32.5)	A (D)	1.8 (33.6)	A (D)
SR 89/Elm Street	SSSC	--	--	0.7 (22.9)	A (C)
SR 89/Pine Street	SSSC	--	--	0.6 (32.1)	A (D)

Source: Fehr & Peers 2009

Notes: [1] SSSC = Side Street Stop Control

[2] Delay is reported in seconds per vehicle for the overall intersection for signalized intersections, and for the overall intersection (worst movement) for unsignalized intersections.

[3] The analysis period represents the absolute peak hour. The LOS E condition is not expected to exceed 4 hours of the day.

-- Intersection not analyzed under winter conditions.

11.7 CUMULATIVE IMPACTS AND MITIGATION MEASURES

IMPACT: **TRANS-C1: Will the project result in a substantial impact upon cumulative transportation systems, including roadways and intersections?**

Summer LOS Analysis

Table 11-26 presents a summary of the LOS at the study intersections for cumulative summer plus project conditions for the Project and Alternatives. Figures 11-25 through 11-28 show the cumulative plus project traffic volumes at the study intersections for Alternatives 1, 3, 4, 5, and 6.

Table 11-26

Summer LOS Results – Cumulative and Cumulative Plus Project
Summary of Project Alternatives

Intersection	Control Type [1]	Cumulative Conditions	Cumulative Plus Project Conditions				
			Alt. 1 & 3	Alt. 2	Alt. 4	Alt. 5	Alt. 6
		Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS
SR 89/SR 28	Signal	51.1 D	51.7 D	*	50.6 D	52.2 D	51.6 D
SR 89/ Pedestrian Signal	Signal	5.3 A	5.7 A	*	5.3 A	5.6 A	5.5 A
SR 89/ Granlibakken Road	SSSC	33.4 **(567.5)** D **(F)**	**39.8 (686.1) E (F)**	*	33.5 **(556.6)** D **(F)**	**37.8 (654.6) E (F)**	**36.3 (615.7) E (F)**
SR 89/ Sequoia Avenue	SSSC	0.7 (31.3) A (D)	0.7 (34.6) A (D)	*	0.7 (31.6) A (D)	0.7 (33.2) A (D)	0.7 (33.2) A (D)
SR 89/ Pineland Drive	SSSC	1.1 (37.6) A (E) [3]	1.3 (43.7) A (E) [3]	*	1.1 (37.3) A (E) [3]	1.2 (41.7) A (E) [3]	1.2 (41.6) A (E) [3]
SR 89/Grand Avenue	SSSC	0.6 (26.9) A (D)	0.7 (30.5) A (D)	*	0.6 (27.0) A (D)	0.7 (29.5) A (D)	0.7 (29.2) A (D)
SR 89/Park Avenue	SSSC	0.1 (23.0) A (C)	0.1 (25.6) A (D)	*	0.1 (23.0) A (C)	0.1 (24.8) A (C)	0.1 (24.7) A (C)
SR 89/Silver Street	SSSC	0.0 (13.1) A (B)	0.3 (26.9) A (D)	*	0.0 (13.1) A (B)	0.5 (26.3) A (D)	0.2 (25.1) A (D)
SR 89/ Homewood Entrance	SSSC	0.7 (22.8) A (C)	1.3 (30.5) A (D)	*	1.1 (24.4) A (C)	1.3 (28.1) A (D)	0.9 (25.8) A (D)
SR 89/Fawn Street	SSSC	0.4 (23.1) A (C)	1.3 (30.9) A (D)	*	0.7 (25.0) A (C)	1.2 (29.9) A (D)	1.7 (34.4) A (D)
SR 89/Tahoe Ski Bowl Way	SSSC	1.8 (33.6) A (D)	2.5 (41.5) A (E) [3]	*	2.0 (35.9) A (E) [3]	2.1 (37.9) A (E) [3]	2.3 (38.6) A (E) [3]

Table 11-26

Summer LOS Results – Cumulative and Cumulative Plus Project
Summary of Project Alternatives

Intersection	Control Type [1]	Cumulative Conditions	Cumulative Plus Project Conditions				
			Alt. 1 & 3	Alt. 2	Alt. 4	Alt. 5	Alt. 6
		Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS
SR 89/Elm Street	SSSC	0.7 (22.9) A (C)	0.8 (25.1) A (D)	*	0.8 (23.8) A (C)	0.8 (24.4) A (C)	0.8 (24.7) A (C)
SR 89/Pine Street	SSSC	0.6 (32.1) A (D)	0.7 (36.2) A (E) [3]	*	0.6 (33.1) A (D)	0.6 (34.7) A (D)	0.6 (33.9) A (D)

Source: Fehr & Peers 2009

Notes:
[1] SSSC = Side Street Stop Control
[2] Delay is report in seconds per vehicle for the overall intersection for signalized intersections, and for the overall intersection (worst movement) for unsignalized intersections.
[3] The analysis period represents the absolute peak hour. The LOS E condition is not expected to exceed 4 hours of the day and therefore is not considered to be a significant impact.
* No project conditions – Same as cumulative conditions
Bold indicates deficient operations.

Analysis: *No Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will not include changes to the existing land uses, densities, and roadway network; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Project (Alternative 1) and Alternatives 3, 5 and 6*

Alternatives 1, 3, 5 and 6 will have a significant impact at the SR 89/Granlibakken Road intersection. Although the SR 89/Granlibakken Road intersection operates at an unacceptable LOS under cumulative conditions, the project is expected to increase delay at the side-street approaches, and therefore cause a significant impact. The remaining study intersections are expected to operate acceptably with the addition of Alternatives 1, 3, 5 and 6 traffic volumes.

Figure 11-25. Cumulative Summer Plus Alternatives 1 and 3 Traffic Volumes

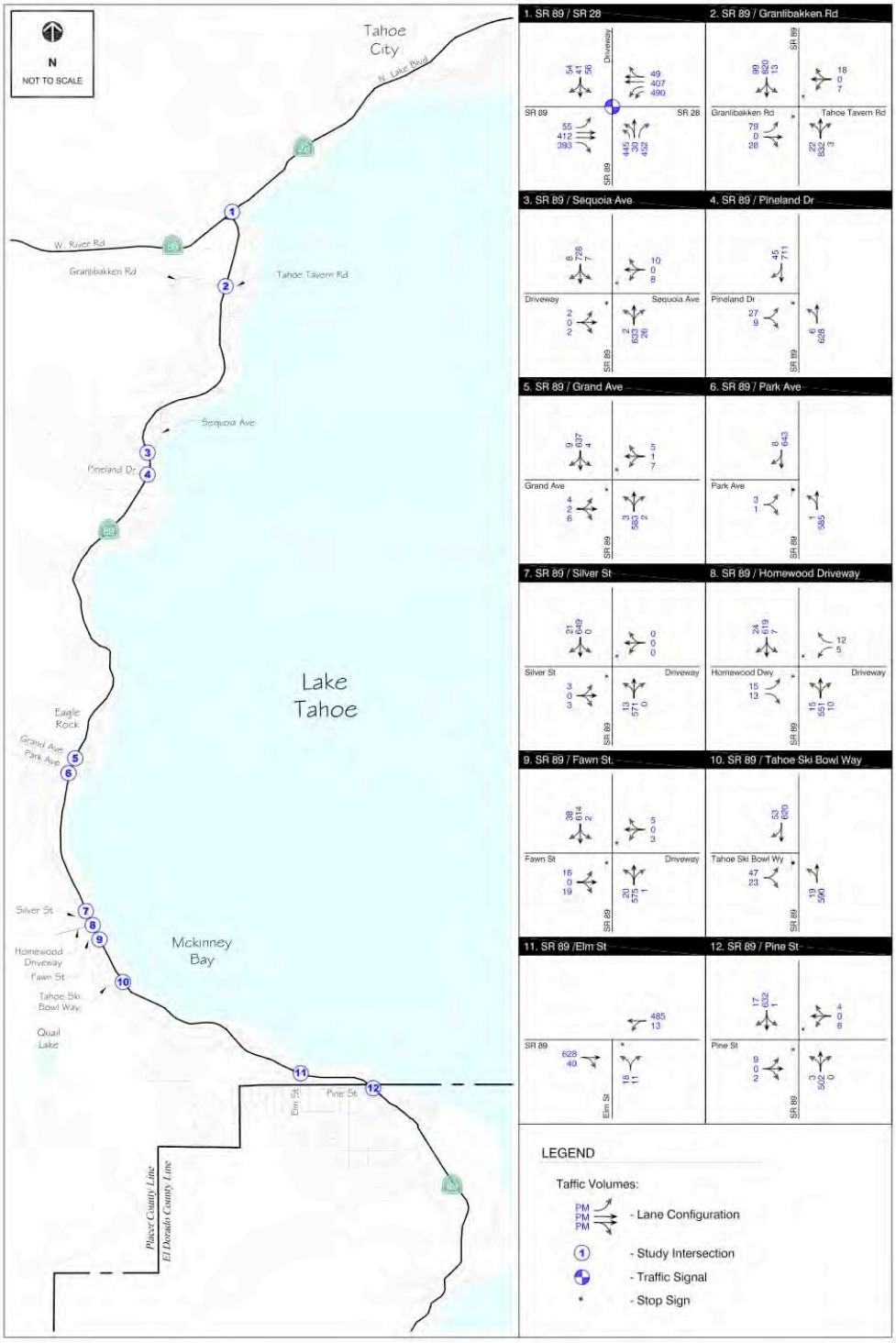
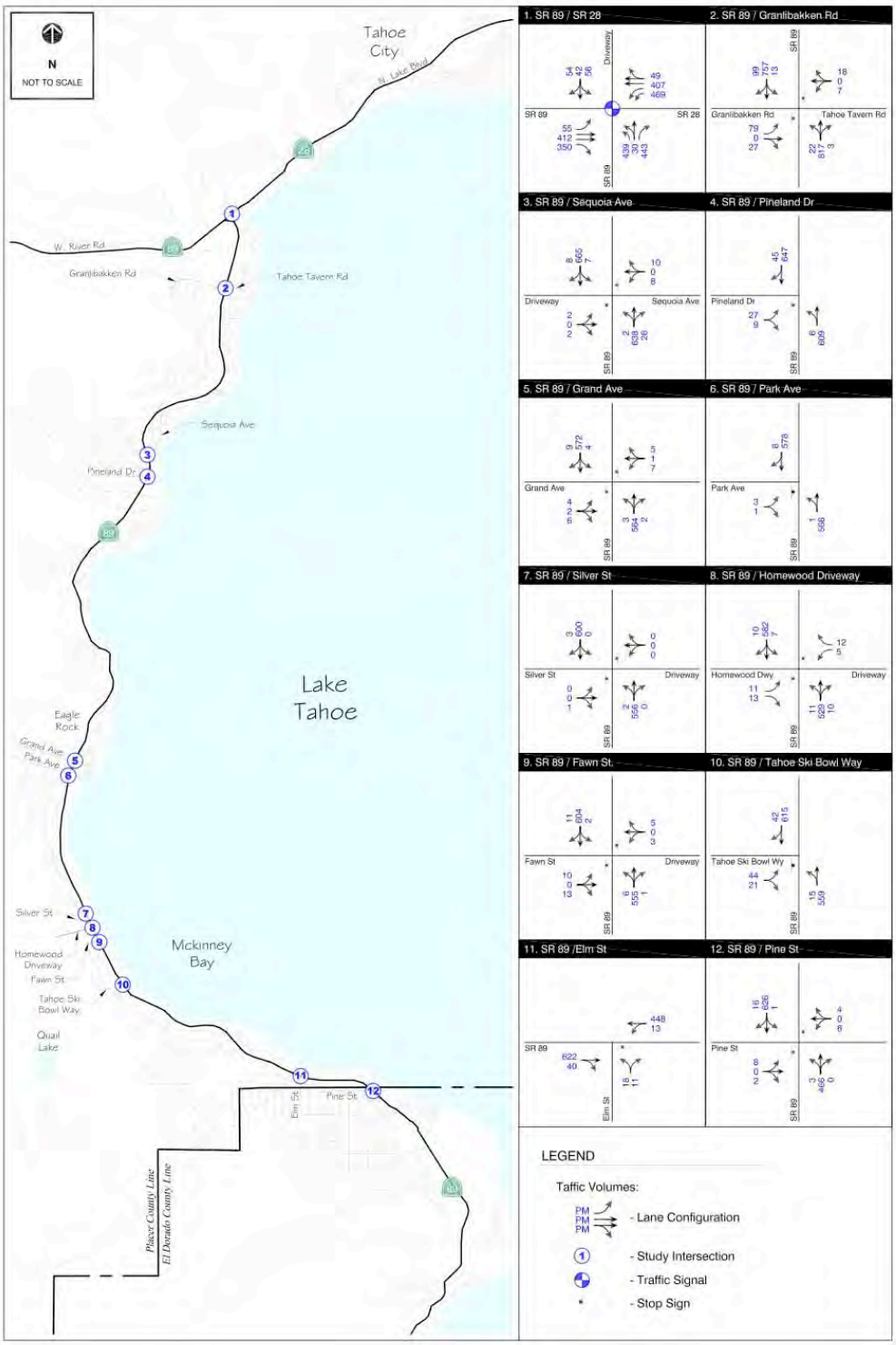


Figure 11-26. Cumulative Summer Plus Alternative 4 Traffic Volumes



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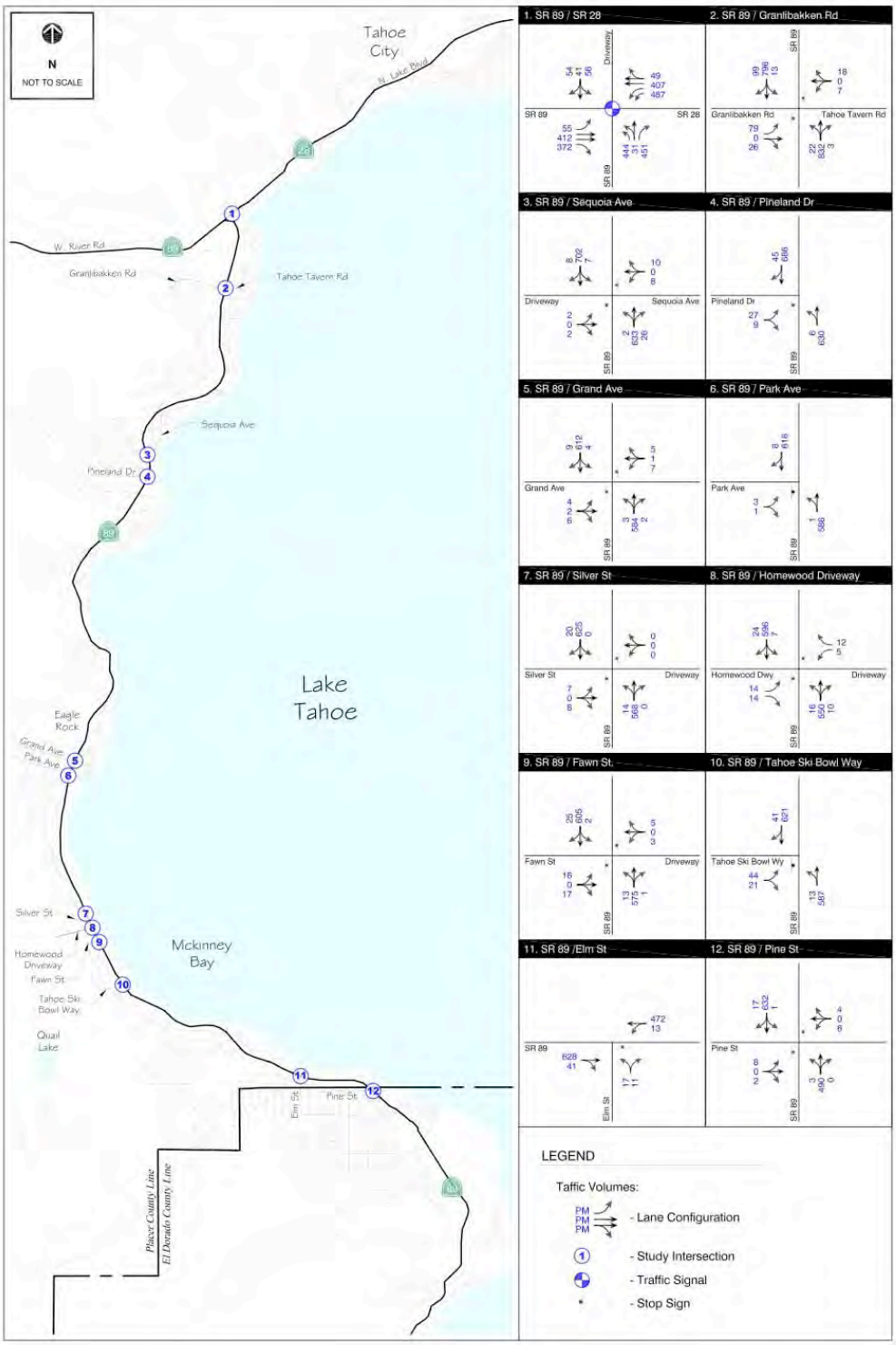
Homewood Moutain Resort Master Plan
2030 Cumulative Summer Plus Alternative 4 Traffic Volumes
Figure 11-26

Figure 11-27. Cumulative Summer Plus Alternative 5 Traffic Volumes



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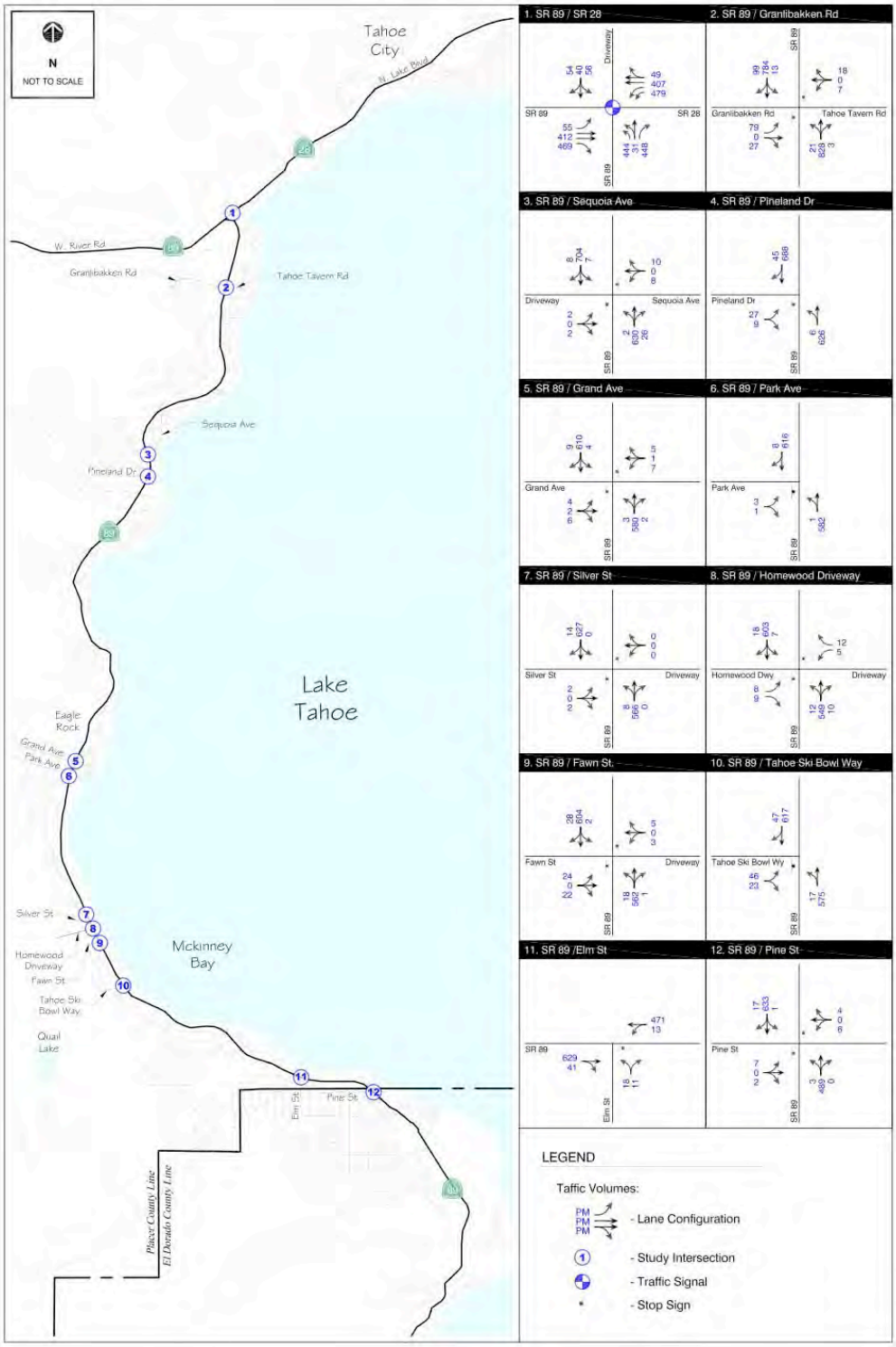
Homewood Moutain Resort Master Plan
2030 Cumulative Summer Plus Alternative 5 Traffic Volumes
Figure 11-27

Figure 11-28. Cumulative Summer Plus Alternative 6 Traffic Volumes



Mitigation: **TRANS-C1: Implement Intersection Improvements**

The Project shall construct the following intersection improvement at the SR 89/Granlibakken Road intersection: Add an acceleration lane or two-way left-turn lane (consistent with the *Placer 89 Environmental Improvement Project*, 2006) to SR 89 north of Granlibakken Road. The mitigation measure will result in the following summer LOS:

- *Delay after mitigation: 3.7* ***(58.9)****, LOS: A* ***(F)****, Project and Alternative 3*
- *Delay after mitigation: 3.6* ***(55.4)****, LOS: A* ***(F)****, Alternative 5*
- *Delay after mitigation: 3.6* ***(53.7)****, LOS: A* ***(F)****, Alternative 6*

Note: A two-way left-turn lane has been environmentally cleared through a CEQA Mitigated Negative Declaration, NEPA Finding of No Significant Impact, and TRPA Programmatic Environmental Assessment, and is scheduled for construction at this location as part of the Caltrans' *Placer 89 Environmental Improvement Project (2006)*. Figures ESL 42 and ESL 43 from the *Placer 89 Environmental Improvement Project* show the proposed roadway improvements, and are provided in Appendix L-2. If construction of the improvement is in place prior to being needed by HMR, HMR shall no longer be responsible for the improvement.

The Project shall obtain an Encroachment Permit from Caltrans for any work within the State right-of-way. A copy of the permit shall be provided to the Placer County Engineering and Surveying department prior to the approval of Improvement Plans.

TRANS-C2: Payment of Countywide Traffic Impact Fees

This project will be subject to the payment of traffic impact fees that are in effect in this area (Tahoe Resort District), pursuant to applicable Ordinances and Resolutions. The applicant is notified that the following traffic mitigation fee(s) will be required and shall be paid to Placer County Department of Public Works prior to issuance of any Building Permits for the project: A) County Wide Traffic Limitation Zone: Article 15.28.010, Placer County Code. The fees are calculated using the information supplied by the applicant. If either the use or the square footage changes, then the fees will change. The actual fees paid will be those in effect at the time the payment occurs.

After Mitigation: *Less than Significant Impact; Project (Alternative 1) and Alternatives 3, 5 and 6*

Implementation of mitigation measure TRANS-C1 will improve summer operations at the SR 89/Granlibakken Road intersection to better than cumulative conditions. This mitigation does not improve LOS to D or better at the side-street approach, however it does improve intersection operations to better than 2030 cumulative conditions.

Analysis: *Less than Significant Impact; Alternative 4*

Alternative 4 will not have a significant impact the study intersections. Although the SR 89/Granlibakken Road intersection is expected to operate at an unacceptable LOS, the project traffic does not increase the delay at the intersection.

Mitigation: No mitigation is required.

Summer Queuing Analysis

Queuing analysis was performed at the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections. Queuing issues currently exist in the area, particularly near the Fanny Bridge. The *SR 89 Fanny Bridge Alternatives Traffic Study* prepared by LSC Transportation Consultants, Inc. (2005) details the congestion issues on the bridge. The LSC study, as well as the LOS tables provided in this study indicate that the congestion in the area is not caused by intersection operations, but rather by the "bottle neck" effect at the Fanny Bridge, and the high number of bicycles and pedestrians that use the bridge. As shown in Table 11-26, the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections operate at LOS D and LOS A, respectively, with and without the project. The *SR 89 Fanny Bridge Alternatives Traffic Study* presents 5 realignment alternatives to relieve congestion on the Fanny Bridge. Note that the queuing analysis includes the pedestrian signal on SR 89 south of the Fanny Bridge which was installed after the *SR 89 Fanny Bridge Alternatives Traffic Study* was completed. The pedestrian signal in conjunction with a barrier chain between the Fanny Bridge sidewalk and the northbound travel lane has significantly reduced the impact of pedestrian and bicycle activity on traffic conditions. The queuing analysis accounts for the vehicle delay resulting from the pedestrian signal.

Table 11-27 shows the Sim Traffic queuing analysis results for the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections during the summer for cumulative and cumulative plus project conditions. The Project alternatives were analyzed during the Friday PM peak hour; however, we understand that on peak weekends during summer months there is significant congestion at the Tahoe City "Wye", and the northbound queue can extend beyond the queue lengths shown in the analysis.

Analysis: *No Impact; No Project (Alternative 2)*

Alternative 2 will not include changes to the existing land uses, densities, and roadway network; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Table 11-27

Summer Queuing Analysis – Cumulative and Cumulative Plus Project
Summary of Project Alternatives

	Storage Length (ft)	Average Summer Queue Lengths[2] (ft)[3]				
		Cumulative	Alts. 1 and 3	Alt. 4	Alt. 5	Alt. 6
SR 89/SR 28						
NBL	405	145	160	135	150	165
NBT	125	**145**	**160**	135	**150**	**165**
NBR	125	**145**	**160**	135	**150**	**165**
EBL	200	55	65	60	60	70
EBT	790	185	180	185	185	195
EBR	250	185	180	185	185	195
WBL	225	175	185	175	180	180
WBT	515	365	440	365	400	365
WBR	225	160	160	160	160	160
SR 89/Pedestrian Crossing						
NBT	515	305	385	280	325	395
SBT	225	165	180	170	165	170

Source: Fehr & Peers 2009

Notes: [1] Storage lengths are defined by the distance to the closest upstream intersection for through movements, and pockets lengths for turn movements.

[2] SimTraffic queuing results are a product of a simulation that is designed to represent "real-life" drivers to the best extent possible. Each simulation run represents a unique set of data. An average of 10 runs is shown in the results table.

[3] Typical practice methodology is to assume an average vehicle length of 25 feet for queuing analysis. A difference of 0-15 feet between scenarios is not considered a change in the number of vehicles.

Bold indicates queue lengths that exceed storage lengths.

Analysis: *Significant Impact; Project (Alternative 1) and Alternatives 3, 5, and 6*

The Project and Alternatives 3, 5, and 6 will have a significant impact at the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections. Although not directly represented in the queuing analysis results in Table 11-27, it should be noted that the analysis does not include bicycle and pedestrian traffic that will contribute additional congestion to the area. Existing congestion at the Fanny Bridge results in delays and vehicle queuing. As discussed, the Fanny Bridge study identifies the congestion issues, as well as improvements to alleviate the congestion (LSC 2005). The Project and Alternatives 3, 5, and 6 will contribute additional traffic volumes (Alternatives 1 and 3 will add 70 vehicles to the intersection, 10 travelling northbound; Alternative 5 will add 45 vehicles to the intersection, 9 travelling northbound; and Alternative 6 will add 30 to the intersection, 6

travelling northbound) to this area of known congestion during the Friday PM peak hour. Alternatives 1 and 3 will increase the northbound queue at the SR 89/Pedestrian Crossing intersection by 80 feet (3-4 vehicles). The northbound queue lengths at the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections for the other alternatives will increase by 1 vehicle. (Typical practice methodology is to assume an average vehicle length of 25 feet for queuing analysis.) The increase in traffic volumes and queue lengths (of one or more vehicles) is considered a significant impact.

Mitigation: No mitigation is possible.

After Mitigation: *Significant and Unavoidable Impact; Project (Alternative 1) and Alternatives 3, 5, and 6*

Improvement alternatives have been identified by others (*SR 89 Fanny Bridge Alternatives Traffic Study*, LSC 2005) to relieve congestion and reduce queuing on Fanny Bridge. Once these improvements are implemented the project impact will be less than significant; however, funding for the improvement project (particularly state funding) has not been secured; therefore, the impact is significant and unavoidable. It should be noted that the Fanny Bridge improvement project is identified in the Lake Tahoe Regional Transportation Plan's Project Strategies (Short Term), and partially funded by two sources: the Federal Transportation Improvement Program for the work being done by the Tahoe Transportation District and Placer County Capital Improvement Program traffic impact fees.

The project applicant shall contribute a fair share contribution to the Fanny Bridge improvement alternative based on Placer County standards. Note that payment of fees does not mitigate an impact if there is no evidence in the record there is a funding program in place which will get the improvement built.

Analysis: *Less than Significant Impact; Alternative 4*

Alternative 4 will reduce traffic volumes at the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Winter LOS Analysis

Table 11-28 presents a summary of the LOS at the study intersections for cumulative winter plus project conditions for the Project. Figures 11-29 through 11-32 show the cumulative plus project traffic volumes at the study intersections for Alternatives 1, 3, 4, 5, and 6.

Table 11-28

Winter LOS Results – Cumulative and Cumulative Plus Project
Summary of Project Alternatives

Intersection	Control Type [1]	Cumulative Conditions	Cumulative Plus Project Conditions				
			Alt. 1 & 3	Alt. 2	Alt. 4	Alt. 5	Alt. 6
		Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS	Delay[2] LOS
SR 89/SR 28	Signal	31.7 C	31.0 C	*	30.0 C	30.8 C	30.6 C
SR 89/ Pedestrian Signal	Signal	3.6 A	3.5 A	*	3.3 A	3.5 A	3.4 A
SR 89/ Granlibakken Road	SSSC	11.5 **(147.5)** B **(F)**	13.4 **(185.5)** B **(F)**	*	7.2 **(95.3)** A **(F)**	13.0 **(177.2)** B **(F)**	12.6 **(167.3)** B **(F)**
SR 89/ Sequoia Avenue	SSSC	0.6 (21.7) A (C)	0.6 (21.5) A (C)	*	0.6 (17.8) A (C)	0.6 (20.6) A (C)	0.6 (20.6) A (C)
SR 89/ Pineland Drive	SSSC	0.9 (24.2) A (C)	0.9 (23.6) A (C)	*	0.9 (17.8) A (C)	0.9 (22.6) A (C)	0.9 (22.5) A (C)
SR 89/Grand Avenue	SSSC	0.6 (20.2) A (C)	0.6 (19.9) A (C)	*	0.6 (14.5) A (B)	0.6 (19.4) A (C)	0.6 (19.1) A (C)
SR 89/Park Avenue	SSSC	0.1 (17.9) A (C)	0.1 (17.8) A (C)	*	0.1 (13.8) A (B)	0.1 (17.4) A (C)	0.1 (17.1) A (C)
SR 89/Silver Street	SSSC	0.3 (17.7) A (C)	0.1 (18.3) A (C)	*	0.0 (10.8) A (B)	0.1 (15.7) A (C)	0.1 (17.5) A (C)
SR 89/ Homewood Entrance	SSSC	4.2 (30.1) A (D)	1.2 (22.6) A (C)	*	1.0 (14.4) A (B)	1.5 (22.4) A (C)	1.3 (22.0) A (C)
SR 89/Fawn Street	SSSC	3.3 (25.4) A (D)	14.9 **(65.2)** B **(F)**	*	0.7 (14.1) A (B)	11.6 **(50.8)** B **(F)**	12.6 **(53.5)** B **(F)**
SR 89/Tahoe Ski Bowl Way	SSSC	5.1 (32.5) A (D)	1.1 (17.4) A (C)	*	1.1 (16.1) A (B)	1.1 (17.3) A (C)	1.1 (17.3) A (C)

Source: Fehr & Peers 2009

Notes:
[1] SSSC = Side Street Stop Control
[2] Delay is report in seconds per vehicle for the overall intersection for signalized intersections, and for the overall intersection (worst movement) for unsignalized intersections.
* No project conditions – Same as cumulative conditions
Bold indicates deficient operations.

Figure 11-29. Cumulative Winter Plus Alternatives 1 and 3 Traffic Volumes

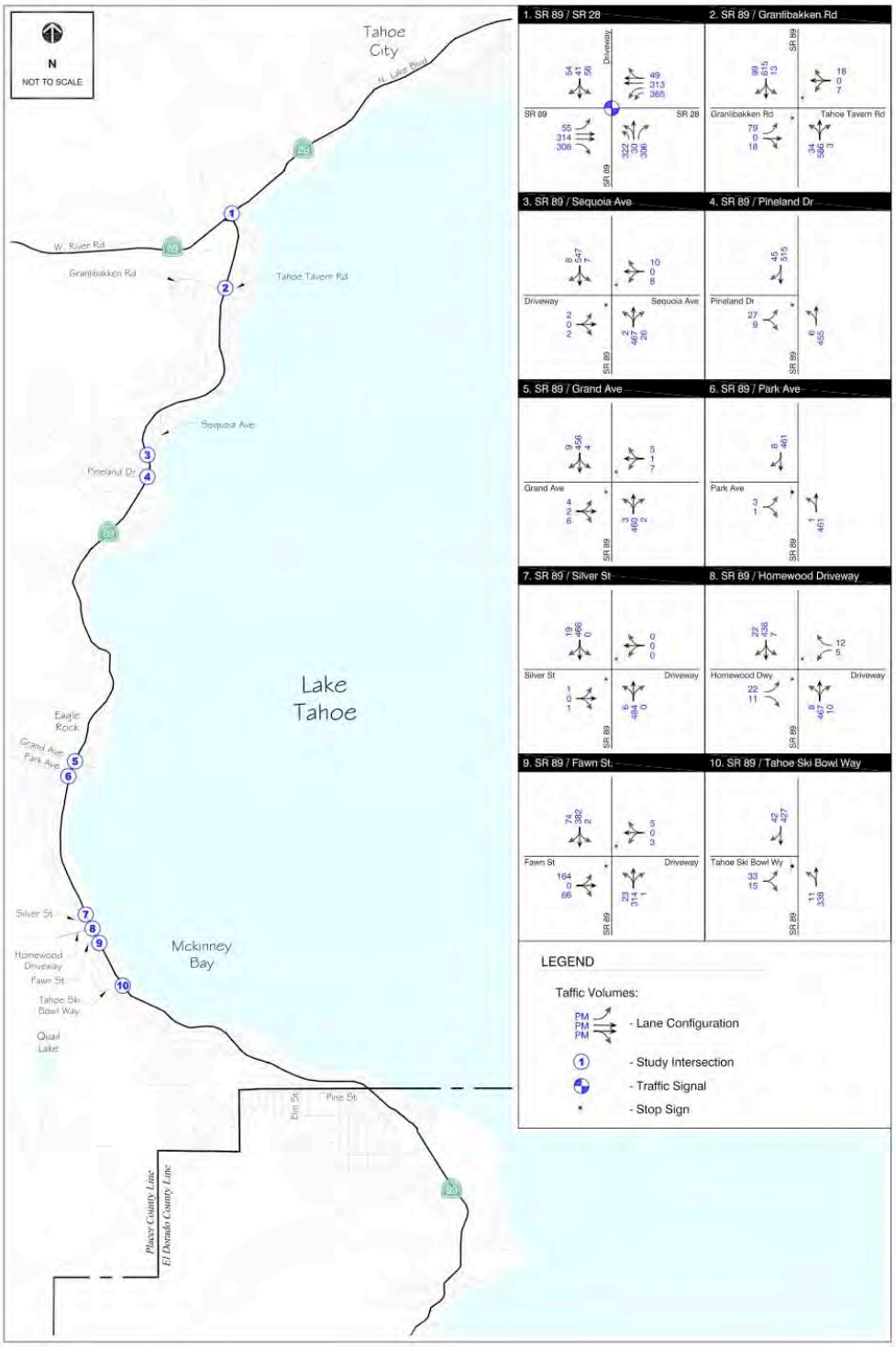


Figure 11-30. Cumulative Winter Plus Alternative 4 Traffic Volumes

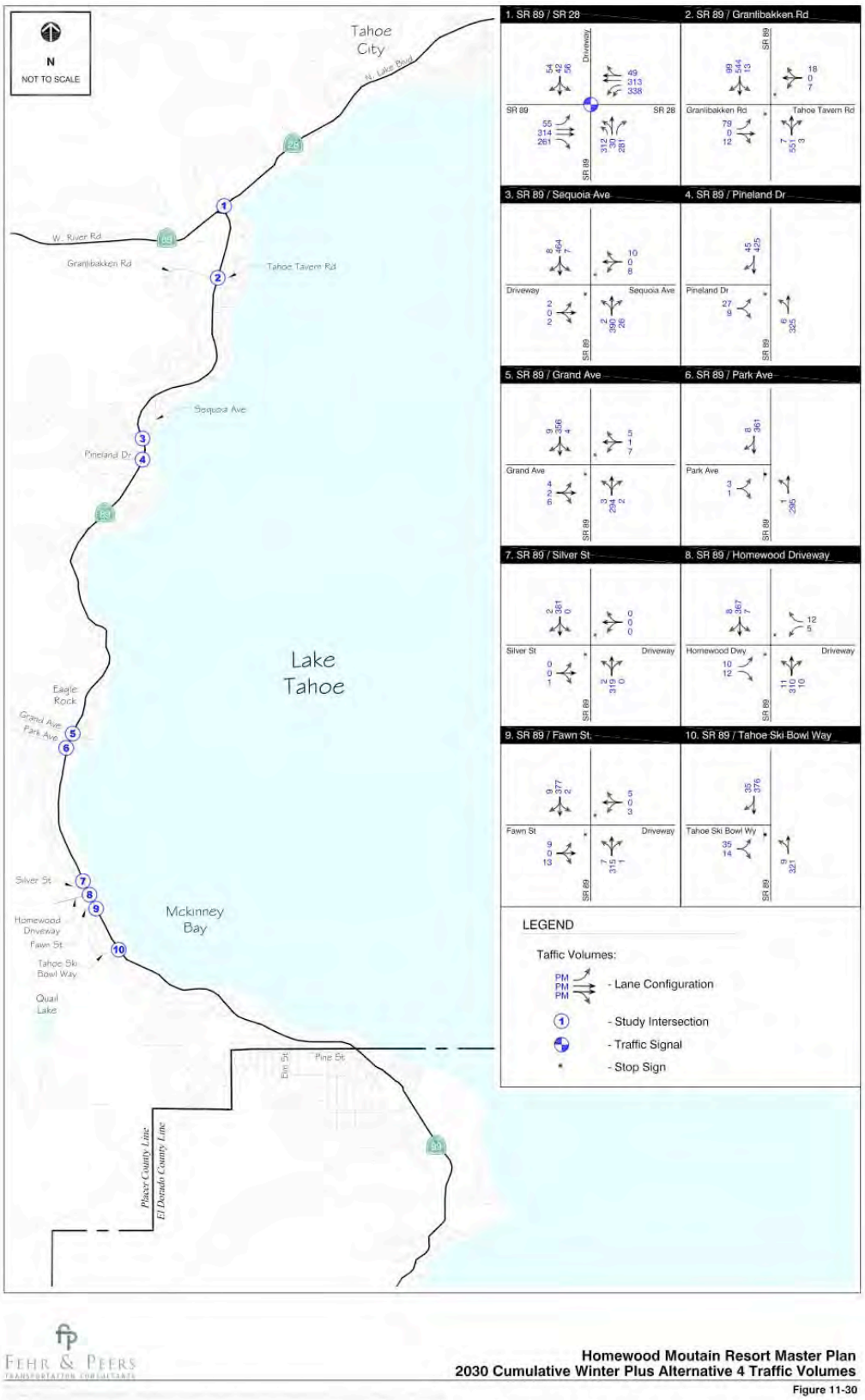
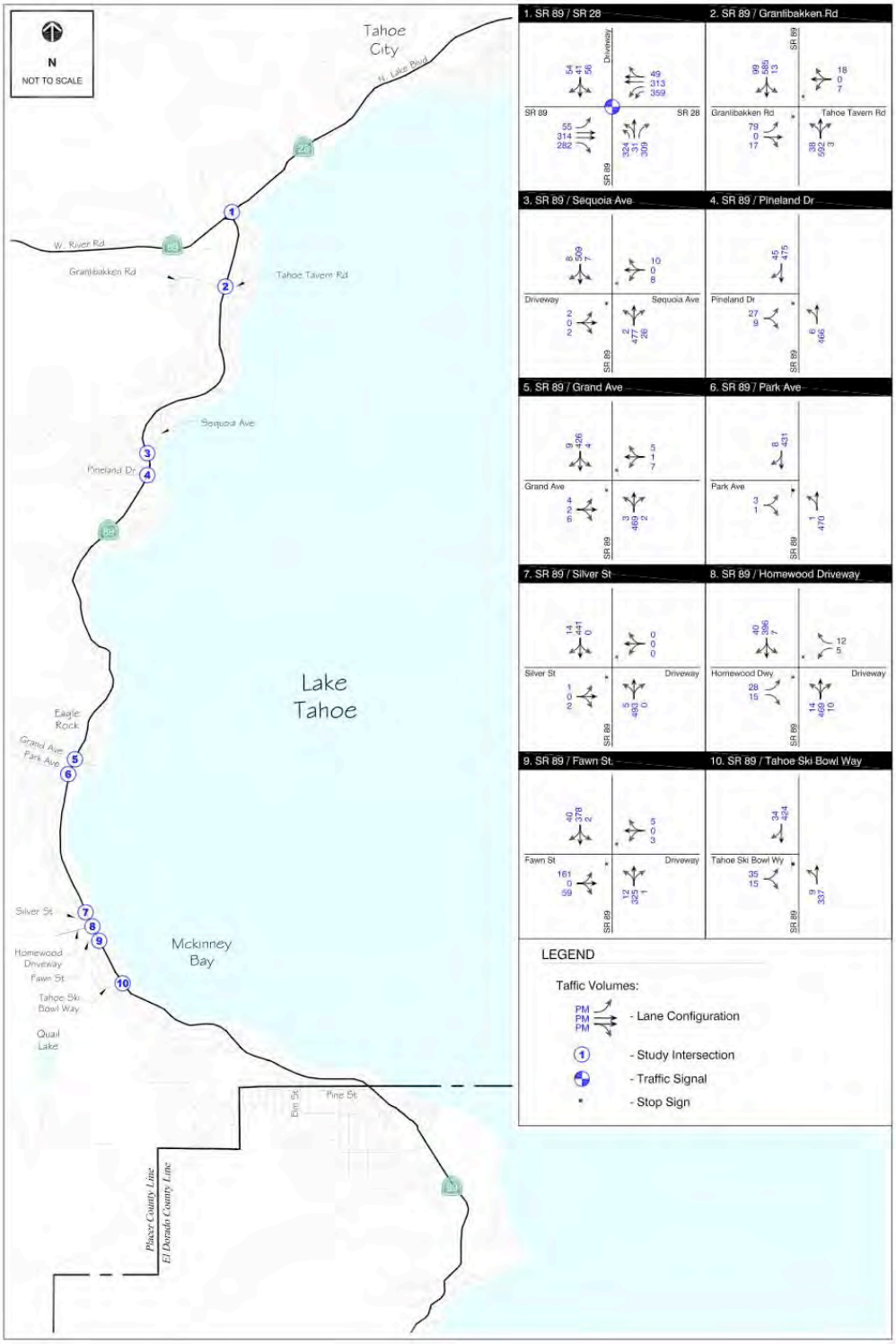


Figure 11-31. Cumulative Winter Plus Alternative 5 Traffic Volumes



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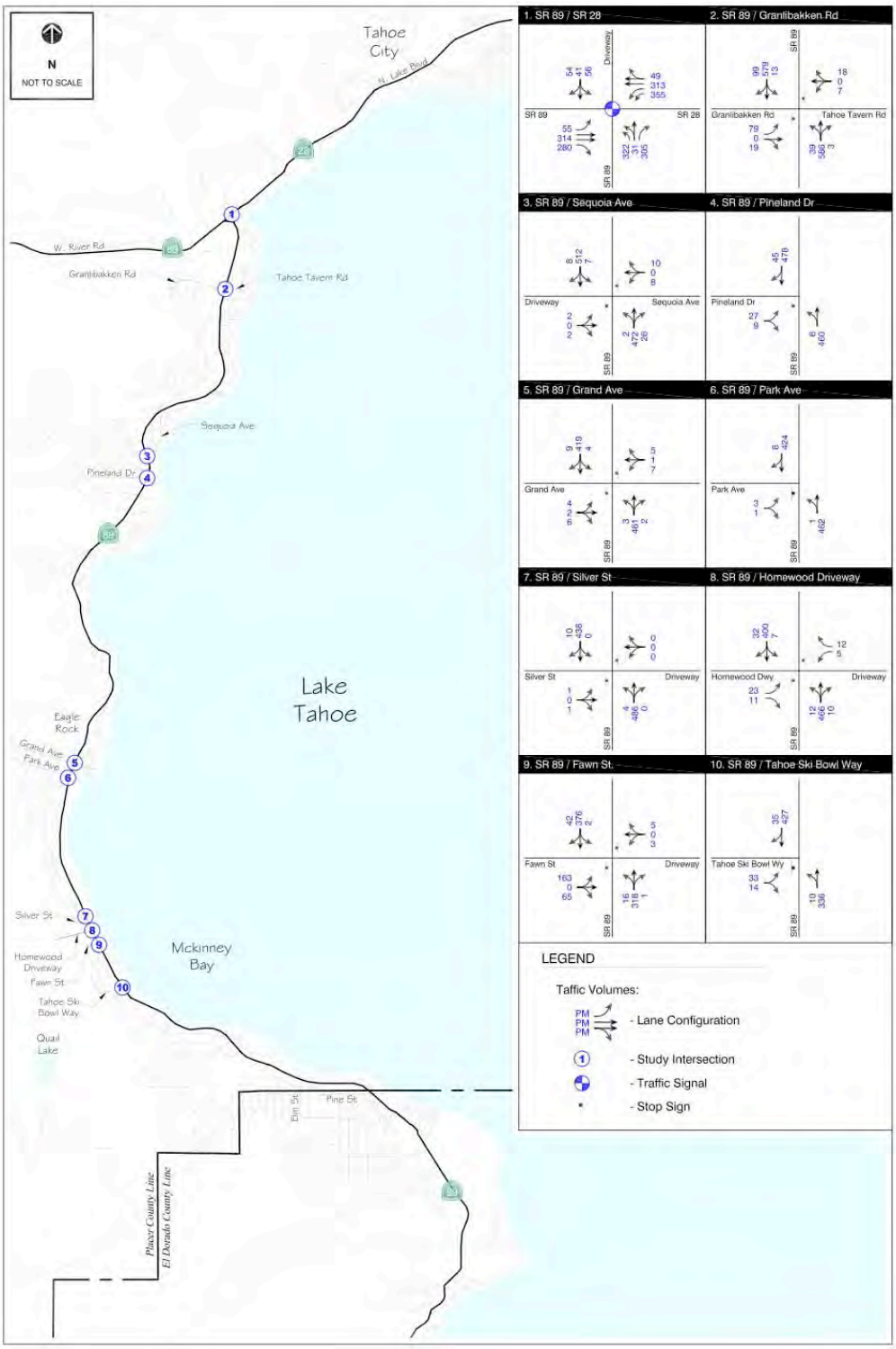
2030 Cumulative Winter Plus Alternative 5 Traffic Volumes
Figure 11-31

Figure 11-32. Cumulative Winter Plus Alternative 6 Traffic Volumes



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Homewood Moutain Resort Master Plan
2030 Cumulative Winter Plus Alternative 6 Traffic Volumes
Figure 11-32

Analysis: *No Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will not include changes to the existing land uses, densities, and roadway network; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Project (Alternative 1) and Alternatives 3, 5, and 6*

The Project (Alternative 1) and Alternatives 3, 5, and 6 will have a significant impact at the SR 89/Granlibakken Road and SR 89/Fawn Street intersections. Although the overall trip generation for the Project and Alternatives 3, 5, and 6 is less than the existing HMR trip generation, the distribution of vehicle trips is expected to change, causing an increase in some turning movements at the intersections. The remaining study intersections are expected to operate at acceptable LOS with the addition of the Project and Alternatives.

Mitigation: **TRANS-C1: Implement Intersection Improvements**

SR 89/Granlibakken Road:

The Project shall construct the following intersection improvement at SR 89/Granlibakken Road: Add an acceleration lane or two-way left-turn lane (consistent with the *Placer 89 Environmental Improvement Project*, 2006) to SR 89 at Granlibakken Road. The mitigation measure will result in the following winter LOS:

- *Delay after mitigation: 2.8 (26.2), LOS: A (D), Project and Alternative 3*
- *Delay after mitigation: 2.8 (25.7), LOS: A (D), Alternative 5*
- *Delay after mitigation: 2.9 (25.5), LOS: A (D), Alternative 6*

Note: A two-way left-turn lane has been environmentally cleared through a CEQA Mitigated Negative Declaration, NEPA Finding of No Significant Impact, and TRPA Programmatic Environmental Assessment, and is scheduled for construction at this location as part of the Caltrans' *Placer 89 Environmental Improvement Project (2006)*. Figures ESL 42 and ESL 43 from the *Placer 89 Environmental Improvement Project* show the proposed roadway improvements, and are provided in Appendix L-2. If construction of the improvement is in place prior to being needed by HMR, HMR shall no longer be responsible for the improvement.

The Project shall obtain an Encroachment Permit from Caltrans for any work within the State right-of-way. A copy of the permit shall be provided to the Placer County Engineering and Surveying department prior to the approval of Improvement Plans.

SR 89/Fawn Street:

The project shall construct the following intersection improvement at SR 89/Fawn Street: Add a left-turn pocket on Fawn Street. The pocket should have a minimum length of 100 feet.

- *Delay after mitigation: 9.7 (41.6), LOS: A (E), Project and Alternative 3*
- *Delay after mitigation: 8.2 (35.5), LOS: A (E), Alternative 5*
- *Delay after mitigation: 8.6 (35.8), LOS: A (E), Alternative 6*

Note: The analysis period represents the absolute peak hour. The LOS E condition is not expected to exceed 4 hours of the day and therefore is not considered to be a significant impact after implementation of mitigation measures.

TRANS-C2: Payment of Countywide Traffic Impact Fees

SR 89/Granlibakken Road:

This project will be subject to the payment of traffic impact fees that are in effect in this area (Tahoe Resort District), pursuant to applicable Ordinances and Resolutions. The applicant is notified that the following traffic mitigation fee(s) will be required and shall be paid to Placer County Department of Public Works prior to issuance of any Building Permits for the project: A) County Wide Traffic Limitation Zone: Article 15.28.010, Placer County Code. The fees are calculated using the information supplied by the applicant. If either the use or the square footage changes, then the fees will change. The actual fees paid will be those in effect at the time the payment occurs.

After Mitigation: *Less than Significant Impact; Project (Alternative 1) and Alternatives 3, 5, and 6*

Implementation of mitigation measure TRANS-C1 will improve winter operations at the SR 89/Granlibakken Road and SR 89/Fawn Street intersections to within LOS standards.

Analysis: *Less than Significant Impact; Alternative 4*

Although the SR 89/Granlibakken Road intersection is expected to operate at an unacceptable LOS under Alternative 4, the intersection delay decreases compared to cumulative conditions, and therefore is not considered a significant impact. The remaining study intersections are expected to operate at acceptable LOS under plus project conditions for Alternative 4.

Mitigation: No mitigation is required.

Winter Queuing Analysis

Table 11-29 shows the storage and queue lengths for the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections during the winter.

Table 11-29

Winter Queuing Analysis – Cumulative and Cumulative Plus Project
Summary of Project Alternatives

	Storage Length (ft)	Average Winter Queue Lengths (ft)				
		Cumulative	Alt. 1 and 3	Alt. 4	Alt. 5	Alt. 6
SR 89/SR 28						
NBL	405	105	100	105	105	100
NBT	125	70	70	65	70	65
NBR	125	70	70	65	70	65
EBL	200	40	45	40	45	40
EBT	790	100	100	100	95	90
EBR	250	100	100	100	100	100
WBL	225	120	120	110	110	120
WBT	515	105	110	105	110	125
WBR	225	60	65	60	65	65
SR 89/Pedestrian Crossing						
NBT	515	180	160	170	180	170
SBT	225	135	135	135	135	135

Source: Fehr & Peers 2009

Notes: [1] Storage lengths are defined by the distance to the closest upstream intersection for through movements, and pockets lengths for turn movements.

Analysis: *No Impact; Alternative 2*

Alternative 2 will not include changes to the existing land uses, densities, and roadway network; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternatives 1, 3, 4, 5 and 6*

The queue lengths at the SR 89/SR 28 and SR 89/Pedestrian Crossing intersections are not expected to exceed the existing storage lengths with the addition of project traffic from each alternative.

Mitigation: No mitigation is required.

11.8 REFERENCES

California Environmental Quality Act. *Appendix G*

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12 AIR QUALITY

12.1 ENVIRONMENTAL SETTING

The Homewood Mountain Resort (HMR) Ski Area Master Plan (Project) is located within the Placer County portion of the Lake Tahoe Air Basin (LTAB). This chapter describes the climate and topography of the LTAB and offers an overview of conditions affecting pollutant ambient air concentrations in the basin. Following this, the chapter summarizes relevant air quality standards, pollutant characteristics, and criteria pollution monitoring data measured near the Project. The chapter discusses existing emission sources and estimates air pollutant emissions that would be caused directly or indirectly by the Project, determines whether those emissions are significant in relation to applicable air quality standards, and identifies mitigation measures addressing those impacts. Finally, the chapter provides an analysis of cumulative air quality impacts. Please see to Chapter 19 – Climate Change for a discussion of greenhouse gases and global climate change.

12.1.1 Climate and Topography

The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted from those sources. Meteorological and topographical conditions are also important—atmospheric conditions, such as wind speed, wind direction, and air temperature gradients, interact with the physical features of the landscape to determine the movement and dispersal of air pollutants.

In winter, the meteorology of the LTAB is typified by large amounts of precipitation from Pacific storms that fall mainly as snow, accompanied by below freezing temperatures, winds, cloudiness, and lake and valley fog. Winter days can be cool and brilliantly clear between storms. Thermal inversions are a dominant feature of winter weather within the LTAB. In summer, days are often mild and sunny, with high temperatures in the upper 70s and low 80s (degrees Fahrenheit), with southern flows of moisture bringing an occasional thunderstorm.

During winter, thermal inversions trap pollutants near the ground, leading to high winter concentrations of carbon monoxide (CO) in the more congested and populated areas of the basin. South Lake Tahoe is particularly prone to elevated levels of CO during thermal inversions due to the high traffic volumes and number of residential wood stoves and fireplaces in the area. Please refer to Appendix B of the TMPO RTP. No exceedances of the 8-hour have occurred since 1992. Also please note that traffic volumes have decreased significantly at the project area and throughout the Region over the past eight years (Mobility 2030 p 14-17). During summer, some transport of ozone (O_3) from the west occurs, but the California Air Resources Board (ARB) has not yet officially recognized this as a transport route.[1] Given the decrease in traffic volumes over the last seven years and that ozone is increasing it certainly appears that transport into the Lake Tahoe Region is a significant factor.

12.1.2 Air Quality Standards and Existing Concentrations

Air quality within Placer County is managed by the Placer County Air Pollution Control District (PCAPCD). The PCAPCD administers air quality regulations developed at the federal, State, and local levels. Placer County's Environmental Review Ordinance (County Ordinance Chapter 18) provides guidance regarding assessment air quality impacts under CEQA.

[1] Note that it has been suggested (T. Cahill, UC Davis) that under typical conditions, ozone in the Tahoe Region is caused by pollutant transport from outside sources

The Tahoe Regional Planning Agency (TRPA) has authority for overseeing and managing overall air quality within the LTAB. The TRPA has bi-state regulatory authority over new development projects and has established its own set of air quality standards and ordinances.

The U.S. Environmental Protection Agency (EPA) and ARB have established ambient air quality standards for seven criteria pollutants, all of which occur in the LTAB: O_3, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than or equal to 10 microns in diameter (PM10), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). The EPA and ARB have adopted standards applicable to other air pollutant emissions, including hydrogen sulfide, vinyl chloride, and sulfates. The Project is not expected to emit these pollutants and as such, they are not discussed further.

National and California ambient air quality standards (NAAQS and CAAQS, respectively) are shown in Table 12-1. The table also specifies the TRPA 8-hour CO standard, which is more stringent than the California or national standard.

O_3 and NO_2 (an O_3 precursor) are considered regional pollutants because they affect air quality on a regional scale; oxides of nitrogen (NO_X), including NO_2, react photochemically with reactive organic gases (ROG) to form O_3 some distance downwind of the source of pollutants. Pollutants such as CO, PM_{10}, and $PM_{2.5}$ are considered local pollutants because they tend to disperse rapidly with distance from the source. PM_{10} and $PM_{2.5}$ are also considered regional pollutants that travel and impact downwind areas. The health effects of these pollutants are discussed below.

Ozone

O_3 is a severe eye, nose, and throat irritant that increases susceptibility to respiratory infections. O_3 causes extensive damage to plants through leaf discoloration and cell damage. O_3 degrades synthetic rubber, textiles, and other materials. O_3 is not emitted directly into the air, but formed by a photochemical reaction of O_3 precursors (ROG and NO_X) in the atmosphere. These O_3 precursors react in the atmosphere in the presence of sunlight to form O_3. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, O_3 is primarily a summer air pollution problem.

Mobile sources (and to a lesser extent stationary combustion equipment) are the primary sources of O_3 precursors (ROG and NO_X). Air quality improvement plans within the LTAB and larger Sacramento Metropolitan Area have focused on reducing vehicle travel and the formation of O_3. Vehicle use in the Project area has decreased by approximately 1% to 2.3% from 1999 to 2008 (Table 11-4). Because the automobile is the primary source of O_3 precursors, reduced vehicle trips directly correlates to reductions in O_3levels.

Carbon Monoxide

CO is a gas that is essentially inert to plants, but can have adverse effects on human health. CO combines with hemoglobin to reduce the amount of oxygen transported in the bloodstream. Effects on humans range from slight headaches to nausea to death. Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions, which can cause CO “hotspots” typical of the South Lake Tahoe area. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Table 12-1

Ambient Air Quality Standards Applicable in California

Pollutant	Symbol	Average Time[a]	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Ozone[b]	O_3	1 hour	0.09	NA	180	NA	If exceeded	NA
		8 hours	0.070	0.075	137	147	If exceeded	If fourth highest 8-hour concentration in a year, averaged over 3 years, is greater than the standard
Carbon monoxide	CO	8 hours	9.0	9.0	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20.0	35.0	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
Carbon monoxide (LTAB only)	CO	8 hours	6.0	NA	7,000	NA	If equaled or exceeded	NA
Nitrogen dioxide	NO_2	Annual arithmetic mean	0.030	0.053	57	100	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.18	0.100	339	188	If exceeded	NA
Sulfur dioxide	SO_2	3 hour	NA	0.5	NA	1300	NA	If exceeded
		24 hours	0.04	NA	105	NA	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	0.075	655	196	If exceeded	NA
Hydrogen sulfide	H_2S	1 hour	0.03	NA	42	NA	If equaled or exceeded	NA
Vinyl chloride	C_2H_3Cl	24 hours	0.01	NA	26	NA	If equaled or exceeded	NA
Inhalable particulate matter	PM_{10}	Annual arithmetic mean	NA	NA	20	NA	If exceeded	NA
		24 hours	NA	NA	50	150	If exceeded	If exceeded on more than 1 day per year
	$PM_{2.5}$	Annual arithmetic mean	NA	NA	12	15.0	If exceeded	If 3-year average of the weighted annual mean from single or multiple community-oriented monitors exceeds the standard

Pollutant	Symbol	Average Time[a]	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Inhalable particulate matter cont'd	$PM_{2.5}$ cont'd	24 hours	NA	NA	NA	35	NA	If less than 98% of the daily concentrations, averaged over three years, are equal to or less than the standard
Sulfate particles	SO_4	24 hours	NA	NA	25	NA	If equaled or exceeded	NA
Lead particles	Pb	Calendar quarter	NA	NA	NA	1.5	NA	If exceeded no more than 1 day per year
		30-day average	NA	NA	1.5	NA	If equaled or exceeded	NA
		Rolling 3-Month average	NA	NA	NA	0.15	NA	Averaged over a rolling 3-month period

Sources: California Air Resources Board 2010

Notes: National standards shown are the primary (public health) standards. Equivalent units are based upon a reference temperature of 25°C and a reference pressure of 760 torr; parts per million in this table refers to parts per million by volume, or micromoles of pollutant per mole of gas.

NA = not applicable.

[a] Time period over which air pollutant concentrations are averaged for the purpose of determining attainment with the NAAQS and CAAQS.

[b] The EPA replaced the 1-hour O_3 standard with an 8-hour standard of 0.08 part per million. EPA issued a final rule that revoked the 1-hour standard on June 15, 2005. However, the California 1-hour O_3 standard will remain in effect.

Inhalable Particulate Matter

State and federal ambient air quality standards for particulate matter apply to two classes of particulates: $PM_{2.5}$ and PM_{10}. These particulates can damage human health and retard plant growth. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled, such as $PM_{2.5}$ and PM_{10}. Particulates also reduce visibility and corrode materials. In the LTAB, there are additional concerns regarding particulate matter because particles are deposited into Lake Tahoe and reduce lake clarity.

Sulfur Oxides

Sulfur oxide (SO_x) gases are a family of colorless, pungent gases (including SO_2) formed primarily by combustion of sulfur-containing fossil fuels (mainly coal and oil), metal smelting, and other industrial processes. Because SO_X are regional pollutants, they can travel to the LTAB from upwind sources. SO_x can react to form sulfates, which significantly reduce visibility. The major health concerns associated with exposure to high concentrations of sulfur oxides include effects on breathing, respiratory illness, alterations in pulmonary defenses, and aggravation of existing cardiovascular disease. Emissions of SO_x can also damage tree foliage and agricultural crops. Together, SO_x and NO_x are the major precursors to acid rain, which is associated with the acidification of lakes and streams and the accelerated corrosion of buildings and monuments.

Lead

Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Pb is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used several decades ago to increase the octane rating in gasoline, thereby making gasoline-powered automobile engines a major source of airborne lead. Ambient concentrations of lead have dropped dramatically with the phasing out of leaded fuel. Short-term exposure to high levels of lead can cause vomiting, diarrhea, convulsions, coma, or even death, but even small amounts of lead can be harmful, especially to infants, young children, and pregnant women.

Toxic Air Contaminants

Toxic air contaminants (TACs) are pollutants that may result in an increase in mortality or serious illness, or that may pose a present or potential hazard to human health. Health effects of TACs include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases that lead to death. Particulate matter from diesel-fueled engines are classified as a TAC. Compared to other air toxics that the ARB has identified and controlled, diesel particulate matter emissions are estimated to be responsible for about 70% of the total ambient air toxics risk (California Air Resources Board 2000).

Existing Criteria Pollutant Concentrations

Existing air quality conditions are characterized by criteria pollutant monitoring data collected in the region. Monitoring stations are not located in the immediate Project vicinity. The closest monitoring station is the Truckee Monitoring Station on 10046 Donner Pass Road, Truckee, CA 96161, located 21 miles north of the Project in the Mountain Counties Air Basin. The next closest stations are the Echo Summit Monitoring Station (21200 US 50, Little Norway, CA 95721); the South Lake Tahoe-Airport Monitoring Station (1901 Airport Road, South Lake Tahoe, CA 96150); and the South Lake Tahoe-Sandy Way Monitoring Station (3337 Sandy Way,

South Lake Tahoe, CA 96150). These stations are located approximately 30, 35, and 24 miles to the south, respectively.

Table 12-2 summarizes air quality data from the Truckee, Echo Summit, and the two South Lake Tahoe monitoring stations from 2006 to 2008 for which complete data is available. The table indicates that the monitoring stations in the vicinity of the Project have experienced occasional violations of the 1-hour and 8-hour O_3, PM_{10}, and $PM_{2.5}$ ambient air quality standards during the 3-year monitoring period. While the information presented in Table 12-2 is sparse and recorded from monitoring stations as far as 35 miles from the Project site, that data is presented to provide a general representation of existing air quality conditions within the LTAB.

Local monitoring data (see Table 12-2) is used to designate areas as nonattainment, maintenance, attainment, or unclassified for the NAAQS and CAAQS. The four designations are further defined as follows:

- Nonattainment—assigned to areas where monitored pollutant concentrations consistently violate the standard in question;
- Maintenance—assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past, but are no longer in violation of that standard;
- Attainment—assigned to areas where pollutant concentrations meet the standard in question over a designated period of time; and
- Unclassified—assigned to areas were data are insufficient to determine whether a pollutant is violating the standard in question.

Table 12-3 shows the federal and State attainment status for Placer County. The EPA has classified the western portion of Placer County as a serious nonattainment area for the federal 8-hour O_3 standard, while the Lake Tahoe area is designated as an attainment area. For the federal CO standard, the EPA has classified the Lake Tahoe North Shore portion of the county as an unclassified maintenance area. The EPA has classified Placer County as an unclassified/attainment area for the federal PM_{10} standard (US and a nonattainment area for the federal $PM_{2.5}$ standard (EPA 2009a). The ARB has classified the LTAB portion of Placer County as an attainment area for the State 1-hour and 8-hour O_3, $PM_{2.5}$, and CO standards. ARB has designated the LTAB a nonattainment area for the State PM_{10} standard (ARB 2009b). (Please also refer to page 66 of the RTP Mobility 2030 Conformity Analysis).

12.1.3 Existing Emission Sources

Regional Emissions Inventory

The LTAB is home to a variety of sources that generate emissions of criteria pollutants. The ARB compiles an emissions inventory for by emission source in the LTAB. This inventory is used by the PCAPCD, the TRPA, and the ARB for regional air quality planning purposes and is the basis for the LTAB's air quality plans. ARB's inventory includes such sources as stationary sources (e.g., electric utilities, mineral or industrial processes); area-wide sources (e.g., farming operations, construction/demolition activities, residential fuel combustion); and mobile sources (e.g., automobiles, aircraft, off-road equipment). Current emissions of criteria pollutants for 2008 are summarized in Table 12-4.

Table 12-2

Ambient Air Quality Monitoring Data Measured at the Truckee, Echo Summit, South Lake Tahoe-Airport, and South Lake Tahoe-Sandy Way Monitoring Stations

Pollutant Standards	Truckee			Echo Summit			South Lake Tahoe Stations		
	2006	2007	2008	2006	2007	2008	2006	2007	2008
1-Hour O_3									
Maximum 1-hour concentration (ppm)	0.096	0.082	0.096	0.092	0.081	0.077	0.086	0.090	0.091
1-hour California designation value	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.09
1-hour expected peak day concentration	–	–	–	–	–	–	–	0.080	0.086
Number of days standard exceeded[a]									
CAAQS 1-hour (>0.09 ppm)	1	0	1	0	0	0	0	0	0
8-Hour O_3									
National maximum 8-hour concentration (ppm)	0.083	0.079	0.081	0.079	0.074	0.068	0.075	0.073	0.077
National second-highest 8-hour concentration (ppm)	0.083	0.078	0.078	0.079	0.074	0.066	0.073	0.071	0.075
State maximum 8-hour concentration (ppm)	0.084	0.079	0.082	0.080	0.074	0.068	0.075	0.073	0.077
State second-highest 8-hour concentration (ppm)	0.084	0.078	0.079	0.079	0.074	0.066	0.073	0.071	0.076
8-hour national designation value	0.072	0.073	0.076	0.067	0.071	0.070	–	0.067	0.070
8-hour California designation value	0.084	0.084	0.084	0.080	0.077	0.077	0.075	0.075	0.077
8-hour expected peak day concentration	–	–	–	–	0.078	0.078	–	0.075	0.078
Number of days standard exceeded[a]									
NAAQS 8-hour (>0.075 ppm)	3	3	5	4	0	0	0	0	1
CAAQS 8-hour (>0.070 ppm)	12	9	9	7	5	0	2	5	5
Carbon Monoxide (CO)									
National[b] maximum 8-hour concentration (ppm)	–	–	–	–	–	–	–	–	–
National[b] second-highest 8-hour concentration (ppm)	–	–	–	–	–	–	–	–	–
California[c] maximum 8-hour concentration (ppm)	–	–	–	–	–	–	–	–	–
California[c] second-highest 8-hour concentration (ppm)	–	–	–	–	–	–	–	–	–
Maximum 1-hour concentration (ppm)	–	–	–	–	–	–	–	–	–

Pollutant Standards	Truckee			Echo Summit			South Lake Tahoe Stations		
	2006	2007	2008	2006	2007	2008	2006	2007	2008
Second-highest 1-hour concentration parts per million (ppm)	–	–	–	–	–	–	–	–	–
Number of days standard exceeded[a]									
NAAQS 8-hour (≥9 ppm)	–	–	–	–	–	–	–	–	–
CAAQS 8-hour (≥9.0 ppm)	–	–	–	–	–	–	–	–	–
NAAQS 1-hour (≥35 ppm)	–	–	–	–	–	–	–	–	–
CAAQS 1-hour (≥20 ppm)	–	–	–	–	–	–	–	–	–
Particulate Matter (PM_{10})[d]									
National[b] maximum 24-hour concentration micrograms per cubic meter (μg/m^3)	–	–	–	167.1	–	–	–	–	–
National[b] second-highest 24-hour concentration (μg/m^3)	–	–	–	107.1	–	–	–	–	–
State[c] maximum 24-hour concentration (μg/m^3)	–	–	–	–	–	–	66.6	55.6	96.8
State[c] second-highest 24-hour concentration (μg/m^3)	–	–	–	–	–	–	59.3	53.5	86.2
State annual average concentration (μg/m^3)[e]	–	–	–	–	–	–	17.2	–	–
National annual average concentration (μg/m^3)	–	–	–	29.0	–	–	–	–	–
Number of days standard exceeded[a]									
NAAQS 24-hour (>150 μg/m^3)	–	–	–	1	–	–	–	–	–
CAAQS 24-hour (>50 μg/m^3	–	–	–	–	–	–	3	2	10
Particulate Matter ($PM_{2.5}$)									
National[b] maximum 24-hour concentration (μg/m^3)	–	–	–	28.0	18.0	102.4	–	–	–
National[b] second-highest 24-hour concentration (μg/m^3)	–	–	–	15.0	16.0	81.2	–	–	–
State[c] maximum 24-hour concentration (μg/m^3)	–	–	–	28.0	30.9	102.4	–	–	–
State[c] second-highest 24-hour concentration (μg/m^3)	–	–	–	24.0	25.5	83.0	–	–	–
National annual designation value (μg/m^3)	–	–	–	6.7	6.4	7.2	–	–	–
National annual average concentration (μg/m^3)	–	–	–	6.2	6.0	9.5	–	–	–
State annual designation value (μg/m^3)	–	–	–	8	6	6	–	–	–
State annual average concentration (μg/m^3)[e]	–	–	–	6.3	6.3	–	–	–	–

Pollutant Standards	Truckee			Echo Summit			South Lake Tahoe Stations		
	2006	2007	2008	2006	2007	2008	2006	2007	2008
Number of days standard exceeded[a]									
NAAQS 24-hour (>35 μg/m^3)[f]	–	–	–	0	0	15	–	–	–

Sources: ARB 2009a.

Notes: ppm = parts per million.

μg/m^3 = micrograms per cubic meter.

CAAQS = California ambient air quality standards.

NAAQS = national ambient air quality standards.

– = insufficient data available to determine the value.

1-hour, 8-hour, and CO monitoring information from the South Lake Tahoe Stations is from the Airport Way Station. PM_{10} monitoring information from the South Lake Tahoe Stations is from the Sandy Way Station.

[a] Violations of the CAAQS and NAAQS are determined by the number of threshold violations. Consequently, a single exceedance is not necessarily a violation.

[b] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[c] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, State statistics are based on California approved samplers.

[d] Measurements usually are collected every six days.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored.

Table 12-3

Federal and State Attainment Status for Placer County

Pollutant	State Status	Federal Status
8-Hour O_3	Nonattainment for the western portion of Placer County, attainment for LTAB portion	Serious nonattainment for the western portion of Placer County, attainment for LTAB portion
PM_{10}	Nonattainment	Attainment/unclassified
$PM_{2.5}$	Unclassified/attainment	Nonattainment
CO	Unclassified/attainment	Unclassified maintenance area (North Lake Tahoe Shore)

Sources: EPA 2009a; ARB 2009b.

Existing Emissions at HMR

The Project area is currently used exclusively as a ski resort. Additional accessory uses include summer weddings, banquets, concerts, and farmers markets. There are three main buildings consisting of two base lodges and a temporary tent structure at the mid-mountain area. Criteria pollutant emissions from these facilities are primarily generated from area sources, including natural gas combustion, landscaping activities, and periodic paint maintenance. In addition, fuel usage from vehicles traveling to and from the resort represent an indirect source of HMR generated airborne pollutants. Emissions from these sources were estimated using a variety of methodologies described in section 12-3 (below). Table 12-5 provides a summary of the existing emissions described in this section.

12.1.4 Sensitive Receptors

A sensitive receptor is defined as a location where human populations, especially children, seniors, and persons in ill health might be found, and where there is a reasonable expectation of continuous human exposure according to the averaging period for ambient air quality standards (e.g., 24-hour, 8-hour, and 1-hour). Typical sensitive receptors include residences, hospitals, and schools. In the Project vicinity there are several lodges and motels along State Route (SR) 89. Scattered rural residencies are also located east of SR 89. Project residential condominiums, townhomes, and employee housing will be considered sensitive receptors once constructed.

Table 12-4

Estimated Emissions for the California Side of the LTAB in 2008

Source type	Subcategory	Emissions (tons per day)							
		TOG	ROG	CO	NO_X	SO_X	PM	PM_{10}	$PM_{2.5}$
Stationary Sources									
Fuel Combustion									
Stationary	Electric utilities	0.00	0.00	0.01	0.05	0.00	0.00	0.00	0.00
Stationary	Manufacturing and industrial	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00
Stationary	Service and commercial	0.01	0.00	0.02	0.09	0.00	0.01	0.01	0.01
Stationary	Other (fuel combustion)	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00
Total Fuel Combustion		**0.01**	**0.01**	**0.04**	**0.20**	**0.00**	**0.01**	**0.01**	**0.01**
Petroleum Production and Marketing									
Stationary	Petroleum marketing	0.23	0.04	0.00	0.00	0.00	0.00	0.00	0.00
Total Petroleum Production and Marketing		**0.23**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Cleaning and Surface Coatings									
Stationary	Laundering	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stationary	Degreasing	0.12	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Stationary	Coatings and related process solvents	0.10	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Stationary	Adhesives and sealants	0.06	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Total Cleaning and Surface Coatings		**0.28**	**0.24**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Industrial processes									
Stationary	Mineral processes	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
Total Industrial Processes		**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**
Total Stationary Sources		**0.52**	**0.29**	**0.05**	**0.21**	**0.00**	**0.02**	**0.02**	**0.02**
Area-Wide Sources									
Solvent Evaporation									
Area-Wide	Consumer products	0.42	0.36	0.00	0.00	0.00	0.00	0.00	0.00
Area-Wide	Architectural coatings and related process solvents	0.19	0.18	0.00	0.00	0.00	0.00	0.00	0.00
Area-Wide	Pesticides/fertilizers	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00

Source type	Subcategory	Emissions (tons per day)							
		TOG	ROG	CO	NO_X	SO_X	PM	PM_{10}	$PM_{2.5}$
Area-Wide	Asphalt paving/roofing	0.35	0.35	0.00	0.00	0.00	0.00	0.00	0.00
Total Solvent Evaporation		**0.97**	**0.91**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Miscellaneous Processes									
Area-wide	Residential fuel combustion	2.82	1.24	11.82	0.33	0.05	1.95	1.82	1.75
Area-wide	Farming operations	0.91	0.07	0.00	0.00	0.00	0.12	0.06	0.01
Area-wide	Construction and demolition	0.00	0.00	0.00	0.00	0.00	0.89	0.43	0.04
Area-wide	Paved road dust	0.00	0.00	0.00	0.00	0.00	2.43	1.11	0.17
Area-wide	Unpaved road dust	0.00	0.00	0.00	0.00	0.00	2.4	1.42	0.14
Area-wide	Fugitive windblown dust	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.00
Area-wide	Fires	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Area-wide	Managed burning and disposal	0.5	0.23	2.75	0.07	0.01	0.32	0.32	0.3
Area-wide	Cooking	0.01	0.01	0.00	0.00	0.00	0.04	0.03	0.02
Total Miscellaneous Processes		**4.25**	**1.55**	**14.58**	**0.40**	**0.06**	**8.19**	**5.21**	**2.43**
Total Area-Wide Sources		**5.22**	**2.45**	**14.58**	**0.40**	**0.06**	**8.19**	**5.21**	**2.43**
Mobile Sources									
On-Road Motor Vehicles									
Mobile	Light duty passenger	0.33	0.31	2.83	0.18	0.00	0.01	0.01	0.01
Mobile	Light duty trucks – 1	0.45	0.42	4.65	0.31	0.00	0.02	0.02	0.01
Mobile	Light duty trucks – 2	0.3	0.27	2.93	0.33	0.00	0.02	0.02	0.01
Mobile	Medium duty trucks	0.15	0.14	1.61	0.18	0.00	0.01	0.01	0.01
Mobile	Light heavy duty gas trucks – 1	0.04	0.04	0.36	0.04	0.00	0.00	0.00	0.00
Mobile	Light heavy duty gas trucks – 2	0.04	0.04	0.33	0.02	0.00	0.00	0.00	0.00
Mobile	Medium heavy duty gas trucks	0.04	0.03	0.35	0.03	0.00	0.00	0.00	0.00
Mobile	Heavy heavy duty gas trucks	0.04	0.03	0.54	0.05	0.00	0.00	0.00	0.00
Mobile	Light heavy duty diesel trucks – 1	0.00	0.00	0.01	0.07	0.00	0.00	0.00	0.00
Mobile	Light heavy duty diesel trucks – 2	0.00	0.00	0.01	0.04	0.00	0.00	0.00	0.00
Mobile	Medium heavy duty diesel trucks	0.01	0.00	0.04	0.18	0.00	0.01	0.01	0.01
Mobile	Heavy heavy duty diesel trucks	0.04	0.04	0.15	0.54	0.00	0.02	0.02	0.02

Source type	Subcategory	Emissions (tons per day)							
		TOG	ROG	CO	NO_X	SO_X	PM	PM_{10}	$PM_{2.5}$
Mobile	Motorcycles	0.08	0.07	0.46	0.02	0.00	0.00	0.00	0.00
Mobile	Heavy duty diesel urban buses	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
Mobile	Heavy duty gas urban buses	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Mobile	School buses	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
Mobile	Other Buses	0.01	0.01	0.12	0.04	0.00	0.00	0.00	0.00
Mobile	Motor homes	0.01	0.01	0.35	0.02	0.00	0.00	0.00	0.00
Total On-Road Motor Vehicles		**1.54**	**1.42**	**14.79**	**2.11**	**0.01**	**0.09**	**0.09**	**0.07**
Other Mobile Sources									
Mobile	Commercial Harbor Craft	0.3	0.27	2.72	0.2	0.03	0.09	0.09	0.09
Mobile	Recreational boats	0.05	0.04	0.18	0.56	0.00	0.02	0.02	0.02
Mobile	Off-road recreational vehicles	0.89	0.84	6.5	0.32	0.00	0.05	0.05	0.03
Mobile	Off-road equipment	0.61	0.57	1.64	0.02	0.00	0.01	0.01	0.01
Mobile	Farm equipment	0.52	0.46	3.45	1.36	0.00	0.09	0.08	0.08
Mobile	Fuel storage and handling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Other Mobile Sources		**2.40**	**2.21**	**14.49**	**2.46**	**0.04**	**0.26**	**0.25**	**0.22**
Total Mobile Sources		**3.94**	**3.64**	**29.28**	**4.57**	**0.05**	**0.35**	**0.34**	**0.29**
Total LTAB		**9.67**	**6.38**	**43.91**	**5.18**	**0.11**	**8.56**	**5.57**	**2.74**

Notes:

TOG = total organic gases
ROG = reactive organic gases (a subset of TOG and an O_3 precursor)
CO = carbon monoxide
NO_X = oxides of nitrogen
SO_X = oxides of sulfur
PM = total particulate matter
PM_{10} = particulate matter 10 microns or less in diameter
$PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

12.2 REGULATORY SETTING

The air quality management agencies in Lake Tahoe portion of Placer County include the EPA, ARB, PCAPCD, and TRPA. The EPA establishes NAAQS for which the ARB and the PCAPCD have primary implementation responsibility.

The ARB and the PCAPCD are responsible for ensuring that CAAQS are met. The ARB oversees the activities of the local air districts, but it does not have direct permitting authority over stationary sources of air pollutants; that authority instead resides with the local air districts. The ARB has the authority for setting vehicle emissions standards for on-road vehicles and for some off-road vehicles. The ARB also identifies and sets control measures for TACs.

The PCAPCD is responsible for implementing strategies for air quality improvement and recommending mitigation measures for new growth and development. It adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs and regulates agricultural burning. Other PCAPCD responsibilities include monitoring air quality, preparation of clean air plans, and responding to citizen air quality complaints. In addition to planning responsibilities, the PCAPCD has permitting authority over stationary sources of pollutants. The ARB has authority over mobile sources of pollutants.

Table 12-5

Existing (2008) Emissions at HMR (pounds per day)

ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
36	50	386	24	6	0

Source: URBEMIS2007; Tirman pers. comm. (A), (B), (C), and (D); Harned pers. comm. (A) and (B); Energy Information Administration 2009a and 2009b.

Notes:
[1] Emissions represent sum total from mobile, area, and stationary sources (see Section 12.3)

The TRPA is responsible for planning and regulating development in the Lake Tahoe Basin. The TRPA has the authority to adopt environmental quality thresholds and to enforce ordinances designed to achieve the thresholds. The TRPA's authority is granted directly from Congress; therefore, it has the authority to adopt environmental thresholds, which include air quality thresholds. The TRPA is required to adopt ordinances or regulations that allow for development while also meeting the threshold standards. The TRPA applies these ordinances or regulations to development falling within its jurisdiction.

12.2.1 Federal

The federal Clean Air Act (CAA), enacted in 1963 and amended several times thereafter (including the 1990 amendments), establishes the framework for modern air pollution control. The CAA directs the EPA to establish ambient air standards for six pollutants: O_3, CO, Pb, NO_2, PM, and SO_2. These standards are divided into primary and secondary standards. Primary standards are designed to protect human health, including the health of "sensitive" populations such as asthmatics, children, and the elderly, within an adequate margin of safety. Secondary standards are designed to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

The Clean Air Act Amendments (CAAA) of 1990 govern federal air quality regulations. The CAAA delegates primary responsibility for clean air to the EPA. The EPA develops rules and regulations to preserve and improve air quality, as well as delegating specific responsibilities to State and local agencies.

Areas that do not meet the federal ambient air quality standards are called *nonattainment* areas. The CAA requires states to develop and adopt State Implementation Plans (SIPs) for nonattainment areas showing how air quality standards will be attained. The SIP, which is reviewed and approved by the EPA, must demonstrate how the federal standards will be achieved. Failing to submit a SIP or secure approval could lead to denial of federal funding and permits for such improvements as highway construction and sewage treatment plants. In California, the EPA has delegated authority to prepare SIPs to the ARB, which, in turn, has delegated that authority to individual air districts. In cases where the SIP is submitted by the State, but fails to demonstrate achievement of the standards, the EPA is directed to prepare a federal implementation plan.

12.2.2 State

The ARB and local air districts are responsible for achieving California's air quality standards through district-level air quality management plans that will be incorporated into the SIP. The ARB establishes CAAQS, maintains oversight authority in air quality planning, develops programs for reducing emissions from motor vehicles, develops air emission inventories, collects air quality and meteorological data, and approves SIPs.

Responsibilities of air districts include overseeing stationary source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality–related sections of environmental documents required by CEQA.

The California Clean Air Act (CCAA) of 1988 substantially added to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures (TCMs). The CCAA focuses on attainment of CAAQS, which, for certain pollutants and averaging periods, are more stringent than the comparable NAAQS.

The CCAA requires designation of attainment and nonattainment areas with respect to CAAQS. The CCAA also requires that local and regional air districts expeditiously adopt and prepare an air quality attainment plan if the district violates CAAQS for CO, SO_2, NO_2, or O_3. These Clean Air Plans are specifically designed to attain these standards and must be designed to achieve an annual 5% reduction in district-wide emissions of each nonattainment pollutant or its precursors. Unlike the federal CAA, the CCAA does not set precise attainment deadlines. Where an air district is unable to achieve a 5% annual reduction in district-wide emissions of each nonattainment pollutant or its precursors, the adoption of “all feasible measures” on an expeditious schedule is acceptable as an alternative strategy (Health and Safety Code Section 40914(b)(2)). No locally prepared attainment plans are required for areas that violate the State PM_{10} standards, but the ARB is currently addressing PM_{10} attainment issues.

The CCAA emphasizes the control of “indirect and area-wide sources” of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish TCMs. The CCAA does not define *indirect and area-wide sources*. However, Section 110 of the federal CAA defines an indirect source as:

a facility, building, structure, installation, real property, road, or highway, which attracts, or may attract, mobile sources of pollution. Such a term includes parking lots, parking garages, and other facilities subject to any measure for management of parking supply.

TCMs are defined in the CCAA as "any strategy to reduce trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing vehicle emissions."

12.2.3 Local

Placer County Air Pollution Control District

As discussed above, under the California CAA, the PCAPCD is required to develop an air quality plan for nonattainment criteria pollutants within the air district. As part of a state-wide effort to attain the CO CAAQS, PCAPCD adopted the 2004 Maintenance Plan for CO. This plan demonstrates ten statewide areas (including the north and south Lake Tahoe Shores) have achieved attainment with the CO standard between 1992 and 1995, and outlines how these areas will continue to maintain compliance with the standard. Please also refer to the Conformity Analysis contained on page 66 of the TMPO RTP.

The PCAPCD has also specified significance thresholds for daily emissions resulting from construction and Project operations. If emissions exceed the following thresholds, they have the potential to result in a significant air quality impact: 82 pounds per day for ROG, NO_X, PM_{10}, and SO_X; and 550 pounds per day for CO (Chang pers. comm. (A)). The Project may also be subject to the following PCAPCD rules, which have been adopted to reduce emissions throughout Placer County:

- **Rule 202: Visible Emissions.** Establishes limits regarding the opacity of emissions.
- **Rule 205: Nuisance.** Limits emissions of substances that cause a nuisance to the public.
- **Rule 207: Particulate Matter.** Prohibits particulate emissions in excess of 0.2 grain per cubic foot of gas.
- **Rule 210: Specific Containments**. Establishes limits regarding the emissions of sulfur compounds and other combustion containments.
- **Rule 212**: **Storage of Organic Liquids**. Limits emissions from storage tanks for organic liquids. It applies to any facility that stores organic liquids having a vapor pressure greater than 25.8 millimeters of mercury (mm Hg) (0.5 pound-force per square inch absolute [psia]) are held in a stationary container.
- **Rule 213: Gasoline Transfer into Stationary Storage Containers.** Limits gasoline vapors and spills associated with the transfer of gasoline into stationary containers.
- **Rule 217: Cutback and Emulsified Asphalt Paving Materials.** Reduces the amount of VOCs caused by asphalt paving. It establishes restrictions on the type of asphalt that can be sold or manufactured in Placer County.
- **Rule 218: Architectural Coatings.** Limits VOC emissions in architectural coatings. It applies to anyone who manufactures, supplies, or applies architectural coatings.

- **Rule 226: Sulfur Content of Fuels.** Limits sulfur emissions from the combustion of fossil fuels, natural gas, and liquid fuel in the LTAB.

- **Rule 228: Fugitive Dust.** Reduces the amount of particulate matter entrained and discharged into the air by requiring actions to prevent, reduce, or minimize fugitive dust emissions. This rule also applies to construction activities.

- **Rule 242: Stationary Internal Combustion Engines.** Limits NO_X and CO emissions from stationary internal combustion engines rated at more than 50 brake horsepower operating more than 200 hours per year. This rule would apply to construction activities that occur for more than 200 hours per year.

- **Rule 246: Natural Gas Fired Water Heaters**. Limits NO_x emissions from natural-gas water heaters with a rated heat input capacity less than 75,000 British thermal units (Btu) per hour.

- **Rule 501: General Permit Requirements.** Provides an orderly procedure for the review of new sources of air pollution and the orderly review of the modification and operation of existing sources through the issuance of permits. This rule does not apply to internal combustion engines with a manufacturer's maximum continuous rating of 50 brake horsepower or less or to gas turbine engines with a maximum heat input rate of 3 million Btu per hour or less at ISO [International Organization for Standardization] standard day conditions (288 degrees Kelvin, 60% relative humidity, 101.3 kilopascals pressure).

- **Rule 502: New Source Review.** Provides for the review of new and modified existing sources and outlines mechanisms, such as emissions offsets, that can be implemented by stationary source projects to avoid interference with the attainment of air quality standards. The rule applies to all new stationary sources and to modifications of existing stationary sources that after construction may emit ROG, NO_x, SO_x, PM_{10}, CO, Pb, vinyl chloride, sulfuric acid mist, hydrogen sulfide (H_2S), and reduced sulfur compounds. Rule 502 requires the implementation of best available control technology (BACT).

The Project may be subject to the Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations (ATCM). According to California Department of Conservation's geological survey maps, the Project is not in an area known to contain naturally occurring asbestos (NOA) (Department of Conservation 2006). However, if NOA is found within the Project area, an Asbestos Dust Mitigation Plan must be submitted to the district.

Tahoe Regional Planning Agency

The TRPA has the following eight air quality standards and indicators with the goal of protecting the air quality in the LTAB:

- **AQ-1: Carbon Monoxide.** Do not meet or exceed the TRPA 8-hour 6.0-ppm CO standard, the federal 8-hour 9.0-ppm standard, the California 1-hour 20-ppm standard, or the federal and Nevada 1-hour 35 ppm standard. The indicator for attainment of this standard is the second-highest CO concentration read at the Stateline, Nevada, station (ppm). The Tahoe Basin is classified a maintenance-nonattainment for this threshold (See also Mobility 2030, Conformity Section).

- **AQ-2: Ozone.** Do not exceed the TRPA 1-hour 0.08-ppm O_3 standard, the federal 1-hour 0.12-ppm standard, the California 1-hour 0.09-ppm, or the Nevada 1-hour 0.10-ppm standards. Attainment is based on the number of 1-hour periods, which equal or exceed the federal, Nevada, or TRPA standard at any of the permanent monitoring sites (unit less), and the number of 1-hour periods that exceed the California standard. The TRPA is in nonattainment for this threshold.

- **AQ-3: Particulate Matter.** Do not exceed the California and federal standards for 24-hour concentrations (50 and 150 micrograms per cubic meter [$\mu g/m^3$], respectively) and the annual average (20 and 50 $\mu g/m^3$) for particulate matter. Attainment is based on the number of 24-hour periods exceeding the applicable NAAQS or NAAQS at any permanent monitoring station (unit less) and the annual average PM_{10} concentration at any monitoring station ($\mu g/m^3$). The TRPA is in nonattainment for this threshold.

- **AQ-4: Visibility.** Do not violate TRPA regional and subregional visibility standards. For regional and subregional visibility, reduce wood smoke concentrations 15% below the 1981 levels. Reduce suspended soil particles 30% below 1981 levels. For regional visibility, the standard is achievement of an extinction coefficient of 25 Mm-1 at least 50% of the time as calculated from aerosol species concentrations measured at the Bliss State Park monitoring site (visual range of 156 km, 97 miles); and achievement of an extinction coefficient of 34 Mm-1 at least 90% of the time as calculated from aerosol species concentrations measured at the Bliss State Park monitoring site (visual range of 115 km, 71 miles). Calculations will be made on three year running periods using the existing 1991-1993 monitoring data as the performance standards to be met or exceeded. For subregional visibility, the standard is achievement an extinction coefficient of 50 Mm-1 at least 50% of the time as calculated from aerosol species concentrations measured at the South Lake Tahoe monitoring site (visual range of 78 km, 48 miles); and achievement of an extinction coefficient of 125 Mm-1 at least 90% of the time as calculated from aerosol species concentrations measured at the South Lake Tahoe monitoring site (visual range of 31 km, 19 miles). For State visibility standards, visual range is calculated from nephelometer data collected at Bliss State Park and Lake Tahoe Boulevard for periods in which relative humidity is less than 70%. The TRPA is in attainment for this threshold.

- **AQ-5: Traffic Volume.** Reduce traffic volume on US 50 (U.S. 50) by 7% from the 1981 values. The standard uses the average traffic volume from 4:00 PM to midnight. Traffic volumes on US 50, recorded at a site immediately west of the intersection of Park Avenue in the City of South Lake Tahoe, include a count of both directions during an average day. The TRPA selected this indicator because of the timing of the highest CO concentrations, which generally occur during these times. The TRPA is in attainment with this threshold.

- **AQ-6: Wood Smoke.** Reduce annual wood smoke emissions from 15% from 1981 levels. Aerosol samples analyzed for organic and light-absorbing carbon collected in South Lake Tahoe and Bliss State Park are indirect indicators of wood smoke. The TRPA lacks sufficient data to evaluate whether they are in attainment for this threshold.

- **AQ-7: Vehicle Miles Traveled.** Reduce vehicle miles traveled (VMT) 10% below the 1981 levels. Typically, VMT is calculated directly from a traffic model. However, in 1988, TRPA adopted interim performance targets for the VMT threshold standard, as follows: VMT calculated for peak summer day using QRS (Quick Response System)

transportation model or equivalent model. Based on the the recent decrease in traffic volumes over the past seven years, the TRPA is in attainment for this threshold. (see RTP for current monitoring, modeling and attainment status).

- **AQ-8: Atmospheric Deposition.** Reduce dissolved inorganic nitrogen load on Lake Tahoe from atmospheric sources 20% from 1973–1981 levels using the annual average concentration of particulate NO_3 at the Lake Tahoe Boulevard air quality monitoring station. The TRPA lacks sufficient data to evaluate whether it is in attainment for this threshold.

The TRPA has established a list of provisions for direct sources of air pollutants that may apply to the Project. Specifically, TRPA *Code of Ordinances* Section 91.3 Combustible Appliances sets air quality standards for gas heaters and central furnaces. Section 91.5 New Stationary Source Review states that emissions from new stationary sources for the peak 24-hour period must not exceed established thresholds, which are summarized in Table 12-6. If thresholds are exceeded, the Project would be considered to have a significant environmental impact and new stationary sources contributing to the violation would be prohibited.

Table 12-6

TRPA New Stationary Source Review Significance Thresholds

Pollutant	Kilograms	Pounds
Nitrogen Oxides (NO_x)	11.0	24.2
Particulate Matter less than 10 Microns (PM_{10})	10.0	22.0
Volatile Organic Compounds (VOC)	57.0	125.7
Sulfur Dioxide (SO_2)	6.0	13.2
Carbon Monoxide (CO)	100.0	220.5

Source: TRPA 2009, page 91-5.

The TRPA *Code of Ordinances* Chapter 93 – Traffic and Air Quality Mitigation Program establishes fees and other procedures to offset impacts from indirect sources of air pollution. Development projects that result in an increase of more than 200 average daily vehicle trips (ADTs) must offset regional and air quality impacts by contributing to the TRPA Air Quality Mitigation Fund. Acceptable contributions are determined by the TRPA and are based upon the type of development (TRPA 2006).

12.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

For the purposes of this analysis, the thresholds summarized in Table 12-7 will be used to determine whether implementation of the Project would result in a significant air quality impact. These thresholds were identified by the PCAPCD and the TRPA.

Table 12-7

Thresholds of Significance

Evaluation Criteria	As Measured By	Agency Requirements		Point of Significance[2]
		PCAPCD	TRPA	
Impact AQ-1: Will the Project Generate Construction Emissions in Excess of Applicable Standards?	Increases in pollutant emissions	Greater than 82 lbs./day of ROG, NO_X, SO_X, and PM_{10}[1]. Greater than 550 lbs./day of CO.	Greater than 0 increases above State, federal, and TRPA Air Quality Standards.	82 pounds per day of ROG, NO_X, SO_X, and PM_{10} and greater than 550 lbs./day of CO[3] .
Impact AQ-2: Will the Project Generate Operational Emissions or VMTs in Excess of Applicable Standards?	Total Operational: Increases in pollutant emissions;	Greater than 82 lbs./day of ROG, NO_X, SO_X, and PM_{10}. Greater than 550 lbs./day of CO.	An increase of VMTs or emissions of PM, CO, or O_3 precursors. For stationary source emissions: NO_X: 24.2 lbs./day PM_{10}: 22.0 lbs./day VOCs: 125.7 lbs./day SO_X: 13.2 lbs./day CO: 220.5 lbs./day	Total Operational: 82 pounds per day of ROG, NO_X, SO_X, and PM_{10} and greater than 550 lbs./day of CO[3]
	VMT: Increase in VMT;			VMT: Increase in VMT[4]
	Stationary Sources: Peak 24-hour period emissions for NO_X, PM_{10}, VOCs, SO_X, CO.			Stationary Sources: NO_X: 24.2 lbs./day PM_{10}: 22.0 lbs./day VOCs: 125.7 lbs./day SO_X: 13.2 lbs./day CO: 220.5 lbs./day[4]
Impact AQ-3: Will the Project Exposure of Sensitive Receptors to Substantial Pollutant Concentrations?	Increase in CO and DPM concentrations.	Exceedance of CO NAAQS and CAAQS. No quantitative threshold for DPM.	Greater than 0 increase in CO concentrations. No quantitative threshold for DPM.	Greater than 0 increase in CO concentrations[4] Qualitative assessment of DPM emissions, construction schedule, and nature of sensitive receptors.
Impact AQ-4: Will the Project Conflict with or Obstruction of Implementation of the Applicable Air Quality Plan?	Number or conflicts.	Greater than 0 conflicts.		Greater than 0 conflicts[4]
Impact AQ-5: Will the Project Generate Objectionable Odors?	Creation of new odor sources.	Record of greater than one complaint call in a one-year period or greater than ten odor complaints in a 90 day period.		Same agency requirements.

Evaluation Criteria	As Measured By	Agency Requirements		Point of Significance[2]
		PCAPCD	TRPA	
Cumulative Impact	Increases in pollutant emissions.	Greater than 10 lbs./day of ROG or NO_X.	NA	Greater than 10 lbs./day of ROG or NO_X[3]

Notes:
lbs./day = pounds per day.
[1] The PCAPCD has not established a significance threshold for $PM_{2.5}$. However, because $PM_{2.5}$ is a subset of PM_{10}, the 82 pound per day threshold can used as a proxy for significance evaluation of $PM_{2.5}$.
[2] Although based on slightly different metrics, PCAPCD and TRPA standards have been adopted to ensure the same level of air quality protection. The standard most appropriate for assessing air quality impacts relative to the modeling performed below has been selected to evaluate significance.
[3] Based on PCAPCD standard
[4] Based on TRPA standard

12.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

This section describes the Project's effects on air quality. The No Project (Alternative 2) represents the existing land use configuration, which would remain unchanged. There would be no net increase in air pollutant emissions associated with construction or operation under No Project (Alternative 2). The following discussion focuses on the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6. The Proposed Project (Alternative 1) and Alternative 3 do not differ with regard to traffic volumes or land-use patterns (Harned pers. comm. (A)). Where appropriate, they are analyzed as a single unit and will be referred to as Proposed Project (Alternative 1) and Alternative 3.

12.4.1 Construction (Short-Term) Impacts

Construction activities may result in the degradation of short-term air quality due to the release of PM_{10}, $PM_{2.5}$, CO, NO_X, and ROG. Such emissions would result from earthmoving and use of heavy equipment, as well as land clearing, ground excavation, cut-and-fill operations, and roadway construction. Emissions can vary substantially from day to day, depending on the level of activity, the specific operations, and the prevailing weather.

As shown in Table 12-7, the PCAPCD and TRPA have separate thresholds for the evaluation of air quality impacts from construction activities. The discussion below evaluates emissions in accordance with the metrics required by each agency's threshold. The finding of significance is based on PCAPCD's thresholds, and is discussed in a summary section at the conclusion of the impact. However, note that because PCAPCD's thresholds have been implemented to ensure that the CAAQS are met, they are also an appropriate proxy in determining if the proposed project is in compliance with TRPA standards.

Impact: **AQ-1. Will the Project Generate Construction Emissions in Excess of Applicable Standards?**

Analysis: *No Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will not include any changes to the existing HMR site or structures. Therefore, No Project (Alternative 2) will have no construction emissions.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5, and 6*

PCAPCD Requirements

Construction emissions of ROG, NO_X, CO, $PM_{10,}$ and $PM_{2.5,}$ were estimated using the URBEMIS2007 (version 9.2.4) model. To estimate construction emissions, URBEMIS2007 analyzes the type of construction equipment used and the duration of the construction period associated with construction of each of the land uses. Land use assumptions are presented in Table 12-8 and are based on information presented in Chapter 3 and provided by JMA Ventures, LLC (Tirman pers. comm. (A)). A detailed inventory of construction equipment was not provided. Therefore, equipment inventories, load factors, and horsepower (Hp) were based on default values generated by URBEMIS2007 for the specified land uses. Appendix M summarizes the equipment assumptions used in the modeling.

Construction of the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 will occur in four phases over a ten-year period (2011 through 2020) (Tirman pers. comm. (A)). The number of residential dwellings and square feet of nonresidential facilities under construction varies by year. The Mid-Mountain Base area and the North Base area will be completed during Phase 1a and Phase 1b/c, while South Base area construction will occur during Phases 2a and 2b. Appendix N summarizes the construction schedule and land-use assumptions used in the modeling. Complete URBEMIS2007 model outputs are provided in Appendix O.

Tables 12-9 through 12-13 present construction emissions. As shown in these tables, implementation of the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 will generate a significant amount of PM_{10} and $PM_{2.5}$during the first year of Phase 1a.

Table 12-8

Land Use Assumptions

Land Use[2]	URBEMIS Entry[3]	Proposed Project (Alt 1) and Alternative 3	No Project (Alternative 2)	Alternative 4	Alternative 5	Alternative 6
Hotel[4]						
Rooms	Hotel	75 rooms	0	0	75 rooms	50 rooms
Condo/Hotel[5]	Hotel	60 units	0	0	0	25
Penthouse Condo	Townhouse/Condo	30 units	0	0	0	0
Residential Condos	Townhouse/Condo	135 units	0	0	225 units	195
Townhomes	Townhouse/Condo	16 units	0	0	0	0
Fractional Condos	Townhouse/Condo[6]	20 units	0	0	0	0
Workforce Housing	Apartment (low rise)	13 units	0	0	12 units	12 units
Commercial	Strip Mall	25,000 square feet	0	1 lot[7]	25,000 square feet	25,000 square feet
Skier Parking Spaces	Parking	272 spaces (1.00 acre)	0	0	156 spaces (0.70 acre)	156 spaces (0.70 acre)
Residential Lots	Residential Lots	0	0	16 lots (225,000 square feet disturbed)	16 lots (24,000 square feet disturbed)	14 (21,000 square feet disturbed)
Skier Services	General Office Building	32,000 square feet	0	0	32,000 square feet	22,000 square feet
Maintenance	General Office Building	15,000 square feet	0	0	15,000 square feet	15,000 square feet
Day Lodge	Racquetball/Health	15,000 square feet	0	0	15,000 square feet	15,000 square feet
Gondola terminal	Racquetball/Health	18,000 square feet	0	0	18,000 square feet	18,000 square feet
Water Tanks	Water Tank	2 (56,000 square feet disturbed)	0	0	2 (56,000 square feet disturbed)	2 (56,000 square feet disturbed)

Sources: Chapter 3 – Project Description; Tirman pers. comm. (A).

Notes:

[2] Land use totals represent north, south, and mid-mountain uses combined.

[3] URBEMIS classifications are for modeling purposes only.

[4] Assumed accessory uses include meeting space (3,005 square feet); fitness center/spa (10,590 square feet); restaurant (1,800 square feet); and a bar (1,260 square feet).

[5] Includes 40 units – 20 with lock-offs that allow the units to be used as two units.

[6] Classified as "Timeshare" for mobile source modeling (below).

[7] Assumed one commercial building would occupy the 15,000 square foot lot. No grading of the site would occur as the lot would be sold as is (currently a paved parking lot).

Table 12-9

Construction Emissions from Proposed Project (Alternative 1) (pounds per day)

		ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Phase 1a							
2011	Site Grading	2.89	23.54	13.60	159.10	34.06	0.00
	Building Construction	4.97	21.68	46.47	1.47	1.27	0.03
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	**Yes**	No	No
2012	Building Construction	4.59	20.26	43.57	1.35	1.16	0.03
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2013	Building Construction	4.21	18.79	40.75	1.10	1.05	0.03
	Paving	3.09	16.54	13.49	1.36	1.24	0.00
	Exterior Coatings	66.45	0.07	1.09	0.01	0.00	0.00
	Total[2]	74	35	55	2	2	0
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
Phase 1b and 1c							
2014	Site Grading	2.46	19.16	12.04	12.29	3.20	0.00
	Building Construction	1.15	7.72	10.37	0.43	0.38	0.10
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2015	Building Construction	1.06	6.89	9.80	0.41	0.36	0.01
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2016	Building Construction	0.98	6.31	9.30	0.35	0.30	0.01
	Paving	1.50	8.60	8.62	0.65	0.59	0.00
	Exterior Coatings	14.35	0.01	0.18	0.00	0.00	0.00
	Total[2]	17	15	18	1	1	0
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
Phase 2a							
2017	Site Grading	2.06	14.75	10.81	44.56	9.79	0.00
	Building Construction	0.89	5.63	8.48	0.31	0.27	0.01
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2018	Building Construction	0.82	5.06	8.07	0.27	0.23	0.01
	Paving	1.32	7.50	8.23	0.54	0.49	0.00
	Exterior Coatings	13.25	0.01	0.14	0.00	0.00	0.00
	Total[2]	15	13	16	1	1	0
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No

		ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Phase 2b							
2019	Site Grading	1.79	12.29	10.19	29.27	6.50	0.00
	Building Construction	1.81	9.64	13.36	0.51	0.45	0.01
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2020	Building Construction	1.63	8.97	12.81	0.45	0.40	0.01
	Paving	1.57	8.97	10.10	0.64	0.58	0.00
	Exterior Coatings	16.65	0.01	0.15	0.00	0.00	0.00
	Total[2]	20	18	23	1	1	0
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No

Sources: URBEMIS2007, Tirman pers. comm. (A) and (B).

Notes:

[1] Please refer to Appendix N for a detailed construction schedule.

[2] Total represents emission during which building construction, paving, and exterior coatings occur concurrently.

[3] The PCAPCD has not established a significance threshold for $PM_{2.5}$. However, because $PM_{2.5}$ is a subset of PM_{10}, the 82 pound per day threshold can be used as a proxy for the significance evaluation of $PM_{2.5}$.

Table 12-10

Construction Emissions from Alternative 3 (pounds per day)

		ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Phase 1a							
2011	Site Grading	2.89	23.54	13.60	425.43	89.69	0.00
	Building Construction	4.97	21.68	46.47	1.47	1.27	0.03
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	**Yes**	**Yes**	No
2012	Building Construction	4.59	20.26	43.57	1.35	1.16	0.03
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2013	Building Construction	4.21	18.79	40.75	1.10	1.05	0.03
	Paving	3.09	16.54	13.49	1.36	1.24	0.00
	Exterior Coatings	66.45	0.07	1.09	0.01	0.00	0.00
	Total[2]	74	35	55	2	2	0
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
Phase 1b and 1c							
2014	Site Grading	2.46	19.16	12.04	12.53	3.25	0.00
	Building Construction	1.15	7.72	10.37	0.43	0.38	0.01
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No

		ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
2015	Building Construction	1.06	6.89	9.80	0.41	0.36	0.10
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2016	Building Construction	0.98	6.31	9.30	0.35	0.30	0.01
	Paving	1.50	8.60	8.62	0.65	0.59	0.00
	Exterior Coatings	14.35	0.01	0.18	0.00	0.00	0.00
	Total[2]	17	15	18	1	1	0
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
Phase 2a							
2017	Site Grading	2.06	14.75	10.81	54.11	11.78	0.00
	Building Construction	0.89	5.63	8.48	0.31	0.27	0.01
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2018	Building Construction	0.82	5.06	8.07	0.27	0.23	0.01
	Paving	1.32	7.50	8.23	0.54	0.49	0.00
	Exterior Coatings	13.25	0.01	0.14	0.00	0.00	0.00
	Total[2]	15	13	16	1	1	0
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
Phase 2b							
2019	Site Grading	1.79	12.29	10.19	34.11	7.01	0.00
	Building Construction	1.81	9.64	13.36	0.51	0.45	0.01
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2020	Building Construction	1.63	8.97	12.81	0.45	0.40	0.01
	Paving	1.57	8.97	10.10	0.64	0.58	0.00
	Exterior Coatings	16.65	0.01	0.15	0.00	0.00	0.00
	Total[2]	20	18	23	1	1	0
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No

Sources: URBEMIS2007, Tirman pers. comm. (A) and (B).

Notes:

[1] Please refer to Appendix N for a detailed construction schedule.

[2] Total represents emission during which building construction, paving, and exterior coatings occur concurrently.

[3] The PCAPCD has not established a significance threshold for $PM_{2.5}$. However, because $PM_{2.5}$ is a subset of PM_{10}, the 82 pound per day threshold can be used as a proxy for the significance evaluation of $PM_{2.5}$.

Table 12-11

Construction Emissions from Alternative 4 (pounds per day)

		ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Phase 1a							
2011	Site Grading	2.89	23.54	13.60	27.18	6.51	0.00
	PCAPCD Standard	82	82	550	82	N/A[1]	82
Exceed Threshold?		No	No	No	No	No	No

Sources: URBEMIS2007; Tirman pers. comm. (C).

Note:

Please refer to Appendix N for detailed construction dates.

[1] The PCAPCD has not established a significance threshold for $PM_{2.5}$. However, because $PM_{2.5}$ is a subset of PM_{10}, the 82 pound per day threshold can be used as a proxy for the significance evaluation of $PM_{2.5}$.

Table 12-12

Construction Emissions from Alternative 5 (pounds per day)

		ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Phase 1a							
2011	Site Grading	2.89	23.54	13.60	350.23	73.98	0.00
	Building Construction	4.57	19.96	37.62	1.38	1.21	0.02
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	**Yes**	No	No
2012	Building Construction	4.21	18.70	35.36	1.26	1.10	0.02
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2013	Building Construction	3.87	17.39	33.17	1.15	1.00	0.02
	Paving	2.66	14.50	11.99	1.19	1.09	0.00
	Exterior Coatings	50.35	0.05	0.83	0.00	0.00	0.00
	Total[2]	57	32	46	2	2	0
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
Phase 1b and 1c							
2014	Site Grading	2.46	19.16	12.04	38.81	8.74	0.00
	Building Construction	3.69	17.10	33.89	1.09	0.93	0.02
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2015	Building Construction	3.36	15.70	31.67	1.01	0.86	0.02
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No

		ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
2016	Building Construction	3.05	14.45	29.66	0.91	0.77	0.02
	Paving	2.59	13.54	12.46	1.06	0.96	0.00
	Exterior Coatings	57.64	0.04	0.74	0.01	0.00	0.00
	Total[2]	63	28	43	2	2	0
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
Phase 2a							
2017	Site Grading	2.06	14.75	10.81	3.88	1.29	0.00
	Building Construction	0.72	4.98	4.35	0.26	0.24	0.00
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2018	Building Construction	0.66	4.48	4.29	0.22	0.2	0.00
	Paving	1.22	7.39	8.18	0.54	0.49	0.00
	Exterior Coatings	0.45	0.00	0.00	0.00	0.00	0.00
	Total[2]	2	12	12	1	1	0
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
Phase 2b[3]							
2019	Site Grading	1.79	12.29	10.19	3.35	1.09	0.00
	PCAPCD Standard	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No

Sources: URBEMIS2007, Tirman pers. comm. (A) and (B).

Notes:

[1] Please refer to Appendix N for a detailed construction schedule.

[2] Total represents emission during which building construction, paving, and exterior coatings occur concurrently.

[3] The PCAPCD has not established a significance threshold for $PM_{2.5}$. However, because $PM_{2.5}$ is a subset of PM_{10}, the 82 pound per day threshold can be used as a proxy for the significance evaluation of $PM_{2.5}$.

[4] Phase involves only grading of roadways leading to the 8 residential lots. No exterior coatings or paving was assumed.

Table 12-13

Construction Emissions from Alternative 6 (pounds per day)

		ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Phase 1a							
2011	Site Grading	2.89	23.54	13.60	349.03	73.73	0.00
	Building Construction	4.52	19.82	36.49	1.37	1.20	0.02
	PCAPCD Threshold	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	**Yes**	**No**	No
2012	Building Construction	4.17	18.57	34.32	1.26	1.10	0.02
	PCAPCD Threshold	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2013	Building Construction	3.83	17.28	32.20	1.14	0.99	0.02
	Paving	2.65	14.47	11.98	1.19	1.09	0.00
	Exterior Coatings	48.12	0.05	0.79	0.00	0.00	0.00
	Total[2]	55	32	45	2	2	0
	PCAPCD Threshold	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
Phase 1b and 1c							
2014	Site Grading	2.46	19.16	12.04	26.21	6.11	0.00
	Building Construction	3.31	15.63	25.36	0.99	0.87	0.02
	PCAPCD Threshold	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2015	Building Construction	3.02	14.40	23.83	0.92	0.81	0.02
	PCAPCD Threshold	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2016	Building Construction	2.74	13.29	22.45	0.83	0.72	0.02
	Paving	2.17	11.82	11.06	0.92	0.84	0.00
	Exterior Coatings	37.15	0.03	0.48	0.00	0.00	0.00
	Total[2]	42	25	34	2	2	0
	PCAPCD Threshold	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
Phase 2a							
2017	Site Grading	2.06	14.75	10.81	3.88	1.29	0.00
	Building Construction	0.72	4.98	4.35	0.26	0.24	0.00
	PCAPCD Threshold	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2018	Building Construction	0.66	4.48	4.29	0.22	0.2	0
	Paving	1.22	7.39	8.18	0.54	0.49	0.00
	Exterior Coatings	0.45	0.00	0.00	0.00	0.00	0.00
	Total[2]	2	12	12	1	1	0
	PCAPCD Threshold	82	82	550	82	N/A[3]	82

		ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Exceed Threshold?		No	No	No	No	No	No
Phase 2b							
2019	Site Grading	1.79	12.29	10.19	22.61	5.11	0.00
	Building Construction	0.76	4.54	7.59	0.24	0.20	0.01
	PCAPCD Threshold	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No
2020	Building Construction	0.70	4.10	7.25	0.21	0.18	0.01
	Paving	1.15	6.57	7.88	0.45	0.41	0.00
	Exterior Coatings	12.81	0.01	0.11	0.00	0.00	0.00
	Total[2]	15	11	15	1	1	0
	PCAPCD Threshold	82	82	550	82	N/A[3]	82
Exceed Threshold?		No	No	No	No	No	No

Sources: URBEMIS2007, Tirman pers. comm. (A) and (B).

Notes:
1 Please refer to Appendix N for a detailed construction schedule.
2 Total represents emission during which building construction, paving, and exterior coatings occur concurrently.
3 The PCAPCD has not established a significance threshold for $PM_{2.5}$. However, because $PM_{2.5}$ is a subset of PM_{10}, the 82 pound per day threshold can be used as a proxy for the significance evaluation of $PM_{2.5}$.

TRPA Requirements

The TRPA considers any increase in criteria pollutants above State, federal, and TRPA air quality standards to be significant. These standards are concentration values at particular locations rather than mass emissions from Project construction (Table 12-9 through Table 12-13). Dispersion modeling to estimate pollutant concentrations is beyond the scope of this document; as such analysis would require specific details, such as specific construction schedule, location of operating construction equipment, and location of exposed sensitive receptors, that are currently unknown. However, the mass emissions presented in Table 12-9 through Table 12-13 are an appropriate proxy for determining if the Project complies with TRPA thresholds. Based on Table 12-9, increases in ROG, NO_X, CO, $PM_{10,}$ and $PM_{2.5}$ are expected during all phases, with the greatest increases occurring during Phase 1a. Pollutant concentrations have the potential to exceed NAAQS, CAAQS, and TRPA standards on days requiring substantial construction equipment and activity. Because specific construction details are currently unknown, it is not possible to determine the number of days in which ambient air quality standards may be exceeded. Based on the mass emissions presented in Table 12-9, it can be inferred that Phase 1a would result in the most frequent and severe exceedences. However, these exceedences will be short-term as pollutant concentrations will dissipate once construction is completed.

Summary: The point of significance for construction emissions is the PCAPCD's thresholds of 82 pounds per day of ROG, NO_X, SO_X, and PM_{10} and 550 pounds per day of CO. Because these thresholds have been implemented to ensure that the CAAQS are met, they are also an appropriate proxy in determining if the proposed action is in compliance with TRPA standards. As shown in Tables 12-9, 12-10, 12-12, and 12-13, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would result in PM_{10} emissions in excess of PCAPCD's threshold of 82 pounds per day. Likewise, Alternative 3 will generate $PM_{2.5}$

emissions in excess of 82 pounds per day.[2] This is a significant impact. To reduce construction emissions, the PCAPCD recommends implementation of Mitigation Measures AQ-1.

Mitigation: **Mitigation Measure AQ-1: Implement PCAPCD Best Management Practices (BMPs) to reduce pollutant emissions during construction.**

The Project Applicant shall implement the following recommended mitigation measures, which were provided by the PCAPCD. These measures shall be implemented prior to and during the construction phase. In addition, construction of the Project is required to comply with PCAPCD rules and regulations (see section 12-2).

- **Dust Control Plan:** The applicant shall submit a Construction Emission/Dust Control Plan to the PCAPCD. This plan must address the minimum Administrative Requirements found in PCAPCD Rule 228, Fugitive Dust, Sections 300 and 400. The applicant shall not break ground prior to receiving PCAPCD approval of the Construction Emission/Dust Control Plan.
- **Equipment Inventory:** The Project Applicant shall submit a comprehensive inventory (i.e. make, model, year, emission rating) of heavy-duty off-road equipment (50 horsepower of greater) that will be used an aggregate of 40 or more hours for construction.
- **Enforcement Plan:** An enforcement plan shall be established and submitted to the PCAPCD for review, to evaluate weekly project-related on-and-off- road heavy-duty vehicle engine emission opacities, using standards as defined in California Code of Regulations, Title 13, Sections 2180 - 2194.
- **Compliance with Rule 202:** Construction equipment exhaust emissions shall not exceed District Rule 202, Visible Emission limitations.
- **Compliance with Rule 228:** Grading operations shall be suspended if fugitive dust exceeds PCAPCD Rule 228 (Fugitive Dust) limitations. Water shall be applied to control dust, as required by the rule, to prevent dust impacts off-site. Operational water truck(s) shall be on-site, at all times, to control fugitive dust. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked off-site.
- **Pre-Construction Meeting**: If required by the Department of Engineering and Surveying and/or the Department of Public Works, the contractor shall have a pre-construction meeting for grading activities. The contractor shall invite the PCAPCD to the pre-construction meeting in order to discuss the construction emission/dust control plan with employees and/or contractors.
- **Maintenance of Public Thoroughfares:** The Project Applicant shall keep adjacent public thoroughfares clean of silt, dirt, mud, and debris, and shall "wet broom" the streets if silt, dirt, mud or debris is carried over to adjacent public thoroughfares. Dry mechanical sweeping is prohibited.
- **Traffic Limits**: Traffic speeds on unpaved surfaces shall be limited to 15 miles per hour or less.

[2] The PCAPCD has not established a significance threshold for $PM_{2.5}$. However, because $PM_{2.5}$ is a subset of PM_{10}, the 82 pound per day threshold can be used as a proxy for the significance evaluation of $PM_{2.5}$.

- **Wind Restrictions:** Grading operations shall be suspended when wind speeds (including instantaneous gusts) exceed 25 miles per hour and dust is impacting adjacent properties.
- **Idling Restrictions:** Idling time shall be limited to a maximum of five minutes for diesel-powered equipment.
- **Open Burning Restrictions:** No open burning of removed vegetation shall be allowed during construction. Removed vegetative material shall be either chipped on-site or taken to an appropriate disposal site.
- **Ultra-Low Diesel Fuel:** ARB ultra low diesel fuel shall be used for diesel–powered equipment and low sulfur fuel shall be utilized for stationary equipment.
- **Clean Power Sources:** Existing power sources (e.g., power poles) or clean fuel generators shall be used rather than temporary diesel power generators.
- **Compliance with PCAPCD Permit Regulations**: On-site stationary equipment which is classified as 50 horsepower or greater shall either obtain a State issued portable equipment permit or a PCAPCD issued portable equipment permit. Pursuant to PCAPCD Rule 501, General Permit Requirements, the Project may need a permit from the PCAPCD prior to construction. In general, any engine greater than 50 brake horsepower or any boiler with heat greater than 1,000,000 Btu per hour requires a PCAPCD permit.
- **Compliance with NESHAPs**: The demolition or remodeling of any structure may be subject to the National Emission Standard for Hazardous Air Pollutants (NESHAPs) for Asbestos. This may require that a structure to be demolished be inspected for the presence of asbestos by a certified asbestos inspector, and that asbestos materials are removed prior to demolition.
- **Traffic Plans:** If a Traffic Plan is required the PCAPCD shall be provided receive a copy for review. PCAPCD recommendations within the plan may include, but not be limited to: use of public transportation and satellite parking areas with a shuttle service.
- **Landscaping Plan:** The applicant shall provide a landscaping plan for review and approval by the Design/Site Review Committee. As required by the PCAPCD, landscaping shall include native drought-resistant species (plants, trees and bushes) and no more than 25% lawn area to reduce the demand for irrigation and gas powered landscape maintenance equipment. The Project Applicant shall include irrigation systems which efficiently utilize water (e.g., prohibit systems that apply water to non-vegetated surfaces and systems which create runoff), use applicant shall install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls, rain "shut off" valves, and other devices as reviewed and approved by the Design Site Review Committee.
- **Limit Daily Construction Activities:** Daily soil disturbance activities shall be limited to 15 acres per day.

After Mitigation: *Less than Significant Impact, Alternative 1 (Proposed Project); Significant and Unavoidable Impact*; *Alternatives 3, 5, and 6*

PCAPCD staff indicates that compliance with Mitigation Measures AQ-1 can reduce construction PM_{10} and $PM_{2.5}$ emissions by 50%. For the Proposed Project,

implementation of Mitigation Measure AQ-1 will reduce PM_{10} emissions to 79.55 pounds per day, which is below the PCAPCD's significance threshold of 82. This impact is considered less than significant.

For Alternatives 3, 5, and 6, depending on the alternative selected, Mitigation Measure AQ-1 equates to an approximate reduction of 150 - 215 pounds per day in PM_{10} and 37 - 45 pound per day in $PM_{2.5}$ during Phase 1a.[3] Implementation of Mitigation Measure AQ-1 will therefore reduce PM2.5 emissions below 82 pounds per day. However, short-term project emissions of PM_{10} will still exceed PCAPCD's significance threshold. This impact is therefore significant and unavoidable.

Analysis: *Less Than Significant Impact; Alternative 4*

As documented in Table 12-11, Alternative 4 will not exceed PCQPCD significance thresholds for construction emissions. Therefore, this impact is considered to be less than significant.

Mitigation: No mitigation is required.

12.4.2 Operational (Long-Term) Impacts

Project operation will generate long-term emissions of ROG, NO_X, PM_{10}, $PM_{2.5}$, and CO from mobile, stationary, and area sources. Mobile sources include increased vehicle traffic (VMTs, ADTs) associated with the Project and water taxis. Stationary and area sources include natural gas combustion, consumer products, landscaping equipment, the application of architectural coatings, and the diesel back-up generators for the chairlifts.

This section analyzes operational emissions per guidance from the PCAPCD (Chang pers. comm. (A)). It was assumed that operational emissions would begin once a building is fully operational and continue each subsequent year. Building completion dates were based on the construction schedule summarized in Appendix N. Operational emissions from each year during the construction process are presented in Appendix S. To ensure a conservative analysis, the discussion below presents emissions at buildout and occupancy of the Project.

As shown in Table 12-7, the PCAPCD and TRPA have separate thresholds for the evaluation of air quality impacts from operational activities. The discussion below evaluates emissions in accordance with the metrics required by each agency's threshold.

Impact: AQ-2. Will the Project Generate Operational Emissions or Vehicle Miles Traveled (VMT) in Excess of Applicable Standards?

Analysis: *No Impact; No Project (Alternative 2)*

No Project (Alternative 2) will not induce any changes to the existing land uses, densities, or roadway network. Emissions associated with existing operations at HMR, including natural gas consumption for No Project (Alternative 2) of 11,000 therms per year provided by JMA Ventures, LLC (Tirman pers. comm. (D)), would remain unchanged.

[3] Note that implementation of Mitigation Measure AQ-1, specifically idling restrictions and traffic plans, will also contribute to reductions of ozone precursors and CO.

Therefore, No Project (Alternative 2) will not result in any impacts. No further analysis is required.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

PCAPCD Requirement

Mobile Source Emissions

Primary mobile sources are those emissions associated with vehicle trips and include employee, delivery, and maintenance activities. Off-road vehicles, such as the two water taxis, are also considered sources of mobile emissions. Operational emissions from these sources are O_3 precursors (ROG and NO_X), CO, PM_{10}, $PM_{2.5}$, and CO_2 emitted as exhaust. Please refer to Chapter 19 for a discussion of global climate change and Project-related greenhouse gas emissions. (See conformity analysis RTP: Mobility 2030).

Trip generation information used in the analysis is based on data provided by the traffic engineers, Fehr & Peers (Harned pers. comm. (A) and (B)). Fehr & Peers provided daily trip rates for each land use (residential, commercial, etc.). To provide a conservative analysis, Fehr & Peers produced two trip rates for lodging activities—one rate accounts for 50% of the lodging guests arriving at the resort on Friday during the PM peak hour, while the other rate accounts for the remaining 50% of the guests arriving over a period from the late afternoon to evening (Fehr & Peers 2009). Daily trip rates were adjusted to account for internal trips completed by guests already at HMR and alternative modes of transportation. Data for the adjustment calculations were provided by Fehr & Peers (Harned pers. comm. (B)). Appendix P contains the trip generation rates used in the modeling.

Fehr & Peers provided daily VMTs for the winter and summer seasons. The traffic data indicated that there are currently no regular uses at the Project site during summer. The Lake Tahoe Music Festival holds a maximum of two concerns per summer at HMR. Since this event only occurs twice per summer, it was not included in analysis by Fehr & Peers and existing summer VMT was therefore assumed to be zero (Fehr & Peers 2009; Harned pers. comm. (A)). Consequently, the Project would result in increased trips and mobile emissions during the summer season.

During the winter ski season, existing VMT is currently higher than the VMT estimated with the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 (Harned pers. comm. (A)). This is because the residential units and hotel rooms would result in internalization between Project uses, reducing the external trips generated as compared to existing conditions. The existing site does not have internal capture of trips because day skiers must arrive at the beginning of each day and leave the site at the end of each day.

Table 12-14 summarizes VMT provided by Fehr & Peers. Note that the VMT estimate for Alternative 5 does not include trips associated with the 12 workforce housing units. These units were added to the design concept following the originally modeling completed by Fehr & Peers. Addition of these 12 units is not expected to substantially increase summer or winter VMT above values presented in Table 12-14.

Table 12-14

Daily VMT Generated at Buildout

Alternative	Summer	Winter
Proposed Project (Alternative 1) and Alternative 3	8,431	9,541
No Project (Alternative 2)	0	13,328
Alternative 4	2,362	2,362
Alternative 5[1]	7,045	8,114
Alternative 6	6,796	7,899

Source: Harned pers. comm. (A).

[1] VMT estimate does not include trips associated with the 12 workforce housing units, which were added to the Alternative after the VMT modeling was completed. However, according to the Transportation Chapter, the addition of 12 affordable housing units would have a negligible effect on daily trips (increase of approximately 25) and VMT.

Operational emissions were modeled at buildout (2021) based on consultation with PCAPCD staff (Chang pers. comm. (B)) using the URBEMIS2007 (version 9.2.4) model and the traffic assumptions listed Appendix P. URBEMIS2007 estimates mobile source emissions and vehicular emissions typically associated with the specified land uses. URBEMIS utilizes ARB's EMFAC2007 (version 2.3) emission rate program to produce emissions estimates for transportation. Based on discussion with the traffic engineers, it was assumed that no external trips would be generated by skier services, maintenance facilities, water tanks, or the day lodge as these facilities are meant to serve skiers, residents, and guests already at HMR. Additional trips resulting from skier drop-off and parking during winter and from the miniature golf course during summer were included in the analysis. This information was then used to run the URBEMIS2007 model. Model outputs generated by URBEMIS2007 are provided in Appendix O. For further information regarding the methodology used to estimate trip generation, please see Chapter 11 - Transportation and Circulation.

Information provided by JMA Ventures, LLC indicates that two hybrid-diesel water taxis will be operated under Proposed Project (Alternative 1) and Alternatives 3, 5, and 6. It is anticipated that one taxi will be begin service in 2014 and the second taxi will begin service in 2019. These taxis will have a capacity of up to 25 people and will operate Monday through Sunday from 9:00 AM to 8:00 PM, May 15th to September 15th (Tirman pers. comm. (A)). Water taxis of the proposed capacity typically have 150 to 350 horsepower engines, with most vessels utilizing twin diesel engines. For the purposes of this analysis, it was assumed that each water taxi would have twin 225 horsepower diesel engines.

The ARB's OFFROAD model was used to estimate emissions from a conventional diesel powered pleasure craft. OFFROAD can be used to calculate emissions based on technology types, seasonal conditions, regulations, and activity assumptions. Emissions were generated for a diesel inboard engine pleasure craft (maximum 250 horsepower) operating in the Lake Tahoe portion of Placer County in the summer season (May through September).

The following equation was used to calculate emission factors for each criteria pollutant based on the OFFROAD emissions outputs. The resulting emission factors were then multiplied by the horsepower-hour for the water taxi (12 hours X 450 horsepower).

Emission factor = (tons/day) X (1/population) X (2,000 pounds/ton) X (1/horsepower) X (load factor).
Where:
Tons/day = OFFROAD output for each criteria pollutant in tons per day;
Population = OFFROAD output for population;
Horsepower = 250 horsepower (maximum horsepower calculated by OFFROAD);
Load factor= 0.35 (OFFROAD default).

Hybrid water craft can have 70 to 80% fuel savings compared to typical diesel engines. It was therefore assumed that the hybrid water taxis would burn 70% less fuel than a diesel vessel, resulting in 70% fewer emissions. Emission estimates calculated using the above equation were therefore multiplied by 30% to account for a 70% reduction in emissions. Emissions calculations are presented in Appendix Q. Implementation of the Project may also increase use of recreational watercraft, such as jet skis and boats. Because use of these crafts is driven by several external factors (e.g. population, pricing, season), it is currently unknown by what factor watercraft usage will increase as a result of the Project. Consequently, this report does not quantity potential emissions associated with recreational watercraft because such analysis would be speculative. However, based on the emissions associated with the hybrid water taxi (Tables 12-16 through 12-19), potential emissions generated by these watercraft are likely to be small and not result in exceedences of the PCAPCD or TRPA thresholds.

Area Source Emissions

At the Project site, area sources include emissions from residential natural gas combustion for heating; landscaping activities; consumer products (i.e. household cleaners, personal care products); periodic paint emissions from facility maintenance; and back-up diesel generators for the chairlifts. As discussed in the project description, the two wood stoves currently operating at HMR would be removed under the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6. Emissions from these area sources were estimated for buildout conditions (2021) based on consultation with PCAPCD staff (Chang pers. comm. (B)) using a variety of methods are described in this section.

Beaudin Ganze Inc. analyzed natural gas consumption from the Proposed Project (Alternative 1) at buildout to be approximately 1,604,000 therms per year (Beaudin Ganze 2007). Given the similar land uses, it was assumed that Alternatives 3, 5, and 6 would have a similar consumption rate (Tirman pers. comm. (B)).

Emissions from natural gas consumption was calculated using URBEMIS2007 default emission factors and land use assumptions summarized in the Beaudin Ganze energy report (Beaudin Ganze 2007). The URBEMIS2007 emission factors for NO_X and CO are categorized into residential and non-residential land uses. To calculate a weighted emission factor for NO_X and CO, assumptions provided by Beaudin Ganze regarding the number and square footage of each dwelling unit and hotel room were scaled to match the land use assumptions presented in Table 12-8. The default URBEMIS2007 natural gas usage rates for each land use type were then used to calculate percentage of natural gas consumption for each land use. These values were then used to calculate the weighted emission factor for NO_X and CO, which was multiplied by the anticipated natural gas consumption estimates summarized above. Emission factors for other criteria

pollutants are not categorized by land use and a weighted value did not therefore need to be calculated.

Criteria pollutant emissions from landscaping activities, consumer products, and architectural coatings were estimated using URBEMIS2007 and the land-use assumptions summarized in Table 12-8. Complete URBEMIS2007 outputs are provided in Appendix O.

Emissions from the five back-up diesel generators for the chairlifts were estimated using URBEMIS2007 and information provided by JMA Ventures, LLC (Tirman pers. comm. (E)). The URBEMIS2007 technical appendix provides default emission factors by engine horsepower. Table 12-15 lists the horsepower of the generators and the corresponding URBEMIS2007 emission factors.

Table 12-15

Horsepower and Emission Factors (grams/horsepower-hour) for Diesel Generators

Chairlift	Horsepower	ROG	NO_X	CO	SO_X	PM
Ellis	300	0.350	4.316	1.391	0.004	0.135
Quail	130	0.572	5.563	2.796	0.005	0.234
Quad (2)	99	0.879	2.796	5.563	0.005	0.425
	400	0.350	4.316	1.391	0.004	0.135
Madden	150	0.572	4.999	2.241	0.005	0.234

Sources: Tirman pers. comm. (E); Jones & Stokes 2007.

Based on the information listed in Table 12-10, the following equation was used to calculate emissions of criteria pollutants. It was assumed that each generator would operate for no more than 48 hours per year (Tirman pers. comm. (E)). Emission calculations are presented in Appendix R.

Pounds/day = (emission factor) X (engine horsepower) X (hours/day) X (load factor) X (conversion factor)
Where:
Emission factor = URBEMIS2007 default emission factor from Table 12-10;
Engine horsepower = Generator horsepower listed in Table 12-10;
Hours/day = 0.0054; 48 hours per year/ 8,760 hours per year;
Load factor = 0.740; URBEMIS2007 default for generator sets;
Conversion factor = 0.0022; conversion from grams to pounds.

Summary of Mobile and Area Source Emissions (Total Operational)

Tables 12-16 through Table 12-19 present total operational emissions. Note that because the VMT estimates for Alternative 5 do not include trips associated with the 12 workforce housing units, mobile emissions under Alternative 5 will be slightly higher than those presented in Table 12-18. Trips associated with these additional units are expected to be minimal and will not result in a substantial increase in emissions.

Table 12-16

Operational Emissions (2021) from Proposed Project (Alternative 1) and Alternative 3 (pounds per day)

Source	ROG	NOX	CO	PM_{10}	$PM_{2.5}$	SO2
Mobile						
Traffic (Winter)	9.69	12.15	93.38	16.36	3.11	0.07
Traffic (Summer)	10.70	7.17	71.82	14.51	2.77	0.08
Hybrid Water Taxi[1]	0.68	1.03	2.35	0.06	0.06	0.00
Area						
Natural Gas	30.94	25.89	41.27	0.77	0.77	0.00
Landscape[2]	0.74	0.12	9.27	0.03	0.03	0.00
Consumer Product	10.47	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	2.45	0.00	0.00	0.00	0.00	0.00
Diesel Generator[3]	0.01	0.06	0.04	0.00	0.00	0.00
Total for the Proposed Project (Alternative 1) and Alternative 3 (Winter)[4]	54	39	137	17	4	0.07
Total for the Proposed Project (Alternative 1) and Alternative 3 (Summer)[5]	56	34	125	15	4	0.08
Total for No Project (Alternative 2) (Winter)[6]	8	11	75	13	3	0
Total for No Project (Alternative 2) (Summer)[6]	1	3	6	0	0	0
Comparison to No Project (Alternative 2) (Winter)	(+46)	(+28)	(+62)	(+5)	(+1)	(0)
Comparison to No Project (Alternative 2) (Summer)	(+55)	(+32)	(+119)	(+15)	(+4)	(0)
PCAPCD Standard	82	82	550	82	N/A[7]	82
Exceed Standard?	No	No	No	No	No	No

Sources: Harned pers. comm. (A) and (B); Tirman pers. comm. (A) through (E); Jones & Stokes 2007; Beaudin Ganze 2007; URBEMIS2007; and OFFROAD2007.

Notes:

1 Assumes the use of two hybrid 225 horsepower diesel water taxis operating for 12 hours per day.

2 Emissions would only occur during the summer season.

3 Assumes the use of five diesel backup generators operating for 0.054 hours per day.

4 Winter emissions (i.e., winter traffic, natural gas, consumer products, exterior coatings, and diesel generators).

5 Summer emissions (i.e., summer traffic, hybrid water taxi, natural gas, landscape, consumer products, and exterior coatings).

6 Emissions represent those from current HMR operations in the year 2021. Implementation of the Project would eliminate emissions generated by No Project (Alternative 2).

7 The PCAPCD has not established a significance threshold for $PM_{2.5}$. However, because $PM_{2.5}$ is a subset of PM_{10}, the 82 pound per day threshold can be used as a proxy for the significance evaluation of $PM_{2.5}$.

Table 12-17

Operational Emissions (2021) from Alternative 4 (pounds per day)[1, 2]

Source	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Mobile						
Traffic (Winter)	2.53	3.07	23.99	4.03	0.77	0.02
Traffic (Summer)	2.37	2.06	20.40	4.03	0.77	0.02
Area						
Natural Gas	0.26	0.16	0.34	0.01	0.01	0.00
Landscape[3]	0.37	0.05	3.80	0.01	0.01	0.00
Consumer Product	0.78	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.40	0.00	0.00	0.00	0.00	0.00
Total for Alternative 4 (Winter)[4]	4	3	24	4	0.78	0.02
Total for Alternatives 4 (Summer)[5]	4	2	25	4	0.79	0.02
Total for No Project (Alternative 2) (Winter)[6]	8	11	75	13	3	0
Total for No Project (Alternative 2) (Summer)[6]	1	3	6	0	0	0
Comparison to No Project (Alternative 2) (Winter)	(-3.94)	(-8.00)	(-50.27)	(-8.55)	(-2.44)	(-0.06)
Comparison to No Project (Alternative 2) (Summer)	(+3.56)	(-0.29)	(+18.49)	(+4.03)	(+0.77)	(+0.02)
PCAPCD Standard	82	82	550	82	N/A[7]	82
Exceed Standard?	No	No	No	No	No	No

Sources: Harned pers. comm. (A) and (B); Tirman pers. comm. (A) through (E); EIA 2009a and 2009b; URBEMIS2007.

Notes:

1 No water taxis or backup diesel generates were assumed to operate

2 Assumes the full buildout of 16 single family homes and one general commercial building.

3 Emissions would only occur during the summer season.

4 Winter emissions (i.e., winter traffic, natural gas, consumer products, exterior coatings, and diesel generator).

5 Summer emissions (i.e., summer traffic, natural gas, landscape, consumer products, and exterior coatings).

6 Emissions from current operations in the year 2021. Implementation of the Project would eliminate emissions generated by No Project (Alternative 2).

7 The PCAPCD has not established a significance threshold for $PM_{2.5}$. However, because $PM_{2.5}$ is a subset of PM_{10}, the 82 pound per day threshold can be used as a proxy for the significance evaluation of $PM_{2.5}$.

Table 12-18

Operational Emissions (2021) from Alternative 5 (pounds per day)

Source	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Mobile						
Traffic (Winter)[1]	8.54	10.60	83.12	14.02	2.69	0.08
Traffic (Summer) [1]	9.38	6.17	62.88	12.11	2.31	0.06
Hybrid Water Taxi[2]	0.68	1.03	2.35	0.06	0.06	0.00
Area						
Natural Gas	30.94	23.41	40.93	0.77	0.77	0.00
Landscape[3]	0.87	0.13	9.99	0.04	0.04	0.00
Consumer Product	12.39	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	2.65	0.00	0.00	0.00	0.00	0.00
Diesel Generator[4]	0.01	0.06	0.04	0.00	0.00	0.00
Total for Alternative 5 (Winter)[5]	55	35	126	15	4	0.08
Total for Alternative 5 (Summer)[6]	57	31	116	13	3	0.06
Total for No Project (Alternative 2) (Winter)[7]	8	11	75	13	3	0
Total for No Project (Alternative 2) (Summer)[7]	1	3	6	0	0	0
Comparison to No Project (Alternative 2) (Winter)	(+47)	(+24)	(+52)	(+2)	(0)	(0)
Comparison to No Project (Alternative 2) (Summer)	(+56)	(+28)	(+110)	(+13)	(+3)	(0)
PCAPCD Standard	82	82	550	82	N/A[8]	82
Exceed Standard?	No	No	No	No	No	No

Sources: Harned pers. comm. (A) and (B); Tirman pers. comm. (A) through (E); Jones & Stokes 2007; Beaudin Ganze 2007; URBEMIS2007; and OFFROAD2007.

Notes:

1 Emissions do not include those associated with the 12 workforce housing units.

2 Assumes the use of two hybrid 225 horsepower diesel water taxis operating for 12 hours per day.

3 Emissions would only occur during the summer season.

4 Assumes the use of five diesel backup generators operating for 0.054 hours per day.

5 Winter emissions (i.e., winter traffic, natural gas, consumer products, exterior coatings, and diesel generator).

6 Summer emissions (i.e., summer traffic, hybrid water taxi, natural gas, landscape, consumer products, exterior coatings, and diesel generator).

7 Emissions from current operations in the year 2021. Implementation of the Project would eliminate all emissions generated by No Project (Alternative 2).

8 The PCAPCD has not established a significance threshold for $PM_{2.5}$. However, because $PM_{2.5}$ is a subset of PM_{10}, the 82 pound per day threshold can be used as a proxy for the significance evaluation of $PM_{2.5}$.

Table 12-19

Operational Emissions (2021) from Alternative 6 (pounds per day)

Alternative 6	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Mobile						
Traffic (Winter)	8.32	10.23	80.24	13.57	2.59	0.07
Traffic (Summer)	8.94	5.92	60.31	11.68	2.24	0.06
Hybrid Water Taxi[1]	0.68	1.03	2.35	0.06	0.06	0.00
Area						
Natural Gas	30.94	24.06	41.02	0.77	0.77	0.00
Landscape[2]	0.73	0.11	8.35	0.03	0.03	0.00
Consumer Product	10.22	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	2.28	0.00	0.00	0.00	0.00	0.00
Diesel Generator[3]	0.01	0.06	0.04	0.00	0.00	0.00
Total for Alternative 6 (Winter)[4]	52	35	124	14	3	0.07
Total for Alternative 6 (Summer)[5]	54	31	112	13	3	0.06
Total for No Project (Alternative 2) (Winter)[6]	8	11	75	13	3	0
Total for No Project (Alternative 2) (Summer)[6]	1	3	6	0	0	0
Comparison to No Project (Alternative 2) (Winter)	(+45)	(+24)	(+49)	(+2)	(0)	(0)
Comparison to No Project (Alternative 2) (Summer)	(+53)	(+29)	(+106)	(+13)	(+3)	(0)
PCAPCD Threshold	82	82	550	82	N/A[7]	82
Exceed Threshold?	No	No	No	No	No	No

Sources: Harned pers. comm. (A) and (B); Tirman pers. comm. (A) through (E); Jones & Stokes 2007; Beaudin Ganze 2007; URBEMIS2007; and OFFROAD2007.

Notes:

1 Assumes the use of two hybrid 225 horsepower diesel water taxis operating for 12 hours per day.

2 Emissions would only occur during the summer season.

3 Assumes the use of five diesel backup generators operating for 0.054 hours per day.

4 Winter emissions (i.e., winter traffic, natural gas, consumer products, exterior coatings, and diesel generator).

5 Summer emissions (i.e., summer traffic, hybrid water taxi, natural gas, landscape, consumer products, and exterior coatings).

6 Emissions from current operations in the year 2021. Implementation of the Project would eliminate emissions generated by No Project (Alternative 2).

7 The PCAPCD has not established a significance threshold for $PM_{2.5}$. However, because $PM_{2.5}$ is a subset of PM_{10}, the 82 pound per day threshold can be used as a proxy for the significance evaluation of $PM_{2.5}$.

Based on Tables 12-16 through 12-19, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 will result in an increase of criteria pollutants, but the emissions will not exceed PCAPCD thresholds. Operational emissions associated with Alternative 4 are expected to decrease relative to baseline conditions during the winter season.

TRPA Vehicle Miles Traveled Requirement

Project-related VMTs was provided by Fehr & Peers (Harned pers. comm. (B)), and presented in Chapter 11 – Transportation, Parking, and Circulation. Summer and winter

traffic volumes are different due to seasonal land uses and tourist attractions. Existing VMT during the summer season is currently zero, while existing winter volumes are higher than those expected for the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 (see Table 12-14). Consequently, Project implementation would result in an increase of VMT during the summer season only. To calculate new VMT, summer and winter volumes were each compared to existing VMT for the respective season. The season changes in VMT were then added to calculate total new VMT.

Table 12-20 shows the VMT results compared to No Project (Alternative 2). The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 will generate 4,464, 1,831, and 1,367 new VMT compared to No Project (Alternative 2), respectively. Note that the VMT estimate for Alternative 5 does not include trips associated with the 12 workforce housing units. These units were added to the design concept following the originally modeling completed by Fehr & Peers. Addition of these 12 units is not expected to substantially increase summer or winter VMT relative to what is presented in Table 12-20.

Table 12-20

VMT Analysis of the Proposed Project (Alternative 1) and Alternatives

Alternative	Summer Season VMT	Comparison to No Project (Alternative 2)	Winter Season VMT	Comparison to No Project (Alternative 2)	Total VMT Change
Proposed Project (Alternative 1) and Alternative 3	8,431	(+8,431)	9,541	(-3,787)	(+4,644)
No Project (Alternative 2)	0	(0)	13,328	(0)	(0)
Alternative 4	2,362	(+2,362)	2,362	(-10,966)	(-8,604)
Alternative 5[1]	7,045	(+7,045)	8,114	(-5,214)	(+1,831)
Alternative 6	6,796	(+6,796)	7,899	(-5,429)	(+1,367)

Source: Harned pers. comm. (B).

[1] VMT estimate does not include trips associated with the 12 workforce housing units.

TRPA Stationary Source Requirement (see Table 12-6)

TRPA *Code of Ordinances* Section 91.3 establishes daily emission limits for stationary sources (please see Table 12-6). Stationary sources associated with the Project include natural gas combustion. As shown in Table 12-21, daily stationary source emissions of NO_X under the Proposed Project (Alternative 1) and Alternative 3 would exceed TRPA thresholds. North Base area and South Base area facilities will be constructed using U.S. Green Building LEED standards. These standards will improve energy efficiency, reducing the need for natural gas combustion for space heating. According to the U.S. Green Building Council (USGBC), green buildings can reduce energy consumption by 24-50% (USGBC 2009). Thus, these Project design features will effectively reduce NO_X emissions from stationary sources under the Proposed Project (Alternative 1) and Alternative 3.

Table 12-21

Stationary Source Emissions (pounds per day)

Scenario	ROG	NO_X	CO	PM_{10}	SO_2
Proposed Project (Alternative 1) and Alternative 3[(1)]	30.9	**25.9**	41.3	0.7	0.0
Alternative 4[(1)]	0.3	0.2	0.3	0.0	0.0
Alternative 5[(1)]	30.9	23.4	40.9	0.7	0.0
Alternative 6[(1)]	30.9	24.1	41.0	0.7	0.0
TRPA Standard	**125.7**	**24.2**	**220.5**	**22**	**13.2**

Sources: TRPA 2009; EIA 2009a and 2009b; Jones & Stokes 2007; Beaudin Ganze 2007; Tirman pers. comm. (A), (B), and (C); and URBEMIS2007.

Note:
[1] Emissions are from natural gas combustion and are not based on LEED standards.

Summary: The point of significance for total operational emissions is PCAPCD's mass emissions thresholds. The TRPA's threshold of any increase in VMT and exceedences of the stationary source standards outlined in TRPA *Code of Ordinances* Section 91.3 are used to evaluate VMT and stationary sources, respectively.

As shown in Tables 12-16 through 12-19, implementation of the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 would not generate emissions in excess of PCAPCD's mass emissions thresholds. However, all alternatives except Alternative 4 would result in VMT increases compared to baseline conditions (Table 12-20). Likewise, although stationary source emissions are not expected to exceed the standards outlined in the TRPA code, there is potential for future owners, operators, and residents to install wood-burning appliances that would generate substantial PM_{10} emissions. This is considered a significant impact. Implementation of Mitigation Measure AQ-2a will reduce VMT related effects to less than significant and is required for the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6. Implementation of Mitigation Measures AQ-2b is required for all Alternatives and will ensure the TRPA stationary source standards are not violated.

Mitigation: **Mitigation Measure AQ-2a: Contribute to the TRPA Traffic and Air Quality Mitigation Program.**

The Project Applicant shall pay the appropriate air quality mitigation fee in accordance with Chapter 93—Traffic and Air Quality Mitigation Program of the TRPA *Code of Ordinances*. The TRPA adopted this program as a means of generating the revenue necessary to address air quality impacts associated with VMT. By contributing to TRPA's Mitigation Program, the Project effectively mitigates air quality emissions through VMT reductions achieved through Mitigation Program, as VMT reductions typically result in reductions of air pollutant emissions. Specific regional and local VMT reduction strategies that may benefit from the mitigation include, but are not limited to:

- Expansion of existing transit facilities;
- Addition of bicycle lanes;

- Transportation Systems Management measures such as bicycle facilities, pedestrian facilities, and use of alternative fuels in fleet vehicles; and
- Provision of connectivity between multi-use paths for bicycles and pedestrians.

Mitigation: **Mitigation Measure AQ-2b: Prohibit Installation of Wood-Burning Appliances.**

There are no new wood-burning appliances included in the Proposed Project (Alternative 1) or Alternatives 3, 4, 5, or 6. There is potential, however, for future owners, operators, and residents to install wood-burning appliances. However, no new wood burning appliances defined in District Rule 225 Wood-Burning Appliances shall be allowed in any residential or non-residential structures within the boundaries of the project. A standard note indicating this restriction shall be included on all building plans approved in association with this project.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 4, 5, and 6*

Implementation of mitigation measure AQ-2a will reduce impacts associated with the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 to a less than significant level by providing the necessary funding to offset the project's contribution to long-term criteria pollutant emissions resulting from increased traffic.

Implementation of mitigation measure AQ-2b will reduce potential impacts associated with the future owners, operators, or residents installing wood-burning appliances under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 to a less than significant level.

Impact: AQ-3. Will the Project Expose Sensitive Receptors to Substantial Pollutant Concentrations?

Analysis: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 2, 3, 4, 5, and 6*

PCAPCD Requirement

On-Road Carbon Monoxide

Localized increases in CO concentrations from vehicle congestion at intersections affected by development were modeled using the Caltrans CALINE4 line source dispersion model (Benson 1989). CALINE4 is a Gaussian dispersion model specifically designed to evaluate air quality impacts of roadway projects. Each roadway segment analyzed in the model is treated as a sequence of "links." CALINE4 uses worst-case meteorological data to predict a concentration that would never be exceeded, thus producing a conservative estimate of a project's potential effects. CO emissions and temperature are inversely related, so a winter low temperature and the highest peak-hour traffic counts were modeled to estimate the worst-case CO concentrations for the action.

Traffic volumes and operating conditions used in the modeling were obtained from the traffic analysis prepared by Fehr & Peers (Harned pers. comm. (D); Harned pers. comm. (E)). Ambient CO concentrations near the roadway for existing (2008) and future year (2030) Project conditions were modeled using CALINE4. The PM peak-hour traffic was modeled as the traffic data indicated that LOS and delays would be worse in the PM peak-hour than in the AM peak hour. The data included traffic volumes in the surrounding area, so traffic is highest during the summer season (Harned pers. comm. (C); Harned pers. comm. (D)). Consequently, the summer traffic volumes were modeled

along with winter temperatures to represent a worst-case scenario (see section "CALINE4"). CO modeling was conducted at the SR 89/SR 28 and SR 89/Granlibakken Road intersections, which have the greatest traffic volumes and worst LOS/delay.

Vehicle emission rates were determined using the ARB's EMFAC2007 emission rate program. Free-flow traffic speeds were adjusted to a speed of 1.0 mph to represent a worst-case scenario. EMFAC2007 modeling procedures followed the guidelines recommended by Caltrans (California Department of Transportation 2003). The program assumed LTAB regional traffic data operating during the winter months. A winter temperature of 20° F and humidity of 30% were assumed.

CO concentrations were estimated at four receptor locations located at each intersection for a total of eight receptors. The receptors were placed 100 feet from the center of intersection diagonals, and 71 feet from roadway centerlines at the boundary of the mixing zone (142 feet from each other) to represent a worst-case scenario. Receptor heights were set at 5.9 feet.

Meteorological inputs to the CALINE4 model were determined using methodology recommended in CALINE4 Users Guide (Sonoma Technology and California Department of Transportation 1998). The meteorological conditions used represent a calm winter period. The worst-case wind angles option was used to determine a worst-case concentration for each receptor. The meteorological inputs include: wind speed of 0.5 meter per second, ground-level temperature inversion (atmospheric stability class G), wind direction standard deviation equal to 30 degrees, ambient temperature of 25°F (-3.89° Celsius), altitude above sea level of 1,900 meters (6,235 feet), and a mixing height of 1,000 meters.

A background concentration of 0.9 parts per million was added to the modeled 1-hour values to account for sources of CO not included in the modeling. Eight-hour modeled values were calculated from the 1-hour values using a persistence factor of 0.6. A background concentration of 0.5 parts per million was added to the modeled 8-hour values. Background concentration data were taken from the monitoring data provided by the EPA's Air Data webpage (US Environmental Protection Agency 2009b) for the Tahoe City (Site ID 060610007) monitoring station. The Tahoe City monitoring station was installed as part of a short-term air quality study led by the ARB. The station is located approximately eight miles from the Project. Concentrations represent those in the year 2004 as this was the most recent year for CO monitoring at the station. Actual 1- and 8-hour background concentrations in future years would likely be lower than those used in the CO modeling analysis because the trend in CO emissions and concentrations is decreasing because of continuing improvements in engine technology and the retirement of older, higher-emitting vehicles.

Modeled CO concentrations plus background CO levels from the nearest monitoring station are presented in Table 12-22. CO concentrations would not exceed the federal or State 1- and 8-hour standards (PCAPCD).

Construction Related Diesel Particulate Matter

Diesel Particulate Matter (DPM) is a carcinogenic toxic air contaminate that will be emitted by heavy-duty equipment during construction. A number of site-specific factors, which are beyond the scope of this master plan evaluation, are required to calculate DPM concentrations caused by construction activity. For example, the specific construction schedule, location of operating construction equipment, and location of exposed sensitive receptors, are necessary to model pollutant dispersion and calculate relative DPM concentrations at receptor locations. In addition, information on the location of specific receptors is required to perform an HRA. Because a detailed construction schedule is currently unavailable, a quantitative analysis of health risks from construction is not possible.

The Office of Environmental Health Hazard Assessment (OEHHA) indicates that cancer health risks from DPM are typically associated with chronic exposure and recommends using a 70-year exposure period for the cancer risk analysis to represent a chronic exposure scenario. As discussed above, construction is anticipated to take a maximum of ten years. This is well below the recommended 70-year analysis period. Moreover, construction-related DPM emissions will be spread between the north and south bases, rather than concentrated in one location. Tourists visiting the HMR during construction will also be transient and only exposed to elevated DPM during their visit. The first condos constructed at the resort will be completed in December of 2016. Assuming these dwellings will be occupied immediately after construction, the potential exposure period of new residents to construction-related DPM would be no more than four years. It is therefore unlikely that construction activities will result in elevated health risks. In addition, Mitigation Measure AQ-1 will help to minimize concentrations of DPM at nearby sensitive receptors.

TRPA Requirement

As shown in Table 12-22, emissions of CO would not result in an increase in CO concentrations when compared to the existing conditions under future year conditions. Exposure of sensitive receptors to construction-related DPM is well below the 70 year recommended analysis period and is not anticipated to result in elevated health risks.

Summary: The point of significance for the exposure of sensitive receptors to CO concentrations is the TRPA threshold of any net increase in CO concentrations relative to existing conditions. The Proposed Project (Alternative 1) and Alternatives 2, 3, 4, 5, and 6 are not expected to result in increased CO concentrations. This impact is considered less than significant.

The evaluation of DPM is based on a qualitative assessment of the construction period and type of sensitive receptors. Based on the discussion above, construction is well below OEHHA 70-year analysis period. Moreover, the actual exposure period to sensitive receptors will be even shorter given the seasonal travel patterns and construction schedule for the new residential dwellings.

Mitigation: No mitigation is required.

Table 12-22

Carbon Monoxide Modeling Concentrations Results (parts per million)

Intersection	Receptor ID	Proposed Project (Alternative 1) and Alternative 3				No Project (Alternative 2)				Alternative 4				Alternative 5				Alternative 6			
		2008		2030		2008		2030		2008		2030		2008		2030		2008		2030	
		1-hr CO[2]	8-hr CO[3]	1-hr CO[2]	8-hr CO[3]	1-hr CO[2]	8-hr CO[3]	1-hr CO[2]	8-hr CO[3]	1-hr CO[2]	8-hr CO[3]	1-hr CO[2]	8-hr CO[3]	1-hr CO[2]	8-hr CO[3]	1-hr CO[2]	8-hr CO[3]	1-hr CO[2]	8-hr CO[3]	1-hr CO[2]	8-hr CO[3]
SR89/SR28	1	4.4	2.6	1.2	0.7	4.3	2.5	1.2	0.7	4.2	2.5	1.2	0.7	4.3	2.5	1.2	0.7	4.3	2.5	1.2	0.7
	2	4.4	2.6	1.2	0.7	4.3	2.5	1.2	0.7	4.3	2.5	1.2	0.7	4.4	2.6	1.2	0.7	4.3	2.5	1.2	0.7
	3	4.4	2.6	1.2	0.7	4.3	2.5	1.2	0.7	4.3	2.5	1.2	0.7	4.4	2.6	1.2	0.7	4.3	2.5	1.2	0.7
	4	4.5	2.7	1.2	0.7	4.4	2.6	1.2	0.7	4.4	2.6	1.2	0.7	4.4	2.6	1.2	0.7	4.4	2.6	1.2	0.7
SR89/ Granlibakken Road	5	3.1	1.8	1.1	0.6	3.0	1.8	1.1	0.6	3.0	1.8	1.1	0.6	3.1	1.8	1.1	0.6	3.1	1.8	1.1	0.6
	6	3.1	1.8	1.1	0.6	3.0	1.8	1.1	0.6	3.0	1.8	1.1	0.6	3.1	1.8	1.1	0.6	3.0	1.8	1.1	0.6
	7	3.1	1.8	1.1	0.6	3.0	1.8	1.1	0.6	3.0	1.8	1.1	0.6	3.1	1.8	1.1	0.6	3.1	1.8	1.1	0.6
	8	3.2	1.9	1.1	0.6	3.1	1.8	1.1	0.6	3.1	1.8	1.1	0.6	3.2	1.9	1.1	0.6	3.2	1.9	1.1	0.6

Source: CALINE4.

Notes:

[1] Background concentrations of 0.9 parts per million and 0.5 parts per million were added to the modeling 1-hour and 8-hour results, respectively.

[2] The federal and State 1-hour standards are 35 and 20 parts per million, respectively.

[3] The federal and State 8-hour standards are 9 and 9.0 parts per million, respectively.

Impact: **AQ-4. Will the Project Conflict with or Obstruction of Implementation of the Applicable Air Quality Plan?**

Analysis: *No Impact; No Project (Alternative 2).*

The No Project (Alternative 2) will not change existing land uses, densities, the roadway network, population, or employment, and will not generate construction emissions. The No Project (Alternative 2) will therefore not conflict with or obstruct applicable air quality plans. There will be no impact and no further analysis is required.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5, and 6*

PCAPCD and TRPA Requirements

As discussed above, the ARB adopted a revised SIP for CO for the north and south shores of Lake Tahoe. The SIP demonstrates how these areas will continue to maintain compliance with the federal 8-hour CO standard. The TRPA adopted a *Regional Plan* to outline how the region will achieve and maintain air quality thresholds (see section 12.2.3).

A project is typically deemed inconsistent with air quality plans if it results in population and/or employment growth that exceeds growth estimates included in the applicable planning documents and therefore generates emissions not accounted for in the emissions budget. The Proposed Project (Alternative 1) and Alternative 3 would expand certain plan area uses beyond current TRPA and Placer County boundary lines and conflict with existing land use prescriptions. Boundary lines are established by the land use assumptions in the County General Plan and TRPA Code, so any boundary line violation could be inconsistent with the CO SIP and TRPA *Regional Plan*. An analysis of plan level-consistency was therefore conducted using the Project's potential to violate the CAAQS and NAAQS.

Construction Emissions. Modeling presented in Impact AQ-1 indicates that the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 may result in construction emissions that exceed the CAAQS or NAAQS on days requiring sustainable construction equipment or activity. This is a significant impact.

Operational Emissions. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 will increase VMTs (see Impact AQ-2), but will not violate CO standards, the pollutant of greatest concern in the LTAB (see impact AQ-3). The Project also incorporates traffic management strategies and LEED standards to reduce operation emissions. The Project Applicant will ensure HMR meets land use projections contained within TRPA and Placer County planning documents. Consequently, this impact is less than significant.

Mitigation: **Mitigation Measure AQ-1: Implement PCAPCD Best Management Practices (BMPs) to reduce pollutant emissions during construction.**

After Mitigation: *Less than Significant Impact, Proposed Project (Alternative 1); Significant and Unavoidable Impact, Alternatives 3, 5, and 6*

Mitigation Measure AQ-1 will minimize construction related emissions generated by Alternative 1 to less than significant (see Impact AQ-1). Consequently, implementation of the Project will not conflict or obstruct with implementation of the applicable air quality plans, including the CO SIP and TRPA *Regional Plan*.

PM_{10} emissions generated by Alternatives 3, 5, and 6 will remain significant after implementation of Mitigation Measure AQ-1 (see Impact AQ-1). Therefore, construction of the project alternatives may conflict or obstruct with implementation of the applicable air quality plans, including the CO SIP and TRPA *Regional Plan*.

Analysis: *Less Than Significant Impact; Alternative 4*

Construction Emissions. Modeling presented in Impact AQ-1 indicates that the Alternative 4 will not result in construction emissions that exceed the CAAQS or NAAQS on days requiring sustainable construction equipment or activity. Therefore, Alternative 4 will not conflict with an air quality plan and this impact is less than significant.

Operational Emissions. Alternative 4 will not increase total VMTs (see Impact AQ-2), and will not violate CO standards, the pollutant of greatest concern in the LTAB (see impact AQ-3). Consequently, this impact is less than significant.

Mitigation: No mitigation is required.

Impact: AQ-5. Will the Project Generate Objectionable Odors?

Analysis: *Less than Significant Impact; Proposed Project (Alternative 1) and No Project (Alternative 2), and Alternatives 3, 4, 5, and 6*

PCAPCD and TRPA Requirements

The generation and severity of odors is dependent on a number of factors, including the nature, frequency, and intensity of the source; wind direction; and the location of the receptor(s). Odors rarely cause physical harm, but can cause discomfort, leading to complaints to regulatory agencies. Typical facilities known to produce odors include landfills, wastewater treatment plants, manufacturing plants, and certain agricultural activities.

The existing HMR is not known to include any major facilities that produce odors. According to the PCAPCD and the TRPA, there have been no odor complaints against HMR (Finnell pers. comm.; Emmett pers. comm.). Consequently, continuing operation is not anticipated to generate any objectionable odors that affect a substantial number of people.

Project implementation would not result in the addition of any major odor producing facilities. Since there have been no odor complaints against HMR, implementation of the Proposed Project (Alternative 1) and Alternatives 2, 3, 4, 5, and 6, which will not add new odor sources, is not anticipated to generate objectionable odors that affect a substantial number of people.

Diesel emissions from construction equipment and volatile organic compounds from paving activities may create odors during construction. These odors would be temporary and localized, and they would cease once construction activities have been completed. Thus, it is not anticipated that the operation or the construction of the Proposed Project (Alternative 1) and Alternatives 2 (No Project), 3, 4, 5, and 6 would result in odor complaints. This impact is considered less than significant.

Mitigation: No mitigation is required.

12.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact: **AQ-C1. Would the Project Result in a Cumulative Short-Term Impact on Air Quality?**

Analysis: *No Impact; No Project (Alternative 2).*

There would be no construction under No Project (Alternative 2). Therefore, there will be no impacts. No further analysis is required.

Mitigation: No mitigation is required.

Analysis: *Significant Impact, Proposed Project (Alternative 1) and Alternatives 3, 5, and 6*

As discussed in Impact AQ-1, the Project would generate emissions of ROG, NO_X, CO, $PM_{10,}$ and $PM_{2.5}$ during construction. These emissions are primarily associated with fugitive dust during site grading and the use of heavy-duty equipment. Unmitigated construction activity under the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would exceed the PCAPCD significance standard for PM_{10} during Phase 1a. This is a significant cumulative impact.

Mitigation: **Mitigation Measure AQ-1: Implement PCAPCD Best Management Practices (BMPs) to reduce pollutant emissions during construction.**

After Mitigation: *Less than Significant Impact, Proposed Project (Alternative 1); Significant and Unavoidable Impact, Alternatives 3, 5,and 6*

Implementation Mitigation Measure AQ-1 will reduce PM10 emissions generated by the Proposed Project (Alternative 1) to less than significant. It is anticipated that similar projects in the LTAB, including those listed in Chapter 20 – Mandated Analysis, Table 20-1 would also be required to implement similar BMPs to reduce project-level construction-related emissions. Thus, the Proposed Project (Alternative 1) would not contribute to a cumulative impact.

Alternatives 3, 5, and 6 would result in a significant and unavoidable short-term construction related impact, even after implementation of Mitigation Measure AQ-1. Given the large scale and number of related projects within the region, emissions generated by Alternatives 3, 5 and 6 would contribute to a cumulative impact.

Analysis: *Less Than Significant Impact; Alternative 4*

As documented in Table 12-11, Alternative 4 will not exceed PCQPCD significance thresholds for construction emissions. Other projects in the area do not involve extensive earth moving activities. Therefore, Alternative 4 will not contribute to a cumulative impact.

Mitigation: No mitigation is required.

Impact: **AQ-C2. Would the Project Result in a Cumulative Long-Term Regional Impact on Air Quality?**

Analysis: *Less than Significant Impact; No Project (Alternative 2) and Alternative 4*

The No Project (Alternative 2) and Alternative 4 were found to have less than significant long-term impacts on air quality. The No Project (Alternative 2) is expected to have net, long-term reduction in emissions due to increasing technological efficiencies. Alternative 4 would have a net long-term reduction in air pollutant emissions. The No

Project (Alternative 2) and Alternative 4 will therefore not contribute to a cumulatively considerable impact on air quality.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5, and 6*

As shown in Impact AQ-2, implementation of the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 increase VMT in the Project area and vicinity relative to existing conditions. This increase in VMT may result in long-term increase in criteria pollutant emissions from traffic operations. When combined with emissions from area and stationary sources, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 generate ROG and NO_X emissions in excess of 10 pounds per day, which exceeds the PCAPCD's cumulative significance threshold. This is considered a significant impact.

Mitigation: **Mitigation Measure AQ-2a: Contribute to the TRPA Traffic and Air Quality Mitigation Program**

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 5, and 6*

To mitigate cumulative operational impacts, the PCAPCD requires the payment of fees for each pound of pollutant in excess of 10 pounds per day. Based on consultation with the PCAPCD, payment of the TRPA off-site fee (Mitigation Measure AQ-2a) will satisfy this PCAPCD fee requirement (Rinker pers. comm.). Implementation of Mitigation Measure AQ-2a will therefore provide the necessary funding to offset the Project's contribution to long-term criteria pollutant emissions. TRPA adopted the Traffic and Air Quality Mitigation Program as a means of generating the revenue necessary to implement programs to reduce VMT, resulting in improvements to both traffic and traffic-related air quality. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 will therefore not contribute to a cumulatively considerable air quality impact.

Impact: AQ-C3. Would the Project Result in a Cumulative Long-Term Local Impact on Air Quality?

Analysis: *Less than Significant Impact; Proposed Project (Alternative 1), No Project (Alternative 2) and Alternatives 3, 4, 5, and 6*

CO modeling for the Proposed Project (Alternative 1) and Alternatives 2 (No Project), 3, 4, 5, and 6 showed that existing and future concentrations from idling would not exceed existing State, federal, and TRPA thresholds. This modeling is based on traffic volumes that assumed cumulative growth throughout the Lake Tahoe area. Because the Proposed Project (Alternative 1) and Alternatives 2 (No Project), 3, 4, 5, and 6 would not exceed State, federal, or TRPA thresholds, they would not contribute to a cumulative air quality violation.

Mitigation: No mitigation is required.

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13 NOISE

13.1 ENVIRONMENTAL SETTING

This chapter discusses the potential noise impacts due to, and on the Project site. This chapter provides information on the existing noise environment, impacts associated with the development of the Project, impacts upon the Project site, and mitigation measures to ensure compliance with State and local criteria.

13.1.1 Characteristics of Environmental Noise

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. *Noise* can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound level. The decibel (dB) scale is used to quantify sound intensity. Because sound pressure can vary enormously within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called *A-weighting*, which is written "dBA." In general, human sound perception is such that a change in sound level of 3 dB is just noticeable; a change of 5 dB is clearly noticeable; and a change of 10 dB is perceived as doubling or halving sound level.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (L_{xx}), the day-night sound level (L_{dn}), and the community noise equivalent level (CNEL). Below are brief definitions of these measurements and other terminology used in this chapter.

- **Sound.** A vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Ambient Noise.** The composite of noise from all sources near and far in a given environment exclusive of particular noise sources to be measured.
- **Decibel (dB).** A unit-less measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals. The human hearing threshold is defined as zero dB.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Sound Level (L_{eq}).** The average of sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour A weighted L_{eq} is the energy average of A-weighted sound levels occurring during a 1-hour period and is the basis for noise abatement criteria (NAC) used by Caltrans and FHWA.

- **Exceedance Sound Level (L_{xx}).** The sound level exceeded during the stated percentage of the time during a sound level measurement period. For example, L_{90} is the sound level exceeded 90% of the time and L_{10} is the sound level exceeded 10% of the time.
- **Maximum and Minimum Sound Levels (L_{max} and L_{min}).** The maximum or minimum sound level measured during a measurement period.
- **Day-Night Level (L_{dn}).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 PM to 10:00 PM and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Vibration.** Mechanical oscillations about an equilibrium point.
- **Peak Particle Velocity (PPV).** A measurement of ground vibration defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive state.

L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered equivalent and are treated as such in this assessment. Typical indoor and outdoor noise levels are shown in Table 13-1.

Table 13-1

Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet fly-over at 1000 feet	— 110 —	Rock band concert
Gas lawn mower at 3 feet	— 100 —	
Diesel truck at 50 feet at 50 mph	— 90 —	Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Gas lawn mower, 100 feet; Noisy urban area, daytime; Commercial area	— 70 —	Vacuum cleaner at 10 feet; Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	Large business office
Quiet urban daytime	— 50 —	Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime	— 30 —	Library
Quiet rural nighttime	— 20 —	Bedroom at night
	— 10 —	Broadcast/recording studio
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: California Department of Transportation 1998.

13.1.2 Effects of Noise on People

The effects of noise on people can be placed in three categories:

1. Subjective effects of annoyance, nuisance, and dissatisfaction;
2. Interference with activities such as speech, sleep, and learning; and
3. Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- A change in noise levels of 3 dBA is considered a just-perceivable difference;
- A change in level of 5 dBA is a noticeable difference, and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness(White, 1975).

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate, between 3 dB and 4.5 dB per doubling of distance.

13.1.3 Vibration

Operation of heavy construction equipment, particularly pile driving and other impacts devices such as pavement breakers create seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Vibration from operation of this equipment can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance will result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes will decrease with increasing distance.

Perceptible ground-borne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as the peak particle velocity (PPV).

Table 13-2 summarizes typical vibration levels generated by construction equipment (Federal Transit Administration 2006).

Table 13-2

Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 feet
Pile driver (impact)	0.644 to 1.518
Pile drive (sonic/vibratory)	0.170 to 0.734
Vibratory roller	0.210
Hoe ram	0.089
Large bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: FTA 2006.

Vibration amplitude attenuates (the gradual loss in intensity) over distance and is a complex function of how energy is imparted into the ground and the soil conditions through which the vibration is traveling. Equation 1, below, can be used to estimate the vibration level at a given distance for typical soil conditions (Federal Transit Administration 2006). PPV_{ref} is the reference PPV from Table 13-2:

Equation 1

$$PPV = PPV_{ref} \times (25/Distance)^{1.5}$$

Tables 13-3 and 13-4 summarize typical human response to transient and continuous vibration that is usually associated with construction activity. Equipment or activities typical of continuous vibration include: excavation equipment, static compaction equipment, tracked vehicles, traffic on a roadway, vibratory pile drivers, pile-extraction equipment, and vibratory compaction equipment. Equipment or activities typical of single-impact (transient) or low-rate repeated impact vibration include: impact pile drivers, blasting, drop balls, “pogo stick” compactors, and crack-and-seat equipment (California Department of Transportation 2004).

Table 13-3

Human Response to Transient Vibration

PPV	Human Response
2.0	Severe
0.9	Strongly perceptible
0.24	Distinctly perceptible
0.035	Barely perceptible

Source: Caltrans 2004.

Table 13-4

Human Response to Continuous Vibration

PPV	Human Response
3.6 (at 2 Hz) to 0.4	Very disturbing
0.7 (at 2 Hz) to 0.17	Disturbing
0.10	Strongly perceptible
0.035	Distinctly perceptible
0.012	Slightly perceptible

Source: Caltrans 2004.

13.1.4 Blasting Airblast and Vibration

Blasting is unlikely, but may be required as part of Project construction activities. The two primary environmental effects of blasting are airblast and groundborne vibration. The following is a brief discussion of each of these effects.

Ground Vibration

Blasting creates seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Ground vibration can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance will result in different vibration levels containing different frequencies and displacements. Vibration amplitudes decrease with increasing distance.

As seismic waves travel outward from a blast, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as the PPV.

Airblast

Energy released in an explosion creates an air overpressure (commonly called an airblast) in the form of a propagating wave. If the receiver is close enough to the blast, the overpressure can be felt as the pressure front of the airblast passes. The accompanying booming sound lasts for only a few seconds. The explosive charges used in mining and mass grading are typically wholly contained in the ground, resulting in an airblast with frequency content below about 250 cycles per second, or Hz.

Because an airblast lasts for only a few seconds, use of L_{eq} (a measure of sound level averaged over a specified period of time) to describe blast noise is inappropriate. Airblast is properly measured and described as a linear peak air overpressure (i.e., an increase above atmospheric pressure) in pounds per square inch (psi). Modern blast monitoring equipment is also capable of measuring peak overpressure data in terms of unweighted dB. Decibels, as used to describe airblast, should not be confused with or compared to dBA, which are commonly used to describe relatively steady-state noise levels. An airblast with a peak overpressure of 130 dB can be

described as being mildly unpleasant, whereas exposure to jet aircraft noise at a level of 130 dBA would be painful and deafening.

Human Response to Airblast and Vibration

Human response to blast vibration and airblast is difficult to quantify. Vibration and airblast can be felt or heard well below the levels that produce any damage to structures. The duration of the event and blast frequency have an effect on human response. Blast events are relatively short, on the order of several seconds for sequentially delayed blasts. Generally, as blast duration and vibration frequency increase, the potential for adverse human response increases. Studies have shown that a few blasts of longer duration will produce a less adverse human response than short blasts that occur more often.

Table 13-5 summarizes the average human response to vibration and airblast that may be anticipated when a person is at rest in quiet surroundings. If the person is engaged in any type of physical activity, the level required for the responses indicated are increased considerably.

It is important to understand that the forgoing describes the average responses of individuals. Individual responses can fall anywhere within the full range of the human response spectrum. At one extreme are those people who receive some tangible benefit from the blasting operation and probably would not be disturbed by any level of vibration and airblast, as long as it does not damage their property. At the opposite extreme are people who would be disturbed by even barely detectable vibration or airblast. Individuals at either of these two extremes were not considered in the listing of average human response or in the impact conclusions that follow.

Table 13-5

Human Response to Airblast and Ground Vibration from Blasting

Response	Ground Vibration Range PPV (inches per second)	Airblast Range (dB)
Barely to distinctly perceptible	0.02–0.10	50–70
Distinctly perceptible to strongly perceptible	0.10–0.50	70–90
Strongly perceptible to mildly unpleasant	0.50–1.00	90–120
Mildly unpleasant to distinctly unpleasant	1.00–2.00	120–140
Distinctly unpleasant to intolerable	2.00–10.00	140–170

Source: Caltrans 2004.

13.1.5 Regional Setting

The Project site is located within Placer County on the west shoreline of Lake Tahoe, six miles south of Tahoe City along SR 89. Land uses in the Project area include the Homewood Mountain Resort (HMR) and associated recreation and commercial uses, and commercial and residential uses in the vicinity. The main sources of noise are from ski resort operations and from vehicular traffic along SR 89. Noise sources in Placer County include noise from traffic traveling on roadways within the County, aircraft overflights, and recreational activities such as boating and skiing.

13.1.6 Local Setting

Stationary Sources

Existing noise sources associated with HMR operation include automobile traffic, snowmaking, and occasional outdoor concerts. j.c. brennan & associates conducted ambient noise monitoring for existing conditions with and without snowmaking at various locations around the Project area. Table 13-6 provides ambient noise monitoring results during a period without snowmaking, and Table 13-7 provides ambient noise monitoring results during snowmaking (j.c. brennan and Associates 2007, 2009).

Table 11-4 (Historic Traffic Volumes) in Chapter 11 – Transportation, Parking, and Circulation shows historic traffic volumes in the HMR area. Large-scale concerts are normally held twice a year during the summer months. The amplification of voice and instrumental music together with applause and audience response can result in excessive noise at nearby residences. In general, snowmaking occurs at nighttime throughout the ski season, depending on the amount of natural snowfall. Snowmaking may occur continually for several days at a time early in the season, or prior to opening of the ski resort to establish an early base of snow. Snow grooming typically occurs every night during the ski season. Parking lot activities and automobile traffic occur during the times the ski facility is open, with peak periods of activity in the morning and evening hours. Snow removal occurs in the parking lots after snowfall, typically at nighttime.

Table 13-6

Continuous Ambient Noise Monitoring Results

				Average Measured Hourly Noise Levels, dBA							
				Daytime				Nighttime			
Site	Location	Date	CNEL (dBA)	L_{eq}	L_{max}	L_{50}	L_{90}	L_{eq}	L_{max}	L_{50}	L_{90}
A	Southeastern Project Boundary	March 23-25, 2007	54.2	50.8	59.6	32.2	28.5	47.0	57.1	25.5	22.2
			53.0	51.2	61.1	32.3	28.8	45.0	48.9	25.3	22.2
			51.0	51.2	60.4	34.2	30.2	40.8	43.9	27.1	23.6
B	Eastern Project Boundary	March 27-28, 2007	42.4	43.9	53.6	24.1	21.0	27.5	43.1	22.9	20.3
			46.9	43.8	59.7	34.0	30.6	39.6	47.3	30.7	26.4
C	Northeastern Project Boundary	March 23-25, 2007	62.0	50.7	67.9	41.2	37.5	56.1	53.4	35.2	32.0
			50.0	50.9	66.6	41.4	37.9	37.7	49.0	34.7	32.5
			54.1	55.8	68.1	41.5	38.0	36.7	47.0	34.8	32.9

Source: j.c. brennan & associates , 2007.

Table 13-7

Continuous Ambient Noise Monitoring Results With and Without Snowmaking

Site	Location	Date	CNEL*/dBA
A	Residential uses near South Base area	December 18, 2008	65.1*/60.0
		December 19, 2008	65.8*/62.7
		December 20, 2008	65.4*/59.9
		December 21, 2008	58.6/**
B	Eastern Project Boundary	December 18, 2008	62.5*/51.6
		December 19, 2008	61.7*/55.8
		December 20, 2008	55.0*/48.0
		December 21, 2008	52.5/**
C	Northeastern Project Boundary	December 18, 2008	50.3*/48.1
		December 19, 2008	55.9*/52.7
		December 20, 2008	43.3*/35.4
		December 21, 2008	44.7/**

Source: j.c. brennan & associates 2009.

* Indicates the CNEL with snowmaking operations. Snowmaking was continuous (24 hours each day) from December 18 through December 20, 2008.

** No snowmaking occurred during this day.

The Homewood Volunteer Ski Patrol operates in the Project area. Noise-generating activities include educational clinics, trainings, and special events.

Mobile Sources

Noise sources associated with roadways include traffic along SR 89 and local streets in the Project area. The Project will result in additional trips from employee and ski shuttles and a dial-a-ride service in the winter and summer, and a water taxi service in the summer. Table 11-4 (Historic Traffic Volumes) in Chapter 11 – Transportation, Parking, and Circulation shows historic traffic volumes in the HMR area.

Noise Sensitive Land Uses

Noise sensitive land uses are generally defined as locations where people reside or where the presence of noise could adversely affect the use of the land. Typical noise-sensitive land uses include residences, schools, hospitals, and parks. Noise-sensitive land uses that could be affected by the Project include existing residences adjacent to the South Base and the North Base areas. Recreational activities in the Project area are not considered noise-sensitive land uses because they are transitory in nature with exposure of users typically being less than one hour. The West Shore Inn is located east across SR 89 approximately 225 feet from the North Base area. The single-family homes, residential condominiums, townhomes, and employee housing in with the Project are considered sensitive receptors once constructed.

The following analysis considers the impact of Project-related noise on the surrounding environment, and the impact of noise from the surrounding environment on the Project.

13.2 REGULATORY SETTING

13.2.1 Federal

There are no federal regulations that are applicable to noise impacts of the Project. The U.S. Bureau of Mines (USBM) provides recommended limits on airblast and vibration from blasting.

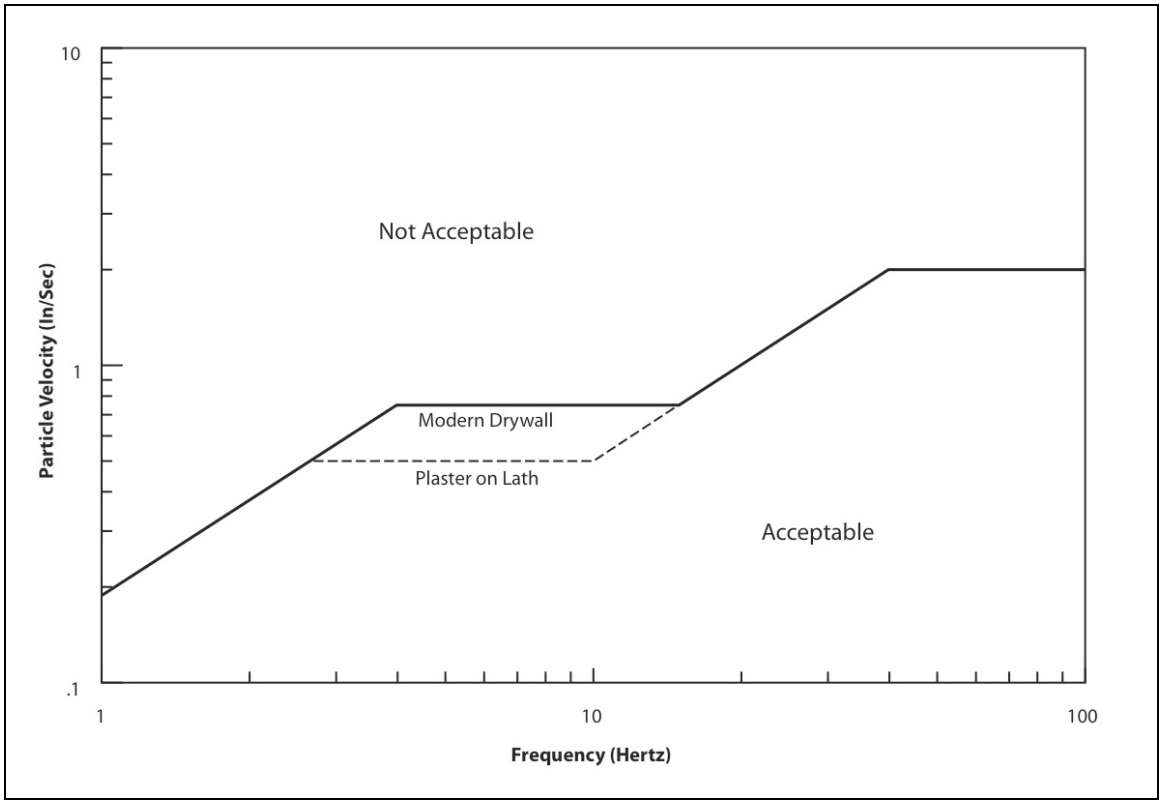
Airblast Criteria

Conventional noise criteria (for steady-state noise sources) and limits established for repetitive impulsive noise (such as for gun-firing ranges) do not apply to air overpressures from blasting. *USBM Report of Investigations 8485* (U.S. Bureau of Mines 1980a) and the regulations issued more recently by the U.S. Office of Surface Mining and Reclamation Enforcement specify a maximum safe overpressure of 0.013 psi (133 dB) for impulsive airblast when recording is accomplished with equipment having a frequency range of response of at least 2–200 Hz.

Ground Vibration Criteria

USBM Report of Investigations 8507 (U.S. Bureau of Mines 1980b) contains blasting-level criteria that can be appropriately applied to keep ground vibration well below levels that might cause damage to neighboring structures. At low-vibration frequencies, velocities of ground vibration are restricted to low levels. As vibration frequency increases, higher velocities are allowed up to a maximum of 2.00 inches per second. Figure 13-1 depicts blasting-level criteria as a function of frequency.

Figure 13-1. R18507 Alternative Blasting Level Criteria



To determine the velocity limit from Figure 13-1 that would apply to the neighboring properties, the dominant frequency ranges of the vibration must first be determined. The distribution of explosives, distance from the blast, and the nature of the transmitting medium (soil and rock) between the blast site and the affected structure affect the dominant frequency of the blast vibration. Timing between the detonations also affects the frequency, but only in relatively close proximity to the blast.

At a distance of 500–1,000 feet from the blast, vibration frequency would typically be 25–100 Hz. At a distance of 1,000–2,500 feet, the frequency would be 10–40 Hz. At a distance of 2,500–5,000 feet, the frequency would be 4–35 Hz. The PPV limits specified in Figure 13-1 range from 0.50 inch per second at 4 Hz to 2.00 inches per second at 40 Hz and above. The limit of 0.50 inches per second is considered a reasonable threshold for this Project given that many of the structures are older.

13.2.2 State

Title 24, Part 2, of the State of California Building Code establishes noise standards for all new multi-family residential units. Where exterior noise levels exceed 60 dBA CNEL/L_{dn}, the code stipulates that an acoustical analysis shall be performed and submitted before construction. The acoustical analysis is required to establish mitigation measures that will limit maximum CNEL/L_{dn} levels to 45 dBA in any inhabitable room. Although there are no generally applicable interior noise standards pertinent to all uses, California communities typically adopt a CNEL/L_{dn} standard of 45 dBA as a maximum limit on interior noise in all residential units.

13.2.3 Local

Placer County General Plan Noise Element

Placer County General Plan (Placer County 1994) goals and policies pertaining to noise are designed to protect County residents from the harmful and annoying effects of exposure to excessive noise. *General Plan* Noise Element Goal 9A and applicable policies include the following:

Goal 9.A: To protect County residents from the harmful and annoying effects of exposure to excessive noise.

9.A.1. The County shall not allow development of new noise-sensitive uses where the noise level due to non-transportation noise sources will exceed the noise level standards of Table 9-1 [see Table 13-8 below] as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated into the development design to achieve the standards specified in Table 9-1 [see Table 13-8 below].

9.A.2. The County shall require that noise created by new non-transportation noise sources be mitigated so as not to exceed the noise level standards of Table 9-1 [see Table 13-8 below] as measured immediately within the property line of lands designated for noise-sensitive uses.

9.A.4. Impulsive noise produced by blasting should not be subject to the criteria listed in Table 9-1 [see Table 13-8 below]. Single event impulsive noise levels produced by gunshots or blasting shall not exceed a peak linear overpressure of 122 db, or a C-weighted Sound Exposure Level (SEL) of 98 dBC. The cumulative noise level from impulsive sounds such as gunshots and

blasting shall not exceed 60 dB LCdn or CNELC on any given day. These standards shall be applied at the property line of a receiving land use.

9.A.5. Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 9-1 [see Table 13-8 below] at existing or planned noise-sensitive uses, the County shall require submission of an acoustical analysis as part of the environmental review process so that noise mitigation may be included in the project design. The requirements for the content of an acoustical analysis are listed in Table 9-2.

9.A.6. The feasibility of proposed projects with respect to existing and future transportation noise levels shall be evaluated by comparison to Figure 9-1 [see Table 13-8 below].

9.A.8. New development of noise-sensitive land uses shall not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources, including airports, which exceed the levels specified in Table 9-3, unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to the levels specified in Table 9-3 [see Table 13-9 below].

9.A.9. Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 9-3 at outdoor activity areas or interior spaces of existing noise-sensitive land uses.

9.A.10. Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 9-3 or the performance standards of Table 9-1 [see Table 13-8 below], the County shall require submission of an acoustical analysis as part of the environmental review process so that noise mitigation may be included in the project design. At the discretion of the County, the requirement for an acoustical analysis may be waived provided that all of the following conditions are satisfied:

a. The development is for less than five single-family dwellings or less than 10,000 square feet of total gross floor area for office buildings, churches, or meeting halls;

b. The noise source in question consists of a single roadway or railroad for which up-to-date noise exposure information is available. An acoustical analysis will be required when the noise source in question is a stationary noise source or airport, or when the noise source consists of multiple transportation noise sources;

c. The existing or projected future noise exposure at the exterior of buildings which will contain noise-sensitive uses or within proposed outdoor activity areas (other than outdoor sports and recreation areas) does not exceed 65 dB Ldn (or CNEL) prior to mitigation. For outdoor sports and recreation areas, the existing or projected future noise exposure may not exceed 75 dB Ldn (or CNEL) prior to mitigation;

d. The topography in the Project area is essentially flat; that is, noise source and receiving land use are at the same grade; and

e. Effective noise mitigation, as determined by the County, is incorporated into the project design to reduce noise exposure to the levels specified in Table 9-1 or 9-3. Such measures may include the use of building setbacks, building orientation, noise barriers, and the standard noise mitigations contained in the Placer County Acoustical Design

Manual. If closed windows are required for compliance with interior noise level standards, air conditioning or a mechanical ventilation system will be required.

9.A.11. The County shall implement one or more of the following mitigation measures where existing noise levels significantly impact existing noise-sensitive land uses, or where the cumulative increase in noise levels resulting from new development significantly impacts noise-sensitive land uses:

a. Rerouting traffic onto streets that have available traffic capacity and that do not adjoin noise sensitive land uses;

b. Lowering speed limits, if feasible and practical;

c. Programs to pay for noise mitigation such as low cost loans to owners of noise-impacted property or establishment of developer fees;

d. Acoustical treatment of buildings; or

e. Construction of noise barriers.

9.A.12. Where noise mitigation measures are required to achieve the standards of Tables 9-1 and 9-3, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered as a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.

Table 13-8

Allowable L_{dn} Noise Levels Within Specified Zone Districts Applicable to New Projects Affected by or Including Non-Transportation Noise Sources
(Table 9-1 of the *Placer County General Plan*)

Zone District of Receptor	Property Line of Receiving Use[1]	Interior Spaces[2]
Residential adjacent to industrial	60 dBA	45 dBA
Other Residential	50 dBA	45 dBA
Office/Professional	70 dBA	45 dBA
Transient Lodging	65 dBA	45 dBA
Neighborhood Commercial	70 dBA	45 dBA
General Commercial	70 dBA	45 dBA
Recreation and Forestry	70 dBA	-

Notes:

[1] Except where noted otherwise, noise exposures will be those which occur at the property line of the receiving use.

[2] Interior spaces are defined as any locations where some degree of noise-sensitivity exists. Examples include all habitable rooms of residences, and areas here communication and speech intelligibility are essential, such as classrooms and offices.

Placer County Noise Ordinance

Placer County's noise ordinance is found in Article 9.36 in the Placer County Code. Placer County's noise ordinance prohibits the creation of any sound that results in a 5 dBA increase in the ambient noise level, as measured at the property line of any affected sensitive receptor, or any sound that exceeds the sound level standards summarized in Table 13-10.

Noise from construction activities is also addressed in Placer County's noise ordinance. Section 9.36.030 stipulates that construction activities between the hours of 6:00 AM and 8:00 PM, Monday through Friday, and 8:00 AM and 8:00 PM, Saturdays and Sundays, are exempt.

Table 13-9

Maximum Allowable Noise Exposure for Transportation Noise Sources
(Table 9-3 of the *Placer County General Plan*)

Land Use	Outdoor Activity Areas[1]	Interior Spaces	
	L_{dn}/CNEL, dB	L_{dn}/CNEL, dB	L_{eq}, dB[2]
Residential	603	45	--
Transient Lodging	603	45	--
Hospitals, Nursing Homes	603	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	603	--	40
Office Buildings	--	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

Notes:

[1] Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

[2] As determined for a typical worst-case hour during periods of use.

[3] Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Table 13-10

Placer County Noise Ordinance Sound Level Standards

Sound Level Descriptor	Daytime (7:00 AM to 10:00 PM)	Nighttime (10:00 PM to 7:00 AM)
Hourly L_{eq}, dB	55	45
Maximum Level (L_{max}) dB	70	65

Tahoe Regional Planning Agency Code of Ordinances, Chapter 23: Noise Limitations

Chapter 23 (Noise Limitations) of the Tahoe Regional Planning Agency (TRPA*) Code of Ordinances* establishes noise limitations for areas within TRPA's jurisdiction. The purpose is to implement the Goal and Policies of the Noise Subelement of the Land Use Element and maintain the TRPA noise thresholds. Chapter 23 establishes noise limitations for single noise events from aircraft, marine crafts, motor vehicles, motorcycles, off-road vehicles, and oversnow vehicles. Section 23.2 states that TRPA shall use the maximum level recorded on a noise meter, L_{max}, for measuring single noise events. The noise levels set forth in Subsection 23.2.A are the maximum permissible noise levels for the types of operations listed, unless specifically exempted under Section 23.8.

Section 23.2.A establishes noise level standards (expressed in CNEL) that shall not be exceeded; projects that result in exceedences of the noise level standards shall not be approved by TRPA. In addition, Section 23.2.A stipulates that community noise levels shall not exceed levels existing on August 26, 1982, where such levels are known.

Chapter 23 also provides guidance on the measurement of noise levels (Section 23.4), noise monitoring (Section 23.5), and performance standards (Section 23.6).

Section 23.8 further states that TRPA-approved construction or maintenance projects, or the demolition of structures, are exempt from Chapter 23 (Noise Limitations) between the hours 8:00 AM and 6:30 PM.

Tahoe Regional Planning Agency Regional Plan for the Lake Tahoe Basin: Goals and Policies

The *1987 Regional Plan* for the Lake Tahoe Basin describes the needs and goals of the region and provides statements of policy to guide decision making as it affects the region's resources and remaining capacities. The *Regional Plan* with all of its elements, as implemented through agency ordinances, rules, and regulations provides for the achievement and maintenance of the adopted environmental threshold carrying capacities (thresholds) while providing opportunities for orderly growth and development. The Goals and Policies contained within the *Regional Plan* establish thresholds applicable for areas within TRPA's jurisdiction.

The *Regional Plan* Land Use Element contains noise thresholds for aircraft noise sources; single-event noise sources (i.e., noise from boats, motor vehicles, motorcycles, off-road vehicles, and snowmobiles that occur in a non-regular or non-repetitive manner); and community noise levels, which are used to determine land use compatibility. The TRPA community noise thresholds from the *Regional Plan* are summarized in Table 13-11.

Table 13-11

TRPA Community Noise Level Standards

Land Use Category/Transportation Corridor	Average Noise Level or CNEL Range (dBA)
Land Use Category	
High Density Residential Areas	55
Low Density Residential Areas	50
Hotel/Motel Areas	60
Commercial Areas	60
Industrial Areas	65
Urban Outdoor Recreation Areas	55
Rural Outdoor Recreation Areas	50
Wilderness and Roadless Areas	45
Critical Wildlife Habitat Areas	45
Transportation Corridor[1, 2]	
US 50	65[3]
SR 89, SR 207, SR 28, SR 267 and N 431	55[3]
South Lake Tahoe Airport	60[4]

Source: Tahoe Regional Planning Agency 1986

Notes:

1 Background noise levels will not exceed the noise levels specified in this table.

2 It shall be a policy of the TRPA Governing Board in the development of the *Regional Plan* to define, locate, and establish CNEL levels for transportation corridors.

3 Recommended CNEL levels for transportation corridors.

4 This recommended threshold overrides the land use CNEL thresholds and is limited to an area within 300 feet from the edge of the road.

5 This recommended threshold applies to those areas impacted by the approved flight paths.

Tahoe Regional Planning Agency Regional Plan for the Lake Tahoe Basin: Plan Area Statements

TRPA has adopted environmental thresholds for the Lake Tahoe Region. The noise thresholds are numerical CNEL values for various land use categories and transportation corridors.

The TRPA has divided the Lake Tahoe Region into more than 174 separate Plan Areas. For each Plan Area, a “Plan Area Statement” (PAS) is made as to how that particular area should be regulated to achieve regional environmental and land use objectives. As a part of each Statement, an outdoor CNEL standard is established. The Project site is located within Plan Areas 157, 158, and 159. The noise thresholds for these Plan Areas are 55 dB CNEL, 55 dB CNEL and 60 dB CNEL, respectively.

13.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

This section describes the significance criteria that will be used to determine potential noise impacts. Table 13-12 presents the evaluation criteria for potential noise impacts. Table 13-12 also cites the source from which the point of significance was derived.

Table 13-12

Evaluation Criteria with Point of Significance—Noise

Evaluation Criteria	Agency Requirements		Point of Significance[1]
	Placer County	TRPA	
NOI-1. Will construction (including blasting activities) of the Project expose the public to high noise levels or vibration?	Daytime (7:00 AM to 10:00 PM) construction noise exceeding 55 dBA, L_{eq} and nighttime (10:00 PM to 7:00 AM) construction noise exceeding 45 dBA, L_{eq} outside of the exempted hours of 6:00 AM to after 8:00 PM, Monday to Friday. Daytime (7:00 AM to 10:00 PM) construction noise exceeding 55 dBA, L_{eq} and nighttime (10:00 PM to 7:00 AM) construction noise exceeding 45 dBA, L_{eq} outside of the exempted hours of 8:00 AM to after 8:00 PM, Saturday and Sunday.	a) Before 8:00 AM and after 6:30 PM b) 1 inch per second peak particle velocity measured at property line or "yard" line[1]	a) Daytime (7:00 AM to 10:00 PM) construction noise exceeding 55 dBA, L_{eq} and nighttime (10:00 PM to 7:00 AM) construction noise exceeding 45 dBA, L_{eq} outside of the exempted hours of 6:00 AM to after 8:00 PM, Monday to Friday. Daytime (7:00 AM to 10:00 PM) construction noise exceeding 55 dBA, L_{eq} and nighttime (10:00 PM to 7:00 AM) construction noise exceeding 45 dBA, L_{eq} outside of the exempted hours of 8:00 AM to after 8:00 PM, Saturday and Sunday. b) 1 inch per second peak particle velocity measured at property line or "yard" line[2].
NOI-2. Will operation and maintenance of the Project expose the public to high noise levels (e.g., above CNEL permitted in the applicable Plan Area Statements, Community Plan or Master Plan) from transportation sources?	Exterior noise levels greater than 50 dBA, L_{dn}/CNEL at the property line of the receiving land use.	Greater than applicable Plan Area or Community Plan CNEL limits or significant increase in noise (>3 dB for areas in Plan Area attainment or any increase in noise for Plan Areas out of attainment) measured at property line or "yard" line[2].	Exterior noise levels greater than 50 dBA, L_{dn}/CNEL at the property line of the receiving land use, or greater than applicable Plan Area or Community Plan CNEL limits or significant increase in noise (>3 dB for areas in Plan Area attainment or any increase in noise for Plan Areas out of attainment) measured at property line or "yard" line[2].
NOI-3. Will noise from Project concerts, snowmaking, or other resort operations effect existing or proposed noise-sensitive land uses?	Exterior noise levels greater than 50 dBA, L_{dn}/CNEL at the property line of the receiving land use.	Greater than applicable Plan Area or Community Plan CNEL limits or significant increase in noise (>3 dB for areas in Plan Area attainment or any increase in noise for Plan Areas out of attainment) measured at property line or "yard" line[2].	Exterior noise levels greater than 50 dBA, L_{dn}/CNEL at the property line of the receiving land use, or greater than applicable Plan Area or Community Plan CNEL limits or significant increase in noise (>3 dB for areas in Plan Area attainment or any increase in noise for Plan Areas out of

Evaluation Criteria	Agency Requirements		Point of Significance[1]
	Placer County	TRPA	
			attainment) measured at property line or "yard" line[2].

[1] Point of significance represents the most stringent of the two agency requirements.

[2] The property or yard line of the affected receptor whichever is closer to the affected structure.

13.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

13.4.1 No Project (Alternative 2)

No Project (Alternative 2) represents the existing land use configuration, which would remain unchanged in the future. No construction activity would take place, and therefore construction noise was not evaluated. Because the existing land uses would not change under No Project (Alternative 2), operational noise under the No Project (Alternative 2) is not discussed separately below.

13.4.2 Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 are similar in terms of the impacts they would have on noise and where appropriate are analyzed as a single unit below.

13.4.3 Construction Noise

Specific construction equipment is not known at this time. Therefore, a default list of construction equipment listed in Appendix M of Chapter 12 - Air Quality was used for this analysis. Typical noise levels (dBA) from construction equipment are shown in Table 13-13 below. In order to evaluate a reasonable worst-case scenario, noise from the three loudest pieces of equipment likely to operate at the same time has been evaluated. These include a paver, a bulldozer, and a truck. Noise levels were entered into a spreadsheet model based on FTA 2009 guidelines (Federal Transit Administration 2009) to generate noise levels at nearby receptors.

Table 13-13

Construction Equipment Noise

Equipment	Typical Noise Level (dBA) 50 feet from Source
Grader	85
Bulldozers	85
Truck	88
Loader	85
Roller	74
Air Compressor	81
Backhoe	80
Pneumatic Tool	85
Paver	89
Pile Driver	101
Concrete Pump	82

Source: Federal Transit Administration 2009.

Pile driving is not anticipated because current schematic designs indicate perimeter and spread footing foundations rather than piles (Tirman, pers. comm.). However, in order to represent a worst-case scenario it was assumed that a pile driver would be used.

13.4.4 Construction Vibration and Airblast

Construction will potentially require pile driving and blasting, so the impacts of vibration and airblast during construction were evaluated. To assess the damage potential from ground vibration induced by construction equipment, PPV was calculated using Equation 1 [$PPV = PPV_{ref} \times (25/Distance)^{1.5}$] and compared to Tables 13-14 and 13-15 below. Table 13-2 above summarizes vibration source levels for construction equipment.

Boulders below grade may require blasting. However, it is anticipated that techniques other than blasting will be used to break up boulders. Blasting will be limited if required (Tirman pers. comm.). Details about where and when blasting would occur were not available. Therefore, vibration and airblast from blasting was calculated using methods recommended by the California Department of Transportation 2004 and assuming a 30 lb charge. Although blasting is not likely to occur, effects were quantified to describe a worst-case scenario.

Table 13-14

Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (inches per second)	
	Transient Sources[1]	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.20	0.10
Historic and some old buildings	0.50	0.25
Older residential structures	0.50	0.30
New residential structures	1.00	0.50
Modern industrial/commercial buildings	2.00	0.50

Source: California Department of Transportation 2004.

Note:
[1] Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 13-15

Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (inches per second)	
	Transient Sources[1]	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.90	0.10
Severe	2.00	0.40

Source: California Department of Transportation 2004.

Note:
[1] Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

13.4.5 Operational Noise

Operational noise includes noise from both mobile and stationary sources. Traffic noise was evaluated by entering existing and future traffic segment volumes provided by the Project traffic engineers (Fehr & Peers 2009, see Chapter 11 – Transportation, Parking, and Circulation) into a spreadsheet model based on the *FHWA's Traffic Noise Model (TNM)*. In addition to the automobile traffic there will be additional trips generated by the dial-a-ride service, employee and ski shuttles, and a water taxi. Impacts from the employee shuttle were evaluated by using the *FTA Noise Lookup Tables* (Federal Transit Administration

2006). Impacts from the skier shuttle, dial-a-ride, and water taxi vehicle trips are discussed qualitatively because these trips will be consistent with existing traffic and boating activity in the area.

Noise from stationary sources includes noise generated by the ski resort operations during winter and by summer concerts at the outdoor amphitheatre. The main source of noise from on-site ski resort activities will be from snowmaking. Impacts on noise from snowmaking are based on noise monitoring conducted for the *Environmental Noise Assessment* by j.c. brennan & associates (j.c. brennan & associates 2009). j.c. brennan & associates conducted noise measurements of existing snowmaking equipment used at HMR, and results are shown above in Table 13-7. Noise level data was collected at three locations for three different types of snowmaking guns that would be used in the improved snowmaking system under the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6. The monitoring locations were at 50 feet in front, side, and rear of the equipment. Table 13-16 shows the results of the noise level data associated with the snowmaking equipment. Other stationary sources including the outdoor amphitheatre are discussed qualitatively.

Table 13-16

Snowmaking Equipment Noise Levels

Snowmaking Equipment	Type	Noise Levels at Position		
		Front @ 50’	Side @ 50’	Rear @ 50’
Super Polecat 25 horsepower	Fan Gun	75 dBA	71 dBA	77 dBA
Super Wizzard 25 horsepower	Fan Gun	76 dBA	70 dBA	76 dBA
Viking Snowtower	Fan Gun	78 dBA	70 dBA	65 dBA

Source: j.c. brennan & associates 2009.

Table 13-17

Calculated Construction Noise Levels

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0	92	91
100	-6	-2	85	83
150	-10	-3	80	78
200	-12	-4	77	75
225	-13	-4	75	74
300	-16	-5	72	71
400	-18	-6	69	67
500	-20	-6	66	65
600	-22	-7	64	63
700	-23	-7	62	61
800	-24	-7	61	59
900	-25	-8	60	58
1,000	-26	-8	58	57
1,200	-28	-9	56	55
1,400	-29	-9	55	53
1,600	-30	-9	53	51
1,800	-31	-10	52	50
2,000	-32	-10	50	49
2,500	-34	-10	48	46
3,000	-36	-11	46	44

13.4.6 Construction Noise Impacts

Impact: **NOI-1. Will construction (including blasting activities) of the Project expose the public to high noise levels or vibration?**

Analysis: *Significant Impact; Proposed Project (Alternative 1), and Alternatives 3, 5, and 6*

Noise impacts resulting from construction depend on the noise generated by construction equipment, the timing and duration of noise generating activities, and the distance and shielding between construction noise sources and noise sensitive areas. Noise levels from excavation and grading activities will typically be in the range of 79 to 84 dBA (L_{eq}) at 50 feet. Noise from building construction (foundations, structure, finishing) will typically be in the range of 75 to 78 dBA (L_{eq}) at 50 feet from the source (U.S. Environmental Protection Agency 1971). Combined noise from the three loudest pieces of equipment likely to be used would reach 93 dB, L_{eq} at 50 feet. In order to evaluate noise from

construction activity, the three loudest pieces of equipment in Table 13-13 were combined in order to represent a worst-case scenario.

Construction noise levels attenuate at a rate of about 6 dBA per doubling of distance between the source and receptor. Shielding by buildings or terrain often result in much lower construction noise levels at distant receptors. Table 13-17 shows the calculated maximum (L_{max}) and L_{eq} sounds levels that would result from Project construction.

The nearest residences to the North Base area are located along Sacramento Avenue south of the existing gravel parking lot, as close as 100 feet from the Project area. Residences along Silver Street are as close as 150 feet from the Project area, and residences east of SR 89 are approximately 200 feet from the Project area. As shown in Table 13-17, noise at these locations could reach 85 dBA, 80 dBA, and 77 dBA, respectively.

The nearest residences to the South Base area are located along Tahoe Ski Bowl Way and Lagoon Road east of the existing parking lots and maintenance facility, as close as 100 feet to the Project area. As shown in table 13-17, maximum noise levels at adjacent residences could reach 85 dBA without acoustical shielding from structures or terrain.

In addition, pile drivers could be used under the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6. As shown in Table 13-18, noise from pile drivers could be as loud as 93 dBA at 100 feet from the source.

Construction would occur seasonally between May 2011 and December 2020 at various locations throughout the Project area and is anticipated to occur during normal working hours. Construction would occur at particular locations for only a fraction of the time between May 2011 and December 2020 (i.e. construction would not occur over the entire Project area for nine continuous years). Appendix N details the estimated construction schedule.

Construction activities associated with the operation of heavy equipment may generate localized groundborne vibration. Vibration from non-impact construction activity is typically below the threshold of perception when the activity is more than 50 feet from the receptor. Additionally, vibration from these activities will be of limited duration and will end when construction is completed. Vibration from non-impact equipment would be less than 0.10 inches per second at 25 feet. Vibration from pile driving, assuming a typical pile driver (Table 13-2), would be less than 0.5 inches per second (the damage threshold for older buildings and residences in Table 13-14) within about 30 feet of pile driving.

Vibration and airblast would also occur if blasting techniques are used. Tables 13-19 and 13-20 below depict calculated PPV and PSI at three distances from Project construction areas to represent potential impacts at the nearest sensitive receptors under a worst-case scenario.

Construction noise in Placer County is exempt from 6:00 AM to 8:00 PM. Construction noise outside of these hours would be significant if it exceeds 55 dBA from 8:00 PM to 10:00 PM or 45 dBA from 10:00 PM to 6:00 AM. Noise from pile driving would reach maximum levels of 93 dBA at the nearest residences to the Project area. Placer County does not have thresholds for vibration. As stated in Table 13-14, an appropriate damage potential threshold at older residential structures should be 0.3 PPV (inches per second). As stated in Table 13-15, strongly perceptible PPV would be 0.10 inches per second.

Construction noise from 8:00 AM to 6:30 PM is exempt under the TRPA Codes of Ordinances Chapter 23 – Noise Limitations.

Table 13-18

Calculated Noise Levels from Pile Driver

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0	101	99
100	-6	-2	93	92
150	-10	-3	89	87
200	-12	-4	85	84
225	-13	-4	84	82
300	-16	-5	81	79
400	-18	-6	77	76
500	-20	-6	75	73
600	-22	-7	73	71
700	-23	-7	71	69
800	-24	-7	69	68
900	-25	-8	68	67
1,000	-26	-8	67	65
1,200	-28	-9	65	63
1,400	-29	-9	63	62
1,600	-30	-9	62	60
1,800	-31	-10	60	59
2,000	-32	-10	59	58
2,500	-34	-10	57	55
3,000	-36	-11	54	53

Table 13-19

Calculated Vibration from Blasting

Distance (feet)	Calculated PPV (inches/second)
150	0.501
225	0.262
300	0.165

Source: Caltrans 2004.

Table 13-20

Calculated Airblast from Blasting

Distance (feet)	Calculated PSI (pounds per square inch)	Calculated dB
150	0.00715	127.8
225	0.00440	123.6
300	0.00311	120.6

Source: Caltrans 2004.

The results in Tables 13-19 and 13-20 indicate that blasting with a 30 pound charge would result in a maximum of 0.501 PPV (inches per second) and 127.8 dB would occur at the nearest residence. The predicted vibration level is below the TRPA thresholds of 1.0 PPV inches per second for vibration and the recommended threshold of 133 dB for blasting. However, depending on the location of blasting and the size of the charge, there is potential for blasting to result in vibration that exceeds the 0.5 inches per second damage threshold for older buildings and residential structures indicated in Table 13-14. Consequently, vibration and airblast impacts from blasting are potentially significant. Mitigation Measures NOI-1a and NOI-1b would reduce this impact to less than significant. Vibration from pile driving is not expected to exceed 0.5 in/sec beyond 30 feet from pile driving is therefore considered to be less than significant.

As shown in Table 13-17, construction noise could reach up to 85 dBA at the nearest residences, and if pile drivers are used noise could reach up to 93 dBA. Using the most stringent thresholds, noise from construction activity occurring within the hours of 8:00 AM to 6:30 PM is exempt. Therefore, if construction activity occurs outside of these hours, this impact would be considered significant and mitigation would be required. Detailed information on the construction schedule is not available. Because it is possible that construction activity could take place outside of the exempted hours, this impact is considered significant and Mitigation Measure NOI-1c is required to reduce this impact.

Mitigation: **Mitigation Measure NOI-1a: Employ Measures to Reduce Airblast and Vibration from Blasting.**

Contractors shall retain a qualified blasting specialist to develop a site-specific blasting program report to assess, control, and monitor airblast and ground vibration from blasting. The report shall be reviewed and approved by the County prior to issuance of a blasting permit. The report shall include, at minimum, the following measures:

- The contractor shall use current state-of-the-art technology to keep blast-related vibration at offsite residential, other occupied structures and well sites as low as possible, consistent with blasting safety. In no instance shall blast vibration, measured on the ground adjacent to a residential, other occupied structure, or well site be allowed to exceed the frequency-dependent limits specified in the Alternative Blasting Level Criteria contained in USBM Report of Investigations 8507.
- The project contractor shall use current state-of-the-art technology to keep airblast at offsite residential and other occupied structures as low as possible. In no instance shall airblast, measured at a residence or other occupied structure, be allowed to exceed the 0.013-psi (133-dB) limit recommended in USBM Report of Investigations 8485.
- The project contractor shall monitor and record airblast and vibration for blasts within 1,000 feet of residences and other occupied structures to verify that measured levels are within the recommended limits at those locations. The contractor shall use blasting seismographs containing three channels that record in three mutually perpendicular axes and which have a fourth channel for recording airblast. The frequency response of the instrumentation shall be from 2 to 250 Hz, with a minimum sampling rate of 1,000 samples per second per channel. The recorded data must be such that the frequency of the vibrations can be determined readily. If blasting is found to exceed specified levels, blasting shall cease, and alternative blasting or excavation methods shall be employed that result in the specified levels not being exceeded.
- Airblast and vibration monitoring shall take place at the nearest offsite residential or other occupied structure. If vibration levels are expected to be lower than those required to trigger the seismograph at that location, or if permission cannot be obtained to record at that location, recording shall be accomplished at some closer site in line with the structure. Specific locations and distances where airblast and vibration are measured shall be documented in detail along with measured airblast and vibration amplitudes.

Mitigation Measure NOI-1b: Conduct Building Inspection prior to Blasting.

HMR shall inspect any existing buildings located within a 500-foot radius of planned blasting activities. The inspection shall document preexisting conditions. The preinspection survey of the buildings shall be completed with the use of photographs, videotape, or visual inventory, and shall include inside and outside locations. All existing cracks in walls, floors, driveways, etc., shall be documented with sufficient detail for comparison during and upon completion of blasting activities to determine whether actual vibration damage has occurred. The results of both surveys shall be provided to the County for review and acceptance of conclusions. Should damage occur, construction operations shall be halted until the problem activity can be identified. Once identified, the problem activity shall be modified to eliminate the problem and protect the adjacent

buildings. Any damage to nearby buildings shall be repaired back to the pre-existing condition.

Mitigation Measure NOI-1c: Employ noise-reducing construction practices.

HMR shall design and implement measures to reduce noise from construction. HMR will prepare a noise control plan that will identify feasible measures that can be employed to reduce construction noise, including enclosing or shielding noise-generating equipment and locating equipment as far as practical from sensitive uses would also be effective. Implementation of such measures is anticipated to provide up to 10 dB of noise reduction. The noise control plan shall employ noise-reducing construction practices such that construction noise does not exceed: (1) 55 dBA Leq between the hours of 8:00 PM to 10:00 PM and 45 dBA between the hours of 10:00 PM to 6:00 AM on weekdays; or (2) 55 dBA between the hours of 8:00 PM and 10:00 PM and 45 dBA between the hours of 10:00 PM and 8:00 AM on weekends. The plan must be approved by the TRPA and Placer County prior to issuing a Grading Permit. The noise control plan may include, and is not limited to, the following measures:

- Gasoline or diesel engine construction equipment shall have sound-control devices that are at least as effective as those originally provided by the manufacturer and that equipment be operated and maintained to minimize noise generation.
- Prohibit gasoline or diesel engines from having unmuffled exhaust.
- Locate noise-generating equipment as far as practical from noise-sensitive uses.
- Use noise-reducing enclosures around noise-generating equipment.
- Schedule substantial noise-generating activity, and blasting in particular, during daytime or early evening hours.
- Place temporary barriers between noise sources and noise-sensitive land uses or taking advantage of existing barrier features (terrain, structures, edge of trench) to block sound transmission.
- Cover trenches where blasting will occur.
- Prohibit backup alarms and provide an alternate warning system, such as a flagman or radar-based alarm that is compliant with State regulations.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 5, and 6*

Mitigation Measures NOI-1a and NOI-1b reduce vibration impacts from blasting. Mitigation Measure NOI-1c reduces construction noise levels below the County thresholds of 55 dBA L_{eq} between the hours of 8:00 PM to 10:00 PM and 45 dBA L_{eq} between the hours of 10:00 PM to 6:00 AM on weekdays, and 55 dBA between the hours of 8:00 PM and 10:00 PM and 45 dBA between the hours of 10:00 PM and 8:00 AM on weekends.

Analysis: *Significant Impact; Alternative 4*

Alternative 4 entails closing the ski resort and creating up to 16 estate residential lots and one commercial lot. A majority of the estate home lots would be located on the mountain of the ski resort. Pile driving and blasting would not occur under Alternative 4. Because the nearest residences to construction activities will be at least 50 feet from on-site

construction activity, the vibration impact of construction activity is considered less than significant.

To evaluate noise from construction activity, the three loudest pieces of equipment in Table 13-13 were combined in order to represent a worst case scenario. Construction noise potential under Alternative 4 would be similar to noise under the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 (Table 13-17) but would be limited to the commercial lot at the North Base area and the home sites which are generally located on the mountain and away from adjacent land uses.

Residences are located within 150 feet of the North Base area commercial lot. Maximum noise levels at the residences could reach 80 dBA without acoustical shielding from structures or terrain. Residences are located within 300 feet from the potential home site located at the South Base area, and maximum noise levels could reach 72 dBA without acoustical shielding. Construction would occur from May 2011 through October 2011 and would typically occur during normal working hours. Appendix N includes a detailed construction schedule.

Construction activities associated with the operation of heavy equipment may generate localized groundborne vibration. Vibration from non-impact construction activity is typically below the threshold of perception when the activity is more than about 50 feet from the receptor. Additionally, vibration from these activities will be of limited duration and will end when construction is completed.

Construction noise in Placer County is exempt from 6:00 AM to 8:00 PM. Construction noise outside of these hours would be significant if it exceeds 55 dBA from 8:00 PM to 10:00 PM or 45 dBA from 10:00 PM to 6:00 AM. Placer County does not have thresholds for vibration. As stated in Table 13-14, an appropriate damage potential threshold at older residential structures should be 0.3 PPV (inches per second). As stated in Table 13-15, strongly perceptible PPV would be 0.10 inches per second.

Construction noise from 8:00 AM to 6:30 PM is exempt under the *TRPA Codes of Ordinances Chapter 23 – Noise Limitations*.

Using the most stringent thresholds, noise from construction activity from 8:00 AM to 6:30 PM is exempt. If construction activity occurs outside of these hours, this impact would be considered significant and mitigation would be required. Detailed information on the hours construction would take place is currently not available. Because it is possible that construction activity could take place outside of the exempted hours, this impact is considered significant and mitigation is required to reduce this impact to less than significant.

Mitigation: **Mitigation Measure NOI-1c: Employ noise-reducing construction practices**

After Mitigation: *Less than Significant Impact; Alternative 4*

Mitigation Measure NOI-1c reduces construction noise levels below the County thresholds of 55 dBA L_{eq} between the hours of 8:00 PM to 10:00 PM and 45 dBA L_{eq} between the hours of 10:00 PM to 6:00 AM on weekdays, and 55 dBA between the hours of 8:00 PM and 10:00 PM and 45 dBA between the hours of 10:00 PM and 8:00 AM on weekends.

13.4.7 Operational Noise Impacts

Operational impacts include stationary sources such as noise from snowmaking, and mobile sources such as traffic and additional trips generated by the shuttle, dial-a-ride, and water taxi.

Impact: **NOI-2. Will operation and maintenance of the Project expose the public to high noise levels (e.g., above CNEL permitted in the applicable Plan Area Statements, Community Plan or Master Plan) from transportation sources?**

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternative 3*

Residences are located throughout the surrounding roadway network. In addition, new residences will be built with the Proposed Project (Alternative 1) and Alternative 3. Significant noise impacts are identified where existing noise sensitive receptors would be exposed to noise increases that exceed the noise significance thresholds.

Traffic-related noise will be generated by existing and anticipated traffic on SR 89. The Project will contribute to traffic on SR 89, and will therefore contribute to traffic-related noise. Traffic generated by the Project is a small proportion of the overall amount of traffic on SR 89 (see Chapter 11 – Transportation, Parking, and Circulation). In addition, as shown in Table 11-4 (Historic Traffic Volumes) in Chapter 11 – Transportation, Parking, and Circulation, historic traffic volumes in the HMR area are steadily decreasing. Therefore, because traffic-related noise is a function of all traffic on the roadway (existing and Project-related traffic), the focus is on noise levels that will occur if the Project is approved, in conjunction with existing and anticipated traffic.

Traffic noise levels on SR 89 were calculated based on traffic noise modeling using the *FHWA TNM*. The calculated traffic noise levels at 100 feet from the centerline of SR 89 under future traffic conditions are summarized in Table 13-21.

The Project will generate trips from employee and ski shuttles, dial-a-rides, and water taxis. The employee shuttle buses are planned to operate during both the summer and winter seasons. The employee shuttle will be a 20-25 passenger van and will serve the employee housing areas on the North Shore, which will reduce employee vehicle traffic. Shuttle and dial-a-ride vehicles will be smaller vans, such as a 195 horsepower Chevrolet Express. Scheduled shuttle service is planned to operate between Homewood and Tahoe City seven days a week from 7:00 AM to 11:00 PM every hour.

Dial-a-ride service will operate during the summer and winter seasons from 8:00 AM to 6:30 PM. Service will be provided in the winter as far north as Tavern Shores and Granlibakken, and as far south as Rubicon Bay (excluding the Talmont and Upper Ward Canyon areas). Summer service will accommodate rides to/from the HMR in an area bounded by Granlibakken Road to the north and Sugar Pine Point to the south.

The water taxi will likely be a 20-25 passenger hybrid vehicle and will operate in the summer months between Homewood and Tahoe City. This service is planned to operate seven days a week between 9:00 AM and 8:00 PM at least every hour. Vehicle trips from the shuttles and dial-a-ride will run on local roadways. Noise from the employee shuttle can reach 45 L_{eq} on local roadways (Federal Transit Administration 2006). The shuttles, dial-a-rides, and water taxis will help to minimize single-passenger automobile trips.

Table 13-21

Noise Levels for 2030 plus Alternatives 1&3

	Noise Level at 100 feet CNEL			Distance to Contours (feet)			
Segment along SR 89	2030 No Project	2030 + Alts. 1&3	Change	55 dBA	60 dBA	65 dBA	70 dBA
Driveway to SR 28	55.6	55.5	-0.1	101.4	54.8	–	–
SR 28 to Granlibakken	66.4	66.6	0.2	468.5	232.5	117.7	62.5
Granlibakken to Sequoia	65.6	65.8	0.2	419.2	208.9	105.9	56.9
Sequoia to Pineland	65.1	65.4	0.3	394.6	196.2	99.3	53.9
Pineland to Grand	67.6	66.0	-1.6	407.5	208.0	108.3	59.2
Grand to Park	65.4	65.9	0.5	401.2	204.9	106.7	58.5
Park to Silver	64.5	64.8	0.3	365.5	182.6	93.6	49.9
Silver to Homewood Driveway	64.5	64.8	0.3	363.9	181.8	93.3	49.7
Homewood Driveway to Fawn	64.5	64.8	0.3	364.2	182.0	93.3	49.8
Fawn to Tahoe Ski Bowl Way	63.7	64.9	1.2	371.7	185.5	94.7	50.8
Tahoe Ski Bowl Way to Elm Street	65.5	66.5	1.0	440.9	224.2	116.7	63.3
Elm Street to Pine Street	64.3	64.5	0.2	350.4	174.8	90.5	47.7

In Placer County, noise from mobile sources would be significant if exterior noise levels are greater than 50 dBA, L_{dn}/CNEL at the property line of the receiving land use. The *TRPA Community Plan* regulates noise for transportation corridors. For SR 89, noise is regulated to 55 dBA within 300 feet of the roadway. Noise from mobile sources would be significant if exterior noise levels are greater than 55 dBA within 300 feet of the roadway, or if the change in noise is greater than 3 dBA. In addition, for Plan Areas that are out of attainment, any increase in noise would be significant.

Plan Areas 156, 157, and 160 have noise standards of 55, 55, and 60 dBA, respectively. As shown in Table 13-21, noise exceeds 55 dBA (the more stringent threshold) even without the Project. Based on a personal communication with TRPA staff, any increase in noise, relative to future no project conditions, would be significant because the standard is currently exceeded Therefore, it is necessary to fully mitigate/offset the incremental increase in noise, relative to future no project conditions (Emmett, pers. comm.). The greatest incremental increase in noise levels, relative to future no project conditions, due to project-related traffic is predicted to be 1.2 dBA. Noise from the shuttles and dial-a-ride vehicles will be consistent with current noise on local roadways. Noise from the water taxi will be consistent with other boating activities in the Tahoe City and Homewood areas. Traffic noise would increase by 1.2 dBA for areas that are currently out of attainment with regards to TRPA Plan Areas. Therefore, this impact is considered to be significant.

Mitigation: **Mitigation Measure NOI-2: Employ measures to ensure Project-related traffic noise does not increase relative to future no project conditions.**

The Project Applicant shall design and implement measures to reduce noise from traffic related to the Proposed Project (Alternative 1). HMR will prepare a noise control plan that will identify feasible measures that can be employed to reduce traffic noise by 1.2 dB. The noise control plan shall employ noise-reducing measures such that Project-related noise does not increase relative to future no project conditions. This is in addition to the ongoing reduction in traffic volumes observed on SR 89 (see Chapter 11 – Transportation, Parking, and Circulation). The plan must be approved by the TRPA and Placer County prior to issuing a Grading Permit. The noise control plan may include, and is not limited to, the following measures:

- Constructing/use of barriers, berms, and acoustical shielding (reductions of 3dB to 5dB).
- Utilizing noise-reducing pavement (reductions of 2-5dB).
- Lowering speed limits, if feasible and practical (reductions of 1-2dB).
- Programs to pay for noise mitigation such as low cost loans to owners of noise-impacted property or establishment of developer fees (no actual noise reduction from this, reduction depends on actual measure that is implemented.).
- Acoustical treatment of buildings (reductions of 3-5dB).

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alternative 3*

Mitigation Measure NOI-2 would ensure that the Project-related traffic noise impacts would not result in any increase in noise levels (CNEL) relative to future no project conditions, which would mitigate the Project's impact on traffic noise.

Analysis: *Less than Significant Impact; Alternative 4*

Alternative 4 entails closing the existing ski resort and creating up to 16 estate residential lots and one commercial lot. A majority of the estate lots would be accessed from the South Base area of the ski resort. Scattered residences are located throughout the surrounding roadway network. Significant noise impacts are identified where existing noise sensitive receptors would be exposed to noise increases that exceed the noise significance thresholds.

Traffic noise levels on SR 89 were calculated based on traffic noise modeling using the FHWA TNM. As stated in the Air Quality chapter, the traffic data indicated that roadway volumes would be worse in the PM peak-hour than in the AM peak hour. The data included traffic volumes in the surrounding area, which indicated that traffic volumes are highest during the summer season. Therefore, summer PM peak-hour traffic was modeled. The calculated traffic noise levels at 100 feet from the centerline SR 89 under future traffic conditions are summarized in Table 13-22.

Table 13-22

Noise Levels for 2030 + Alternative 4

Segment along SR 89	Noise Level at 100 feet CNEL			Distance to Contours (feet)			
	2030 No Project	2030 + Alt 4	Change	55 dBA	60 dBA	65 dBA	70 dBA
Driveway to SR 28	55.6	55.5	-0.1	101.7	54.9	–	–
SR 28 to Granlibakken	66.4	66.4	0	456.3	226.6	114.9	61.2
Granlibakken to Sequoia	65.6	65.6	0	407.8	202.9	102.8	55.5
Sequoia to Pineland	65.1	65.1	0	382.0	190.3	96.7	52.2
Pineland to Grand	67.6	65.7	-1.9	391.2	199.8	104.0	57.2
Grand to Park	65.4	65.5	0.1	380.3	194.1	100.8	55.6
Park to Silver	64.5	64.5	0	350.7	175.0	90.5	47.7
Silver to Homewood Driveway	64.5	64.5	0	351.1	175.2	90.6	47.8
Homewood Driveway to Fawn	64.5	64.6	0.1	353.3	176.4	91.1	48.1
Fawn to Tahoe Ski Bowl Way	63.7	64.8	1.1	362.5	181.2	93.0	49.5
Tahoe Ski Bowl Way to Elm Street	65.5	65.5	0	382.8	195.3	101.5	56.0
Elm Street to Pine Street	64.3	64.3	0	342.5	170.6	88.8	46.4

Under Alternative 4, HMR would close and there would be substantially less winter traffic. In Placer County, noise from mobile sources would be significant if exterior noise levels were greater than 60 dBA, Ldn/CNEL at the property line of the receiving land use. The *TRPA Community Plan* regulates noise for transportation corridors. For SR 89, noise from mobile sources would be significant if exterior noise levels were greater than 55 dBA within 300 feet of the roadway, or if the change in noise is greater than 3 dBA.

Plan Areas 156, 157, and 160 have noise standards of 55, 55, and 60 dBA, respectively. As shown in Table 13-22, noise exceeds 55 dBA (the more stringent threshold) even without the Project. Based on a conversation with TRPA, any increase in noise, relative to future no project conditions, would be significant and that it is necessary to fully mitigate/offset the incremental increase in noise, relative to future no project conditions (Emmett, pers. comm.). The greatest incremental increase in noise levels, relative to future no project conditions, due to project-related traffic is predicted to be 1.1 dBA. Because traffic noise would increase for areas that are currently out of attainment with regards to TRPA Plan Areas, this impact is considered significant.

Mitigation: **Mitigation Measure NOI-2: Employ measures to ensure Project-related traffic noise does not increase relative to future no project conditions.**

After Mitigation: *Less than Significant Impact; Alternative 4*

Mitigation Measure NOI-2 would ensure that the Project-related traffic noise impacts would not result in any increase in noise levels (CNEL) relative to future no project conditions, which would mitigate the Project's impact on traffic noise.

Analysis: *Significant Impact; Alternative 5*

Alternative 5 includes multi-family residential uses at the North Base parking area along with skier services, retail and hotel uses. Up to 16 single-family lots would be developed at the South Base area. Scattered residences are located throughout the surrounding roadway network. Significant noise impacts are identified where existing noise sensitive receptors would be exposed to noise increases that exceed the noise significance thresholds.

Traffic noise levels on SR 89 were calculated based on traffic noise modeling using the *FHWA TNM*. As stated in the Air Quality chapter, the traffic data indicated that roadway volumes would be worse in the PM peak-hour than in the AM peak hour. The data included traffic volumes in the surrounding area, which indicated that traffic volumes are highest during the summer season. Therefore, summer PM peak-hour traffic was modeled. The calculated traffic noise levels at 100 feet from the centerline of SR 89 under future traffic conditions are summarized in Table 13-23.

Table 13-23

Noise Levels for 2030 + Alternative 5

	Noise Level at 100 feet CNEL			Distance to Contours (feet)			
Segment along SR 89	2030 No Project	2030 + Alt 5	Change	55 dBA	60 dBA	65 dBA	70 dBA
Driveway to SR 28	55.6	55.5	-0.1	101.7	54.9	–	–
SR 28 to Granlibakken	66.4	66.5	0.1	464.7	230.5	116.8	62.1
Granlibakken to Sequoia	65.6	65.7	0.1	415.0	206.7	104.7	56.4
Sequoia to Pineland	65.1	65.3	0.2	390.5	194.3	98.3	53.3
Pineland to Grand	67.6	65.9	-1.7	402.9	205.7	107.1	58.7
Grand to Park	65.4	65.7	0.3	391.2	199.8	104.0	57.2
Park to Silver	64.5	64.7	0.2	361.0	180.5	92.7	49.3
Silver to Homewood Driveway	64.5	64.7	0.2	360.3	180.1	92.6	49.2
Homewood Driveway to Fawn	64.5	64.7	0.2	360.4	180.2	92.6	49.2
Fawn to Tahoe Ski Bowl Way	63.7	64.9	1.2	367.9	183.7	94.0	50.3
Tahoe Ski Bowl Way to Elm Street	65.5	65.6	0.1	386.8	197.3	102.7	56.6
Elm Street to Pine Street	64.3	55.5	-8.8	245.2	123.4	65.2	

In Placer County, noise from mobile sources would be significant if exterior noise levels were greater than 60 dBA, L_{dn}/CNEL at the property line of the receiving land use. The *TRPA Community Plan* regulates noise for transportation corridors. For SR 89, noise from mobile sources would be significant if exterior noise levels were greater than 55 dBA within 300 feet of the roadway, or if the change in noise is greater than 3 dBA. In addition, for Plan Areas that are out of attainment, any increase in noise would be significant.

Plan Areas 156, 157, and 160 have noise standards of 55, 55, and 60 dBA, respectively. As shown in Table 13-21, noise exceeds 55 dBA (the more stringent threshold) even without the Project. Based on a conversation with TRPA, any increase in noise, relative to future no project conditions, would be significant and it is necessary to mitigate the incremental increase in noise, relative to future no project conditions (Emmett, pers. comm.). The greatest incremental increase in noise levels, relative to future no project conditions, due to project-related traffic is predicted to be 1.2 dBA. Noise from the shuttles and dial-a-ride vehicles will be consistent with current noise on local roadways. Noise from the water taxi will be consistent with other boating activities in the Tahoe City and Homewood areas. However, because traffic noise would increase by 1.2 dBA for areas that are currently out of attainment with regards to TRPA Plan Areas, this impact is considered significant.

Mitigation: **Mitigation Measure NOI-2: Employ measures to ensure Project-related traffic noise does not increase relative to future no project conditions.**

After Mitigation: *Less than Significant Impact; Alternative 5.*

Mitigation Measure NOI-2 would ensure that the Project-related traffic noise impacts would not result in any increase in noise levels (CNEL) relative to future no project conditions, which would mitigate the Project's impact on traffic noise.

Analysis: *Significant Impact; Alternative 6*

Alternative 6 includes multi-family residential uses at the North Base parking area along with skier services, retail and hotel uses. Up to 16 single-family lots would be developed at the South Base area. Scattered residences are located throughout the surrounding roadway network. Significant noise impacts are identified where existing noise sensitive receptors would be exposed to noise increases that exceed the noise significance thresholds.

Traffic noise levels on SR 89 were calculated based on traffic noise modeling using the FHWA TNM. As stated in the Air Quality chapter, the traffic data indicated that roadway volumes would be worse in the PM peak-hour than in the AM peak hour. The data included traffic volumes in the surrounding area, which indicated that traffic volumes are highest during the summer season. Therefore, summer PM peak-hour traffic was modeled. The calculated traffic noise levels at 100 feet from the centerline of SR 89 under future traffic conditions are summarized in Table 13-24.

In Placer County, noise from mobile sources would be significant if exterior noise levels were greater than 60 dBA, L_{dn}/CNEL at the property line of the receiving land use. The *TRPA Community Plan* regulates noise for transportation corridors. For SR 89, noise from mobile sources would be significant if exterior noise levels were greater than 55 dBA within 300 feet of the roadway, or if the change in noise is greater than 3 dBA. In addition, for Plan Areas that are out of attainment, any increase in noise would be significant.

Plan Areas 156, 157, and 160 have noise standards of 55, 55, and 60 dBA, respectively. As shown in Table 13-21, noise exceeds 55 dBA (the more stringent threshold) even without the Project. Based on a conversation with TRPA, any increase in noise, relative to future no project conditions, would be significant and it is necessary to mitigate the incremental increase in noise, relative to future no project conditions because the area is out of attainment (Emmett, pers. comm.). The greatest increase in noise levels due to the traffic is predicted to be 1.2 dBA. Noise from the shuttles and dial-a-ride vehicles will be

consistent with current noise on local roadways. Noise from the water taxi will be consistent with other boating activities in the Tahoe City and Homewood areas. However, because traffic noise would increase by 1.2 dBA for areas that are currently out of attainment with regards to TRPA Plan Areas, this impact is considered significant.

Table 13-24

Noise Levels for 2030 + Alternative 6

	Noise Level at 100 feet CNEL			Distance to Contours (feet)			
Segment along SR 89	2030 No Project	2030 + Alt 5	Change	55 dBA	60 dBA	65 dBA	70 dBA
Driveway to SR 28	55.6	55.5	-0.1	101.7	54.9	-	-
SR 28 to Granlibakken	66.4	66.5	0.1	464.1	230.3	116.7	62.1
Granlibakken to Sequoia	65.6	65.7	0.1	414.5	206.4	104.6	56.3
Sequoia to Pineland	65.1	65.3	0.2	390.2	194.1	98.2	53.3
Pineland to Grand	67.6	65.9	-1.7	401.9	205.2	106.8	58.5
Grand to Park	65.4	65.7	0.3	390.5	199.4	103.8	57.1
Park to Silver	64.5	64.7	0.2	360.3	180.1	92.6	49.2
Silver to Homewood Driveway	64.5	64.7	0.2	359.8	179.8	92.5	49.1
Homewood Driveway to Fawn	64.5	64.7	0.2	360.7	180.3	92.7	49.3
Fawn to Tahoe Ski Bowl Way	63.7	64.9	1.2	368.7	184.1	94.2	50.4
Tahoe Ski Bowl Way to Elm Street	65.5	65.6	0.1	389.3	198.7	103.4	56.9
Elm Street to Pine Street	64.3	64.5	0.2	348.6	173.8	90.1	47.4

Mitigation: **Mitigation Measure NOI-2: Employ measures to ensure Project-related traffic noise does not increase relative to future no project conditions.**

After Mitigation: *Less than Significant Impact; Alternative 6.*

Mitigation Measure NOI-2 would ensure that the Project-related traffic noise impacts would not result in any increase in noise levels (CNEL) relative to future no project conditions, which would mitigate the Project's impact on traffic noise.

Impact: NOI-3. Will noise from Project concerts, snowmaking, or other resort operations effect existing or proposed noise-sensitive land uses?

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5, and 6*

Noise from operational sources would be significant if exterior noise levels were greater than the Placer County standards of 50 dBA, L_{dn}/CNEL at the property line of the receiving land use. Noise is regulated under the *TRPA Community Plan* by land use category. Noise for high density residential uses are regulated to 55 dBA, noise from hotels and commercial uses are regulated to 60 dBA, and noise for outdoor recreational uses are regulated to 55 dBA. For Plan Areas that are out of attainment, any increase in

noise would be considered significant. Plan Areas 156, 157, and 160 have noise standards of 55, 55, and 60 dBA, respectively.

Operations and maintenance at HMR would generate noise under the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 due to activities such as snow grooming, ski patrol activities, avalanche control, snowmaking, and concerts. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 propose no changes to existing grooming, or ski patrol activities at HMR, so no impact would occur. Other operational noise sources include HVAC systems, cooling towers/evaporative condensers, loading docks, lift stations, emergency generators, and outdoor public address systems. Similarly, these noise sources are a part of the existing noise environment with HMR operations and are not anticipated to increase under the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6.

Snowmaking typically occurs at nighttime throughout the ski season depending upon the amount of natural snowfall. To represent a worst-case scenario, it was assumed that snowmaking would occur every night of the ski season from midnight until 7:00 AM, and for 3 continual days per week for two weeks in the beginning of the season (Tirman pers. comm.). This is comparable to existing snowmaking operations. HMR currently uses 25 horsepower fan-gun technology for snowmaking. Fan guns include the Super Polecat, Super Wizzard, and the Viking Snowtower models. There are five guns operating at the north side and 5 guns operating at the south side of HMR. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would add guns on both the north and south sides, but it is currently unknown how many new guns will be used and the exact locations of the guns relative to existing and proposed noise sensitive land uses (Tirman, pers. comm.). Because the number and type of guns as well as the location of each gun is currently unknown, the noise levels from snowmaking cannot be quantified.

The new amphitheatre is planned to be the permanent home of the annual Lake Tahoe Music Festival. Amplification of voice and music, combined with applause and other audience reactions could result in audible sound at nearby residential units. The amphitheatre will be located between the base of the gondola and the hotel outdoor deck area. The nearest existing residence is on Sacramento Avenue and is located approximately 400 feet from the new amphitheatre. New residential units along Tahoe Ski Bowl Way would be as close as 250 feet to the amphitheatre, and the hotel would be immediately adjacent to the amphitheatre. Although sound levels at a rock concerts can reach 110 dBA (see Table 13-1), concerts at the amphitheatre are smaller-scale and are not anticipated to reach this level. Residential Building A is located between the amphitheatre and existing residences on Sacramento Avenue and will provide substantial acoustical shielding between the amphitheatre and existing residences. The building will also provide acoustical shielding between the amphitheater and most of the new residential units along Tahoe Ski Bowl Way. New residential townhome units at the north end of Tahoe Ski Bowl way would not be shielded by the building. The amphitheatre will project amplified sound towards the mountain, and sound energy will primarily dissipate in that direction.

Sound from the amphitheatre is anticipated to result in significant impacts at new HMR proposed residential townhomes located along the north end of Tahoe Ski Bowl Way. Depending on the type of music acts and the degree of amplification there is potential for significant noise impacts to occur at existing residences as well. Concerts, which are currently held periodically throughout the year, would require a special use permit from TRPA specifying hours of activities and specific sound level limits. Mitigation Measures NOI-3a and NOI-3b would reduce this impact to a less-than-significant level.

As shown in Table 13-7, noise from snowmaking currently exceeds these standards at the residential uses near the South Base area and residential uses near the North Base area (e.g., the eastern Project boundary). Therefore, any increase in noise from snowmaking in these locations is considered significant. Mitigation Measure NOI-3a is required to reduce this impact at new residences in the Project area. Mitigation Measure NOI-3c is required to reduce this impact at existing residences to a less than significant level.

Mitigation: **Mitigation Measure NOI-3a: Design new residences to reduce interior noise below 45 dBA, L_{dn}.**

HMR shall design and construct new residences such that interior noise from snowmaking and other sources of noise (including concerts) in the area does not exceed 45 dBA, L_{dn}. HMR will retain a qualified acoustical consultant to design the necessary acoustical treatments. Measures that can be implemented include installing acoustically rated doors and windows, use of upgraded wall and roof materials to provide additional acoustical insulation, and sealing gaps in walls and ceilings with acoustical caulking. The acoustical consultant will prepare a report for the TRPA and Placer County demonstrating compliance with noise standards inside of residential units.

Mitigation Measure NOI-3b: Implement design and operational measures at the amphitheater to ensure compliance with the adjacent Planning Area Statement (PAS) CNEL limit at existing residences.

HMR shall demonstrate that the amphitheater has been designed such that operational noise at existing residences will be in compliance with the adjacent Planning Area Statement (PAS) CNEL limit. An acoustical engineer with experience in the prediction and mitigation of outdoor theater sound levels shall be consulted prior to design and construction of the proposed amphitheater. The acoustical engineer shall identify feasible mitigation measures for reducing noise-related impacts to nearby residences. Mitigation measures may include, but are not limited to, orientation and location of the amphitheater, construction of noise barriers, limitations on speaker orientation, limitations on noise-generation levels, and hours of activity. The project applicant shall incorporate the mitigation measures into the design and operation of the amphitheater.

Mitigation Measure NOI-3c: Implement measures to ensure noise levels at existing residences are reduced to meet the adjacent Plan Area Statement (PAS) CNEL limit.

To reduce existing and proposed snowmaking noise levels to a less than significant level, HMR must reduce noise levels to meet adjacent PAS CNEL limits. The reduction of noise to PAS CNEL levels shall be reevaluated annually to ensure that HMR is implementing all possible snowmaking measures available to work towards the attainment of the PAS CNEL noise standards for Plan Areas 157, 158, and 159 (55dB, 55dB, and 60dB, CNEL, respectively). HMR will prepare a noise control plan to design, construct/install, and operate new snowmaking equipment so that the increase in noise associated with snowmaking conditions, (see Table 13-7) is reduced to meet the appropriate PAS limit. The plan must be approved by the TRPA and Placer County prior to HMR using any new snowmaking equipment. The noise control plan may include, and is not limited to, the following measures:

- Situate snowmaking equipment as far as practicable from existing noise sensitive land uses (reductions of 2-3dB). If setbacks are used to control snowmaking noise, snow could be moved from the location where it is made, and mechanically deposited in the desired location. This measure would involve the

use of snow grooming equipment, which would also produce noise. In general, snow grooming equipment produces lower levels than snowmaking equipment, and the time required to move the snow would be less than the time required to make snow on a continuous basis. Typical snow grooming equipment is approximately the size of a bulldozer. Bulldozers between 100 and 250 HP can generate maximum noise levels of 81-85 dBA (Hoover & Keith, 2000). It is reasonable to assume that snowgrooming equipment would generate similar noise levels. Thus the overall noise impacts of this alternative in a given area would be lower than for continuous snowmaking using snowmaking nozzles.

- Place temporary barriers between noise sources and noise-sensitive land uses or taking advantage of existing barrier features (terrain, structures, edge of trench) to block sound transmission. Barriers would be most effective where the nozzles are close to the noise sensitive land uses. The barriers should be solid and massive, and placed close to the nozzles to block line of sight to the receivers. Thick (1/2 inch) plywood or wood, and straw bales are examples of suitable materials for such an application. Where nozzles are placed in fixed, elevated positions, barriers could consist of tower structures with plywood sides blocking line of sight to the nozzles (reductions of 3-9dB). At the South and North Base areas, the construction of proposed HMR buildings may provide permanent barriers between snowmaking operations and adjacent land uses.
- Select quieter snow making equipment (reductions of 2-3dB). HMR currently uses fan gun technology for its snowmaking system, which is quieter than compressed air/water nozzles used at other resorts. However, the latest snowmaking gun technology shall be consulted when purchasing new equipment. The new and quieter equipment shall be used in locations closest to noise sensitive land uses.
- Prohibit/minimize the operation of snow making activities during nighttime hours (prohibition eliminates nighttime noise that is penalized in the calculation of CNEL averages).
- Reduce the number of snow making equipment operating concurrently (reduction of 2-3 dB).
- Reducing the number of nozzles close to noise sensitive land uses. (In general, a 50 percent reduction in the number of nozzles in a given area will result in a reduction of 3 dB, which is considered to be a perceptible reduction in noise levels).

After Mitigation: *Less than Significant; Proposed Project (Alternative 1), and Alternatives 3, 5, and 6*

As stated above, in Plan Areas out of attainment, any increase in noise would be significant. Mitigation Measures NOI-3a and NOI-3b would reduce impacts from the amphitheatre, and Mitigation Measures NOI-3a and NOI-3c would reduce impacts from snowmaking to meet PAS CNEL levels, and therefore would be less than significant.

Analysis: *Less than Significant Impact; Alternative 4*

Alternative 4 entails closing HMR and creating up to 16 estate residential lots and one commercial lot at the North Base area. A majority of the estate lots would be accessed from the South Base area of the ski resort. Operational noise under Alternative 4 would be similar to the adjacent residential neighborhoods east of the South Base area.

Noise from operational sources would be significant if exterior noise levels were greater than the Placer County standards of 50 dBA, L_{dn}/CNEL at the property line of the receiving land use. Noise is regulated under the *TRPA Community Plan* by land use category. Under Alternative 4, impacts would include typical noise from residential and commercial areas, which is not anticipated to exceed the Placer County threshold of 60 dBA or TRPA PAS standards. This impact is considered less than significant.

Mitigation: No mitigation is required.

13.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact: NOISE-C1: Will the Project result in a substantial impact upon the cumulative noise environment?

Analysis: *No Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will not contribute new noise sources to the existing environment, and no impacts would result. The No Project (Alternative 2) would not have a cumulatively considerable impact on noise.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5, and 6*

The traffic volumes in the traffic analysis in Chapter 11 – Traffic, Parking, and Circulation were based on cumulative growth in the HMR area. Consequently, the noise analysis was also based on cumulative growth and represents cumulative effect conditions. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would result in minor increased in noise compared to the No Project (Alternative 2) (see Tables 3.6-21 through 3.6-23). Based on a conversation with TRPA, any increase in noise, relative to future no project conditions, would be significant and that it is necessary to fully mitigate/offset the incremental increase in noise, relative to future no project conditions (Emmett, pers. comm.). Plan Areas 156, 157, and 160 are currently out of attainment due to traffic and snowmaking noise. Noise from traffic is anticipated to increase with the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6. Noise from snowmaking is also expected to increase. However, Mitigation Measure NOI-2 would reduce traffic noise relative to future no-project conditions, and Mitigation Measures NOI-3a and NOI-3c would reduce snowmaking noise to PAS CNEL levels. In addition, Mitigation Measures NOI-3a and NOI-3b would reduce noise from the amphitheatre at new and existing residences. Therefore, impacts from noise would be reduced to less than significant levels.

Mitigation: **Mitigation Measure NOI-2: Employ measures to ensure Project-related traffic noise does not increase relative to future no project conditions.**

Mitigation Measure NOI-3a: Design new residences to reduce interior noise below 45 dBA, L_{dn}.

Mitigation Measure NOI-3b: Implement design and operational measures at the amphitheater to ensure compliance with the adjacent Planning Area Statement (PAS) CNEL limit at existing residences.

Mitigation Measure NOI-3c: Implement measures to ensure noise levels at existing residences are reduced to meet the adjacent Plan Area Statement (PAS) limit.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5, and 6*

Cumulative impacts would be considered less than significant with implementation of Mitigation Measures NOI-2, NOI-3a, NOI-3b and NOI-3c.

Analysis: *Less than Significant Impact; Alternative 4*

Alternative 4 would remove the ski resort and build single-family residences on the mountain and a retail facility along SR 89. Alternative 4 is expected to reduce noise in the Project area and vicinity by reducing traffic volumes on area roadways and by closing summer and winter ski area activities, including snowmaking, concerts, snow grooming, and parking lot activities. Consequently, Alternative 4 would not have a cumulatively considerable impact on noise.

Mitigation: No mitigation is required.

13.6 REFERENCES

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13.6.1 Personal Communications

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14.0 SOILS, GEOLOGY AND SEISMICITY

This chapter discloses the geologic, soil and seismic constraints on the Project and describes the physical characteristics of the Project area, including topography, geology, mineral resources, soils, seismicity, geologic hazards and existing land coverage. Proposed land coverage and Tahoe Regional Planning Agency (TRPA) land coverage limitations are also discussed.

The Environmental Setting section provides information on the physical characteristics of the Project area, including geology, faults and history of earthquakes, soils and existing land coverage. The Regulatory Setting section outlines the regulatory framework of the State of California, the TRPA Code of Ordinances and the Placer County General Plan pertaining to geology, soils, seismicity, land capability and land coverage. The Impact Evaluation Criteria are based on the planning guidelines established by the State of California, TRPA and Placer County codified regulations and the TRPA thresholds for land coverage. Analyses of potential environmental impacts from the Project along with the standard engineering practices, compliance measures and recommended mitigation measures are presented in the Environmental Impacts and Recommended Mitigation section, followed by an analysis of cumulative impacts.

14.1 ENVIRONMENTAL SETTING

14.1.1 Physiography

The Lake Tahoe Basin lies within the eastern portion of the Sierra Nevada geomorphic province. The surface of Lake Tahoe has an average elevation of about 6,225 feet above mean sea level (msl) (http://tahoe.usgs.gov/) with surrounding mountain peaks ranging from approximately 8,000 to 10,880 feet above msl. The basin, a large fault-bounded valley, trends north to south with an average width of 18 miles bounded on the west by the Sierra Nevada crest and on the east by the Carson Range and Mount Rose.

The Homewood Mountain Resort (HMR) Ski Area Master Plan Area defines the Project area and is located on the west shore of Lake Tahoe in Placer County in the community of Homewood, California, approximately 19 miles north of South Lake Tahoe and 5 miles south of Tahoe City along State Route (SR) 89. Twenty parcels comprised of 42 Placer County Assessors Parcel Numbers or APNs make up the Project area. The Project area is located within the Homewood USGS 7.5 minute quadrangle map and lies within portions of Township 14 North and Range 16 East, Sections 1, 2, 10, 11, and 12 (Mount Diablo Meridian) with elevations ranging from approximately 6,235 feet to 7,880 feet above msl.

The Project area functions as an active ski resort with ski trails, unpaved access roads, chair lifts, two lodge areas and paved and gravel parking lots. The surrounding area consists of commercial, residential and recreational land uses. The Project area watersheds have high average slopes of between 26% and 48% (see Figure 5, Appendix W). This is important because areas of steeper slope will generally produce more sediment than areas with a more gradual slope. The Project area occupies portions of the Madden Creek, Homewood Creek and Quail Lake Creek watersheds with general aspects trending southeast and northwest and average slopes of 48%, 47% and 45%, respectively. A distinct drainage area intervening between the lower portions of these watersheds is officially defined by TRPA and the Regional Water Quality Control Board – Lahontan Region (Lahontan) as Intervening Zone 7000. The Project area watersheds are defined in Figure 15-1 of Chapter 15, Hydrology, Water Rights, Surface Water Quality and Groundwater. Intervening Area 7000 has an average slope of 26% and general aspect of northeast (IERS 2010). The North and South Base areas, where most of the redevelopment is planned, are relatively

flat. The existing Project area characteristics are illustrated in figures presented in Appendix W of this EIR/EIS, which contains the *HMR Cumulative Watershed Effects (CWE) Analysis* (IERS 2010) that was prepared in compliance with *TRPA Ski Area Master Plan Guidelines* (TRPA 1990). The following CWE Analysis figures are incorporated by reference:

- Figure A1. TMDL Defined Watersheds;
- Figure A2. Soil Parent Materials;
- Figure A3. Geology;
- Figure A4. Topography; and
- Figure A5. Slope Phase Map.

14.1.2 Geology

The Lake Tahoe Basin was formed two to three million years ago by geologic block faulting between the northwest-trending Sierra Nevada to the west and the north-trending Carson Ridge to the east. Lake Tahoe occupies the depression, or fault-produced graben, between these two uplifted mountain ranges. During the past two million years, glaciers played an active roll in shaping the Sierra Nevada Mountains and Lake Tahoe. Alpine glaciers extended below the current lake level along the west shoreline and Emerald Bay.

The basement geology of the Lake Tahoe Basin is divided into three categories: granitic, metamorphic and volcanic (Hyne et al. 1972). The majority of the Project area is underlain by Quaternary (2.6 million years to Present) glacial moraines and Miocene (23 to 5.3 million years) volcanic rocks (Kleinfelder 2007). Surface geology of the Project area consists primarily of andesite lahars/flows and breccias (Mva) and glacial till and moraines (Qg and Qti) and the area along the shore of Lake Tahoe and extending to the North Base area of the Project area is mapped as Quaternary-age lakebed deposits (Ql) (Kleinfelder 2007), as illustrated in Figure 14-1. Other minor geologic map units include alluvium, granitic rocks, metasedimentary rocks and older lake sediments.

14.1.3 Mineral Resources

The only known mineral resource in the vicinity of the Project area is gold. Lake Tahoe's only gold mine was operated in the Project area in the 1940's just south of Quail Lake (IERS 2010). USDA Forest Service Lake Tahoe Basin Management Unit (LTBMU) purchased this parcel in 2009. The gold mine is not within the Project area.

14.1.4 Faults and Seismicity

Lake Tahoe Region

The potential for seismic activity within a Project area is primarily related to the proximity of faults. Faults are fractures or zones of related fractures where the rocks on one side have been displaced with respect to rocks on the other side. The California State Mining and Geology Board define an "active fault" as one that has had surface displacement within the past 11,000 years, the Holocene. Potentially active faults are defined as those that have ruptured between 11,000 and

1.6 million years before the present (Quaternary). Faults are generally considered inactive if there is no evidence of displacement during the Quaternary period.

The Lake Tahoe Basin is located in a region of Holocene age and early Quaternary age, as evidenced by the features and historical data published in Natural Hazards of the Lake Tahoe Basin (Cooper, Clark and Associates 1974) and Preliminary Maps of Pleistocene to Holocene Faults in the Lake Tahoe Basin, California and Nevada (Saucedo 2005):

- Movements have taken place along faults adjacent to the basin within historical time (Lawson 1912; Kachadoorian 1967);
- Sediments at the bottom of Lake Tahoe show offsets or displacements that are indicative of faulting (Hyne 1972); and
- Steep cliffs (30 to 45-degree slopes) and other topographic features associated with active faulting are found on both sides of Lake Tahoe (Hyne et al. 1972).

A north-south fault zone, located about six miles east of the Lake Tahoe Basin, separates the eastern edge of the Sierra Nevada from the parallel fault-block mountains of Nevada and Utah. The north-south faults along the shores of Lake Tahoe appear to be the longest continuous faults traversing the basin area. Of these faults, the fault along the west side of the lake appears to be the longest, with a surface length of approximately 50 miles. A fault of this length could potentially generate a 7.5 magnitude earthquake (Cooper, Clark and Associates 1974).

Ground shaking resulting from an earthquake is typically described by two methods: ground acceleration as a fraction of the acceleration of gravity (g) or the Modified Mercalli scale, which is a more descriptive method involving 12 levels of intensity denoted by Roman numerals (see Table 14-1). The scale relates human perception and amount of damage. Modified Mercalli intensities range from I (shaking that is not felt) to XII (total damage). The Richter Scale is still used to describe earthquakes in the mass media. The Richter magnitude scale, also known as the local magnitude scale, assigns a single number to quantify the amount of seismic energy released by an earthquake. Table 14-1 provides a crosswalk between the Richter Scale and the Modified Mercalli scale.

As depicted in Table 14-1, a Richter magnitude of 7.0 to 7.9 corresponds to IX – X intensity on the Modified Mercalli scale. This intensity of an earthquake could shift buildings off foundations, break underground pipes, and trigger landslides on steep slopes (Burnett 1973). A very young fault scarp on the east side of the Carson Range provides evidence that large and potentially destructive earthquakes have occurred in this region during the last 11,000 years.

Numerous earthquakes have occurred in the Lake Tahoe Basin during the past 100 years of record keeping. These earthquakes generally measured less than 5.0 on the Richter scale. A catalog search of the USGS National Earthquake Information Center (http://earthquake.usgs.gov/regional/neic/ accessed on 11/2/2009) revealed no earthquakes greater than 5.0 magnitudes within the Project area or Tahoe Basin (latitude 39.0672 and longitude – 120.2360). Approximately 1,144 minor earthquakes of less than 5.0 magnitude and 15 major earthquakes of magnitude 5.0 or greater have occurred since 1974.

Table 14-1

Modified Mercalli Intensity Scale

Rating	Description of Damage or Human Perception
I.	Not felt except by a very few under especially favorable circumstances.
II.	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended object may swing.
III.	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motorcars may rock slightly. Vibration like passing of truck. Duration estimated.
IV.	During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make creaking sound. Sensation like heavy truck striking building. Standing motorcars rocked noticeably.
V.	Felt by nearly everyone, many awakened. Some dishes, windows, and so on broken; cracked plaster in a few places; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes notices. Pendulum clocks may stop.
VI.	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster and damaged chimneys. Damage slight.
VII.	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving cars.
VIII.	Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving cars disturbed.
IX.	Damage considerable in specially designed structures; well designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
X.	Some well built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed, slopped over banks.
XI.	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
XII.	Damage total. Waves seen on ground surface. Lines of sight and level distorted. Objects thrown into the air.

RICHTER MAGNITUDE	INTENSITY (Maximum expected Modified Mercalli)
3.0 – 3.9	II -III
4.0 – 4.9	IV - V
5.0 – 5.9	VI - VII
6.0 – 6.9	VII - VIII
7.0 – 7.9	IX – X
8.0 – 8.9	XI - XII

Source: Burnett 1973; U.S. Geological Survey 1974

Project Area

The Project area is located in a region that is traditionally characterized by moderate to high seismic activity (ICC 2006) and lies within a zone of influence of numerous other regional fault systems in eastern California and western Nevada. A *Geologic Hazards and Preliminary Geotechnical Evaluation* was completed for the general Project area on October 15, 2007 (Kleinfelder 2007). The purpose of the evaluation was to identify and assess potential geologic hazards at the site in accordance with the requirements of the California Board for Geologists and Geophysicists (Board) Geologic Guidelines for Earthquake and/or Fault Hazard Reports; the Board Guidelines for Engineering Geologic Reports; California Geological Survey (CGS) Special Publication 42, *Fault-Rupture Hazard Zones in California: Alquist-Priolo Earthquake Fault Zoning Act with index to Earthquake Fault Zone Maps* (Hart and Bryant 1997); and CGS Special Publication 117, *Guidelines for Evaluating and Mitigating Seismic Hazards in California* (California Division of Mines and Geology 1997). The secondary purpose was to comply with Placer County Community Development Resource Agency guidelines for a Preliminary Geotechnical Report. The Kleinfelder preliminary report is referenced for information about the general Project area.

Holdredge and Kull completed follow up geotechnical investigations for the North Base and Mid-Mountain area in 2009 in consideration of proposed site-specific design and construction. geotechnical evaluations for the North Base and Mid-Mountain areas in 2009 and reported findings in *Geotechnical Engineering Report for North Base Lodge, Homewood Mountain Resort* (Holdrege and Kull 2010a) and *Geotechnical Engineering Report for Mid-Mountain Lodge, Homewood Mountain Resort* (Holdrege and Kull 2010b). The Holdredge and Kull reports are referenced for site-specific information for the North Base and Mid-Mountain areas being redeveloped during Phase 1 of the Project.

Figure 14-1 depicts mapped active faults in the vicinity of the Project area: the West Tahoe-Dollar Point fault zone (3.0 miles east of the Project area); the North Tahoe fault (4.8 miles northeast of the Project area); and the Incline Village fault (10.3 miles northeast of the Project area). Figure 14-1 also illustrates the location of two unnamed faults mapped across the Project area. Unnamed Fault 1 trends generally north-south across the west side of Quail Lake past the Mid-Mountain area and continues off-site to the west. Unnamed Fault 2 trends generally north-south across the eastern portion of the Project area and is mapped near the break in slope located to the west of the two base areas.

To evaluate the location of Unnamed Fault 1 relative to the North Base area, Holdrege and Kull reviewed the following maps:

- Fault Activity Map of California and Adjacent Areas; by Charles W. Jennings, California Department of Conservation, Division of Mines and Geology, 1994;
- Geologic Map of the Chico Quadrangle, California, by G.J. Saucedo and D.L. Wagner, California Division of Mines and Geology, 1992;
- Geologic Map of the Lake Tahoe Basin, California and Nevada, by G.J. Saucedo, California Geological Survey, 2005; and
- New Constraints on Deformation, Slip Rate, and Timing of the Most Recent Earthquake on the West Tahoe – Dollar Point Fault, Lake Tahoe Basin, California, by Daniel S. Brothers, et. al., Bulletin of the Seismological Society of America, April 2009.

To evaluate the location of Unnamed Fault 2 relative to the Mid-Mountain area, Holdrege and Kull reviewed the following maps:

- Fault Activity Map of California and Adjacent Areas; by Charles W. Jennings, California Department of Conservation, Division of Mines and Geology, 1994; and

- Geologic Map of the Chico Quadrangle, California, by G.J. Saucedo and D.L. Wagner, California Division of Mines and Geology, 1992.

The Alquist-Priolo Earthquake Fault Zoning Act (1972) also defines an active fault as one that has had surface displacement within the last 11,000 years. Holdredge and Kull (2010a, 2010b) reviewed the 1997 version of Special Publication 42, Fault Rupture Hazard Zones in California, which describes active faults and fault zones, as part of the Alquist-Priolo Earthquake Fault Zoning Act and the document and the 1999 on-line update indicate that the Project area is not located in an Alquist-Priolo active fault zone.

14.1.5 Geologic Hazards

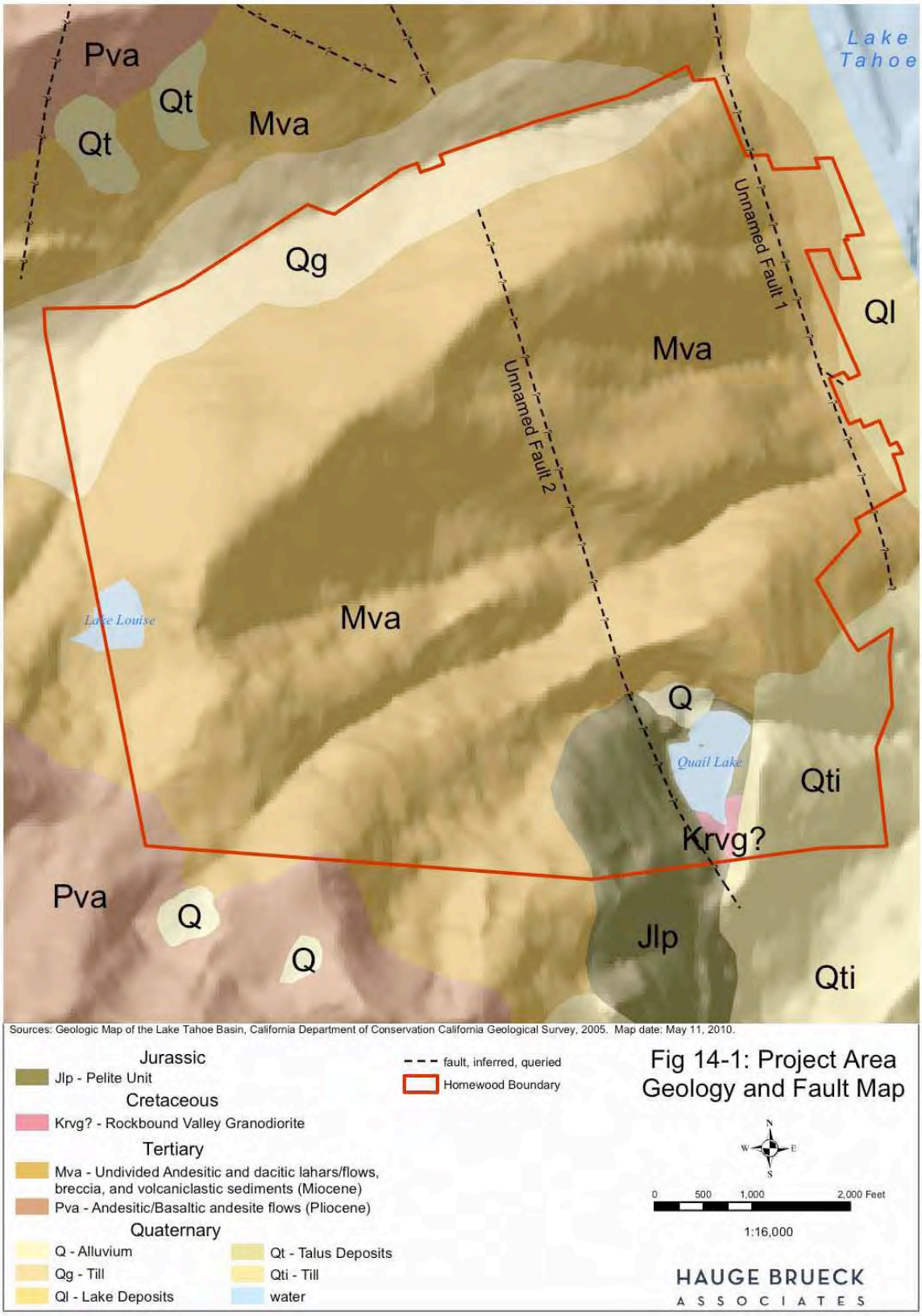
The most significant geologic hazards associated with the Project area are from earthquakes and their associated effects (Holdredge and Kull 2010a, 2010b; Kleinfelder 2007). Earthquakes present direct (primary) and indirect (secondary) hazards; both of which can occur locally or at locations distant from the earthquake source. Direct, local earthquake hazards include damage caused by fault displacements either by ground surface rupture or gradual fault creep. The damage caused by ground shaking is also a direct effect; however, shaking can occur locally or at remote locations. Indirect hazards presented by earthquakes include liquefaction and earthquake-induced landslides, both of which are triggered by ground shaking. The portions of the Project area that are located on or near steep terrain could be subject to slope instability (landsliding, both gravitational or earthquake-induced) hazards. Roads, distribution pipelines, utilities lines and snowmaking pipelines could also be subject to this hazard. The analysis of these hazards is based on an understanding of the potential for any or all of these events to occur in the Project area.

Fault Rupture

The potential for fault rupture is related to concepts of recency and recurrence (Holdrege and Kull 2010a), meaning that the more recently a fault has ruptured, the more likely that the fault could rupture again. Displacement caused by fault rupture or fault creep could occur along future pipelines for snowmaking and utilities that must cross fault zones. In Kleinfelder (2007) reviewed aerial photos of the Project area dating from 1939, 1966, 1987, 1995, 2000 and 2005. No evidence of fault rupture of Holocene features was observed on any of the photos.

The geologic maps referenced by Holdredge and Kull (2010a, 2010b) show several active and potentially active faults located near, but not within, the Project area, including the Dog Valley Fault (active, approximately 20 miles north-northwest), a group of unnamed faults southeast of Truckee (potentially active, approximately 15 miles north), the West Tahoe-Dollar Point Fault (active, approximately 3 miles east), and the North Tahoe Fault (active, approximately 4.5 miles northeast). The Genoa Fault trends in a north-south direction approximately 18 miles east of the site and is capable of very large earthquakes. Earthquakes associated with these faults may cause strong ground shaking at the project area.

Figure 14-1. Project Area Geology and Fault Map



Unnamed Fault 1 (see Figure 14-1) is shown on the Geologic Map of the Lake Tahoe Basin (Saucedo, 2005) as discontinuous and trending in a northwest direction near the base of the slope through the project area. Unnamed Fault 1 is considered to be of Quaternary-age, relatively short, about one mile long, and is shown as approximately located (dashed) and uncertain as to existence (queried) on the Saucedo (2005) map. Unnamed Fault 1 is not shown on the Chico Quadrangle Map (Saucedo and Wagner, 1992). Unnamed Fault 2, considered to be of Quarternary age, is not shown on referenced maps as crossing or trending towards the Mid-Station Base area (Holdrege and Kull 2010b). Again, quaternary age faults are considered potentially active.

Ground Shaking

The severity of ground shaking due to an earthquake is determined by several factors including the size of the earthquake, fault rupture characteristics, and proximity of the earthquake to the site of interest. Additionally, the type of soil or bedrock beneath the site will determine the strength of ground shaking.

As discussed previously, ground shaking is typically described by two methods: ground acceleration as a fraction of the acceleration of gravity (g) or the Modified Mercalli scale, which is a more descriptive method involving 12 levels of intensity denoted by Roman numerals (see Table 14-1). The scale relates human perception and amount of damage. Modified Mercalli intensities range from I (shaking that is not felt) to XII (total damage).

The Lake Tahoe Basin is classified as Zone III on the State of California's Earthquake Epicenters, Faults, and Intensity Zone Map (December 2008). Zone III is a high intensity zone, with a probable maximum earthquake intensity of IX or X on the Modified Mercalli Scale, which corresponds to maximum momentum magnitudes of 7.0 to 7.9 on the Richter scale as detailed in Table 14-1 (Burnett 1973).

The International Building Code’s Seismic Zone Map of the United States places Placer County, including the Project area, within Seismic Hazard Zone III, which corresponds to an area that may experience damage due to earthquakes having moderate intensities of V or more on Modified Mercalli Scale, which corresponds to maximum momentum magnitudes of 4.9 or greater (IBC 2006).

The North Tahoe and Incline Village faults have estimated maximum momentum magnitudes of 7.0 and 6.6, respectively. The slip rate category for the North Tahoe and Incline faults is 0.2 to 1.0 millimeters per year (mm/yr) (Kleinfelder 2007). The Project area is mapped as having a probable maximum earthquake intensity of IX or X on the Modified Mercalli scale, indicating that damage could occur to structures and cracks could form in foundations (Kleinfelder 2007).

For earthquake engineering, an important input parameter is Peak Ground Acceleration (PGA), which is a measure of earthquake acceleration on the ground. PGA is a measure of how hard the earth shakes in a given geographic area rather than a measure of the total size of an earthquake (http://www.consrv.ca.gov/cgs/rghm/psha/Pages/pga.aspx). The California Geological Survey maintains a web-based computer model that estimates probabilistic seismic ground motions for any location within California. The computer model estimates the “Design Basis Earthquake” ground motion, which is defined as the PGA with a ten percent chance of exceedance in 50 years (475-year return period). For an alluvial/colluvial soil type found within the Project area, the estimated design PGA is approximately 0.316g; thus indicating that the ground-shaking hazard in the Project area is moderate (Holdrege and Kull 2010a; California Geological Survey 2007).

Liquefaction

Liquefaction occurs in water-saturated sediments that are shaken by moderate to large earthquakes. The liquefied soil loses shear strength when subjected to cyclic loading and may become unstable and fail, causing damage to all types of structures. Liquefaction was responsible for much of the damage during the 1906 San Francisco earthquake and the 1989 Loma Prieta earthquake. Liquefaction hazard analysis involves understanding the potential for ground shaking combined with the physical properties and conditions of the soil. In order for liquefaction to occur, two criteria must be met. First, there must be an opportunity for liquefaction to occur, and second, the soil must be susceptible to liquefaction. The main factors affecting liquefaction potential of a soil are level and duration of seismic ground motions, soil type and consistency, and depth to groundwater. Soils most susceptible to liquefaction are saturated, loose, clean, uniformly graded, and fine-grained sand deposits. Geologic age also influences the potential for liquefaction. Sediments deposited within the past few thousand years are generally much more susceptible to liquefaction than older Holocene sediments; Pleistocene sediments are even more resistant; and pre-Pleistocene sediments are generally immune to liquefaction (California Division of Mines and Geology 1997).

Holdrege and Kull (2010a, 2010b) completed subsurface explorations at the North Base and Mid-Mountain area in October 2009. The results indicate that the potential for liquefaction is low at the Mid-Mountain and North Base area.

Seismically-Induced Landslides, Debris Flows, Soil Creep and Rock Fall

Slope instability includes landslides, debris flows, soil creep and rock fall. Kleinfelder (2007) completed a geologic hazards and preliminary geotechnical evaluation across the general Project area. Because of the topography of the Project area and observed evidence of soil creep, the possibility of landslides and seismically-induced slope instability is considered moderate. A Quaternary landslide is mapped in the volcanic rocks to the north of the Project area. The same rock type is mapped within the Project area and could be prone to landslides (Kleinfelder 2007). Areas of rock outcrop existing in the Project area, and the potential for seismically-induced rock fall exists (Kleinfelder 2007). Evidence of soil creep (e.g. bent tree trunks) was observed on “The Face” ski trail near the top of the slope below the mid-loading station of the Madden Triple Chair Lift.

Holdredge and Kull completed geotechnical engineering evaluations at the North Base and Mid-Mountain areas (2010a, 2010b). No recent landslides, debris flows or rock fall hazards were observed in these areas. Holdredge and Kull conclude that due to the granular and rocky nature and relative competency of the underlying rock at the proposed development sites and general surrounding area, the potential for slope instability is considered low. For the Mid-Mountain, which is located on a topographically high ridge, the rock fall hazard is considered negligible. The North Base area is located at the base of a moderately steep slope and similar to many locations in mountainous terrain, seismically induced rock fall is a potential hazard. However, no rock outcrops are located on the slope above the North Base area and the potential hazard from seismically induced rock fall is considered low.

14.1.6 Surface Soils

This subsection addresses surface soils as they relate to geotechnical engineering and design constraints within the redevelopment and development portions of the Project area. Soils in the Lake Tahoe Region have most recently been mapped by the United States Department of Agriculture’s (USDA) Natural

Resource Conservation Service (NRCS) and are described in the *Soil Survey of the Tahoe Basin Area, California and Nevada* (USDA 2007). This most recent soil survey is used for the basis of this chapter. It is important to note, however, that for land capability, coverage and permitting purposed TRPA uses the Bailey Land Capability system, which relies on the *Soil Survey of the Tahoe Basin Area, California and Nevada* (Rogers 1974). The 2007 soil survey is being proposed for adoption and integration into the Bailey Land Capability System as part of the TRPA Regional Plan Update.

Lake Tahoe Basin soils are complex and diverse. Variability in relief, vegetative cover, and climate are major factors influencing the region's soil diversity. Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some have shallow depths to bedrock. Some are too unstable to be used as a foundation for buildings or roads. A high water table makes a soil poorly suited to basements or underground installations.

Volcanic-derived soils comprise the majority of the Project area with some areas along the northwest boundary and below Quail Lake determined as a mix of volcanic and glacial. Based on the NRCS Soil Survey (2007) there are two primary soil series in the Project area, Tallac and Jorge series soils. Soils in the vicinity of existing and/or proposed development in Project area have been reviewed as part of various geotechnical, hydrologic and TRPA land capability analyses (See Davis 2006; Kleinfelder 2007; Holdredge and Kull 2010a, 2010b; and Appendix D of this EIR/EIS for soil investigation locations and results). Generally speaking, results of these reports found that the soils within the Project area are suitable for development with implementation of standard site-specific geotechnical recommendations. Figure 14-2 shows the distribution of the soil groups in the Project area that are described in Table 14-1. Geotechnical recommendations are discussed in the Environmental Impacts and Recommended Mitigation subsection below.

Soil investigations determine that across the North Base area soils are generally very deep and well-drained, derived from colluvium of reworked andesitic materials in the upper layers. Old lakebed deposits are buried at depth. Soils are characterized as having dark brown gravelly sandy loam about 16 inches thick over dark yellowish brown gravelly or very gravelly subsoil abruptly underlain by gravelly, very gravelly or extremely gravelly loamy coarse sand at depths varying from 43 to 60 inches. These soils are members of Soil Hydrologic Groups A and B. One isolated area displayed finer grained sediments within about 30 inches of the natural surface in a small isolated area just south of the North Lodge site, resembling JgC (Jabu gravelly sandy loam, moderately fine subsoil variant, two to nine percent slope), which places the soil within Soil Hydrologic Group C. For the most part, soils were found to be deep and to lack enough coarse fragments in the control section to be skeletal. They are deep soils, as opposed to the former Umpa series, which is moderately deep (20 to 40 inches) and formed on andesitic bedrock. None of the soil profiles in the base areas examined displayed restrictive subsurface layering or fragipans that are typical of the Tallac series.

Soil map units within the Project area are not considered expansive. The shrink-swell potential is notably low (see Table 14-2). Expansive materials are those that could pose a risk to structural damage due to their significant clay content, which can result in swelling and compression during changes in moisture content.

Some soil map units within the Project area are considered moderate to highly corrosive to steel and concrete, as detailed in Table 14-2. Soil corrosion is a complex phenomenon that involves a multitude of variables. Soil resistivity is a parameter for estimating the corrosivity of soils. Soils with high sand and moisture content, high electrical conductivity, high acidity, and high dissolved salts are considered to be the most corrosive.

Figure 14-2. Project Area Soils Map for Geotechnical Consideration

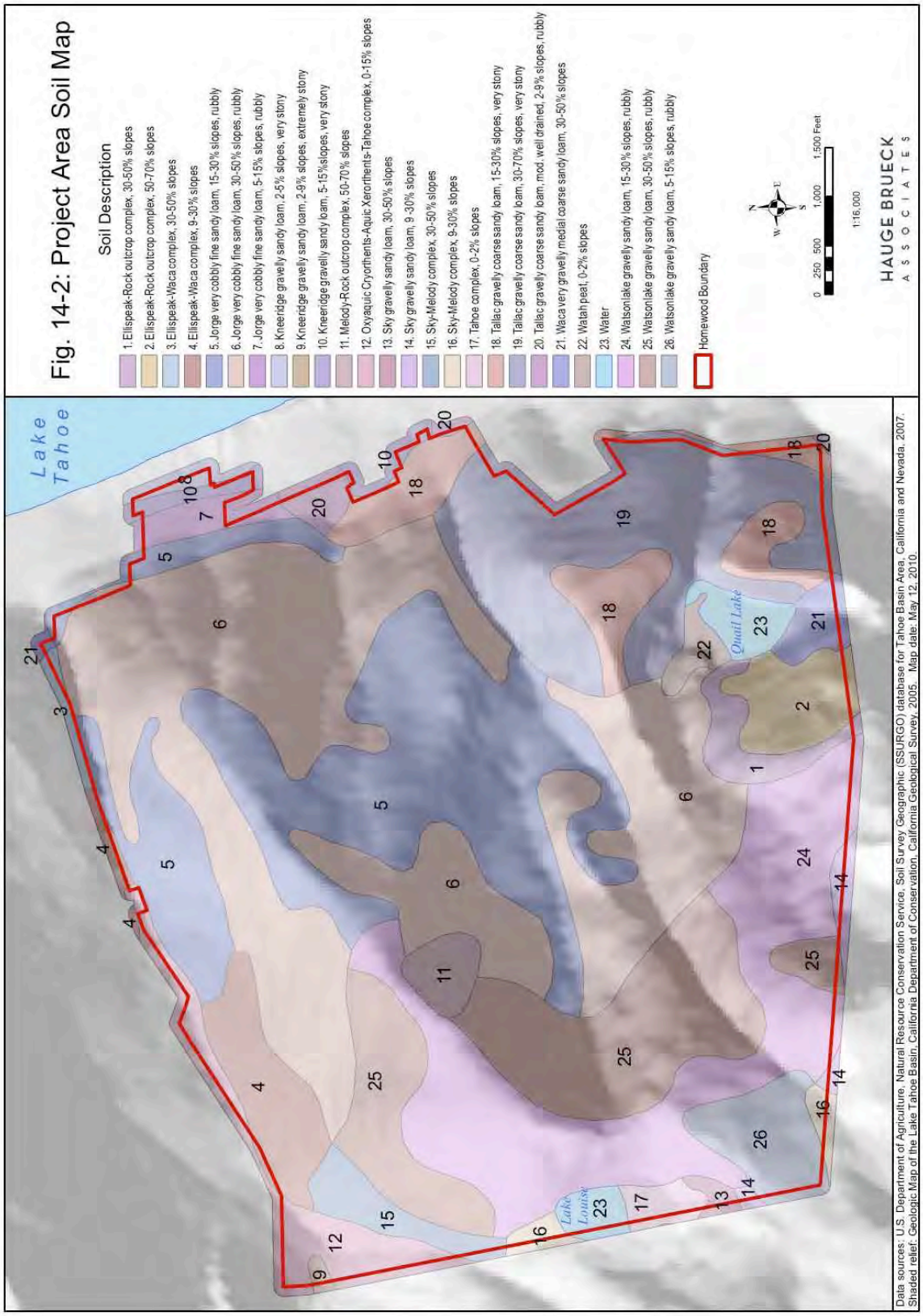


Table 14-2

NRCS Soils in the Project Area

Soil Type[1]	Parent material[2]	Surface Runoff Class[3]	Slowest Permeability[4]	Shrink-Swell Potential[5]	Corrosivity[6]	Drainage Class[7]	Available Water Capacity[8]	Hydrologic Soil Group[9]
Watah Peat 0 to 2% slopes	Organic Material over alluvium derived from mixed sources	Very High	Moderate	Low	High/High	Very poorly drained	5.8 inches Moderate	A/D
Ellispeak-Rock Outcrop Complex 30 to 50% slopes	Colluvium derived from welded tuff and/or lahar	Very High	Rapid above the bedrock	Low	Moderate/Low	Excessively drained	0.8 inches Very Low	D
Ellispeak-Rock Outcrop Complex 50 to 70% slopes	Colluvium derived from welded tuff and/or lahar	Very High	Rapid above the bedrock	Low	Moderate/Low	Excessively drained	0.8 inches Very Low	D
Ellis Peak-Waca Complex 9 to 30% slopes	Colluvium derived from welded tuff and/or lahar	Very High	Rapid above the bedrock	Low	Moderate/Low	Excessively drained	0.8 inches Very Low	D
Ellis Peak-Waca Complex 30 to 50% slopes	Colluvium derived from welded tuff and/or lahar	Very High	Rapid above the bedrock	Low	Moderate/Low	Excessively drained	0.8 inches Very Low	D
Jabu* Gravelly Sandy Loam Moderately Fine Subsoil Variant 2 to 9% slopes	Outwash derived from granodiorite	Low	Very Slow	Low		Well Drained	5.4 inches Moderate	A

Soil Type[1]	Parent material[2]	Surface Runoff Class[3]	Slowest Permeability[4]	Shrink-Swell Potential[5]	Corrosivity[6]	Drainage Class[7]	Available Water Capacity[8]	Hydrologic Soil Group[9]
Jorge Very cobbly fine sandy loam 5 to 15% slopes	Colluvium derived from andesite	Low	Moderate	Low	Moderate/Low	Well drained	5.7 inches Moderate	B
Jorge Very cobbly fine sandy loam 15 to 30% slopes	Colluvium derived from andesite	Medium	Moderate	Low	Moderate/Low	Well drained	5.7 inches Moderate	B
Jorge Very cobbly fine sandy loam 30 to 50% slopes	Colluvium derived from andesite	Medium	Moderate	Low	Moderate/Low	Well drained	5.7 inches Moderate	B
Kneeridge Gravelly medial sandy loam 2 to 9% slopes Extremely stony	Colluvium and/or till derived from andesite	Low	Moderate	Low	Moderate/ High	Moderately well drained	9.5 inches High	A
Kneeridge Gravelly medial sandy loam 2 to 5% slopes Very stony	Colluvium and/or till derived from andesite	Low	Moderate	Low	Moderate/ High	Moderately well drained	9.5 inches High	A
Kneeridge Gravelly medial sandy loam 5 to 15% slopes Very stony	Colluvium and/or till derived from andesite	Low	Moderate	Low	Moderate/ High	Moderately well drained	9.5 inches High	A
Tallac Gravelly coarse sandy loam	Colluvium over till derived from mixed sources	Medium	Slow	Low	Moderate/ Moderate	Well drained	3.2 inches Low	A

Soil Type[1]	Parent material[2]	Surface Runoff Class[3]	Slowest Permeability[4]	Shrink-Swell Potential[5]	Corrosivity[6]	Drainage Class[7]	Available Water Capacity[8]	Hydrologic Soil Group[9]
15 to 30% slopes								
Tallac Gravelly coarse sandy loam 30 to 70% slopes Very stony	Colluvium over till derived from mixed sources	Medium	Slow	Low	Moderate/ Moderate	Well drained	3.2 inches Low	A
Tallac Gravelly coarse sandy loam moderately well drained 2 to 9% Rubbly	Colluvium over till derived from mixed sources	Medium	Slow	Low	Moderate/ Moderate	Well drained	3.2 inches Low	A
Oxyaquic Cryorthents-Aquic Xerorthents-Tahoe Complex 0 to 15%	Alluvium and/or colluvium derived from mixed sources	High	Moderate	Low	Moderate/ Moderate	Somewhat poorly drained	2.5 inches Low	A
Watsonlake Gravelly sandy loam 5 to15% slopes Rubbly	Collivum derived from andesite	Low	Slow above bedrock	Low	Moderate/Low	Well drained	6.9 inches Moderate	B
Watsonlake Gravelly sandy loam 15 to 30% slopes Rubbly	Collivum derived from andesite	Medium	Slow above bedrock	Low	Moderate/Low	Well drained	6.9 inches Moderate	B
Watsonlake Gravelly sandy	Collivum derived from andesite	Medium	Slow above bedrock	Low	Moderate/Low	Well drained	6.9 inches Moderate	B

Soil Type[1]	Parent material[2]	Surface Runoff Class[3]	Slowest Permeability[4]	Shrink-Swell Potential[5]	Corrosivity[6]	Drainage Class[7]	Available Water Capacity[8]	Hydrologic Soil Group[9]
loam 30 to 50% slopes Rubbly								
Melody-Rock Outcrop 50 to 70% slopes	Collivium derived from volcanic rocks	Very High	Moderate above bedrock	Low	Moderate/ High	Excessively drained	1.2 inches Very low	D
Sky-Melody complex 9 to 30% slopes	Colluvium over residuum derived from andesite tuff	High	Very slow above bedrock	Low	Moderate/ High	Well drained	2.3 inches Very low	B
Sky-Melody complex 30 to 50% slopes	Colluvium over residuum derived from andesite tuff	High	Very slow above bedrock	Low	Moderate/ High	Well drained	2.3 inches Very low	B
Sky Gravelly sandy loam 9 to 30% slopes	Colluvium over residuum derived from andesite tuff	High	Very slow above bedrock	Low	Moderate/ High	Well drained	2.3 inches Very low	B
Sky Gravelly sandy loam 30 to 50% slopes	Colluvium over residuum derived from andesite tuff	High	Very slow above bedrock		Moderate/ High	Well drained	2.3 inches Very low	B

Source: NRSC 2007 Soil Survey Maps; Soil Investigation sand HMR Land Capability Challenge, Hauge Brueck Associates 2009

Table Notes: * Jabu identified during soil investigations for the land capability challenge in the North Base area (previously identified as Umpa).

1. See Figure 14-2 for locations

2. Parent material. The unconsolidated and chemically weathered mineral and organic material in which the solum of a soil is formed as a result of pedogenic processes. Granitic. A textural term commonly pertaining to an igneous intrusive rock of felsic to intermediate composition. Referring to granite like rock, but not necessarily true granite. Commonly applied to granite, quartz monzonite, granodiorite, and diorite. Granodiorite. An igneous intrusive rock that is intermediate between felsic and mafic in composition and contains quartz and somewhat more plagioclase than orthoclase.

3. Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

4. Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality.

5. Shrink/Swell Potential provides criteria for determination of expansive soil properties.
6. Ratings are for Concrete/Steel. Corrosivity ratings provided by William Loftis of the Lake Tahoe Field Office of the NRCS on 11/6/2009. The ratings provided are the most conservative and based on the highest % representative aggregate. Site-specific soil resistivity analysis will be necessary prior to site development.
7. Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."
8. Available water capacity (AWC) (available moisture capacity). The volume of water that should be available to plants if the soil, inclusive of fragments, were at field capacity. It is commonly estimated as the difference between the amount of water at field capacity and the amount at wilting point with adjustments for salinity, fragments, and rooting depth. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as: Very low 0 to 2.5; Low 2.5 to 5.0; Moderate 5.0 to 7.5; High 7.5 to 10.0; Very high more than 10.0.
9. Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Hydrologic Soils Group Definitions: A =low runoff potential (0.30 to 0.45 in/hr); B=moderate runoff potential (0.15 to 0.30 in/hr); C=moderately high runoff potential (0.05 to 0.5 in/hr); D=high runoff potential (less than 0.05 in/hr)

14.1.7 Subsurface Conditions

Kleinfelder, Inc. analyzed the subsurface conditions in the *Groundwater Investigation Report for Homewood Mountain Resort* completed on July 14, 2008. This data is also presented in the Second Revised Soils Hydrologic Scoping and Final Report that was submitted to TRPA on October 7, 2010 (Kleinfelder 2010). The purpose of the groundwater investigation was to assess seasonal high groundwater levels and seasonal fluctuation of groundwater levels in the North and South Base areas of the Project area and the slopes above the base areas to an elevation of approximately 6,350 to 6,400 feet above msl. Evaluation techniques included soil borings, soil sampling, installation of groundwater monitoring wells, measuring water levels during Fall 2006, Spring 2007 and Spring 2008 and determining historic groundwater levels in the vicinity of the North and South Base areas. The report provides preliminary estimates of excavation depths for future development in accordance with TRPA regulations.

North Base Area

In the North Base paved parking lots, groundwater was measured at depths of 5.44 to 10.45 feet below ground surface (bgs), and seasonal groundwater as indicated by evidence of mottled soils was noted at depths of approximately 4.3 to 8 feet bgs. Historic water levels in monitoring wells were as high as 4.65 feet bgs (Kleinfelder 2010). High groundwater was measured in the gravel parking lot located south of Sacramento Street at approximately 0.9 to 5 feet bgs. The soils in the North Base area are indicative of an interlayer colluvial and lake sediment depositional environmental and are consistent with the mapped geologic unit of QI (Older Lakebed Deposits). Groundwater flow follows topography and is across the North Base area to the north, northeast and east towards Lake Tahoe (Kleinfelder 2010). Groundwater was measured at depths of 12 to greater than 18 feet bgs in the slopes above the existing North Base parking area (Kleinfelder 2010).

Holdrege and Kull completed the *Geotechnical Engineering Report for North Base Lodge* (Holdrege and Kull 2010a) on January 21, 2010. Eleven test pits were excavated on October 2, 2009 across the western portion of the lodge site to depths ranging from 7 to 18 feet bgs. Nine borings were drilled to depths of 27 to 60 feet bgs from January 13 through 15, 2009 for preliminary reporting (Holdrege and Kull 2009). In addition to the nine borings, subsurface conditions beneath the eastern portion of the North Base area were investigated October 6 and 7, 2009 through drilling four exploratory borings to 23.1 feet and 50 feet bgs.

The western portion of the North Base area is underlain by lakeshore deposits consisting of sand and gravel with cobbles and boulders. The eastern portion of the North Base area in underlain by a relatively thin layer of fill 1.5 to 3 feet thick overlying medium dense to dense, poorly graded, saturated sand with varying amounts of silt, gravel and cobbles. Groundwater was not observed in the test pits but was encountered in borings at depths ranging from 10 to 18 feet bgs.

South Base Area

In the South Base area, groundwater was measured at depths ranging from approximately 15 to 19 feet bgs in the South Base parking lot. Shallow groundwater at depths of approximately 1.7 feet bgs was measured at the north end of Tahoe Ski Bowl Way. The slopes above the South Base area contain groundwater levels at depths ranging from 0.97 to approximately 8 feet bgs. In several of the borings, mottled soils indicate seasonal groundwater at depths of approximately 4 feet bgs (Kleinfelder 2008).

Mid-Mountain Area

Holdredge and Kull prepared the *Geotechnical Engineering Report for the Mid-Mountain Lodge* (Holdredge and Kull 2010b) and report that groundwater was not encountered during subsurface exploration to 13 feet bgs, the maximum depth explored. Subsurface conditions were investigated on October 1, 2009 by excavating ten exploratory test pits in the proposed lodge and water tank areas and on locations of proposed roadways and site access. Subsurface soil conditions consist of medium dense to very dense silty sand with gravel to silty gravel with varying amounts of cobble. Volcanic rock was encountered at 4.5 to 13 feet bgs.

14.1.8 Land Classification System and Existing Land Coverage

The TRPA has established a land capability system based upon the Bailey Land Classification System methodology. Land Capability is "the level of use an area can tolerate without sustaining permanent (environmental) damage through erosion or other causes" (Bailey 1974). Land Capability classification determines the amount of impervious development coverage (i.e. allowable base land coverage) that may exist within a land capability district (LCD) as delineated by TRPA.

Land Coverage is defined in Chapter 2 of TRPA Code of Ordinances as a man-made structure, improvement or covering, that prevents normal precipitation from directly reaching the surface of the land underlying the structure, improvement or covering. Hard coverage typically describes structures, improvements or coverings that inhibit more than 75 percent of precipitation from directly reaching the soil or inhibits the growth of vegetation. Soft coverage describes compacted areas without structures, improvements or coverings and includes uses such as the parking of cars and heavy and repeated pedestrian traffic that compacts the soil so as to prevent substantial infiltration

Table 14-3 displays runoff potential, disturbance hazards and percent allowable base coverage for each LCD. Lands in LCDs 4 through 7 are considered suitable for development. LCDs 1 to 3 are more sensitive and have development limitations, with LCD 1 being the most environmentally sensitive and least suitable for development. LCD 1b (also referred to as Stream Environment Zones) is assigned whenever land is influenced by a stream or high groundwater. New land coverage within LCD 1b is generally prohibited.

Davis[2] Consulting Earth Scientists, Inc. completed the first of a series of soil investigations for the Project area on August 30, 2006 with the intent of advancing a HMR Land Capability Challenge (TRPA File # LCAP2008-0179). The land capability challenge was approved by the TRPA Hearings Officer on August 8, 2009, approving land capability for specific areas in the Project Area: North Base, South Base and Mid-Mountain areas and along Tahoe Ski Bowl Way. The maps are included in Appendix T and represent the TRPA-approved land capability associated with this land capability challenge. Figure 14-3 identifies the LCDs that have been verified within the Project area for the North Base, South Base and Mid-Mountain areas and portions along Tahoe Ski Bowl Way.

Land capability for the remainder of the Project area was verified in October 2010 for determination of allowable base land coverage for the upper mountain portions of the Project area not included in the HMR Land Capability Challenge (TRPA File #LCAP2010-0304). This land capability map is included in Appendix U.

Land coverage verification for the Project area has occurred from the late 1990's through the present. Appendix U contains the TRPA Land Coverage Verification letters documenting existing land coverage within the Project Area. In 2008, 30 parcels were consolidated into 20 parcels as part of two concurrent Boundary Line Adjustments (TRPA Files STD2005-1762 and LLAD2008-0083). The Assessor's Parcel

Numbers or APNs included in the land coverage verification letters are those recognized by TRPA at the time the verification was conducted and are not necessarily what Placer County recognized at the time. Many of the APNs referenced in the TRPA land coverage verifications, HMR Land Capability Challenge, and boundary line adjustments have since changed. Figure 3-4 represents the most recent APN information for the existing Project area, while Figure 14-3 shows the configuration of parcels before the sale of one parcel to the USFS and corresponds to Sheet C3a of the Civil Plans dated April 30, 2010. Appendix T presents figures for existing and proposed land coverage by APN as presented in HMR Land Capability Challenge and represent the preliminary land coverage calculations for the Project area that are discussed in the paragraphs below. Appendix V presents land coverage summaries associated with TRPA File # STD20051762 and LLAD2008-0083, the files on which the EIR/EIS land coverage analysis is based.

Table 14-3

Bailey System Basis of Capability for Lake Tahoe Basin Lands

Capability Level	Tolerance for Use	Slope	Runoff Potential	Runoff Potential	Disturbance Hazards	Allowable % Cover
7	Greatest	0-5%	Slight	Low to moderately low	Low hazard lands	30%
6		0-16%	Slight	Low to moderately low	Low hazard lands	30%
5		0-16%	Slight	Moderately high to high	Low hazard lands	25%
4		9-30%	Moderate	Low to moderately low	Moderate hazard lands	20%
3		9-30%	Moderate	Moderately high to high	Moderate hazard lands	5%
2		30-50%	High	Low to moderately low	High hazard lands	1%
1a	Least	30+	High	Moderately high to high	High hazard lands	1%
1b			Poor natural drainage		High hazard lands	1%
1c			Fragile flora and fauna		High hazard lands	1%

Source: Land Capability Classification of the Lake Tahoe Basin, California – Nevada, Bailey 1974

The total existing land coverage in the approximately 1,253-acre Project area is verified at 1,781,447 square feet. It is unclear if land coverage beneath the public rights-of-way (ROW) was included or excluded from the analysis completed for the boundary line adjustments for the Project area. HMR must coordinate with TRPA to determine if ROW has been considered and if not, formally apply to have coverage figures adjusted accordingly.

To present the most conservative land coverage calculations for existing conditions, the land coverage totals have been revised to reflect the exclusion of land beneath public ROWs located within the South Base area per TRPA Code of Ordinances Section 20.3.D(1)(b) by 20,110 square feet to equal 1,761,337 square feet. If this land coverage was previously excluded, then the existing land coverage analysis is conservative by 20,110 square feet. If this land coverage was not previously excluded, the existing land coverage analysis conforms to the TRPA requirements to exclude lands beneath public ROWs from allowable base land coverage determinations.

The TRPA Code of Ordinances provides methods for calculating allowable base land coverage in Section 20.3.D (2)(a). Allowable base land coverage is dependent on LCD coefficients, as outlined in Table 14-3 above. Table 14-4 compares the verified existing land coverage identified by the LCD in which the land coverage is located to the allowable base land coverage calculated for that LCD.

Total allowable base land coverage within the 1253-acre Project area equals 2,467,149 square feet. Verified existing land coverage is estimated at 1,781,447 square feet. Verified existing land coverage within LCDs 6, 5, 3, 4 and 1b conform to TRPA land coverage limits, while existing land coverage within LCDs 2 and 1a exceed allowable base land coverage by 10,205 and 477,417 square feet, respectively. LCDs 7 and 1c are not identified within the Project area.

Since 2006, approximately 19,000 linear feet of dirt access roads ranging from 7 to 18 feet in width have been treated and removed from within the Project area as part of sediment source control projects that removed and restored soft land coverage and disturbance associated with dirt access roads. The type of restoration, Tier 1, Tier 2 and Tier 3 are discussed in Chapter 15, Hydrology, Water Rights, Surface Water Quality and Groundwater. Land coverage that is removed (i.e. soft coverage associated with compacted roadway surface; road widths range between 7 and 18 feet – personal communication TRPA Staff September 28, 2010) can be banked as land coverage for use in areas of higher capability LCDs or relocated within the project area. Disturbance restoration (i.e., cut and fill slopes) may possibly be banked as restoration credit per TRPA Code of Ordinance Section 20.4.C. The recently removed land coverage and disturbance have not been verified and banked to date. The land coverage is considered to be still in existence until banking applications are verified and approved by TRPA staff. Therefore, the land coverage is treated as existing land coverage in the land coverage calculations detailed in Table 14-4. Figure 14-4 illustrates the locations of the removed and restored land coverage and disturbance. Banking applications must be initiated by the Project Applicant.

Table 14-4

Project Area Land Capability and Existing Land Coverage Determinations

Land Capability District (LCD)	LCD Percent Allowable Impervious Surface	Gross Project Area	Project Area excluding Public ROW	Project Area within Public ROW	Existing Verified Land Coverage	Existing Verified Land Coverage within Public ROW[1]	TRPA Allowable Base Land Coverage (excludes ROW) [1]	TRPA Banked Land Coverage[2]	Excess Land Coverage [3]	Remaining Allowable Base Land Coverage[4]
7	30%	0	0	0	0	0	0	0	0	0
6	30%	957,208	936,624	20,584	259,357	18,761	280,987	0	0	21,630
5	25%	2,712,244	2,712,244	0	159,787	0	678,061	0	0	518,274
4	20%	1,294,645	1,294,645	0	23,878	0	258,929	0	0	235,051
3	5%	18,822,973	18,822,973	0	539,255	0	941,149	0	0	401,893
2	1%	791,779	791,779	0	18,123	0	7,918	0	10,205	0
1a	1%	27,582,568	27,582,568	0	753,243	0	275,826	126,324	477,417	0
1b	1%	2,429,282	2,427,933	1,349	7,694	1,349	24,279	0	0	16,585
Totals		**54,590,699**	**54,568,766**	**21,933**	**1,761,337**	**20,110**	**2,467,149**	**126,324**	**487,623**	**1,193,434**

Source: TRPA land capability challenge documents – August 8, 2009; HMR Master Plan Project Coverage Calculations Table May 20, 2010 and HBA 2010

Note:

[1] TRPA Code of Ordinances Section 20.3.D(2)(2)(ii) outlines the methodology for calculating allowable and maximum allowable base land coverage. TRPA Code Section 20.3.D(1)(b) excludes land beneath Public Right of Ways (ROWs) from inclusion in the Project area of the calculations of allowable base land coverage.

[2] Banked coverage associated with removal of "Lombard Street" per TRPA File #970662 to APN 097-210-01. This banked land coverage was distributed as follows: 80% attributed to APN 97-060-12, 15% attributed to APN 97-060-10 and 5% attributed to APN 97-050-22. This banked land coverage is available for relocation within the Project area and is not included in the totals.

[3] From page 20-25 of the TRPA Code of Ordinances: Excess Land Coverage is defined as the existing amount of land coverage, less the total of the following: the maximum allowable amount of base coverage; the amount of coverage approved by transfer; and the amount of coverage previously mitigated. Excess Land Coverage (% sf) = Existing Land Coverage (% sf) – (Maximum coverage (% sf) + Transferred Coverage (% sf) + Previously Mitigated Coverage (% sf)).

[4.] Remaining Base Land Coverage is defined as Allowable Base Land Coverage minus Existing Improvements/Land Coverage

Figure 14-3. Land Capability Challenge Area Exhibit

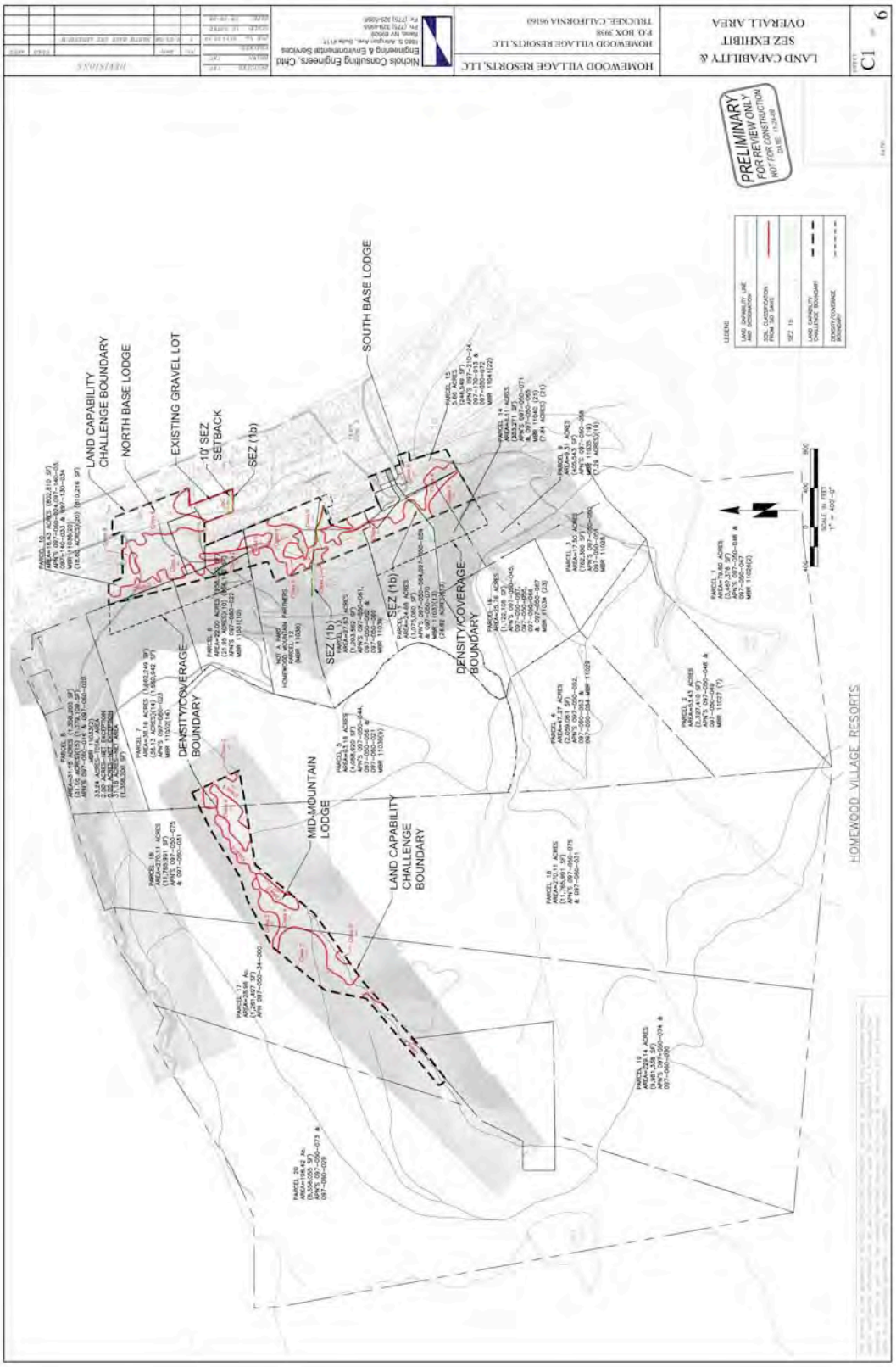
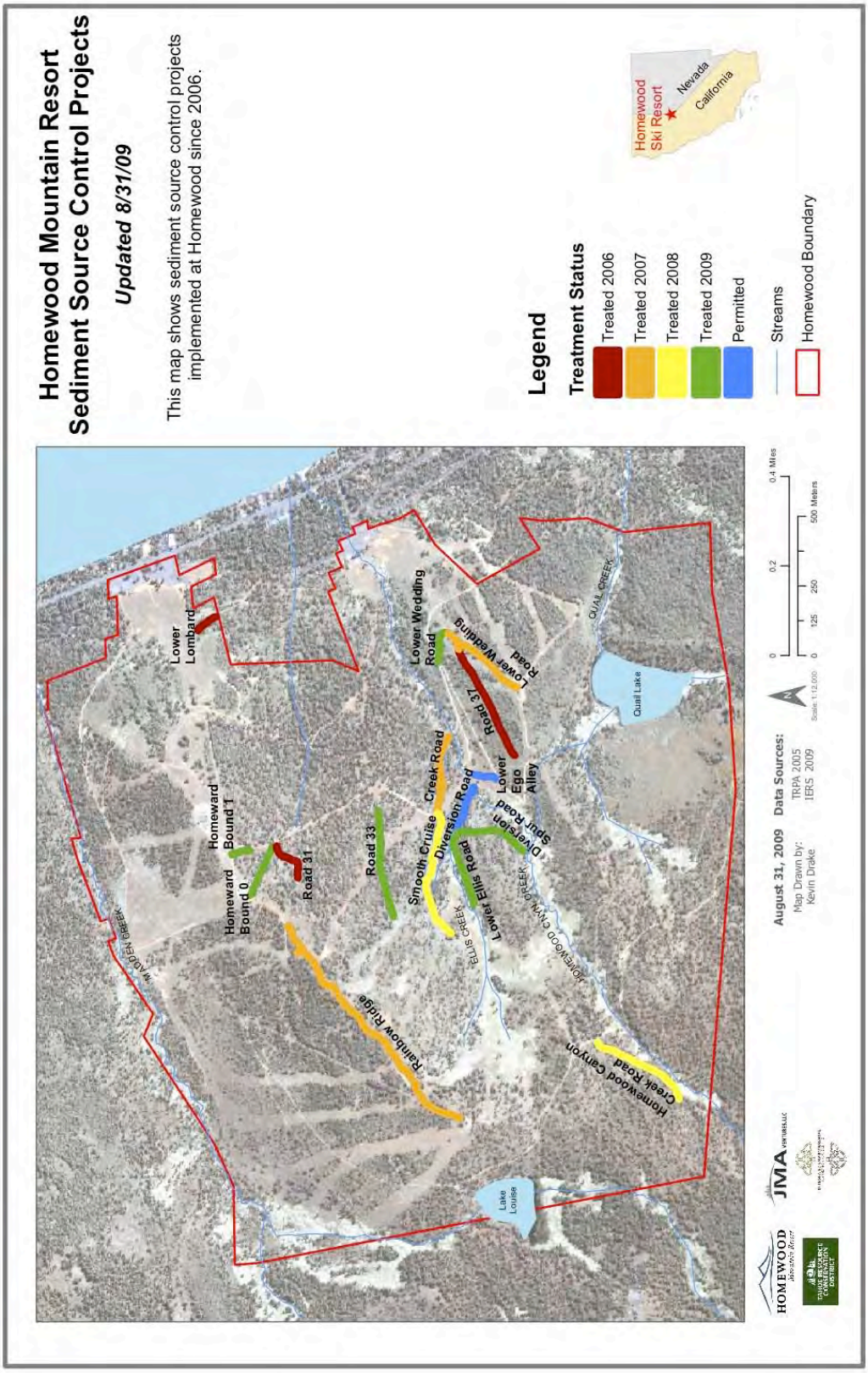


Figure 14-4. Sediment Source Control Projects for Land Coverage Reductions, 2006-2009



14.1.9 HMR Cumulative Watershed Effects (CWE) Analysis

The HMR CWE analysis and watershed thresholds of concern (TOCs) completed in compliance with the TRPA Ski Area Master Plan Guidelines are detailed in Chapter 15, Hydrology, Surface Water Quality, Water Rights and Groundwater in Impact HYDRO-1.

14.2 REGULATORY SETTING

TRPA, Placer County and the State of California enforce regulations for the protection of soils and earth resources of the Project area. The following subsections discuss the regulatory framework pertaining to the Project.

14.2.1 Tahoe Regional Planning Agency

TRPA adopted development restrictions limiting land coverage in Project areas to a range of impervious land coverage coefficients. Chapter 2 of the TRPA Code of Ordinances defines land coverage. Land coverage limits are set forth in Chapter 20 of the TRPA Code of Ordinances, which define allowable base land coverage according to LCDs. Section 20.3 of the Code outlines the process for calculating allowable base land coverage as determined by land capability. Section 20.5 of the Code outlines the regulations and requirements for the Excess Land Coverage Mitigation Program. Section 20.5.C outlines the regulations and requirements for the relocation of existing land coverage on the same parcel or Project area. Removed and relocated coverage must be restored pursuant to Subsection 20.4.C. Section 20.3.B outlines the necessary findings for the transfer of land coverage. Best Management Practices (BMPs) requirements, natural hazard standards, and design standards are presented in Code of Ordinance Chapters 25, 28 and 30, respectively.

Community Enhancement Program

The Project is a participant in the TRPA Community Enhancement Program (CEP). As stated in the February 5, 2008 *Resolution 2008-11 Exhibit 7 Memorandum*, the TRPA document that outlines the CEP requirements as they apply to the Project, TRPA requires that HMR specify the percentage of land coverage reduction proposed for the overall Project. The CEP requires a substantial land coverage reduction and states that the increase in density and height should result in an overall reduction in land coverage within the Project area.

The Resolution states that the uses of a building envelope that would allow a building to stair step up the slope to a maximum of 50 feet at the highest point of the envelope or slope may be appropriate for the Project area. This approach may limit the amount of grading and cut required for building foundations, which would provide an added environmental benefit. TRPA requires the verification of the existing land coverage, land capability and units of use along with assurances that proposed building locations and proposed land coverage transfers will not impact sensitive lands.

Grading Requirements

There are grading standards set forth in Chapters 20 and 64 of the TRPA Code of Ordinances. Limitations include no excavation, filling, or clearing of vegetation or other disturbance of the soil between October 15 and May 1 of each year, unless approval is granted by TRPA. Grading and construction schedules are established in Chapter 62 of the Code of Ordinances. A grading plan is required by TRPA prior to project approval and project construction.

Groundwater Regulations

According to the TRPA Code, Chapter 64, groundwater impacts are considered significant if implementation of the project results in the interception or interference of groundwater by:

- Altering the direction of groundwater;
- Altering the rate of flow of groundwater;
- Intercepting groundwater;
- Adding or withdrawing groundwater; or
- Raising or lowering the water table.

TRPA Code, Chapter 64, Section 64.7.B prohibits excavations in excess of five feet in depth or when there exists a reasonable possibility of interference or interception of a water table unless the following findings can be made:

"(1) A soils/hydrologic report prepared by a qualified professional, whose proposed content and methodology has been reviewed and approved in advance by TRPA, demonstrates that no interference or interception of groundwater will occur as a result of the excavation; and

(2) The excavation is designed such that no damage occurs to mature trees, except where tree removal is allowed pursuant to Subsection 65.2.E, including root systems, and hydrologic conditions of the soil. To ensure the protection of vegetation necessary for screening, a special vegetation protection report shall be prepared by a qualified professional identifying measures necessary to ensure damage will not occur as a result of the excavation; and

(3) Excavated material is disposed of pursuant to Section 64.5 and the Project area's natural topography is maintained pursuant to Subparagraph 30.5.A(1); or if groundwater interception or interference will occur as described in the soils/hydrologic report, the excavation can be made as an exception pursuant to Subparagraph 64.7.A(2) and measures are included in the project to maintain groundwater flows to avoid adverse impacts to SEZ vegetation, if any would be affected, and to prevent any groundwater or subsurface flow from leaving the Project area as surface flow."

As part of the permitting process for the chosen alternative and final design plans, HMR is required to submit a soils/hydrologic report that includes a brief summary of the geologic, soil, and hydrologic conditions expected to be encountered within the chosen alternative Project area. Qualifications of the personnel conducting the soil/hydrologic investigation will be included in the report. The report must specify if the field exploration was conducted by backhoe excavation test pits or drilled boring, and the depths to which the samples were taken. Methods must comply with TRPA requirements to reveal information to 125% of the excavation depth. The boring logs must reveal the vertical sequence of soil textures, percent rock fragment, soil colors, and depths associated with the contact boundaries of these features.

The Second Revised Soils Hydrologic Scoping and Final Report was submitted to TRPA on October 7,, 2010 for review and approval of excavations necessary for building foundations and underground parking structures in the North and South Base areas and for building foundations at the Mid-Mountain area, but has not been fully reviewed or approved at this time.

Based on groundwater monitoring data and site conditions, groundwater is anticipated to be intercepted during construction and long-term operations in the North and South Base areas as a result of excavations. To reduce potential impacts from excavations at the North and South Base

areas, the hotel foundation footings were redesigned to avoid groundwater interception and underground parking structures were designed to minimize groundwater interception. Remaining groundwater that is intercepted by the underground parking structures will require an amendment to TRPA Code Chapter 64, as described in Chapter 3, Description of Proposed Project and Alternatives.

14.2.2 State of California

California Regional Water Quality Control Board – Lahontan Region

Section 402 of the Clean Water Act (CWA) is directly relevant to earthwork and grading in the Project area and establishes the National Pollutant Discharge Elimination Program (NPDES) that the California Regional Water Quality Control Board – Lahontan Region (Lahontan) implements in Lake Tahoe. Projects with construction activities disturbing greater than one acre must apply coverage under Board Order No R6T-2005-0007, prepare a Notice of Intent (NOI) and implement a Stormwater Pollution Prevention Plan (SWPPP). BMPs must be installed and maintained to avoid adverse impacts to receiving water quality as defined by Chapter 5 of the Lahontan Basin Plan. Upon completion of the Project, HMR must submit a Notice of Termination (NOT) to Lahontan to indicate that construction is completed. Further information regarding Lahontan's requirements for NPDES permitting is set forth in Chapter 15 (Hydrology, Water Rights, Surface Water Quality and Groundwater).

Section 5.4 of the Basin Plan outlines land capability and coverage limitations and section 5.7 outlines protections for SEZ, low capability LCDs, and floodplains.

California Building Codes

Pursuant to authority of Government Code Section 50022.1 et seq., the State of California adopted the following building codes to maintain a standard of public safety.

A. International Building Code 2006 edition as adopted in The California Building Standards Code (The 2007 California Building Code), which adopts those standards with state agency modifications within the scope of their authority.

B. National Electrical Code 2005 edition as adopted in The California Building Standards Code (The 2007 California Electric Code), which adopts those standards with state agency modifications within the scope of their authority, published by the National Fire Protection Association, California Administrative Code, Provisions for the National Electrical Code, 2007 Edition, published by International Code Council (ICC).

C. Uniform Plumbing Code 2006 edition as adopted in The California Building Standards Code, including appendices (The 2007 California Plumbing Code), which adopts those standards with state agency modifications within the scope of their authority, published by the International Association of Plumbing and Mechanical Officials.

D. Uniform Mechanical Code 2006 edition as adopted in The California Building Standards Code, including appendices (The 2007 California Mechanical Code), which adopts those standards with state agency modifications within the scope of their authority, published by the International Association of Plumbing and Mechanical Officials (IAPMO).

E. International Existing Building Code 2006 as adopted in The California Building Standards Code (The 2007 California Existing Building Code), which adopts those standards with state agency modifications within the scope of their authority and as limited by Health and Safety Code 19160 et seq., published by ICC.

F. International Fire Code 2006 edition including Appendices' as adopted in The California Building Standards Code (The 2007 California Fire Code), which adopts those standards with state agency modifications within the scope of their authority, published by ICC.

G. International Property Maintenance Code 2006 Edition, published by ICC, as modified by The California Health and Safety Code, Title 25 of the California Code of Regulations, and as further modified in Article 15.56.

H. The following codes and standards are adopted as reference documents and may be used by the chief building official in accordance with California Building Code Sections 104.10 and 104.11 in a case by case review process: Uniform Building Code 1997 edition, Uniform Swimming Pool Code, Spa & Hot Tub Code, published by IAPMO; published supplements to the International Codes; The International Residential Code; The 2006 International Fuel Gas Code; The Urban Wildland Interface Code, published by the International Fire Code Institute; The Uniform Sign Code, published by ICBO; IBC Appendix Chapters; National Fire Protection Association Standards; the Uniform Solar Energy Code, as published by IAPMO; American National Standard, published by American National Standards Institute, Inc.; Masonry Fireplaces, Masonry Institute; and other Nationally recognized Standards. (Ord. 5200-B (part), 2002: Ord. 4959-B (part), 1999: prior code § 4.1)

I. California Health and Safety Code § 19100 et seq

Alquist-Priolo Earthquake Fault Zone Act

The Alquist-Priolo Earthquake Fault Zoning Act (*PRC Section 2621-2630*) intends to reduce the risk to life and property from surface fault rupture during earthquakes by regulating construction in active fault corridors and prohibiting the location of most types of structures intended for human occupancy across the traces of active faults. The act defines criteria for identifying active faults, giving legal support to terms such as active and inactive and establishes a process for reviewing building proposals in Earthquake Fault Zones.

Under the Alquist-Priolo Act, faults are zoned and construction along or across these zones is strictly regulated if they are "sufficiently active" and "well-defined." A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for purposes of the act as within the last 11,000 years). A fault is considered well defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria, and judgment (Hart and Bryant 1997). There are no faults identified or mapped as active within the Project area as defined by the act.

Seismic Hazards Mapping Act

The intention of The Seismic Hazards Mapping Act of 1990 (*PRC Sec. 2690– 2699.6*) is to reduce damage resulting from earthquakes. The Alquist-Priolo Act addresses surface fault rupture and the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. The act's

provisions are similar in concept to those of the Alquist-Priolo Act: the State is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for projects in Seismic Hazard Zones until appropriate site- specific geologic or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

14.2.3 Placer County

General Plan

Placer County General Plan (1994) policies listed under Goal 8.A for seismic and geological hazards apply to the Project.

Goal 8.A. To minimize the loss of life, injury, and property damage due to seismic and geological hazards.

8.A.1. The County shall require the preparation of a soils engineering and geologic-seismic analysis prior to permitting development in areas prone to geological or seismic hazards (i.e., groundshaking, landslides, liquefaction, critically expansive soils, avalanche).

8.A.2. The County shall require submission of a preliminary soils report, prepared by a registered civil engineer and based upon adequate test borings, for every major subdivision and for each individual lot where critically expansive soils have been identified or are expected to exist.

8.A.3. The County shall prohibit the placement of habitable structures or individual sewage disposal systems on or in critically expansive soils unless suitable mitigation measures are incorporated to prevent the potential risks of these conditions.

8.A.4. The County shall ensure that areas of slope instability are adequately investigated and that any development in these areas incorporates appropriate design provisions to prevent landsliding.

8.A.5. In landslide hazard areas, the County shall prohibit avoidable alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation, or septic systems; removal of vegetative cover; and steepening of slopes and undercutting the bases of slopes.

8.A.6. The County shall require the preparation of drainage plans for development in hillside areas that direct runoff and drainage away from unstable slopes.

8.A.7. In areas subject to severe ground shaking, the County shall require that new structures intended for human occupancy be designed and constructed to minimize risk to the safety of occupants.

8.A.8. County shall continue to support scientific geologic investigations which refine, enlarge, and improve the body of knowledge on active fault zones, unstable areas, severe groundshaking, avalanche potential, and other hazardous conditions in Placer County.

8.A.9. The County shall require that the location and/or design of any new buildings, facilities, or other development in areas subject to earthquake activity minimize exposure to danger from fault rupture or creep.

8.A.10. The County shall require that new structures permitted in areas of high liquefaction potential be sited, designed, and constructed to minimize the dangers from damage due to earthquake-induced liquefaction

8.A.11. The County shall limit development in areas of steep or unstable slopes to minimize hazards caused by landslides or liquefaction.

West Shore Area General Plan

The West Shore Area General Plan, adopted by Placer County in October 1998, includes a Safety Element that addresses seismic, geologic, flood, avalanche, and wildfire hazards. Avalanches and wildfire hazards are addressed in Chapter 17, Hazardous Waste and Public Safety and flooding hazards are addressed in Chapter 15, Hydrology, Water Rights, Surface Water Quality and Groundwater.

Placer County Building and Land Development Ordinances

Placer County requires the preparation of a geotechnical and soils analysis for project permitting in areas prone to geologic or seismic hazards (see Article 15.48 of Chapter 15 of the Placer County Code). Kleinfelder Inc. prepared the Geologic Hazards and Preliminary Geotechnical Evaluation Homewood Mountain Resort in November 1, 2007 and followed the Placer County Community Development Resource Agency guidelines for a preliminary geotechnical report. The purpose of the report is to identify and assess the potential geologic hazards present geotechnical considerations for the Project area. Follow up site-specific geotechnical evaluations were completed by Holdrege and Kull for the Master Plan Phase 1 North Base and the Mid-Mountain areas. The relevant recommendations from the reports are included in the Environmental Impacts and Recommended Mitigation section below, and included as standard project-level mitigation measures.

Placer County adopted the California Building Codes on January 1, 2008. The adopted building and construction codes are contained in Placer County Code Article 15.04 of Chapter 15. Article 15.48 of Chapter 15 of the Placer County Code outlines permitting requirements to comply with the Grading, Erosion and Sediment Control Ordinance along with special restrictions and exemptions for the Lake Tahoe Basin. As a lead agency under CEQA, Placer County must comply with the Lahontan WDRs and Lahontan Board Order No. R6T-2005-007 for construction activities within the Lake Tahoe Hydrologic Unit. The Project Applicant complies with permitting requirements through the development of a project-specific SWPPP that is subject to approval by Lahontan.

Lahontan previously established WDRs for the Project area under Board Order No. 6-79-51, which was adopted September 19, 1979, and Board Order No. 6-88-174, which was adopted November 9, 1988. The current Board Order No. 6-95-86 updated WDRs to be consistent with requirements placed on other ski resorts within the Region and established specific compliance dates, which extend those in Board Order No 6-88-174.

Placer County Land Development Manual, Stormwater Management Manual, and General Construction Specifications (Placer County 1994) contain information on grading, subbases and

bases, surfacings and pavements, structures, drainage facilities, right-of-ways (ROW) and traffic control facilities, and materials. Construction specifications developed for the Project within the State Route 89 ROW will comply with applicable Caltrans standards. For consistency, improvements in the Placer County ROW will also comply with Caltrans standards.

Placer County Grading, Erosion, and Sediment Control Ordinance

The Placer County Board of Supervisors adopted the following relevant regulations pertaining to grading and related runoff in Placer County,

15.48.020 Purpose. The ordinance codified in this article is enacted for the purpose of regulating grading on property within the unincorporated area of Placer County to safeguard life, limb, health, property and public welfare; to avoid pollution of watercourses with hazardous materials, nutrients, sediments, or other earthen materials generated on or caused by surface runoff on or across the permit area; and to ensure that the intended use of a graded site is consistent with the Placer County general plan, any specific plans adopted thereto and applicable Placer County ordinances including the zoning ordinance, flood damage prevention ordinance, (Article 15.52) environmental review ordinance (Chapter 18 Placer County Code) and applicable chapters of the California Building Code. In the event of conflict between applicable chapters and this article, the most restrictive shall prevail. (Ord. 5056-B (part), 2000)

15.48.040 Grading. No person shall do or permit to be done any grading in such a manner that quantities of dirt, soil, rock, debris or other material substantially in excess of natural levels are washed, eroded or otherwise moved from the site, except as specifically provided for by a permit. In no event shall grading activities cause or contribute to the violation of provisions of any applicable NPDES stormwater discharge permit. (Ord. 5407-B § 2, 2006: Ord. 5056-B (part), 2000)

15.48.050 Water obstruction. 15.48.090 Levee work. No person shall excavate or remove any material from or otherwise alter any levee required for river, creek, bay, or local drainage control channel, without prior approval of the local governmental agency responsible for the maintenance of the levee. (Ord. 5056-B (part), 2000)

15.48.100 Construction in public rights-of-way. No person shall perform any grading work within the right-of-way of a public road or street, or within a public easement, without prior written approval of the agency director. (Ord. 5407-B § 6, 2006: Ord. 5056-B (part), 2000)

15.48.110 Hazards. If the community development resource agency director determines that any grading on private or public property constitutes a hazard to public safety; endangers property; adversely affects the safety, use or stability of adjacent property, an overhead or underground utility, or a public way, watercourse or drainage channel; or could adversely affect the water quality of any water bodies or watercourses, the director may issue a stop work notice to the owner of the property upon which the condition is located, or other person or agent in control of such property. Upon receipt of such stop work notice, the recipient shall, within the period specified therein, stop all work, obtain a grading permit and conform to the conditions of such permit. The community development resource agency may require the submission of plans or soil or geological reports, detailed construction recommendations, drainage study or other engineering data prior to and in connection with any corrective or proposed work or activity. (Ord. 5407-B § 7, 2006: Ord. 5373-B (part), 2005; Ord. 5056-B (part), 2000)

15.48.120 Tahoe Basin area special restrictions and exemptions.

A. Provisions of this section apply to the unincorporated area of Placer County within that area defined as "TRPA region" in the Tahoe Regional Planning Agency Compact. This area is the Tahoe Basin and that additional and adjacent part of the county of Placer outside of the Tahoe Basin in the state of California which lies southward and eastward of a line starting at the intersection of the basin crestline and the north boundary of Section 1, thence west to the northwest corner of Section 3, thence south to the intersection of the basin crestline and the west boundary of Section 10; all sections referring to township 15 north, range 16 east, M.D.B. and M.

B. Grading and soil disturbance shall be prohibited during the period from October 15th through May 1st unless otherwise approved, in writing, by the agency director and by the Tahoe Regional Planning Agency and Lahontan Regional Water Quality Control Board. Complete winterization of the site is required by October 15th, if work is not complete and permanent revegetation is not established.

C. All work shall be in conformity with any grading restriction required by other federal, state, or local agencies.

D. A permit for grading on residential property issued by the Tahoe Regional Planning Agency will be evidence of conformity to provisions of this section. All other grading in the region, unless otherwise exempt as provided herein, is subject to review and approval by the community development resource agency.

E. Areas of the site not approved for grading, vegetation removal, or construction shall be fenced or otherwise marked to limit access. These fences shall be inspected, maintained, and repaired as necessary.

F. Prior to initiation of grading or construction-related activity, temporary erosion control measures shall be installed to prevent transport of earthen materials and other wastes off of the site.

G. All other provisions of this article shall apply, but a permit shall not be required if the work complies with all the following conditions:

1. The excavation does not exceed four feet in vertical depth at its deepest point measured from the original ground surface, does not exceed two hundred (200) square feet in area, and does not exceed three cubic yards per site;

2. The fill does not exceed three feet in vertical depth at its deepest point measured from the original ground surface, the fill material does not cover more than two hundred (200) square feet, and does not exceed three cubic yards per site;

3. The clearing of vegetation does not exceed one thousand (1,000) square feet in area. (Ord. 5407-B § 8, 2006: Ord. 5373-B (part), 2005; Ord. 5056-B (part), 2000) No person shall do or permit to be done any grading which may obstruct, impede or interfere with the natural flow of stormwaters, in such manner as to cause flooding where it would not otherwise occur, aggravate any existing flooding condition or cause accelerated erosion. This section applies whether such waters are unconfined upon the surface of the land or confined within land depressions or natural drainage ways, unimproved channels or watercourses, or improved ditches, channels or conduits. (Ord. 5056-B (part), 2000)

15.48.360 Geotechnical investigation required. A soil or geologic investigation report shall accompany the application in any of the following circumstances when required by the agency director:

A. When the proposed grading includes a cut or fill exceeding ten (10) feet in depth at any point; however, for vehicular ways, a soil investigation shall not be required unless the grading includes a proposed cut or fill that exceeds ten (10) feet in depth and the slope of the natural ground exceeds thirty (30) percent;

B. When highly expansive soils are present;

C. In areas of known or suspected geological hazards, including landslide hazards and hazards of ground failure stemming from seismically induced ground shaking. (Ord. 5407-B § 13, 2006: Ord. 5056-B (part), 2000)

D. Recommendations regarding surface and subsurface drainage and erosion control; Recommendations for mitigation of geologic hazards. (Ord. 5056-B (part), 2000)

15.48.400 Final report. Upon completion of rough grading work, in the event a complete record of the work is desired or necessary, the community development resource agency may require a final geotechnical report that includes, but is not necessarily limited to the following:

A. A complete record of all field and laboratory tests including location and elevation of all field tests;

B. A professional opinion regarding slope stability, soil bearing capacity, and any other pertinent information;

C. Recommendations regarding foundation design, including soil bearing potential and building restrictions or setbacks from the top or toe of slopes; and

D. A declaration by the geotechnical engineer, civil engineer or engineering geologist in the format required by the community development resource agency that all work was done in substantial conformance with the recommendations contained in the soil or geologic investigation reports as approved and in accordance with the approved plans and specification. (Ord. 5407-B (part), 2006; Ord. 5373-B (part), 2005; Ord. 5056-B (part), 2000)

15.48.560 Setbacks—General. Unless otherwise recommended in a soil or geologic investigation report, Appendix 33 of the latest county adopted version of the Uniform Building Code shall be used for establishing setbacks for property boundaries, buildings and structures other than fences and retaining walls. (Ord. 5407-B § 15, 2006: Ord. 5056-B (part), 2000)

15.48.570 Drainage—General. Any drainage structure(s) or device(s) carrying surface water runoff required by this article shall be designed and constructed in accordance with standards herein, the current Placer County flood control and water conservation district stormwater management manual and criteria authorized by the agency director. (Ord. 5407-B § 16, 2006: Ord. 5056-B (part), 2000)

15.48.580 Drainage discharge requirements. All drainage facilities shall be designed and engineered to carry surface and subsurface waters to the nearest adequate street, storm drain, natural watercourse, or other juncture. (Ord. 5373-B (part), 2005; Ord. 5056-B (part), 2000)

15.48.590 Drainage—Water accumulation. All areas shall be graded and drained so that drainage will not cause erosion or endanger the stability of any cut or fill slope or any building or structure. (Ord. 5056-B (part), 2000)

15.48.600 Drainage protection of adjoining property. When surface drainage is discharged onto any adjoining property, it shall be discharged in such a manner that it will not cause erosion or endanger any cut or fill slope or any building or structure. (Ord. 5056-B (part), 2000)

15.48.610 Terrace drainage. Terraces at least eight feet in width shall be established at not more than twenty-five (25) feet in height intervals for all cut and fill slopes exceeding thirty (30) feet in height. Where only one terrace is required, it shall be at approximately mid-height. Suitable access shall be provided to permit proper cleaning and maintenance of terraces and terrace drains. Swales or ditches on terraces shall have a minimum depth of one foot, a minimum longitudinal grade of four percent, a maximum longitudinal grade of twelve (12) percent. Down-drains or drainage outlets shall be provided at approximately three hundred (300) foot intervals along the drainage terrace. Down-drains and drainage outlets shall be of approved materials and of adequate capacity to convey the intercepted waters to the point of disposal. If the drainage discharges onto natural ground, adequate erosion protection shall be provided. (Ord. 5056-B (part), 2000)

15.48.620 Subsurface drainage. Cut and fill slopes shall be provided with surface and/or subsurface drainage as necessary for stability. (Ord. 5056-B (part), 2000)

15.48.630 Erosion and sediment control. The following shall apply to the control of erosion and sediment from grading operations:

A. Grading plans shall be designed with long-term erosion and sediment control as a primary consideration. Erosion prevention and source control are to be emphasized over sediment controls and treatment.

B. Grading operations shall provide erosion and sediment control measures, except upon a clear demonstration, to the satisfaction of the community development resource agency that at no stage of the work will there be any substantial risk of increased sediment discharge from the site. Temporary mulch, revegetation, or other stabilization methods shall be applied to areas where permanent revegetation or landscaping cannot be immediately implemented. Unless otherwise exempted in this article, grading activity must be scheduled to ensure completion or winterization by October 15th of each year.

C. Grading activity shall be conducted such that the smallest practicable area of erodible land is exposed at any one time during grading operations and the time of exposure is minimized. Land disturbance shall be limited to the minimum area necessary for construction.

D. Natural features, including vegetation, terrain, watercourses and similar resources shall be protected and preserved wherever possible. Units of grading shall be dearly defined and marked to prevent damage by construction equipment.

E. Permanent vegetation and structures for erosion and sediment control shall be installed as soon as possible.

F. Adequate provision shall be made for effective maintenance of temporary and permanent erosion and sediment control structures and vegetation. Sediment and other construction-related wastes shall be retained and properly managed on the site or properly disposed of off-site.

G. No topsoil shall be removed from the site unless otherwise directed or approved by the community development resource agency. Topsoil overburden shall be stockpiled and redistributed where appropriate within the graded area after rough grading to provide a suitable base for seeding and planting. Runoff from the stockpiled area shall be controlled to prevent erosion and resultant sedimentation of receiving water.

H. Runoff shall not be discharged from the site in quantities or at velocities substantially above those which occurred before grading except into drainage facilities, whose design has been specifically approved by the community development resource agency.

I. The permittee shall take reasonable precautions to ensure that vehicles do not track or spill earth materials into public streets and shall immediately remove such materials if this occurs.

J. All cut and fill slopes shall be adequately stabilized to prevent erosion and failure through temporary and permanent means.

K. Control measures shall be employed to prevent transport of dust off the project site or into any drainage course or water body. (Ord. 5407-B § 17, 2006: Ord. 5373-B (part), 2005; Ord. 5056-B (part), 2000)

15.48.650 Erosion and sediment control plans. Erosion and sediment control plans prepared pursuant to this article shall comply with all of the following:

A. The erosion and sediment control plan need not be a separate sheet if all facilities and measures can be shown on the grading sheets without obscuring the clarity of either the grading plan or the erosion and sediment control plan.

B. An erosion and sediment control plan shall be required whenever:

1. The graded portion of the site includes more than ten thousand (10,000) square feet of area having a slope greater than ten (10) percent;

2. Clearing and grubbing of areas of one acre or more regardless of slope;

3. There is a significant risk that more than two thousand five hundred (2,500) square feet will be unprotected or inadequately protected from erosion during any portion of the rainy season;

4. Grading will occur within fifty (50) feet of any watercourse;

5. The community development resource agency determines that the grading will or may pose a significant erosion, or sediment discharge hazard for any reason; or

6. The site is located within the Tahoe Basin.

C. Except as provided in Section 15.48.120 of this article, sediment and erosion control measures must be in place or be capable of being placed within twenty-four (24) hours, in the opinion of the agency director, by October 15th. The agency director may require suspension of any and all grading activities between October 15 and May 1 without prior notice.

D. The applicant shall submit with the erosion and sediment control plans a detailed cost estimate covering this work.

E. Erosion and sediment control plans shall include an effective revegetation program to stabilize all disturbed areas, which will not be otherwise protected. All such areas where grading has been completed between April 1 and October 15 shall be planted by November 1st. Graded areas completed at other times of the year shall be planted within fifteen (15) days. If revegetation is infeasible or cannot be expected to stabilize an erodible area with assurance during any part of the rainy season and the unstable area exceeds two thousand five hundred (2,500) square feet, additional erosion and sediment control measures or irrigation of planted slopes may be required as appropriate to prevent increased sediment discharge.

F. Erosion and sediment control plans shall be designed to prevent increased discharge of sediment at all stages of grading and development from initial disturbance of the ground to project completion. Every feasible effort shall be made to ensure that site stabilization is permanent. Plans shall indicate the implementation period and the stage of construction where applicable.

G. Erosion and sediment control plans shall comply with the recommendations of the responsible civil engineer, geotechnical engineer, engineering geologist, or landscape architect involved in preparation of the grading plans.

H. The structural and hydraulic adequacy of all stormwater containment or conveyance facilities shown on the erosion and sediment control plans shall be verified by a civil engineer, and he or she shall so attest on the plans. Sufficient calculations and supporting material to demonstrate such adequacy shall accompany the plans when submitted.

I. Erosion and sediment control plans shall be designed to meet anticipated field conditions.

J. Erosion and sediment control plans shall provide for inspection and repair of all erosion and sediment control facilities at the close of each working day during the rainy season and for specific sediment cleanout and vegetation maintenance criteria.

K. Erosion and sediment control plans shall comply with any and all standards and specifications adopted herein for the control of erosion and sedimentation on grading sites. These standards and specifications shall be in general compliance with the current Erosion and Sediment Control Guidelines for Developing Areas of the Sierras, published by the High Sierra Resource Conservation District. (Ord. 5407-B § 19, 2006: Ord. 5373-B (part), 2005; Ord. 5056-B (part), 2000)

15.48.660 Vehicular ways—General.. Vehicular ways shall conform to the grading requirements of this article. (Ord. 5056-B (part), 2000)

15.48.670 Vehicular ways—Drainage. Vehicular ways shall be graded and drained in such a manner that will not allow erosion or endanger the stability of any adjacent slope. Surface discharge onto adjoining property shall be controlled in such a manner that it does not cause erosion or endanger existing improvements. Bridges and culverts installed in watercourses may be reviewed by the Placer County Flood Control and Water Conservation district and must be approved by the agency director and any other required permitting agency. (Ord. 5407-B § 20, 2006: Ord. 5056-B (part), 2000)

14.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

Based on the TRPA guidelines, Placer County planning guidelines, and California Building Codes and Acts, a project impact is considered significant if conditions presented in Table 14-5 are met or exceeded.

The EIS/EIR does not address certain CEQA and TRPA evaluation criteria for Soils, Geology and Seismicity because the Project Team determined during project planning and development that the criteria are not applicable to the Project. Rejected evaluation criteria for Soils, Geology and Seismic include:

- CEQA Appendix G Checklist VI-e (Have soils incapable of supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?) - The Project does not propose septic tanks or alternative wastewater disposal systems.

- CEQA Appendix G Checklist X-a (Result in the loss of availability of a known mineral resource that would be of value to the region and the residence of the state?) – The Project area contains no mineral resources. As discussed in the Environmental Settings Section, the Noonchester Mine is not located within the Project area.

- CEQA Appendix G Checklist X-b (Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?) – The project are contains no mineral resource recovery sites.

- TRPA Initial Environmental Checklist II (1f) (Changes in deposition or erosion of beach sand, or changes in siltation, deposition or erosion, including natural littoral processes, which may modify the channel of a river or stream or the bed of a lake?) – The Project area does not contain shorezone areas.

Table 14-5

Evaluation Criteria with Point of Significance – Soils, Geology and Seismicity

Evaluation Criteria	Significance Threshold	Justification
GEO-1. Will the Project expose people or structures to adverse geological hazards, including risk of loss, injury, or death involving fault rupture, strong seismic ground shaking, seismic related	a) Location of facilities within an Alquist-Priolo earthquake fault zone or known active fault zone b) Location of facilities within areas of unstable soil not in conformance with applicable building codes and standard engineering/geotechnical practices	a) PRC Section 2621-2630: The Alquist-Priolo Earthquake Fault Zoning Act b) TRPA Initial Environmental Checklist II (1c, g); CEQA Appendix G Checklist VI (a)

Table 14-5

Evaluation Criteria with Point of Significance – Soils, Geology and Seismicity

Evaluation Criteria	Significance Threshold	Justification
ground failure (e.g., liquefaction), or landslides?		
GEO-2. Will Project facilities be located within an area of unstable soil conditions, including soils susceptible to collapse, subsidence, corrosion or expansion?	a) Overall rating of Moderate to High soil risk potential by geotechnical assessment b) Location of facilities within areas of unstable soil c) Location of facilities in areas of expansive or corrosive soil not in conformance with applicable building codes and standard engineering/geotechnical practices	a) CEQA Appendix G Checklist VI (c); California Building Codes b) TRPA Initial Environmental Checklist II (1c, g) c) CEQA Appendix G Checklist VI (d); California Building Codes
GEO-3. Will the Project result in compaction or covering of the soil beyond the limits allowed in the land capability system, including coverage within sensitive Class 1a and 1b lands?	a) Exceedance of TRPA coverage allowances per land capability district	TRPA Initial Environmental Checklist II (1a and 4a); TRPA Code of Ordinances Chapters 2 and 20; Lahontan Basin Plan, Chapter 5.4
GEO-4. Will construction of the Project result in changes to native geologic substructures or cause erosion, loss of topsoil, or changes in topography from excavation, grading or filling?	a) Changes in topographic features of the Project area inconsistent with the surrounding conditions b) Non-compliance with applicable regulations and permitting requirements for control of erosion on or off-site	a) TRPA Initial Environmental Checklist II (1b) b) CEQA Appendix G Checklist VI (b); TRPA Initial Environmental Checklist II (1b and 1e); TRPA Code of Ordinances Chapters 20, 25 and 64; TRPA 208 Plan; Lahontan Basin Plan Water Quality Objectives (Chapter 5) and Board Order No R6T-2005-0007

Source: Hauge Brueck Associates 2010

14.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

The geology and seismic impact analyses incorporate the following technical reports and studies and regional geologic and fault maps by reference:

Holdrege and Kull. 2009. Preliminary Geotechnical Engineering Report for Homewood Mountain Resort North Base Area. Project No. 41278-01.

Holdrege and Kull. 2010a. Geotechnical Engineering Report for Homewood Mountain Resort North Base Lodge. Project No. 41278-03.

Holdrege and Kull. 2010b. Geotechnical Engineering Report for Homewood Mountain Resort Mid-Mountain Lodge. Project No. 41278-02.

Kleinfelder. 2007. Groundwater Evaluation Report, Homewood Mountain Resort, Homewood, California, October 31, 2007, Project No. 74407.01

Kleinfelder. 2008. Groundwater Evaluation Report, Homewood Mountain Resort, Homewood, California, October 31, 2007, Project No. 74407.01

Kleinfelder. 2010a. Second Revised Soils Hydrologic Scoping and Final Report. October 7, 2010.

Kleinfelder.2010b. Submittal of Revised Soils Hydrologic Exhibits . December 1, 2010. Revised Replacement exhibits dated December 15, 2010.

Saucedo, G. J. 1992. Preliminary Map of Pleistocene to Holocene Faults in the Lake Tahoe Basin, California and Nevada. Department of Geological Sciences, University of Nevada, Reno and Nevada Seismology Laboratory, Nevada Bureau of Mines and Geology.

Saucedo, G.A. 2005. Geologic Map of the Lake Tahoe Basin, California and Nevada. California Department of Conservation, California Geological Survey.

Schweickert, R. A. et al. 2000. Lake Tahoe active faults, landslides and tsunamis", Geological Society of America Field Guide 2.

TRPA. 2010. Soils Hydrologic Approval Homewood Mountain Resort – EIS/EIR Master Plan Alternative 1, Placer County, APNs 097-060-024, 097-050-072 and 075, TRPA File Numbers: LCA2010-0029, 0063 and 0064. January 5, 2011.

U.S. Geological Survey and California Geological Survey. 2006. Quaternary fault and fold database for the United States, accessed October 2007 from USGS web site: http//earthquake.usgs.gov/regional/qfaults/.

The TRPA land coverage analysis incorporates the following documents and technical studies:

TRPA Land Coverage Verification Letters and Maps – July 1998 through March 2006

TRPA Land Coverage Banking Approval Letter – March 21, 2000

Land Capability Challenge – Submitted June 8, 2008 and approved August 8, 2009

IERS. 2010. Homewood Mountain Resort Ski Area Master Plan Cumulative Watershed Effects (CWE) Analysis. Final Draft September 2010.

Impact: **GEO-1. Will the Project expose people or structures to adverse geological hazards, including risk of loss, injury, or death involving fault rupture, strong seismic ground shaking, seismic related ground failure (e.g., liquefaction), or landslides?**

Analysis: *Less than Significant Impact; No Project (Alternative 2)*

Existing structures and infrastructure within the Project area were primarily constructed between the 1960s through the 1980s and may not conform to present day California Building Codes. However, under the No Project Alternative, the existing conditions will persist and it is assumed that there will be no change in environmental consequences associated with adverse geologic hazards. Improvement to meet current building codes cannot be required under the No Project scenario. The impact level is less than significant based on the past record of no loss, injury or death within the Project area involving geologic hazards.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6*

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 will vary by the degree of land coverage and type of land use, but will ultimately be implemented within the same general development area of the Project area. The potential impacts from geologic hazards are similar under each alternative and are discussed below for the North Base, South Base and Mid-Mountain portions of the Project area where development is concentrated.

Fault Rupture. The geologic hazards and geotechnical evaluations (Kleinfelder 2007; Holdredge and Kull 2009, 2010a, 2010b) determined that two Quaternary-age faults are mapped across the Project area. Fault rupture has the potential to compromise the structural integrity of new facilities and expose a greater surface area (and more people) to fault rupture hazard. A potential hazard associated with earthquake faults across the Project area involves surface rupture.

North and South Base Areas. An unnamed, discontinuous fault (Unnamed Fault 2) is shown on the Geologic Map of the Lake Tahoe Basin (Saucedo, 2005) that trends in a northwest direction near the North and South Base areas. This fault is relatively short, about one mile long, and is shown as approximately located (dashed) and uncertain as to existence (queried) on the Saucedo (2005) map. This fault is not shown on the Chico Quadrangle Map (Saucedo and Wagner, 1992).

The structures proposed in the North Base area appear to be sited approximately 300 feet east of the mapped Unnamed Fault 2, and the four westernmost structures proposed in the South Base area appear to be located within the mapped fault trace of Unnamed Fault 2. The Unnamed Fault 2 is discontinuous and questionable as to presence and location. Therefore, the hazard from surface rupture on this unnamed fault is considered low (Holdrege and Kull 2010a) and the level of impact is less than significant.

Mid-Mountain Area. The structures and the Mid-Mountain will be located approximately 700 feet west of the mapped Unnamed Fault 1. Earthquakes centered on regional faults in the area, such as the West Tahoe Fault or Genoa Fault, could likely result in higher ground motion at the site than earthquakes centered on smaller faults that are mapped closer to the Mid-Mountain area (Holdrege and Kull 2010b) and since no faults are mapped as crossing or trending towards the site, the potential for surface rupture at the site is considered low and the level of impact is less than significant.

Site-Specific Geotechnical Recommendations. The recommendations from the geotechnical engineering reports for the Phase 1, primarily North Base area and the Mid-Mountain Area structures and infrastructure (Holdrege and Kull 2010a, 2010b), are incorporated as mitigation measures of the Project and will be included in the final design as required by Placer County Code Chapter 15 for project permitting. This mitigation measure is detailed as GEO-1. The *Geotechnical Engineering Report for Homewood Mountain Resort North Base Lodge - Project No. 41278-03 and Geotechnical Engineering Report for Homewood Mountain Resort Mid-Mountain Lodge - Project No. 41278-02* (Holdrege and Kull. 2010a, 2010b) detail site-specific recommendations pertaining to:

- Site grading;
- Clearing and grubbing;
- Preparation for fill placement;
- Fill placement;
- Cut and fill slope grading;
- Temporary unconfined excavations;
- Best management practices ands erosion control;
- Underground utility trenches;
- Construction dewatering;
- Surface water drainage;
- Plan review and construction monitoring;
- Structural improvement design criteria;
- Spread foundations;
- Mat foundations;
- Seismic design criteria;
- Slab on-grade construction;
- Retaining Wall Design Criteria; and
- Pavement design.

New structures and operational improvements will result in relocated land coverage with minimal changes to the existing landscape. The area that could potentially be affected by fault rupture does not increase in size because the Project area and development footprint will not significantly change. Furthermore, the Proposed Project (Alternative 1) and Alternatives 3, 4, 5and 6 do not increase the surface rupture hazard that current existing within the Project area. The data gathered indicates that the North Base and Mid-Mountain areas are not subject to significant risk of rupture from this fault (Holdrege and Kull 2010a, Holdrege and Kull 2010b). Compliance with the California Building Code standards is adequate to ensure that seismic risks are addressed and potential impacts are reduced to a level of less than significant.

Ground Shaking. The potential hazard associated with earthquake faults also involves strong ground motion. The Project area is located in a region that is traditionally

characterized by moderate to high seismic activity, as discussed in the Environmental Settings section, and therefore, a large earthquake in the project vicinity could potentially cause moderate ground shaking in the Project area (Kleinfelder 2007).

The Unnamed Fault 2 is discontinuous and questionable as to presence and location based on review of Fault Activity Map of California and Adjacent Areas (Jennings1994) and Geologic Map of the Chico Quadrangle, California (Saucedo and Wagner 1992). Therefore, the hazard from surface rupture on this fault is considered low. The hazard associated with strong ground motion is dependent on the location and magnitude of the source earthquake, which is related to the size of the fault (length and height). The mapped Unnamed Fault 2 is one mile long and is not capable of producing large earthquakes. Earthquakes on regional faults in the area, such as the West Tahoe fault or Genoa fault, would likely result in higher ground motion at the site than earthquakes on the unnamed fault inferred to trend approximately 200 feet west of the North Base lodge site. The professional opinion stated in Holdrege and Kull geotechnical engineering reports (2010a, 2010b) is that building set back distances from Unnamed Fault 2 are not warranted and no further study is necessary.

The effects of the Project related to potential structural damage and injury caused by ground shaking will be minimized through compliance with California Building Code seismic coefficients and the requirements for engineering grading plans in section 15.48.320 of Chapter 15 of the Placer County Code. The final project design will incorporate the recommendations from the site-specific geotechnical engineering reports (listed above) prepared in conformance with section 15.48.390 of Chapter 15 of Placer County Code to assure that the potential ground shaking hazards on structures and features in the Project area are minimized.

The majority of the development is located in areas that will experience the least severity of ground shaking during an earthquake because these areas are typically underlain by shallow bedrock (Kleinfelder 2007). The area that could potentially be affected by ground shaking will not change because the Project area and the development footprint will not significantly change. The Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 do not increase the ground shaking hazard that currently exists within the Project area.

Compliance with codified regulations and current building codes is mandatory for project permitting. The intentions of adopted codes and regulations are to avoid, reduce and minimize potential seismic hazards and provide for public safety. Implementation of the engineering and design recommendations of the final geotechnical report (Holdrege and Kull 2010a, 2010b) will minimize effects from ground shaking. Recommendations from the final geotechnical investigation required for project permitting will be incorporated into final project designs to address known seismic constraints, reducing the potential impact of ground shaking hazards to a level of less than significant.

<u>Liquefaction, Lateral Spreading and Slope Instability.</u> Soils most susceptible to liquefaction are saturated, loose, clean, uniformly-graded and fine-grained sand deposits. Lateral spreading is the lateral movement of fractured rock or soil resulting form liquefaction of adjacent materials. Seismically induced slope instability includes debris flows, rock fall and landslides. Holdrege and Kull conducted site-specific geotechnical investigations in October 2009, as discussed above for primary seismic hazards. The results for secondary seismic hazards are discussed according to the three specific development portions of the Project area.

North Base Area. Because groundwater was encountered during October 2009 subsurface investigations, Holdrege and Kull utilized data obtained from exploratory borings, CPT probes and shear wave velocity measurements to evaluate the liquefaction potential of saturated sand and gravel in the eastern and southern portions of the North Base area. The soil profile is determined to have a low potential for liquefaction.

For the northwest portion of the North Base area, a more alluvial site, a minimum factor of safety against liquefaction was calculated at 1.15, as based on a PGA of 0.316g (California Geologic Survey Probabilistic Seismic Hazards Mapping Ground Motion website). The potential hazard in the portions of the North Base area, which will contain the underground parking structure (Building B) and Buildings C, D and E, would be ground settlement. This is an acceptable factor of safety where differential settlement is a potential hazard according to *Recommended Procedures for Implementation of DMG Special Publication 117 Guidelines for Analyzing and Mitigating Liquefaction Hazards in California* (Southern California Earthquake Center 1999). To further reduce the potential for differential settlement to level of less than significant, the underground parking structure (Building B) and Buildings C, D and E will be supported on mat foundations (Holdrege and Kull 2010a).

No surface manifestation (e.g. subsidence or lateral spreading) of underlying potentially liquefiable soils is expected based on the thickness and relative competency of near-surface soils.

No recent landslides, debris flows or rock fall hazards were observed and because of the granular and rocky nature of the conditions within and surrounding the North Base area, the potential for slope instability is considered low. Seismically induced rock fall is a potential hazard, similar to most areas in mountainous terrain; however, no rock outcrops are located on the slope above the North Base and the potential is low to negligible.

South Base Area. Results reported in the preliminary geotechnical report for the Project area (Kleinfelder 2007) and the subsequent Second Revised Soils Hydrologic Scoping and Final Report (Kleinfelder 2010) indicate silty sand, gravelly sand, gravel, cobbles and boulders indicative of a colluvial environment. Shallow groundwater is measured at 1.72 and 3.72 feet bgs at the north end of Tahoe Ski Bowl Way and above the South Base area, respectively. Borings in the parking areas of the South Base did not encounter groundwater to depths of 18 feet bgs in 2007 and 2008. Locations where shallow groundwater and finer grained sandy soils are encountered could be susceptible to liquefactions.

Placer County requires the submittal of a site-specific geotechnical engineering report for the South Base area prior to permitting of Phase 2 of the Project to comply with codified regulations to consider the impacts of a project resulting in significant disruptions, displacements, compaction or overcrowding of the soil as potentially significant unless mitigation measures are applied. This mitigation measure is detailed as GEO-1.

If liquefiable soils or soils susceptible to other types of seismically-induced ground failure are determined to be present in portions of the Project area where project activities will occur, corrective actions will be taken by HMR and its contractors/engineers, including design methods, structural methods, and/or improving in situ foundation methods such as removal and replacement of soils, on-site densification, grouting, or other similar measures, depending on the extent and depth of susceptible soils. These measures reduce pore water pressure during ground shaking by densifying the soil or improving the drainage capacity. Implementation of one or a series of these measures in accordance with the findings of the required final geotechnical report will reduce

potential impacts of liquefaction and other types of seismic ground failure (subsidence and lateral spreading) to a level of less than significant.

No recent landslides, debris flows or rock fall hazards are observed and because of the granular and rocky nature of the conditions within and surrounding the South Base area, the potential for slope instability is considered low. Seismically induced rock fall is a potential hazard, similar to most areas in mountainous terrain; however, no rock outcrops are located on the slope above the South Base and the potential is low to negligible.

Mid-Mountain Area. Based on the results of Holdrege and Kull's subsurface investigations, near-surface soil at the Mid-Mountain area consists of medium dense to very dense silty gravel to silty sand with gravel and cobbles, overlaying surface volcanic rock. This soil profile has a low potential for liquefaction. Because the potential for liquefaction is low, the potential for lateral spreading to occur is also low.

No landslides, debris flows of rock fall hazards are observed at the Mid-Mountain area and because of the granular and competent nature of the subsurface conditions of this portion of the Project area, the potential for slope instability is low. The Mid-Mountain area is located on a topographically high ridge, and the rock fall hazard is therefore considered to be negligible.

General Upper Mountain. A Quaternary landslide is mapped in the volcanic rock to the north of the Project area. The same volcanic rock is mapped within the Project area and may be prone to landsliding (Kleinfelder 2007). The possibility of landslides and seismically induced slope instability in the general Project area is considered moderate because of the steep topography of the Project area and the observed evidence of soil creep. A number of areas of rock outcrops are observed in the Project area and additional rock outcrops could be present but not yet mapped. A potential for seismically-induced rock fall exists within the Project area (Kleinfelder 2007), but is considered low because these areas are not ideal for development and existing and structures and facilities are not proposed in these areas.

A previously unmapped spring on the slope of "The Face" ski trail was observed during preliminary geotechnical investigations (Kleinfelder 2007). The presence of this spring could affect slope stability in this localized area, but no facilities or structures are planned in this part of the Project area.

Slope instability is observed near White Lightening ski trail and soil creep (evidenced by bent tree trunks) is documented on "The Face" ski trail near the top of the slope below the mid-loading station of the Madden Triple chair lift (Kleinfelder 2007). No new facilities or structures are proposed in this part of the Project area.

Through conformance with existing building codes, compliance with federal, State, regional and local regulations, and incorporation of geotechnical recommendations from final geotechnical engineering reports, potential impacts from primary and secondary geologic hazards will be avoided, reduced and minimized to a level of less than significant. The potential impact is considered significant until the completion of mitigation measure GEO-1.

Mitigation: **GEO-1. Submit Final Geotechnical Report**

The Project Applicant shall submit to the Engineering and Surveying Department (ESD), for review and approval, a geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The report shall address and make recommendations on the following:

A) Road, pavement, and parking area design

B) Structural foundations, including retaining wall design (if applicable)

C) Grading practices

D) Erosion/winterization

E) Special problems discovered on-site, (i.e., groundwater, expansive/unstable soils, etc.)

F) Slope stability

G) Utility trench design

Once approved by the ESD, two copies of the final report shall be provided to the ESD and one copy to the Building Department for their use. If the soils report indicates the presence of critically expansive or other soils problems that, if not corrected, could lead to structural defects, a certification of completion of the requirements of the soils report shall be required for subdivisions, prior to approval of the Improvement Plans. This certification may be completed on a lot-by-lot basis or on a Tract basis. This shall be so noted in the Covenants, Conditions and Restrictions (CC&Rs) and on the Informational Sheet filed with the Final Subdivision Map(s). It is the responsibility of the developer to provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 4, 5 and 6*

Mitigation measure GEO-1 minimizes potential impacts within the project area to a level of less than significant by assuring compliance with Placer County codified regulations to prepare project-level geotechnical reports and incorporation of site-specific recommended geotechnical measures into Project designs to avoid, reduce and minimize effects from potential geologic hazards.

Impact: GEO-2. Will Project facilities be located within an area of unstable soil conditions, including soils susceptible to collapse, subsidence, corrosion or expansion?

Analysis: *Less than Significant Impact; No Project (Alternative 2)*

The Geologic Hazards and Preliminary Geotechnical Evaluation (Kleinfelder 2007) reviewed the existing conditions at the North Base, South Base and Mid-Mountain areas and the general Project area. Based on past project records and operations, existing facilities are not located in areas of soils susceptible to significant collapse, subsidence, corrosion or expansion. Under the No Project Alternative, the existing conditions will persist and it is assumed that there will be no change in environmental consequences associated with maintaining existing facilities within consideration to existing soil conditions. This impact level is considered to be less than significant for the No Project (Alternative 2) based on evaluation criteria for GEO-2.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6*

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 will implement varying degrees of development across the Project area. The *Geologic Hazards and Preliminary Geotechnical Evaluation* (Kleinfelder 2007) provided results from

investigations of the general Project area for consideration in project layout and design for these alternatives. Project-level geotechnical evaluations have been completed for the North Base and Mid-Mountain areas that will be developed during Phase 1 of the Project. Project-level geotechnical evaluations will be completed for the South Base area with Phase 2.

North Base Area. Structures and facilities proposed at the North Base area under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 will not be located within areas of unstable soils. Based on low soil risk potential reported in the *Geotechnical Engineering Report for Homewood Mountain Resort North Base Lodge* (Holdrege and Kull 2010a) the level of impact is less than significant.

Soil map units within the North Base area are not considered expansive based on the shrink-swell potential reported in 14-2. Subsurface conditions in the area of the proposed underground parking structure and residential buildings (Buildings C, D, and E) generally consist of medium stiff to very stiff fine-grained soil with low expansion potential (Holdrege and Kull 2010a).

The results of corrosivity testing of soil samples collected at the North Base area indicated negligible potential for sulfate attack on concrete and that the use of Type II cement is acceptable. The resistivity results indicated a very low potential (6,000 ohm-cm and higher) of corrosion of metal exposed to native soils (Holdrege and Kull 2010a).

Subsurface conditions underlying the North Base area vary from dense cemented sand and gravel in the sloping western portion, to stiff silt and lean clay, overlying medium dense sand and gravel in the south and eastern portions. Soil conditions encountered in the area of the proposed lodge during final geotechnical investigations generally consisted of medium dense to very dense granular soil of low plasticity that should provide suitable foundation support for the proposed structure on conventional spread foundations (Holdrege and Kull 2010a).

Based on consolidation tests of fine-grained soil samples collected at depths of 3 and 7.5 feet bgs in the area of the proposed underground parking structure (Building B) and residential buildings (Buildings C, D, and E), the soil is slightly to moderately compressible. The fine-grained soil in this area should provide adequate support for a rigid mat foundation (Holdrege and Kull 2010a).

Medium dense to very dense soil types exist in the western, sloping portions of the proposed lodge site. Refusal on volcanic rock is encountered at depths of 7 to 11 feet bgs. Cuts extending beyond 11 feet bgs in this area may be difficult due to near surface rock and cemented gravel. A significant amount of boulders and over-sized material should be anticipated in excavations in the western portion of the site. With the exception of the organic surface soil, site soil is generally suitable for reuse as structural fill; however, processing to remove oversized material will likely be necessary. The near-surface fine-grained soil encountered in the southern portion of this site is not suitable for reuse as engineered fill that will support structures and will be removed.

South Base Area. Structures and facilities proposed at the South Base area under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will not be located within areas of unstable soils. Based on past project investigations, records and operations, existing facilities that will be retained in the South Base area as part of the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 are not located in areas of soils susceptible to expansion. Soil map units within the Project area are not considered expansive based on the low shrink-swell potential reported in Table 14-2. The Geologic

Hazards and Preliminary Geotechnical Evaluation (Kleinfelder 2007) reports a low soil risk potential for the South Base area.

The South Base area under Alternative 4 will be returned to forested lands and redeveloped for estate Lot 7. The South Base area will be developed during Phase 2 of the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6. Placer County will require the submittal of a site-specific geotechnical engineering report for the South Base area prior to permitting of Phase 2 of the Project. Should project facilities and structures be located in areas of corrosive soils based on future site-specific soil analysis, the use of corrosive resistant materials and engineering methods to protect buried pipes and infrastructure will reduce potential impacts to a level of less than significant.

Mid-Mountain Area. Structures and facilities proposed at the Mid-Mountain area under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 will not be located within areas of unstable soils. Based on low soil risk potential reported in the *Geotechnical Engineering Report for Homewood Mountain Resort Mid-Mountain Lodge* (Holdrege and Kull 2010b) the level of impact is less than significant.

The results of corrosivity tests of soil samples collected at the Mid-Mountain area indicate negligible potential for sulfate attack on concrete and that the use of Type II cement is acceptable. The resistivity results indicated a very low potential (6,000 ohm-cm and higher) of corrosion of metal exposed to native soils (Holdrege and Kull 2010b).

Soil conditions encountered during final geotechnical investigations generally consisted of dense to very dense granular soil types of low plasticity that should provide suitable foundation support for the proposed structures on conventional shallow spread foundations. No highly plastic, compressible, or potentially expansive soil was encountered (Holdrege and Kull 2010b).

Field exploration encountered refusal in volcanic rock across the proposed mid-mountain lodge and water tank sites with depth to refusal varying from 4.5 feet bgs in the east area of the proposed water tanks to 13 feet bgs near the center of the lodge facility. Some areas of near surface rock may be encountered during excavations for utilities, site grading, and/or foundations. A large track-mounted excavator equipped with a ripper tooth or hydraulic hammer, or spot blasting is recommended in these areas. Confined excavations for footings and under ground utilities that extend into rock will likely be difficult. A significant amount of boulders and over-sized material should be anticipated in excavations. With the exception of the organic surface soil, site soil is generally suitable for reuse as structural fill; however, processing to remove oversized material will likely be necessary (Holdrege and Kull 2010b).

General Upper Mountain. Based on past project investigations, records and operations, the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 do not propose new structures and facilities in areas of moderate to high soil risk potential and the level of impact is less than significant.

The Project area contains areas of soil creep (e.g., the Face, White Lightning and Martin's Lane ski runs) in the general upper mountain (Kleinfelder 2007). No structures or facilities are proposed in proximity of these areas.

Based on past project investigations, records and operations, existing facilities that will be retained in the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 are not located in areas of soils susceptible to expansion. Soil map units within the Project area are not considered expansive based on the low shrink-swell potential reported in Table 14-2.

Some soil map units within the Project area are considered moderate to highly corrosive to steel and concrete, as detailed in Table 14-2. A site-specific soil analysis was performed for the Quad chair lift replacement in 2007. The potential for adverse reactivity for steel and concrete was measured for one soil sample. The resistivity testing indicates that subgrade soils have a low corrosion potential when in contact with buried metal. The resistivity value for the near-surface native soil sample was 34,000 ohm-cm (Kleinfelder 2007). Measurements above 20,000 ohm-cm are considered essentially non-corrosive (http://www.corrosionsource.com/). Should project facilities and structures be located in areas of corrosive soils based on future site-specific soil analysis, the use of corrosive resistant materials and engineering methods to protect buried pipes and infrastructure will reduce potential impacts to a level of less than significant.

In summary, no soil constraints are identified within the Project area that would preclude development and redevelopment proposed under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6. Conformance to State and local building codes and implementation of the standard Placer County mitigation measures, along with those recommendations identified in site-specific final geotechnical reports reduce impacts of development on potentially unstable soils to a level of less than significant.

Placer County considers the impacts of a Project resulting in significant disruptions, displacements, compaction or overcrowding of soil as potentially significant unless mitigation measures are applied. Implementation of mitigation measure GEO-1 will assure compliance with Placer County codified regulations.

Mitigation: **GEO-1. Submit Final Geotechnical Report**

Description is provided above for Impact GEO-1.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6*

Mitigation measure GEO-1 minimizes potential impacts within the project area to a level of less than significant by assuring compliance with Placer County codified regulations to prepare project-level geotechnical reports and incorporation of site-specific recommended geotechnical measures into Project designs to avoid, reduce and minimize disruptions, displacements, compaction or overcrowding of soils.

Impact: GEO-3. Will the Project result in compaction or covering of the soil beyond the limits allowed in the land capability system, including coverage within sensitive Class 1a and 1b lands?

The Project area was originally developed prior to the adoption of the TRPA Regional Plan. The Project area is approximately 1,253 acres with existing development concentrated in the North and South Base area. Table 14-4 in the Environmental Settings section above presents existing land coverage characteristics according to LCDs and the resultant totals. Appendix U contains the TRPA Land Coverage Verification letters on which the calculation of existing land coverage are based and the land capability map on which allowable base land coverage determinations are made. Land coverage characteristics of each alternative are discussed below. Table 14-6 outlines proposed land coverage and net land coverage changes, if any, associated with Alternatives 1 through 6.

Analysis: *Significant Impact; No Project (Alternative 2)*

The No Project Alternative (Alternative 2) maintains existing conditions and will not result in a change in land coverage within the Project area. The verified existing land coverage in the Project area is 1,761,337 square feet. Following the base land coverage requirements set forth in Section 20.3 of the TRPA Code of Ordinances, the allowable base land coverage for the Project area totals 2,467,149 square feet. Verified existing land coverage within LCDs 6, 5, 3, 4 and 1b conform to TRPA land coverage limits, while existing land coverage within LCDs 2 and 1a exceed allowable base land coverage by 10,205 and 477,417 square feet, respectively. LCDs 7 and 1c are not identified within the Project area (see Table 14-4).

As identified in Table 14-6, existing land coverage to remain under the No Project Alternative is 1,761,337 square feet, which conforms to TRPA allowable base land coverage limitations overall because LCDs 6, 5, 4 3 and 1b are undercovered and when considered in total land coverage calculations mask excess land coverage in LCDs 2 and 1a. Land coverage that is banked (i.e., 126,324 square feet in LCD 1a in 2000) would reduce excess land coverage square feet if the banked land coverage is permanently retired. If the Project Applicant submits the banking applications for land coverage that has been removed and restored between 2006 and 2009, TRPA could approve additional square footage of land coverage that could be banked and permanently retired, which would reduce the excess land coverage in LCDs 2 and 1a. Verified existing land coverage within the Project area will still likely exceed TRPA allowable base land coverage in LCD 1a.

Although the land coverage is legally existing, excess land coverage is a significant impact. TRPA's excess coverage mitigation program (Code Section 20.5) would not apply to the Alternative 2 because the No Project Alternative does not require a discretionary action by TRPA. However, future projects outside of the scope of the HMR Master Plan but within the Project area may require excess land coverage mitigation.

The No Project Alternative will not achieve land coverage reduction goals, and the impact is considered significant.

Mitigation: No mitigation is available.

After Mitigation: *Significant and Unavoidable Impact; No Project (Alternative 2)*

The No Project Alternative will not comply with TRPA land coverage limitations for LCDs 2 and 1a. Because the No Project does not include actions to reduce excess land coverage or comply with TRPA's excess coverage mitigation program, the impact remains significant and unavoidable.

Table 14-6

Proposed Land Coverage Comparison by Alternative (Square Feet)

Land Capability District[1]	Existing Land Coverage	Proposed Land Coverage	Existing Land Coverage to Remain[2]	Relocated Land Coverage	Allowable Base Land Coverage[3]	Remaining Allowable Base Land Coverage[4]	Excess Land Coverage[5]	Total Buildout Land Coverage[6]
Alternative 1 (Proposed Project)								
6	259,357	307,088	13,698	245,659	280,987	0	39,799	
6 (ROW)	18,761	10,581	0	10,581	6,175	0	4,406	
5	159,787	56,724	61,508	56,724	678,061	559,829	0	
4	23,878	233,835	2,710	21,168	258,929	22,384	0	
3	539,255	0	382,385	0	941,149	558,764	0	
2	18,123	39,234	768	17,355	7,918	0	32,084	
1a	753,243	0	423,502	0	275,826	0	147,677	
1b	7,694	0	0	0	24,279	24,279	0	
1b (ROW)	1,349	454	0	454	13	0	441	
TOTAL w/o ROW	1,761,337	636,881	884,571	340,906	2,467,149	1,165,256	219,560	1,521,452
Alternative 2 (No Project)								
6	259,357	0	259,357	0	280,987	21,630	0	
6 (ROW)	18,761	0	18,761	0	6,175	0	12,586	
5	159,787	0	159,787	0	678,061	518,274	0	
4	23,878	0	23,878	0	258,929	235,051	0	
3	539,255	0	539,255	0	941,149	401,893	0	
2	18,123	0	18,123	0	7,918	0	10,205	
1a	753,243	0	753,243	0	275,826	0	477,417	
1b	7,694	0	7,694	0	24,279	16,585	0	
1b (ROW)	1,349	0	1,349	0	13	0	1,336	
TOTAL w/o ROW	1,761,337	0	1,761,337	0	2,467,149	1,193,434	487,623	1,761,337
Alternative 3								
6	259,357	312,268	13,698	245,659	280,987	0	44,979	
6 (ROW)	18,761	10,581	0	10,581	6,175	0	4,406	
5	159,787	56,724	61,508	56,724	678,061	559,829	0	
4	23,878	282,846	2,710	21,168	258,929	0	26,627	
3	539,255	0	382,385	0	941,149	558,764	0	
2	18,123	72,099	768	17,355	7,918	0	64,949	

Land Capability District[1]	Existing Land Coverage	Proposed Land Coverage	Existing Land Coverage to Remain[2]	Relocated Land Coverage	Allowable Base Land Coverage[3]	Remaining Allowable Base Land Coverage[4]	Excess Land Coverage[5]	Total Buildout Land Coverage[6]
1a	753,243	8,482	423,502	8,482	275,826	0	156,159	
1b	7,694	0	0	0	24,279	24,279	0	
1b (ROW)	1,349	454	0	454	13	0	441	
TOTAL w/o ROW	1,761,337	732,419	884,571	349,388	2,467,149	1,142,872	292,714	1,616,990
Alternative 4								
6	259,357	19,474	163,670	19,474	280,987	97,843	0	
6 (ROW)	18,761	0	18,761	0	6,175	0	12,586	
5	159,787	0	159,787	0	678,061	518,274	0	
4	23,878	5,287	20,598	3,280	258,929	233,044	0	
3	539,255	55,000	539,255	0	941,149	346,893	0	
2	18,123	0	18,123	0	7,918	0	10,205	
1a	753,243	15,000	753,243	15,000	275,826	0	492,417	
1b	7,694	0	7,694	0	24,279	16,585	0	
1b (ROW)	1,349	0	1,349	0	13	0	1,336	
TOTAL w/o ROW	1,761,337	94,761	1,662,370	37,754	2,467,149	1,212,640	502,623	1,757,131
Alternative 5								
6	259,357	196,612	20,380	196,612	280,987	63,995	0	
6 (ROW)	18,761	0	18,761	0	6,175	0	12,586	
5	159,787	53,097	61,508	53,097	678,061	563,456	0	
4	23,878	158,194	18,166	5,712	258,929	82,569	0	
3	539,255	0	382,385	0	941,149	558,764	0	
2	18,123	20,679	18,123	0	7,918	0	30,884	
1a	753,243	0	423,502	0	275,826	0	147,677	
1b	7,694	2,161	190	2,161	24,279	21,928	0	
1b (ROW)	1,349	0	1,349	0	13	0	1,336	
TOTAL w/o ROW	1,761,337	430,743	924,254	257,582	2,467,149	1,290,712	178,561	1,354,997
Alternative 6								
6	259,357	237,971	18,590	237,971	280,987	24,426	0	
6 (ROW)	18,761	0	18,761	0	6,175	0	12,586	
5	159,787	53,097	61,508	53,097	678,061	563,456	0	
4	23,878	158,194	18,166	5,712	258,929	82,569	0	
3	539,255	0	382,385	0	941,149	558,764	0	
2	18,123	20,679	18,123	0	7,918	0	30,884	

Land Capability District[1]	Existing Land Coverage	Proposed Land Coverage	Existing Land Coverage to Remain[2]	Relocated Land Coverage	Allowable Base Land Coverage[3]	Remaining Allowable Base Land Coverage[4]	Excess Land Coverage[5]	Total Buildout Land Coverage[6]
1a	753,243	0	423,502	0	275,826	0	147,677	
1b	7,694	2,161	190	2,161	24,279	21,928	0	
1b (ROW)	1,349	0	1,349	0	13	0	1,336	
TOTAL w/o ROW	1,761,337	472,102	922,464	298,941	2,467,149	1,251,143	178,561	1,394,566

Source: HBA 2010 as based on HMR Master Land Coverage Calculation Workbook dated June 1, 2010; Appendix U, Appendix V

Notes:

[1] LCD 1c, and 7 are not found within the Project area. See table 14-3 for LCD land coverage coefficients/percentages. LCD 1a is assumed for existing land coverage in the general Project area (upper mountain) where LCDs are not yet verified by TRPA. The existing land coverage assigned to LCD 1a is the difference between the 1,781,447 square feet of total existing land coverage stated in TRPA land coverage verification letters in Appendix U and the existing verified land coverage documented for the Tahoe Ski Bowl Way and North Base, South Base and Mid-Mountain areas.

[2] This total reflects the commitment by the Project Applicant to remove and restore approximately 500,000 square feet of existing land coverage under Alternatives 1, 3, 5 and 6. The assumption is that total land coverage removed will equal no less than 500,000 square feet of land coverage under Alternatives 1, 3, 5 and 6.

[3] TRPA Code of Ordinances Section 20.3.D(2)(2)(ii) outlines the methodology for calculating allowable and maximum allowable base land coverage. TRPA Code Section 20.3.D(1)(b) excludes land beneath Public Right of Ways (ROWs) from inclusion in the Project area for the calculations of allowable base land coverage. TRPA verified existing land coverage for the Project area is 1,761,337. TRPA total allowable base land coverage for the Project area is 1,062,925 square feet (this total excludes allowable base land coverage in ROWs).

[4] Remaining Base Land Coverage is defined as Allowable Base Land Coverage minus Existing Improvements/Land Coverage.

[5] From page 20-25 of the TRPA Code of Ordinances: Excess Land Coverage is defined as the existing amount of land coverage, less the total of the following: the maximum allowable amount of base coverage; the amount of coverage approved by transfer; and the amount of coverage previously mitigated. Excess Land Coverage (% sf) = Existing Land Coverage (% sf) – (Maximum coverage (% sf) + Transferred Coverage (% sf) + Previously Mitigated Coverage (% sf)).

[6] Total Build Out Land Coverage = Proposed Land Coverage + Existing Land Coverage to Remain

Analysis: *Less than Significant Impact; Alternative 4*

Alternative 4 will require 94,761 square feet of proposed land coverage, retain 1,662,370 square feet of existing land coverage, relocate 37,754 square feet within the Project area to similar or higher capability LCDs, and reduce total land coverage by under 1 percent. Proposed land coverage will exceed TRPA allowable base land coverage by at least 502,623 square feet in LCDs 2 and 1a as defined by TRPA Code of Ordinances Chapter 20.

Under Alternative 4 the Project area would be reconfigured into 16 residential estate parcels and one commercial parcel (North Base area) and would be considered as Land coverage on the 16 estate parcels would then be defined by the individual parcel evaluation system (IPES) outlined in TRPA Code of Ordinances Chapter 37. Code Section 20.3.D would still apply to the commercial parcel at the North Base area.

The relocation findings for Alternative 4 would be the responsibility of the owners of the individual estate parcels and would be based on the IPES as defined in the TRPA Code of Ordinance Chapter 37. Findings for Code Section 20.5.C would be applicable to the proposed commercial parcel at the North Base area.

The impact is considered less than significant based on preliminary IPES scores (See Appendix V, Table 2) prepared for preliminary land value appraisals and based on land coverage modeling exercises completed for the HMR Cumulative Watershed Effects (CWE) analysis that are detailed in Section 6 of Appendix W. Preliminary IPES scores indicate that approximately 4,211,305 square feet of allowable base land coverage could exist within the estate residential parcels. Note that the IPES completed for the HMR Land Capability Challenge as presented in the tables in Appendix V are considered informational only for appraisal purposes by TRPA and are not official scores.

The HMR CWE analysis modeled land coverage within the Project area based on slope phase adjusted 1974 Bailey overlays and verified LCDs within the HMR Land Capability Challenge area additively with land coverage outside the Project area but within the four watersheds and concluded that allowable base land coverage could be around 11,379,846 square feet. Because the build out of the Project area under Alternative 4 would result in total land coverage that is well below the estimates included in the IPES and HMR CWE documents, the impact is less than significant based on evaluation criteria for impact GEO-3.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5 and 6*

TPRA Code Section 20.3.D – Determination of Project Area Land Coverage. The Project area has 1,761,337 square feet of verified existing land coverage, excluding the 20,100 square feet of land coverage within public ROW. A portion of this existing land coverage, 288,277 square feet (see Appendix U and V), is verified as hard coverage associated with parking and ski facilities, lodges, etc. primarily located within the North and South Base areas, while the balance 1,473,060 square feet represents miscellaneous facilities and soft coverage in the form of existing roads located across the Project area.

Banked land coverage associated with removal of "Lombard Street" per TRPA File #970662 to APN 097-210-01 is 126,324 square feet. This banked land coverage was distributed as follows: 80% attributed to APN 97-060-12, 15% attributed to APN 97-060-10 and 5% attributed to APN 97-050-22 and was removed from LCD 1a.

Under Alternatives 1, 3, 5 and 6, the Project Applicant commits to removing and restoring no less than 500,000 square feet of existing land coverage within the Project area and permanently retiring at least 10 percent of the total existing land coverage to meet the TRPA CEP resolution, which requires a significant reduction in land coverage within the Project area, and proposed height ordinance amendments, which require at least 10 percent reduction in total existing land coverage. Since 2006, soft land coverage associated with roads in the Project area has been removed and restored in the areas outside of the HMR Land Capability Challenge boundary documented in Figure 14-3. At this time, the Project Applicant has not submitted the banking applications to TRPA and the land coverage is treated as existing land coverage in Table 14-6 until banking approvals are granted.

Figure 14-5 identifies the locations for proposed sediment source control and land coverage removal projects for Alternatives 1, 3, 5 and 6. Approximately 25,000 linear feet of dirt access roads ranging from 7 to 18 feet in width have been identified for potential removal and restoration. The balance will be relocated to higher LCD areas within the Project area, banked for possible use within the Project area, permanently retired, or transferred to other permissible uses as permitted by the TRPA Code of Ordinances. As stated above, the Project Applicant commits to the removal of no less

than 500,000 square feet of existing land coverage under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6.

Total verified existing land coverage within the Project area is 1,761,337 square feet. Table 14-6 presents the proposed land coverage characteristics for each alternative. The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will result in reductions in land coverage within the Project area. Figures 14-6, 14-7 and 14-8 illustrate the areas of existing versus proposed land coverage under Alternative 1 at the North Base, South Base and Mid-Mountain areas, respectively. With the removal of 500,000 square feet of land coverage as part of the Project, the following list summarizes the proposed land coverage characteristics for the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6.

- The Proposed Project (Alternative 1) will result in 1,521,452 square feet of total land coverage, requiring 636,881 square feet of proposed land coverage, retaining 884,571 square feet of existing land coverage, relocating 340,906 square feet within the Project area to similar or higher capability LCDs and reducing total land coverage by 14 percent. However, resultant land coverage will still exceed TRPA allowable base land coverage limits in LCDs 1a, 2 and 6 by up to 219,560 square feet. This alternative results in 1,165,256 square feet of remaining allowable base land coverage in LCDs 5, 4, 3 and 1b.
- Alternative 3 will result in 1,616,990 square feet of total land coverage, requiring 732,419 square feet of proposed land coverage, retaining 884,571 square feet of existing land coverage, relocating 349,388 square feet within the Project area to similar or higher capability LCDs, and reducing total land coverage by 8 percent. However, resultant land coverage will still exceed TRPA allowable base land coverage limits in LCDs 1a, 2, 4 and 6 by up to 292,714 square feet. This alternative results in 1,142,872 square feet of remaining allowable base land coverage in LCDs 4, 3 and 1b.
- Alternative 5 will result in 1,354,997 square feet of total land coverage, requiring 430,743 square feet of proposed land coverage, retaining 924,254 square feet of existing land coverage, relocating 257,582 square feet within the Project area to similar or higher capability LCDs, and reducing total land coverage by 23 percent. However, resultant land coverage will still exceed TRPA allowable base land coverage limits in LCDs 1a and 2 by up to 178,561 square feet. This alternative results in 1,290,712 square feet of remaining allowable base land coverage in LCDs 6, 5, 4, 3 and 1b.
- Alternative 6 will result in 1,394,566 square feet of total land coverage, requiring 472,102 square feet of proposed land coverage, retaining 922,464 square feet of existing land coverage, relocating 298,941 square feet within the Project area to similar or higher capability LCDs, and reducing total land coverage by 21 percent. However, resultant land coverage will still exceed TRPA allowable base land coverage limits in LCDs 1a and 2 by up to 178,561 square feet. This alternative results in 1,251,143 square feet of remaining allowable base land coverage in LCDs 6, 5, 4, 3 and 1b.

Excess land coverage is a significant impact that must be mitigated in accordance with TRPA Code of Ordinances Section 20.5. Mitigation measure GEO-3 below presents the mitigation options outlined by TRPA Code of Ordinance Section 20.5 to reduce impacts from excess land coverage to a level of less than significant.

TRPA Community Enhancement Program Resolutions. TRPA's February 5, 2008 Resolution for the Homewood Mountain Resort Ski Area Master Plan CEP project requires the specification of the percentage of land coverage reduction proposed for the Project. The Resolution states that an increase in density and height should result in an overall reduction in land coverage. The proposed TRPA Code Height Amendment (Appendix F) specifies a total land coverage reduction of at least 10 percent to earn additional height.

The Proposed Project (Alternative 1) meets the Resolution and proposed height amendment requirements for additional land coverage reduction to counter expected increases in density and height through a minimum 14 percent reduction in total existing land coverage. Alternative 1 will remove and restore 329,741 square feet of existing land coverage from LCD 1a, 7,694 square feet in LCD 1b, 156,871 square feet in LCD 3 and 41,555 square feet in LCD 5 for relocation to higher capability LCDs. Alternative 1 results in 1,165,256 square feet of remaining allowable base land coverage in LCDs 5, 4, 3 and 1b that is not proposed for use within the Project area.

Alternative 3 does not propose to amend existing height ordinances and therefore does not need to reduce land coverage to counter expected increases in height. However, Alternative 3 will result in a minimum 8 percent reduction in total land coverage and will remove and restore 321,259 square feet of existing land coverage from LCD 1a, 7,694 square feet in LCD 1b, 156,871 square feet in LCD 3 and 41,555 square feet in LCD 5 for relocation to higher capability LCDs. Alternative 3 results in 1,142,872 square feet of remaining allowable base land coverage in LCDs 5, 3 and 1b that is not proposed for use within the Project area.

Alternative 5 meets the Resolution for additional land coverage reduction to counter expected increases in height through a 23 percent reduction in total existing land coverage. Alternative 5 will remove and restore 329,741 square feet of existing land coverage from LCD 1a, 5,343 square feet in LCD 1b, 156,871 square feet in LCD 3, 45,182 square feet in LCD 5, 42,365 square feet in LCD 6 for relocation to similar or higher capability LCDs.

Alternative 6 meets the Resolution for additional land coverage reduction to counter expected increases in height through a 21 percent reduction in total existing land coverage. Alternative 6 will remove and restore 329,741 square feet of existing land coverage from LCD 1a, 5,343 square feet in LCD 1b, 156,871 square feet in LCD 3, 45,182 square feet in LCD 5, and 2,796 square feet in LCD 6 for relocation in similar or higher capability LCDs.

TRPA Code Section 20.4 – Prohibition of Additional Land Coverage in LCDs 1a, 1c, 2 3 and 1b. TRPA permits no additional land coverage or other permanent land coverage in LCDs 1a, 1c, 2 and 3 unless certain conditions can be met. The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will result in an overall reduction of land coverage within the Project area and will relocate existing land coverage from lower capability LCDs to higher Capability LCDs. Because the proposed land coverage will be relocated within the Project area, TRPA Code Section 20.4 is not applicable to the Project and findings for relocation of land coverage are made as follows.

Figure 14-5. Proposed Sediment Source Control and Land Coverage Removal Projects

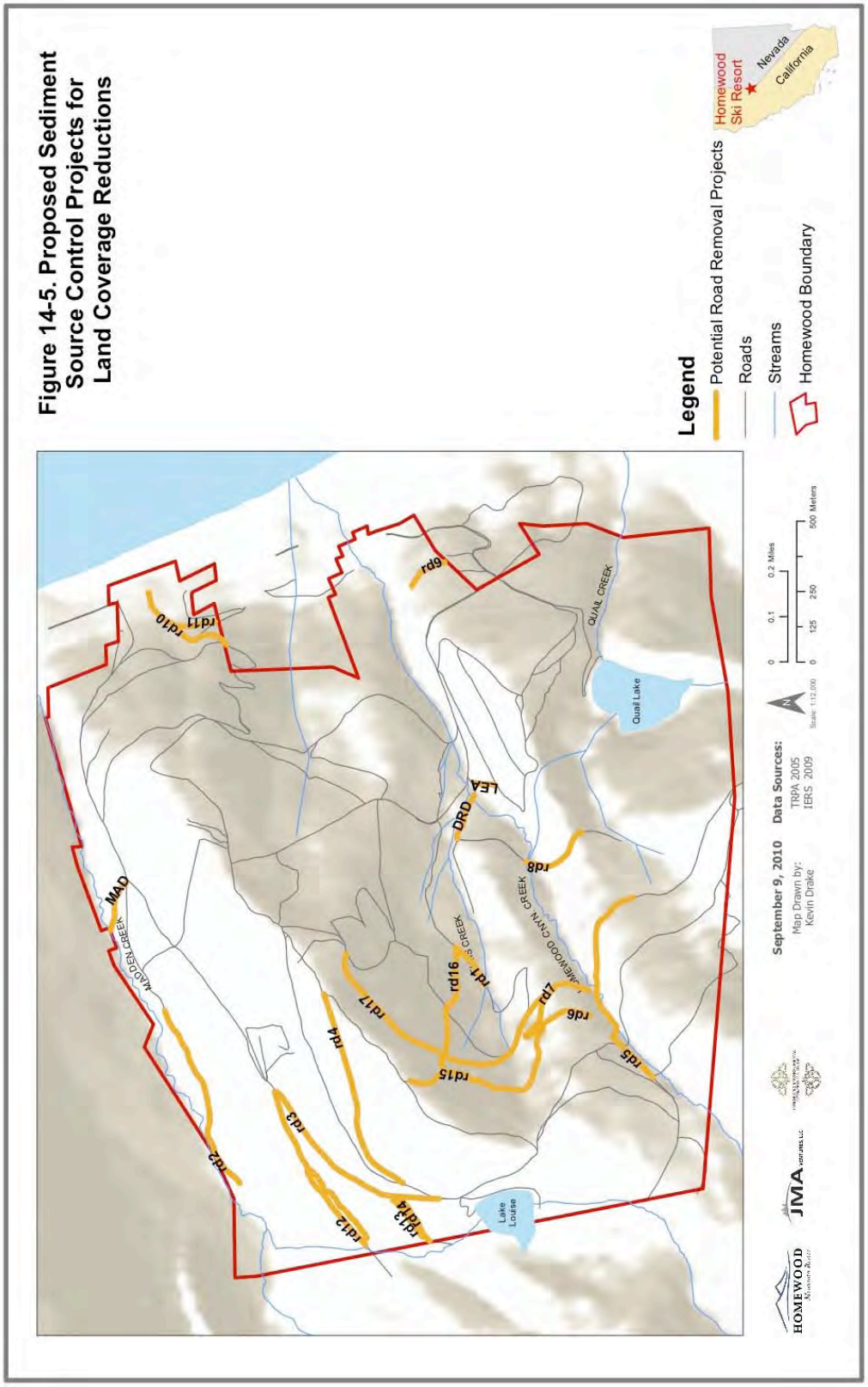


Figure 14-6. Alternative 1 - Existing and Proposed Land Coverage at the North Base Area

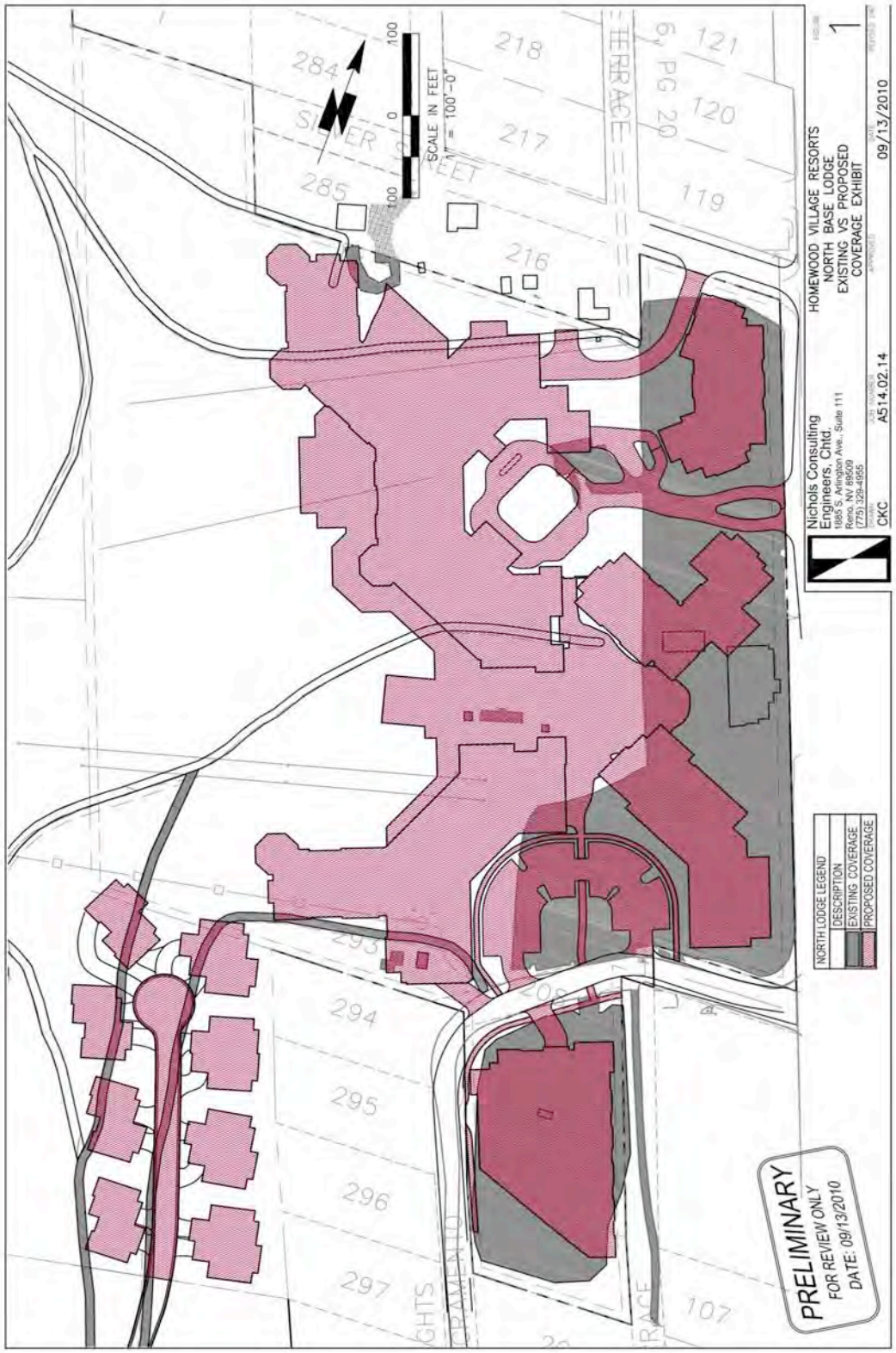
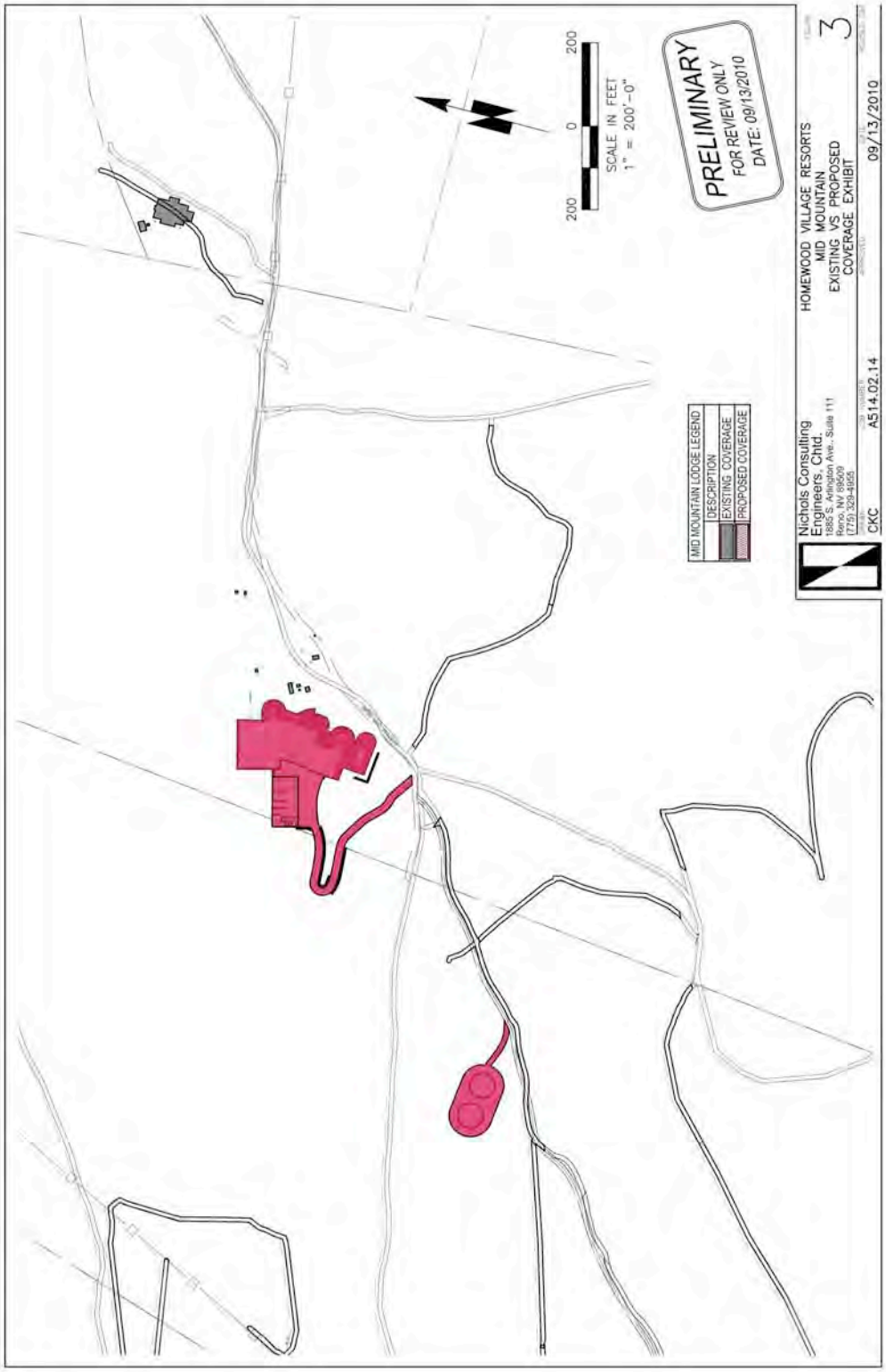


Figure 14-7. Alternative 1 - Existing and Proposed Land Coverage at the South Base Area

Figure 14-8. Alternative 1 - Existing and Proposed Land Coverage at the Mid-Mountain Area



TRPA Code Section 20.5.C –Relocation of Land Coverage within the Project area. To support the findings associated with Subsection 20.4.A(2) of the Code, the following findings are presented pursuant to Subsection 20.5.C of the Code for the relocation of existing land coverage on the same Project area. TRPA Code Section 20.5.C includes four findings necessary for relocation of land coverage within a Project area. The findings and supporting discussion are provided below for the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6.

1. *The relocation is to an equal or superior portion of the parcel or Project area, as determined by reference to the following factors: (a) Whether the area of relocation already has been disturbed; (b) The slope of and natural vegetation on the area of relocation; (c) The fragility of the soil on the area of relocation; (d) Whether the area of relocation appropriately fits the scheme of use of the property; (e) The relocation does not further encroach into a stream environment zone, backshore, or the setbacks established in the Code for the protection of stream environment zones or backshore; (f) The project otherwise complies with the land coverage mitigation program set forth in Section 20.5; and*

   (f) The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will comply with the excess land coverage mitigation program set forth in TPRA Code of Ordinances Section 20.5 through compliance with mitigation measure GEO-3, as outlined below. The relocation of land coverage will be to an equal or superior portion of the Project area. (a) The HMR Ski Area Master Plan development areas consisting of the North Base, South Base and Mid-Mountain areas and the Tahoe Ski Bowl Way extension areas are currently disturbed, covered by hard land coverage or crossed by existing dirt access roads (soft land coverage). The location of the townhomes under Alternatives 1 and 3 is partially disturbed with existing dirt access roadways. (d) The redevelopment of these areas appropriately fits the scheme of use of the Project area, which is operated as a ski resort with supporting commercial and residential uses and winter and summer recreation opportunities.

   (e) The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will reduce encroachment into SEZ, backshore or setbacks. (c) The Proposed Project (Alternative 1) and Alternative 3 will remove and relocate land coverage from LCD 1b to higher capability LCDs within the Project area. Alternatives 5 and 6 will maintain the existing public roadway at the South Base area that crosses an SEZ, but will reduce disturbance in the portion of the North Base area gravel parking lot that has been mapped as LCD 1b. Higher capability LCDs by definition have less fragile soils and are thus considered more suitable for land coverage or disturbance. (b) There is little natural vegetation in the North and South Base areas and along Tahoe Ski Bowl Way because of land coverage such as roads, ROWs, and parking lots. The Mid-Mountain area has been previously disturbed through ski trail and access road creation and current vegetation consists primarily of grasses and shrubs established as part of revegetation and sediment source control projects. The natural vegetation and slopes will be protected as outlined on sheets C10 trough C18 of the Civil Plan set and in associated Revegetation Strategies, Landscaping and Permanent BMP Plans. Relocation will be within the same LCD or will be from lower capability LCD 1a to higher capability LCDs 2, 3, 4, 5 and 6 with less fragile soils. As identified for each alternative in Table 14-6, there is remaining allowable base land coverage in

LCD 1b that could be relocated to LCD 2 in addition to the land coverage proposed for removal in LCD 1a. The remaining allowable base land coverage in LCDs 3, 4 and 5 can be relocated to higher capability LCD 6.

2. *The area from which the land coverage was removed for relocation is restored in accordance with Subsection 20.4.C*

   The area from which the land coverage is removed for relocation will be restored in accordance with Subsection 20.4.C. Restored areas will be landscaped for guest use, stabilized and planted with native vegetation for land coverage restoration, used for bioretention areas for stormwater treatment or converted back to forest lands. A portion of the relocated land coverage (126,324 square feet) is banked from the Lombard Street project, which has been previously restored pursuant to Subsection 20.4.C and approved by TRPA (see Appendix U for TRPA banking letter). Between 2006 and 2009 land coverage was removed in the upper mountain in LCDs 5, 3, and 1b (see Figure 14-4) through removal and restoration of dirt access roads across the upper mountain portion of the Project area. The Project Applicant is responsible for submitting a banking application with TRPA. If approved, the square footage verified by TRPA Staff would be available for relocation to high capability LCDs. Once verified, any applicable work completed between 2006 and 2009 will be applied to the 500,000 square feet of land coverage restoration included in the proposed Master Plan.

3. *The relocation is not to Land Capability Districts 1a, 1b, 1c, 2 or 3, from any higher numbered land capability district.*

   Relocated land coverage is identified by LCD in Table 14-6. Relocated land coverage necessary for implementation of the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will first be from within the same LCD, such as existing land coverage removed in LCD 4 will be relocated to areas of proposed land coverage within LCD 4. If adequate land coverage cannot be relocated within the same LCD, then existing land coverage from lower capability LCDs will be relocated to higher capability LCDs within the Project area, such as from LCD 1a to LCD 2 or higher. The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will remove and restore no less than 500,000 square feet of existing dirt access roads located in LCDs 5, 3 and 1a (see Figures 14-4 and 14-5). Land coverage that is not permanently retired as required for proposed Code Chapter 22.4.G height ordinance amendments or the CEP Governing Board Resolution would be available for relocation within the Project area.

4. *If the relocation is from one portion of a stream environment zone to another portion, there is a net environmental benefit to the stream environment zone. Net environmental benefit to a stream environment zone is defined as an improvement in the functioning of the stream environment zone and includes, but is not limited to: (a) Relocation of coverage from a less disturbed area to a more disturbed area or to an area further away from the stream channel; (b) Retirement of land coverage in the affected stream environment zone in the amount of 1.5:1 of the amount of land coverage being relocated within a stream environment zone; or (c) For projects involving the relocation of more than 1000 square feet of land coverage within a stream environment zone, a finding, based on a report prepared by a qualified professional, that the relocation will improve*

the functioning of the stream environment zone and the quality of existing habitats.

The Proposed Project (Alternative 1) will relocate structures outside of the SEZ and establish 60-foot setbacks from Homewood Creek in the South Base area. Alternative 3 will relocate buildings outside of the SEZ and establish 35 to 40-foot setbacks because of the larger development footprint required to accommodate buildings with less height. Alternatives 5 and 6 will retain the existing culvert associated with the public ROW over Homewood Creek in the South Base area. Alternatives 1 and 3 will establish a 10-foot setback from the edge of the SEZ at the southern end of the North Base area (existing gravel parking area) to conform to TRPA and Placer county setbacks for SEZs without active channels. Alternatives 5 and 6 will maintain development within a portion of the mapped SEZ at the North Base area in order to maximize the use of lands currently located in Plan Areas 158 and 159.

By relocating the existing parking area out of the North Base SEZ and by increasing setbacks from Homewood Creek in the South Base, the Proposed Project (Alternative 1) and Alternative 3 will remove land coverage from LCD 1b (SEZ) and the SEZ setback. This land coverage will either be permanently retired or relocated to higher capability LCDs within the Project area for a net environmental benefit to the North and South Base area SEZs. The Proposed Project (Alternative 1) and Alternative 3 will reduce land coverage within LCD 1b of the public ROW by improving the existing culvert crossing over Homewood Creek to a bridge span. The Proposed Project (Alternative 1) and Alternative 3 propose a stream channel and SEZ restoration project in the South Base and a SEZ restoration project in the North Base. Flood attenuation, culvert removal, bed contact, groundwater recharge, bank erosion reduction, fish passage, aeration, aesthetic and habitat improvements are among the net environmental benefits detailed in Appendix C, which contains the Homewood Creek SEZ Restoration Plan that will be revised based on mitigation measure BIO-5a requirements.

Alternatives 5 and 6 will reduce total land coverage within LCD 1b, but will not improve the existing culvert crossing. As a result, Alternatives 5 and 6 will retain the 1,349 square feet of land coverage in LCD 1b in the public ROW at the South Base area. At the North Base area, Alternatives 5 and 6 will require the relocation of 2,161 square feet of existing land coverage in LCD 1b to provide for the residential development program within existing parking areas. Relocation of land coverage will be to a previously disturbed area. The North Base SEZ does not contain an active stream channel. Alternatives 5 and 6 remove and restore 5,533 square feet of land coverage in the North Base, which exceeds the 1.5:1 retirement ratio. Because Alternatives 5 and 6 will relocate more than 1,000 square feet of land coverage within the North Base SEZ, TRPA will require a report prepared by a qualified professional that supports that the relocation will improve the functioning of the SEZ and the quality of the existing habitat (see mitigation measure BIO-5b in Chapter 5, Biological Resources).

In conclusion, the Project reduces total land coverage within the Project area. Because land coverage in LCDs 1a and 2 exceed allowable base land coverage for those LCDs, the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 are subject to the excess coverage mitigation program described in TRPA Code of Ordinances Section 20.5, which is required to reduce significant land coverage impacts from excess existing land

coverage to a level of less than significant. Options to mitigate the excess land coverage are described below in mitigation measure GEO-3: Comply with Excess Land Coverage Mitigation Program.

Mitigation: **GEO-3: Comply with Excess Land Coverage Mitigation Program**

Based on allowable base land coverage determinations in LCDs 1a and 2, the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 shall be subject to the excess coverage mitigation program described in Code Section 20.5. The excess land coverage within the Project area shall be reduced to comply with Code Section 20.5 through: 1) reduction of coverage onsite; 2) reduction of coverage offsite; 3) payment of excess coverage mitigation fee; 4) parcel consolidation or parcel line adjustment; or 5) combination of these options.

Table 14-7 presents the excess land coverage mitigation fee and reductions in existing land coverage options for each of the alternatives, which are the mitigation options most applicable to the Project area. Land coverage must be permanently retired to supplement the payment of a mitigation fee.

Table 14-7

Excess Land Coverage Mitigation Comparison by Alternative

	Alt. 1	Alt. 3	Alt. 5	Alt. 6
Verified Existing Land Coverage (sf)	1,761,337	1,761,337	1,761,337	1,761,337
TRPA Allowable Land Coverage (sf)	1,086,112	1,086,112	1,086,112	1,086,112
Total Proposed Land Coverage (sf)	1,521,452	1,616,990	1,354,997	1,394,566
Excess Land Coverage (sf) [1]	179,761	221,108	178,561	178,561[4]
Excess Land Coverage Mitigation Fee [2]	$1,601,228	$1,794,027	$1,005,366	$1,293,198
Permanently Retired Land Coverage Requirement to Offset Mitigation Fee (sf) [3]	188,380	211,062	118,278	152,141

Source: HMR Master Land Coverage Summary June 1, 2010; HMR Land Capability Challenge; TRPA Code of Ordinances Chapter 20 Table; HBA 2010

Notes:

1. Excess Land coverage is equal to the Existing Land Coverage – Allowable Base Land Coverage for LCDs that are over allowable base land coverage limits.
2. Coverage Reduction (sf) = ((Fee Percentage of 5% based on Ch 20 Table A) x (CM Construction Cost) / Mitigation Factor of 8);
   Mitigation Fee ($) = (Coverage Reduction (sf) X Mitigation fee square feet Coverage Cost Factor (The Project area is located in Area 7 for Mckinney Bay = $8.5)); and Construction costs are approximately: Alt 1 = $30,140,767; Alt 3 = $33,769,916; Alt 5 = $18,924,583; Alt 6 = $24,342,547.
3. Assuming the application of McKinney Bay Cost Factor of $8.50/square foot
4. Alternative 6 would result in 39,569 square feet of additional land coverage as compared to Alternative 5, but this land coverage is proposed in LCD 6, which contains remaining allowable base land coverage.

The impact from excess land coverage under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 can be reduced to a less than significant level through completion

of the excess land coverage mitigation program as outlined in TRPA Code section 20.5. The mitigation options are listed according to alternative.

Proposed Project (Alternative 1):

1) Payment of Excess Coverage Mitigation Fee = $1,601,228; or

2) Permanent retirement of 188,380 square feet of onsite land coverage (offset of $8.50/square foot assumed) in lieu of the Excess Coverage Mitigation Fee; or

3) Permanent retirement of 176,134 square feet of onsite land coverage (offset of $8.50/square foot assumed) as required for TRPA Code of Ordinances Chapter 22.4.G Amendment for additional building height findings and for CEP Governing Board Resolution requirements and payment of an adjusted Excess Coverage Mitigation Fee equal to $104,091 (Note that the proposed Chapter 22.4.G height amendment requires a 10 percent reduction of total existing land coverage, while the TRPA CEP Resolution requires a "substantial" reduction in existing land coverage but does not quantify square footage of land coverage for permanent retirement - the 176,134 square feet identified above is equal to a 10 percent reduction in verified existing land coverage); or

4) Permanent retirement of 176,134 square feet of onsite land coverage (offset of $8.50/square foot assumed) as required for TRPA Code of Ordinances Chapter 22 for building height findings and for CEP Governing Board Resolution requirements and the permanent retirement of an additional 12,246 square feet (offset of $8.50/square foot assumed) of offsite land coverage to be identified by the Project Applicant; or

5) Combination of Options 1 and 2 for permanent retirement of on or offsite land coverage (offset of $8.50/square foot assumed) and payment of Excess Coverage Mitigation Fee that is appropriate for the amount of excess land coverage that remains (offset of $8.50/square foot assumed).

According to TRPA Code Section 20.5.A, the payment of the Excess Coverage Mitigation Fee mitigates excess land coverage for the Project area to a less than significant level. Permanently retiring 188,380 square feet of onsite land coverage under the Proposed Project (Alternative 1) is considered a more beneficial option for reducing impacts from excess land coverage than only the payment of the mitigation fee. Permanent retirement of land coverage directly reduces impacts in the Project area watersheds through the permanent removal of impervious surfaces and restoration of land capability. HMR proposes to permanently retire land coverage as part of their Master Plan as needed for additional height findings and to mitigate past development.

Notable benefits of the Proposed Project (Alternative 1) that are over and above standard TRPA mitigation requirements include: land coverage reductions in excess of the CEP goal for "substantial" reduction, permanent retirement of a portion of land coverage removed from LCDs 5, 3 and 1a, and the relocation of land coverage from LCD 1a and 1b lands to higher capability LCD lands. Additionally, effects from proposed land coverage will be reduced through application of LID measures such as bioretention areas for stormwater treatment, cisterns to capture roof runoff, heated walkways to control the timing of runoff from walkways and pervious pavement to reduce typical runoff volumes by around 40 percent. The LID measures more closely mimic natural hydrologic patterns and alleviate pressures placed on traditional stormwater treatment systems. The Proposed Project (Alternative 1) will utilize pervious pavers and pervious pavement on approximately 850 square feet of the Project area and will install bioretention areas for

stormwater treatment (approximately 117,000 square feet) across the North Base, South Base and Mid-mountain areas. Cisterns will capture a portion of roof runoff from buildings, up to 7,800 cubic feet per runoff event. These LID measures are not considered in the TRPA calculations for land coverage reductions but will provide added benefits to the Project through reductions in runoff from impervious surfaces. Table 15-8 in Chapter 15, Hydrology, Water Rights, Surface Water Quality and Groundwater, details the impact reductions specified above.

Alternative 3:

1) Payment of Excess Coverage Mitigation Fee = $1,794,027;

2) Permanent retirement of 211,062 square feet of onsite land coverage (offset of $8.50/square foot assumed) in lieu of the Excess Coverage Mitigation Fee;

3) Permanent retirement of 176,134 square feet of onsite land coverage (offset of $8.50/square foot assumed) to comply with CEP Governing Board Resolution requirements and payment of an adjusted Excess Coverage Mitigation Fee = $296,888 (Note that Alternative 3 does not require TRPA Chapter 22 findings for height. The TRPA CEP Resolution, however, requires a "substantial" reduction in existing land coverage but does not quantify square footage for permanent retirement. The 176,134 square feet stated above is based on 10 percent permanent retirement of verified existing land coverage.); or

4) Permanent retirement of 176,134 square feet of onsite land coverage (offset of $8.50/square foot assumed) as required for CEP Governing Board Resolution requirements and the permanent retirement of an additional 34,928 square feet (offset of $8.50/square foot assumed) of offsite land coverage to be identified by the Project Applicant; or

5) Combination of Options 1 and 2 for permanent retirement of on or offsite land coverage (offset of $8.50/square foot assumed) and payment of Excess Coverage Mitigation Fee that is appropriate for the amount of excess land coverage that remains (assuming an offset of $8.50/square foot).

According to TRPA Code Section 20.5.A, the payment of the Excess Coverage Mitigation Fee mitigates excess land coverage for the Project area to a less than significant level. However, permanently retiring 211,062 square feet of land coverage under Alternative 3 is considered a more beneficial option for reducing impacts from excess land coverage than only the payment of the mitigation fee. Permanent retirement of land coverage directly reduces impacts in the Project area watersheds through the permanent removal of impervious surfaces and restoration of land capability. HMR proposes to permanently retire land coverage as part of their Master Plan as needed for additional height findings and to mitigate past development.

Notable benefits of Alternative 3 that are over and above standard TRPA mitigation requirements include: land coverage reductions in excess of the CEP goal for "substantial" reduction, permanent retirement of a portion of the land coverage removed from LCDs 5, 3 and 1a, and the relocation of land coverage from LCD 1a and 1b lands to higher capability LCD lands. Additionally, impacts from proposed land coverage will be reduced through application of LID measures such as bioretention areas for stormwater treatment, cisterns to capture roof runoff, heated walkways to control the timing of runoff from walkways and pervious pavement to reduce typical runoff volumes by around 40 percent. The LID measures more closely mimic natural hydrologic patterns and alleviate pressures placed on traditional stormwater treatment systems. The effects of land

coverage would be reduced through application of LID measures such as cisterns, pervious pavement and pavers and bioretention areas for stormwater treatment that are described above for the Proposed Project (Alternative 1). These LID measures are not considered in the TRPA calculations for land coverage reductions but will provide added benefits to the Project through reductions in runoff from impervious surfaces. Table 15-8 in Chapter 15, Hydrology, Water Rights, Surface Water Quality and Groundwater, details the impact reductions specified above.

Alternative 5:

1) Payment of Excess Coverage Mitigation Fee = $1,005,366; or

2) Permanent retirement of 118,278 square feet of onsite land coverage (offset of $8.50/square foot assumed) in lieu of the Excess Coverage Mitigation Fee; or

3) Permanent retirement of 176,134 square feet of onsite land coverage (offset of $8.50/square foot assumed) as required for TRPA Code of Ordinances Chapter 22 for building height findings and for CEP Governing Board Resolution requirements (Note that Chapter 22 requires a 10 percent reduction of verified existing land coverage, while the CEP Resolution requires a "substantial" reduction in existing land coverage but does not quantify square footage for permanent retirement. The 176,134 square feet stated above is based on 10 percent permanent retirement of verified existing land coverage.); or

4) Combination of Options 1 and 2 for permanent retirement of on or offsite land coverage (offset of $8.50/square foot assumed) and payment of Excess Coverage Mitigation Fee that is appropriate for the amount of excess land coverage that remains (assuming an offset of $8.50/square foot).

According to TRPA Code Section 20.5.A, the payment of the Excess Coverage Mitigation Fee mitigates excess land coverage for the Project area to a level of less than significant. Identification and permanent retirement of onsite land coverage (118,279 square feet) in lieu of payment of the remaining Excess Coverage Mitigation Fee ($1,005,366) is considered more beneficial option for reducing impacts from excess land coverage in the Project area watersheds. A combination of the two mitigation options, described above under option four, is considered more beneficial than the payment of the excess coverage mitigation fee only. Option 3, however, would be required for Alternative 5 because although options one, two and four would legally mitigate excess land coverage on the project area to a level of less than significant, these mitigation options would not meet the proposed TRPA Chapter 22.4.G amendment requirements for additional height nor the CEP Governing Board Resolution for substantial land coverage reductions, assumed to be at least a 10 percent reduction in existing land coverage. Identification and permanent retirement of 176,134 square feet of onsite or offsite land coverage in lieu of payment of the remaining Excess Coverage Mitigation Fee ($1,005,372) is considered the most beneficial option (Option number 3 above) for reducing impacts from excess land coverage. HMR proposes to permanently retire land coverage as part of their Master Plan as needed for additional height findings and to mitigate past development.

Notable benefits of Alternative 5 that are over and above standard TRPA mitigation requirements would be the same as described for Alternative 3.

Alternative 6:

1) Payment of Excess Coverage Mitigation Fee = $1,293,198; or

2) Permanent retirement of 152,141 square feet of onsite land coverage (offset of $8.50/square foot assumed) in lieu of the Excess Coverage Mitigation Fee; or

3) Permanent retirement of 176,134 square feet of onsite land coverage (offset of $8.50/square foot assumed) as required for TRPA Code of Ordinances Chapter 22 for building height findings and for CEP Governing Board Resolution requirements (Note that Chapter 22 requires a 10 percent reduction of verified existing land coverage, while the CEP Resolution requires a "substantial" reduction in existing land coverage but does not quantify square footage for permanent retirement. The 176,134 square feet stated above is based on 10 percent permanent retirement of verified existing land coverage.); or

4) Combination of Options 1 and 2 for permanent retirement of on or offsite land coverage (offset of $8.50/square foot assumed) and payment of Excess Coverage Mitigation Fee that is appropriate for the amount of excess land coverage that remains (assuming an offset of $8.50/square foot).

According to TRPA Code Section 20.5.A, the payment of the Excess Coverage Mitigation Fee mitigates excess land coverage for the Project area to a level of less than significant. Identification and permanent retirement of onsite land coverage (118,279 square feet) in lieu of payment of the remaining Excess Coverage Mitigation Fee ($1,293,198) is considered more beneficial option for reducing impacts from excess land coverage in the Project area watersheds. A combination of the two mitigation options, described above under option four, is considered more beneficial than the payment of the excess coverage mitigation fee only. Option 3, however, would be required for Alternative 6 because although options one, two and four would legally mitigate excess land coverage on the project area to a level of less than significant, these mitigation options would not meet the proposed TRPA Chapter 22.4.G amendment requirements for additional height nor the CEP Governing Board Resolution for substantial land coverage reductions, assumed to be at least a 10 percent reduction in existing land coverage. Identification and permanent retirement of 176,134 square feet of onsite or offsite land coverage in lieu of payment of the remaining Excess Coverage Mitigation Fee ($1,293,198) is considered the most beneficial option (Option number 3 above) for reducing impacts from excess land coverage.

Notable benefits of Alternative 6 that are over and above standard TRPA mitigation requirements would be the same as described for Alternative 3.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5 and 6*

Impacts from excess land coverage associated with the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will be reduced to a less than significant level through completion of mitigation options outlined above in mitigation measure GEO-3.

Impact: GEO-4. Will construction of the Project result in changes to native geologic substructures or cause erosion, loss of topsoil, or changes in topography from excavation, grading or filling?

Analysis: *Less than Significant Impact; No Project (Alternative 2)*

No impacts from excavation, grading or fill will occur under the No Project (Alternative 2) alternative because construction of new structures and facilities will not occur. Topographic features of the Project area will not be altered. Operations and maintenance

activities will continue in compliance with current applicable regulations and permitting requirements for activities that require earthwork.

Based on evaluation criteria for GEO-4, the level of impact is less than significant.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternative 4*

Construction Related Erosion, Loss of Topsoil and Unstable Soil Conditions. Construction of Alternative 4 will involve grading, excavation and fill activities, trenching, removal of vegetative cover, and other earthwork activities associated with construction of residential structures. These activities could cause temporary increases in runoff, erosion and sedimentation from the Project area if precautions and measures are not taken to contain runoff and erosion on site and to stabilize disturbed soils. Individual parcel owners will be required to implement erosion control and revegetation measures to contain runoff and erosion onsite and stabilize disturbed areas to reduce potential impacts from erosion, loss of topsoil, or unstable soil conditions to a level of less than significant. TRPA and Placer County require standard mitigation measures and plans for project-level approval and permitting. If the area of disturbance exceeds one-acre, then Lahontan could require additional measures as part of NPDES permitting conditions.

Changes in Topography and Geologic Substructures. Changes in topography or geologic substructures that are inconsistent with the surrounding conditions will not be permitted under current TRPA and Placer County codified regulations for the construction of building pads for residential units.

Earthwork. No earthwork quantities are available for Alternative 4, which would be dependent on the designs of the individual single-family dwellings, but is assumed to be considerably less than the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6. Grading permits are required by Placer County for moving 3 cubic feet or more of soils within the Tahoe Basin, or excavation exceeding 4 feet in depth, so in most cases a grading permit would be required with each residential building permit. A footprint of 5,000 square feet is assumed for each of the 16 private estate residences. Private residences will be constructed within the existing ski trails and forested areas. Off-site disposal of fill material is not expected under Alternative 4.

TRPA Code of Ordinances, Chapter 64, Section 64.7.B. TRPA Code of Ordinances prohibits excavations in excess of five feet in depth or where there exists a reasonable possibility of interference or interception of a water table except under certain defined and permitted conditions. Residential structures, constructed under Alternative 4 could require excavations in excess of 5 feet to construct level building pads on slopes across the upper mountain. Private land owners would be required to submit a Soils Hydrologic Report to TRPA should excavations in excess of 5 feet be proposed or a reasonable possibility for interception or interference of groundwater exist. Assurance that groundwater movement will not be significantly impacted will be required for project approval and permitting.

Groundwater investigations for the Mid-Mountain area did not encounter groundwater between depths ranging from 8.5 to 20 feet bgs (Kleinfelder 2010) and determined that encountering groundwater would be unlikely based on the presence of shallow bedrock. Construction of single-family dwellings across the upper mountain is unlikely to impact groundwater because groundwater is found at depths deeper than excavations typically

necessary for standard foundations. Based on evaluation criteria for GEO-4, the level of impact is less than significant.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5 and 6*

Construction Related Erosion, Loss of Topsoil and Unstable Soil Conditions. Construction of the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will involve varying degrees of grading, excavation and fill activities, trenching, removal of vegetative cover, and other earthwork activities. These activities could cause temporary increases in runoff, erosion and sedimentation from the Project area if precautions and measures are not taken to contain runoff and erosion on site and to stabilize disturbed soils. The degree of disturbance is related to the amount of land coverage associated with each alternative, which is detailed above in Impact GEO-3.

The *Geologic Hazards and Preliminary Geotechnical Evaluation* (Kleinfelder 2007) found no severe soil constraints that would preclude grading and construction activities in the Project area. The final geotechnical engineering reports for the Mid-Mountain area (Holdrege and Kull 2010b) and the North Base area (Holdrege and Kull 2010a) were completed in conformance to section 15.48.390 of Chapter 15 of Placer County Code and TRPA Code of Ordinances Chapter 61. The reports detail the geotechnical engineering recommendations to be incorporated into final project designs to assure stable soil conditions during and following construction in these portions of the Project area. Although preliminary geotechnical investigations found no severe soil constraints that preclude grading and construction activities, a similar report will be completed for the South Base area during Phase 2 of the Project. The requirements of this report are detailed in the impact analysis for GEO-1.

The Project will implement a number of compliance measures to contain runoff and erosion onsite, minimize wind erosion, stabilize disturbed areas, and reduce potential impacts from erosion, loss of topsoil, or unstable soil conditions to a level of less than significant. These compliance measures and associated plans are required by TRPA or Placer County for project-level approval and permitting and include the following:

- TRPA Erosion and Sediment Control and BMP Plan (including Winterization Plans per TRPA Code Chapters 25, 64 and 81)
- Properly Locate and Protect Stockpile Areas (TRPA Code Chapter 64, Placer County standard mitigation measure)
- Landscaping/Revegetation Plan (per TRPA Code Chapters 20 and 77);
- Stormwater Pollution Prevention Plan (SWPPP – required for NPDES General Construction Permit for projects with disturbance areas greater than one acre);
- SEZ Protection and Restoration Plan; and
- Conformance to TRPA Ordinances and Placer County Grading, Erosion, and Sediment Control Ordinance.

Construction activities (e.g., ground disturbance) associated with all Alternatives 1, 3, 5 and 6 will require installation of site-specific temporary BMPs and maintenance and monitoring to ensure that disturbed soils are protected during precipitation events and for over wintering. The Project Applicant will prepare a site-specific Erosion and Sediment Control BMP Plan that will be finalized based on the preferred alternative to further

define and map temporary BMPs for the control of erosion and runoff from ground disturbing activities. BMPs will be installed in accordance with Chapter 25 of the TRPA Code of Ordinances and are considered part of the Project. An Erosion and Sediment Control BMP Plan is required by TRPA and Placer County. TRPA's BMP requirements are outlined in the Handbook of Best Management Practices (TRPA 1988) and for Placer County BMPs are designed according to the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development/Redevelopment, and/or for Industrial and Commercial, and/or other similar source. The permanent underground stormwater galleries and bioretention areas (see Impact HYDRO-2 for stormwater runoff analysis and preliminary grading plan Sheets C10 to C13 and C15 to C18 for proposed drainage and BMP details) will be constructed during initial site grading and will serve as detention facilities during the construction period. Mitigation measure GEO-4a outlines the requirements for Placer County BMPs to control erosion and contain sediment on-site.

Placer County considers impacts from grading and earthwork potentially significant unless standard mitigation measures are applied to assure compliance with codified regulations to avoid and minimize construction-related impacts to soils. Improvement Plan submittal is required after project permitting, and at such time final grading plans are reviewed and approved as part of the Improvement Plans as detailed in mitigation measure GEO-4b. Recommendations and mitigation measures from final geotechnical reports must be incorporated into the Improvement Plans, as detailed in mitigation measure GEO-1 (see Impact GEO-1).

Placer County requires that stockpiling and/or vehicle staging areas be identified on the Improvement Plans and located as far as practical from existing dwellings and protected resources in the area. If blasting is required for the installation of site improvements, the developer must comply with applicable County Ordinances that relate to blasting and use only State licensed contractors to conduct these operations. Mitigation measures GEO-4c and GEO-4d detail stockpiling and blasting requirements for compliance with Placer codified regulations.

Ground disturbance within the Project area will exceed one acre and is subject to the construction stormwater quality permit requirements of the NPDES program. The Project Applicant must obtain this permit from Lahontan and provide evidence of a state-issued WDID number or filing of a Notice of Intent (NOI) and fees prior to start of construction, as outlined in mitigation measure GEO-4e.

A SWPPP is required under Board Order No. R6T-2005-007 (General Permit No. CAG616002) for discharges of stormwater runoff associated with construction activity involving land disturbance in the Lake Tahoe hydrologic unit. The SWPPP will be designed to address the following objectives:

1. All pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled;
2. Where not otherwise required to be under a Lahontan permit, all non-storm water discharges are identified and either eliminated, controlled, or treated;
3. Site BMPs are effective and result in the reduction or elimination of pollutants in storm water discharges and authorized non-storm water discharges from construction activity to the Best Available Technology Economically Achievable (BAT)/Best Conventional Pollutant Control Technology (BCT) standard;

4. Calculations and design details as well as BMP controls for site run-on are complete and correct, and
5. Stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.
6. To demonstrate compliance with requirements of the NPDES permit, the Qualified SWPPP Developer will include information in the SWPPP that supports the conclusions, selections, use, and maintenance of BMPs.
7. The discharger will make the SWPPP available at the construction site during working hours while construction is occurring and shall be made available upon request by a State or Municipal inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, current copies of the BMPs and map/drawing will be left with the field crew and the original SWPPP shall be made available via a request by radio/telephone.

The proposed landscaping plan and revegetation strategies are presented in the project description provided in Chapter 3.

Changes in Topography and Geologic Substructures. The Project area has been previously altered by grading and fill activities in the North Base, South Base and Mid-Mountain areas and through the construction of roadways, utilities, ski trails and lifts on the upper mountain.

No unique geologic or physical features are identified within the Project area that could be destroyed, covered or modified.

Grading activities necessary for the construction of the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will not result in significant changes in the topography of the Project area that will be inconsistent with the surrounding conditions. These base areas are located at the termini of existing ski trails constructed on steep toeslopes. Under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6, the buildings at the North Base will be constructed into the toeslope and are designed to minimize and camouflage changes in topographic grades. The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will construct a new lodge and two water tanks at the Mid-Mountain area. The lodge and water tanks will be constructed into the hillside and will create a change in topography as grades are altered to construct building pads. The change in topographic grade will be contained behind the lodge structure and water tanks and will not result in significant visible changes in topography that appear inconsistent with the surrounding conditions.

To construct the Project, changes in ground surface relief could occur. As identified on preliminary grading plans Sheets C10, 11, 12 and 13, the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will create cut and fill slopes of up to approximately 20.5 feet maximum, as associated with the water tanks at the Mid-Mountain, and retaining walls 29 to 32 feet, as associated with the North Base underground parking structure, and 19 to 21 feet, as associated with the South Base underground parking structure. Aboveground retaining walls range from 15 feet to one foot in height. The Project's impacts will be reduced to a level of less than significant through compliance with Placer County codified regulations and mitigation measures GEO-4b and GEO-4f for mitigation of impacts associated with alteration of topography and relief features.

Subsurface explorations (Kleinfelder 2007, Holdrege and Kull 2010a, Holdrege and Kull 2010b) identified no geologic substructures that would be destabilized by earthwork activities. Potential impacts from changes in topography and geologic substructures are less than significant.

Earthwork. The Project will result in disturbance of close to 40 acres of the 1253-acre Project area. Grading activities are associated with the installation of buildings, parking areas, retaining walls, roadway improvements and underground utilities, construction of which could significantly disrupt soils through creation of unstable soil conditions, soil disruptions, displacements and compaction.

The estimates for grading, cut, and fill volumes for the North Base, South Base and Mid-Mountain Areas are totaled in Table 14-8 for the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6. Trenching activities for utilities and snowmaking systems will be similar under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6. Maximum trench dimensions are between 2.0 and 2.5 feet in width and up to 5 feet in depth. Utility lines and snowmaking lines are proposed to be located primarily within existing roadways, but portions may need to be located within existing ski trails. As presented in the Snowmaking Planning document (Snowmakers, Inc. 2010) 59,300 linear feet of piping will be necessary for the expansion of the snowmaking system and 37,550 linear feet for utility expansion (NCE email 12/1/2010). The portions of the Project area disturbed by trenching activities will be revegetated as outlined in Chapter 3. Trenching estimates are 22,000 cubic yards for snowmaking expansion and 15,000 cubic yards for water, sewer, gas and electric line excavations. Because net excavations from trenching approach zero cubic yards, Table 14-8 presents the trenching estimates separately from the cut and fill volumes.

Under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6, imported fill material will not be required because fill areas in the Project area will use material that is generated from cut areas. HMR has identified additional areas suitable for the receipt of excess cut materials, including the project locations and approximate fill volume needed to remove, redesign and realign on-mountain access roads, increase vegetation cover on ski trails and improve water quality and skiing conditions within the Project area. These areas are detailed in Chapter 3.

For the Proposed Project (Alternative 1), 148,000 cubic yards of cut material will be produced and up to 157,700 cubic yards (55,700 cubic yards for proposed structures and up to 102,000 cubic yards for projects identified in Chapter 3) of fill material will be needed within the Project area. There is a net deficit of fill material for the Proposed Project (Alternative 1) and thus only material determined by geotechnical engineering evaluations as unfit for fill material will require off-site disposal to an approved receiving site.

Table 14-8

Estimates of Cut and Fill Volumes (Cubic Yards) for the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6

	Alternative 1	Alternative 3	Alternative 5	Alternative 6
Snowmaking Excavation[1]	22,000	22,000	22,000	22,000
Utility Excavation[2]	15,000	15,000	15,000	15,000
Cut Volume	148,000	297,800	208,800	216,800
Fill Volume	55,700	57,400	42,300	55,500
Net Grading (Cut + Fill Volumes)	203,700	355,200	251,100	272,400
Net Cut (Cut – Fill Volumes)	92,300	240,400	166,500	161,300

Source: Alternative 1 - Master Plan Earthwork Quantities on Civil Plan Sheet C2, Notes, Legends and Abbreviations; Alternative 3, 5 and 6 estimates provided by HMR and NCE; HBA 2010

Notes: [1] Snowmaking estimates based on: (59,300ft)*(4ft)*(2.5ft)*($1ft^3/27yd^3$)
[2] Utility estimates based on: (8,750ft)*(5ft)*(2.5ft)*($1ft^3/27yd^3$) for Sewer; (10,700ft)*(5ft)*(2ft)*($1ft^3/27yd^3$) for Water; (18,100ft)*(4ft)*(2.5ft)*($1ft^3/27yd^3$) for Dry Trench/Gas and Electric

For Alternative 3, 297,800 cubic yards of cut material will be generated and approximately 159,400 cubic yards (i.e., 57,400 cubic yards for proposed structures and up to 102,000 cubic yards) of fill material be used within the Project area for projects identified in Chapter 3. The remaining 138,400 cubic yards will need to be transported off-site over the construction period of the Project. The remaining cubic yards will be transported off-site over the 10-year construction period of the Project.

For Alternative 5, 208,800 cubic yards of cut material will be produced and approximately 144,300 cubic yards (i.e., 42,300 cubic yards for proposed structures and up to 102,000 cubic yards for projects identified within the Project area) of fill material will be used within the Project area. The remaining 64,500 cubic yards will be transported off-site over the 10-yr construction period of the Project.

For Alternative 6, 216,800 cubic yards of cut material will be produced and approximately 157,500 cubic yards (i.e., 55,500 cubic yards for proposed structures and up to 102,000 cubic yards for projects identified within the Project area) of fill material will be used within the Project area. The remaining 59,300 cubic yards will be transported off-site over the 10-yr construction period of the Project.

Remaining excess fill will be transported to a TRPA-approved facility with efforts to identify projects and facilities in close proximity to the Project area. Placer County and California Tahoe Conservancy (CTC) have identified projects within the Lake Tahoe Basin that could accommodate excess fill material and reduce the number and length of total trips for Alternative 3, 5 and 6 and the Proposed Project (Alternative 1) if necessary. The potential impact from the removal of excess fill material from the Project area is addressed in Chapter 11, Transportation, Parking and Circulation.

CTC has indicated that the Lower Blackwood Creek Restoration Project, approximately 1.5 miles north of the Project area, could accept 2,000 cubic yards of three to four foot diameter rock, 300 cubic yards of two to three foot diameter rock and 250 cubic yards of one to two foot diameter rock if available by July 1, 2011. Additional CTC project locations that could receive fill materials are identified along the Upper Truckee River if excess rock can be transported to South Lake Tahoe.

Placer County requires compliance with standard mitigation measures for potential impacts from earthwork. Implementation of mitigation measures GEO-4b, GEO-4f and GEO-1 assure compliance with Placer County codified regulations to reduce potential impacts from unstable soil conditions, soil disruptions, displacements and compaction.

TRPA Code of Ordinances, Chapter 64, Section 64.7.B. TRPA Code of Ordinances prohibits excavations in excess of five feet in depth or where there exists a reasonable possibility of interference or interception of a water table except under certain defined and permitted conditions.. Code Section 64.7.A(2)(a-j) outlines the exceptions to the prohibition of groundwater interception or interference. Under Code Section 64.7.A(2)(i) TRPA may make exceptions if excavations are "*necessary to provide below grade parking for projects, qualifying for additional height under Subsection 22.4.D, to achieve environmental goals including scenic improvements, land coverage reductions, and areawide drainage systems; and measures are included in the project to prevent groundwater from leaving the Project area as surface flow and that groundwater, if any is interfered with, is rerouted into groundwater flow to avoid adverse impacts to hydrologic conditions, SEZ vegetation, and mature trees*".

Because sub-section 22.4.D pertains to Project areas within both a TRPA adopted redevelopment plan and a TRPA adopted community plan, this exemption would not directly apply to the Project area (i.e., HMR Ski Area Master Plan Area). TRPA Code Section 64.7.A(2)(i) is proposed for amendment under the Proposed Project (Alternative 1) and Alternatives 5 and 6 to allow projects within Ski Area Master Plans to provide for below grade parking if adverse impacts to hydrologic conditions, SEZ vegetation and mature trees are avoided. Because Alternative 3 does not require additional height but does provide for below grade parking to achieve environmental goals, the proposed amendment to Chapter 64.7.A(2) would be slightly different, as discussed in Chapter 3.

The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will require excavations that exceed five feet and result in interception of groundwater movement during construction at the North and South Base area. Excavations at the Mid-Mountain area are not expected to intercept groundwater movement (Holdrege and Kull 2010b). Based on building cross sections for the Proposed Project (Alternative 1) prepared by Nichols for the North Base, South Base and Mid-Mountain areas (see sheets C19, C20 and C21 of the Civil Plan Set), excavations will be in excess of five feet in some areas to accommodate appropriate depths for underground parking structures. Soil Hydrologic exhibits in Appendix D show the existing grade, finished floor elevations and the groundwater cross-sectional profiles. The North and South Base areas have been designed to avoid groundwater interception from hotel and skier services structures and minimize groundwater interception in the underground parking structure areas.

The findings for TRPA Code Section 64.7.D are as follows:

(1) A soils/hydrologic report prepared by a qualified professional, whose proposed content and methodology has been reviewed and approved in advance by TRPA,

demonstrates that no interference or interception of groundwater will occur as a result of the excavation; and

The Second Revised Soils Hydrologic Scoping and Final Report was prepared by Kleinfelder (October 7, 2010) and submitted to TRPA for review and approval. Groundwater will be intercepted in the North and South Base areas as a result of excavations. To reduce potential impacts from excavations at the North and South Base areas, the hotel foundation footings were redesigned to avoid groundwater interception and underground parking structures were redesigned to minimize groundwater interception to the least area possible for the required number of parking spaces.

The maximum depth of excavation at the North Base area ranges from 29 to 32 feet bgs. The maximum depth of excavation will be approximately 17 feet below seasonal high groundwater levels measured in this area. Groundwater flows across the North Base area to the north, northeast and east towards Lake Tahoe. The estimated groundwater flow rates that will be intercepted by proposed retaining walls for the underground parking structure at the North Base area range from 15 to 37 gallons per minute (gpm).

The maximum depth of excavation at the South Base area ranges from 19 to 21 feet bgs. The maximum depth of excavation will be from 4 to 13 feet below seasonal high groundwater levels measured in this area. The estimated groundwater flow rates that will be intercepted by proposed retaining walls for the underground parking structures at the South Base area range from 1 to 11 gpm.

The maximum depth of the proposed excavation at the Mid-Mountain Area ranges from 8 to 20.5 feet. Based on the presence of shallow bedrock and site topography groundwater should not be encountered to the proposed depths of the retaining walls.

A preliminary construction dewatering plan was completed in support of anticipated NPDES permit conditions to assure that groundwater intercepted during construction activities can be captured and infiltrated or spread within the Project area and that no groundwater exits the Project area as surface flows. The construction dewatering plan is discussed as mitigation measure GEO-4g below.

An operational dewatering plan will be required for long-term mitigation of groundwater interception to assure that groundwater intercepted during long-term operations is not significantly impacted. Mitigation measures will be necessary to prevent groundwater from leaving the Project area as surface flow and that groundwater, if any is interfered with, is rerouted into groundwater flow to avoid adverse impacts to hydrologic conditions, SEZ vegetation, and mature trees. The operational dewatering plan is described in mitigation measure HYDRO-3a in Chapter 15, Hydrology, Water Rights, Surface Water Quality and Groundwater.

(2) The excavation is designed such that no damage occurs to mature trees, except where tree removal is allowed pursuant to Subsection 65.2.E, including root systems, and hydrologic conditions of the soil. To ensure the protection of vegetation necessary for screening, a special vegetation protection report shall be prepared by a qualified professional identifying measures necessary to ensure damage will not occur as a result of the excavation; and

For the Proposed Project (Alternative 1) a total of 195 trees will be removed for construction of the North Base Townhomes, Tahoe Ski Bowl Way Extension, and development in the North Base, South Base and Mid-Mountain Areas. Alternatives 3, 5 and 6 will removed 195, 124 and 124 trees, respectively. The excavations are designed such that no damage occurs to mature trees that will remain in the areas of proposed construction. Tree protection measures are discussed in Chapter 8, Biological Resources in impact analysis BIO-10.

(3) Excavated material is disposed of pursuant to Section 64.5 and the Project area's natural topography is maintained pursuant to Subparagraph 30.5.A(1); or if groundwater interception or interference will occur as described in the soils/hydrologic report, the excavation can be made as an exception pursuant to Subparagraph 64.7.A(2) and measures are included in the project to maintain groundwater flows to avoid adverse impacts to SEZ vegetation, if any would be affected, and to prevent any groundwater or subsurface flow from leaving the Project area as surface flow.

Excavated material will be utilized on-site in fill areas or utilized to complete road removal and ski trail improvement projects, as described above. Excess fill material not utilized onsite will be transported to a TRPA disposal site. Dewatering measures during construction activities have been identified for the South and North Base portions of the Project area to maintain groundwater flows to avoid adverse impacts to SEZ vegetation (South Base only) and to prevent groundwater or subsurface flows from leaving the Project area as surface flows. These measures are detailed in mitigation measure GEO-4 below.

In summary, compliance with applicable sections of Article 15.48 of Chapter 15 and Article 12.32 of Chapter 12 of the Placer County Code (Placer County 2006), Placer County General Construction Specifications (Placer County 1994), goals and policies of the Regional Plan for the Lake Tahoe Basin (Tahoe Regional Planning Agency 2004b), TRPA Code of Ordinances (Tahoe Regional Planning Agency 2004a), the *Handbook of Best Management Practices* and the *Water Quality Management Plan for the Lake Tahoe Region* (TRPA 1988) and Lahontan's waste discharge requirements and construction permits serves to avoid, reduce and minimize potential impacts associated with runoff, erosion, sedimentation and unstable soils to a level of less than significant.

The impact, however, remains significant because 1) the excavations exceeding five feet will intercept seasonal high groundwater during construction of proposed underground parking structures and requires mitigation to assure that intercepted groundwater does not leave the Project area as surface flow and 2) Placer County considers impacts from grading and earthwork potentially significant unless standard mitigation measures are applied, ensuring compliance with codified regulations to avoid and minimize construction-related impacts to soils. Long-term impacts and mitigations for interception of groundwater during project operations are analyzed in Chapter 15, Hydrology, Water Rights, Surface Water Quality and Groundwater.

Mitigation: **GEO-4a. Design Construction-related BMPs According to the California Stormwater Quality Association Stormwater BMP Handbooks and TRPA's Handbook of BMPs**

Construction-related Best Management Practices (BMPs) shall be designed according to the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development / Redevelopment, and/or for

Industrial and Commercial, (and/or other similar source as approved by the Engineering and Surveying Department (ESD)).

Construction (temporary) BMPs for the Project could include, but are not limited to: Fiber Rolls (SE-5), Hydroseeding (EC-4), Stabilized Construction Entrance (LDM Plate C-4), Storm Drain Inlet Protection (SE-10), Silt Fence (SE-1), revegetation techniques, dust control measures, and concrete washout areas.

Storm drainage from on- and off-site impervious surfaces (including roads) shall be collected and routed through specially designed catch basins, vegetated swales, vaults, infiltration basins, water quality basins, filters, etc. for entrapment of sediment, debris and oils/greases or other identified pollutants, as approved by the ESD. BMPs shall be designed at a minimum in accordance with the Placer County Guidance Document for Volume and Flow-Based Sizing of Permanent Post-Construction Best Management Practices for Stormwater Quality Protection. Post-development (permanent) BMPs for the project include, but are not limited to: above and below ground onsite infiltration basin(s), stormwater treatment vaults, and sand/oil interceptors.

No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals. All BMPs shall be maintained as required to insure effectiveness. The Project Applicant shall provide for the establishment of vegetation, where specified, by means of proper irrigation. Proof of on-going maintenance, such as contractual evidence, shall be provided to ESD upon request. Maintenance of these facilities shall be provided by the project owners/permittees unless, and until, a County Service Area is created and said facilities are accepted by the County for maintenance. Contractual evidence of a monthly parking lot sweeping and vacuuming, and catch basin cleaning program shall be provided to the ESD upon request. Failure to do so will be grounds for discretionary permit revocation. Prior to Improvement Plan or Final Map approval, easements shall be created and offered for dedication to the County for maintenance and access to these facilities in anticipation of possible County maintenance.

GEO-4b. Conform to Provisions of Placer County Grading, Erosion, and Sediment Control Ordinance

All proposed grading, drainage improvements, vegetation and tree removal shall be shown on the Improvement Plans and all work shall conform to provisions of the County Grading Ordinance (Ref. Article 15.48, Placer County Code) and Stormwater Quality Ordinance (Ref. Article 8.28, Placer County Code) that are in effect at the time of submittal. No grading, clearing, or tree disturbance shall occur until the Improvement Plans are approved and all temporary construction fencing has been installed and inspected by a member of the DRC. All cut/fill slopes shall be at a minimum of 2:1 (horizontal:vertical) unless a soils report supports a steeper slope but fill slopes shall not exceed 1.5:1 (horizontal:vertical) and the Engineering and Surveying Department (ESD) concurs with said recommendation.

The applicant shall revegetate all disturbed areas. Revegetation undertaken from April 1 to October 1 shall include regular watering to ensure adequate growth. A winterization plan shall be provided with project Improvement Plans. It is the applicant's responsibility to assure proper installation and maintenance of erosion control/winterization before, during, and after project construction. Soil stockpiling or borrow areas shall have proper erosion control measures applied for the duration of the construction activity as specified in the Improvement Plans. Provide for erosion control where roadside drainage is off of the pavement, to the satisfaction of the ESD.

The applicant shall submit to the ESD a letter of credit or cash deposit in the amount of 110% of an approved engineer's estimate for winterization and permanent erosion control work prior to Improvement Plan approval to guarantee protection against erosion and improper grading practices. Upon the County's acceptance of improvements, and satisfactory completion of a one-year maintenance period, unused portions of said deposit shall be refunded to the project applicant or authorized agent.

If, at any time during construction, a field review by County personnel indicates a significant deviation from the proposed grading shown on the Improvement Plans, specifically with regard to slope heights, slope ratios, erosion control, winterization, tree disturbance, and/or pad elevations and configurations, the plans shall be reviewed by the DRC/ESD for a determination of substantial conformance to the project approvals prior to any further work proceeding. Failure of the DRC/ESD to make a determination of substantial conformance may serve as grounds for the revocation/modification of the project approval by the appropriate hearing body.

GEO-4c. Identify Stockpiling and/or Vehicle Staging Areas on Improvement Plans

Stockpiling and/or vehicle staging areas shall be identified on the Improvement Plans and located as far as practical from existing dwellings and protected resources in the area.

GEO-4d. Comply with Placer County Blasting Requirements

If blasting is required for the installation of site improvements, the Project Applicant shall comply with applicable County Ordinances that relate to blasting and use only State licensed contractors to conduct these operations.

GEO-4e. Obtain NPDES Permit

The Project's ground disturbance exceeds one-acre and is subject to the construction stormwater quality permit requirements of the National Pollutant Discharge Elimination System (NPDES) program. The Project Applicant shall obtain such permit from Lahontan and shall provide to the Engineering and Surveying Department evidence of a state-issued WDID number or filing of a NOI and fees prior to start of construction.

GEO-4f. Satisfy the requirements of Section II of the Land Development Manual. (LDM)

The applicant shall prepare and submit Improvement Plans, specifications and cost estimates (per the requirements of Section II of the Land Development Manual [LDM] that are in effect at the time of submittal) to the ESD for review and approval. The plans shall show all conditions for the project as well as pertinent topographical features both on- and off-site. All existing and proposed utilities and easements, on-site and adjacent to the project, which may be affected by planned construction, shall be shown on the plans. All landscaping and irrigation facilities within the public right-of-way (or public easements), or landscaping within sight distance areas at intersections, shall be included in the Improvement Plans. The applicant shall pay plan check and inspection fees. (NOTE: Prior to plan approval, all applicable recording and reproduction cost shall be paid). The cost of the above-noted landscape and irrigation facilities shall be included in the estimates used to determine these fees. It is the applicant's responsibility to obtain all required agency signatures on the plans and to secure department approvals. If the Design/Site Review process and/or DRC review is required as a condition of approval for the project, said review process shall be completed prior to submittal of Improvement Plans. Record drawings shall be prepared and signed by a California Registered Civil

Engineer at the applicant's expense and shall be submitted to the ESD prior to acceptance by the County of site improvements.

Conceptual landscape plans submitted prior to project approval may require modification during the Improvement Plan process to resolve issues of drainage and traffic safety. Any building permits associated with this phased project shall not be issued until the Improvement Plans for that project phase are approved by the ESD.

GEO-4g. Final Construction Dewatering Plan

The redevelopment in the Project area shall involve excavation in the North and South Base areas. The Second Revised Soils Hydrologic Scoping and Final Report (Kleinfelder 2010) suggests that groundwater will be intercepted during construction of underground parking facilities. Because groundwater will be intercepted, which is the process of diverting and/or capturing the groundwater flows, dewatering, which is the removal and disposition of the water itself, shall be implemented onsite.

The final dewatering plan shall be further developed by the construction contractor based on the final site design of the selected alternative. The construction contractor shall demonstrate that they have a reliable plan for dewatering as well as contingency in case that plan does not function as expected. The contractor shall have demonstrable experience in dewatering operations and evidence of such experience shall be provided to TRPA and the County with the dewatering plan.

There are a number of methods for dewatering intercepted groundwater, from drilling wells upslope to installing sheet piling to constructing temporary or permanent concrete walls with dewatering galleries installed. These decisions shall be made in collaboration with the earthwork contractor chosen to construct the Project and the earthwork contractor shall be responsible for addressing the issue effectively. Interception methods are fairly well understood. Interception strategies shall be explored and implemented in parallel with the actual dewatering strategies. Typical approaches to dewatering intercepted groundwater flows during construction shall include, but shall not be limited to the following: irrigation systems, holding tanks, low mountain feed, snowmaking line feed, distribution (sprinkler system), ground infiltration system, full treatment and surface water discharge (this option would require a temporary discharge permit from Lahontan and may require treatments for the removal of sediment, such as settling or baker tanks), groundwater recharge wells, and/or sewer inflows (this option is not typically viable for ongoing dewatering because the Truckee Tahoe Sanitary District typically denies permits for dewatering inflow into their sewer system due to the stress additional inflow puts on their treatment facilities, but shall be considered for an emergency situation).

A preliminary plan shall also be submitted to Lahontan, approved and in place prior to excavation and once excavation is underway, the primary plan shall be implemented with alternative plans in queue and implementable within a short window if necessary.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 5 and 6*

Implementation of Placer County standard mitigation measures GEO-4a, GEO-4b, GEO-4c, GEO-4d, GEO-4e and GEO-4f assure compliance with Placer County codified regulations pertaining to potential grading and construction-related impacts within the Project area. Compliance with codified regulations and Placer County permitting conditions reduce potential impacts of construction-related erosion, loss of topsoil and unstable soil conditions to a level of less than significant.

Implementation of GEO-4g assures that construction impacts to groundwater will be reduced to a level of less than significant based on criteria for Impact GEO-4 pertaining to construction-related groundwater interception. Implementation of the groundwater protection measures approved for the Final Construction Dewatering Plan will assure that the Project complies with TRPA and State of California permit requirements to contain intercepted groundwater on-site and maintain groundwater quality throughout the construction period.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact: **GEO-C1: Will the Project have significant cumulative impacts to geologic resources?**

Analysis: *Less than Significant Impact; Proposed Project (Alternative 1) and Alternatives 2, 3, 4, 5 and 6*

Geologic and Seismic Hazards. Geologic impacts related to the HMR Ski Area Master Plan Project and future projects in the region will involve hazards and potential impacts related to soils conditions, erosion and seismic activity. The entire region along the west shore of Lake Tahoe is susceptible to impacts from seismic activity; however, soils and geologic influences are typically site-specific and confined to discrete spatial locations. Construction and operation of the Project will not alter the potential for seismic activity or affect the level of intensity at which a seismic event on a nearby project site is experienced. Geologic impacts require project-level planning and site-specific design to avoid and minimize potential hazards and do not combine to create cumulative impact conditions beyond Project area boundaries. The exception to this general condition would occur in areas where a large geologic feature such as a fault zone or active landslide area might affect the geology of an off-site location up or down gradient. These circumstances are not present within the Project area. Project-specific geotechnical evaluations are required as part of the project design, approval and permitting process. As such, project facilities in the Lake Tahoe Basin and throughout the region are required to utilize standard engineering practices and to comply with seismic design standards and adopted building codes to reduce the potential for cumulative geologic and seismic impacts during construction and operations to a less than significant level. The HMR Ski Area Master Plan Project is no exception and will not make a considerable contribution towards cumulatively significant effects to geologic hazards.

TRPA Land Coverage. Excess land coverage within a particular LCD, parcel or Project area is a significant impact. The Project area is presently overcovered. The Project will reduce total existing land coverage within the Project area but will still result in excess land coverage in LCDs 1a and 2. Compliance with TRPA's excess coverage mitigation program defined in Code Section 20.5 will reduce the Project's contribution to excess land coverage to a level of less than significant. Under Alternative 2, existing excess land coverage will remain in place, but no changes would occur that would contribute to additional disturbance. Further, land coverage restoration already conducted by HMR to date (2006-2009) contributes to improved watershed conditions, and the Project does not proposed full build-out of allowable base land coverage, resulting in over one million square feet of remaining allowable base land coverage within the Project area.

Other reasonably foreseeable projects will have individually varied effects on land coverage, increasing, maintaining or reducing impervious surfaces. Projects that propose

land coverage in excess of TRPA allowable base land coverage will be required to incorporate mitigation measures and comply with TRPA's excess coverage mitigation program to limit incremental contributions and conform to TRPA land coverage restrictions.

The HMR CWE analysis incorporates the Bailey coefficients as one of a number of metrics used to determine thresholds of concerns (TOCs) for the Project area watersheds. The HMR CWE analysis and watershed TOCs are detailed in Chapter 15, Hydrology, Surface Water Quality, Water Rights and Groundwater in Impact HYDRO-1. The Total Watershed TOCs for Madden Creek, Homewood Creek, Quail Lake Creek watersheds and Intervening Zone 7000 are based on the sediment yield (T/yr) from maximum allowable base land coverage conditions permitted under TRPA's current land capability classification system (i.e., total build-out of land coverage limitations) as supported by surface water quality, stream channel conditions and general watershed indicators. When considering the entire Madden Creek, Quail Lake Creek and Homewood Creek watersheds (e.g. the Project area and portions of the watershed above and below the Project area) the Project land coverage considered cumulatively with other reasonably foreseeable projects' land coverage will not result in land coverage beyond that permitted under the Bailey coefficients (see Appendix W).

Intervening Zone 7000, the drainage area in which the North and South Base areas are located, is possibly over the allowable base land coverage as a result of "grandfathered" land coverage in the near shore areas with commercial and residential uses outside of the Project area. There is currently no known official TRPA land coverage data for this area as a whole or for areas contiguous to the Project area (IERS 2010). Based on the CWE analysis results, the annualized sediment yield is not predicted to increase in Intervening Zone 7000 as a result of the Project or other reasonably foreseeable projects outside the Project area (see Figures 7 and 8 in Appendix W). Alternative 4 would comply with the Total Watershed TOC for Intervening Zone 7000 because of the removal and restoration of existing land disturbance. The Proposed Project (Alternative 1) and Alternatives 5 and 6 are predicted to reduce annualized total sediment loads by 5 T/yr and to within 1 T/yr of the Total Watershed TOC for a net improvement within Intervening Zone 7000 due to actions proposed within the Project area. It is important to note that the TOCs analyzed in the HMR CWE analysis are more conservative than potential TOCs that could be derived using Bailey coefficients that are predicated on the 2007 Soil Survey data that could be adopted under an Updated TRPA Regional Plan or IPES-based data.

With project-level mitigations, the Project when considered in context of other reasonably foreseeable projects will not make significant contributions towards cumulative effects from land coverage.

Unstable Soil Conditions. Considerable cumulative impacts could result from unstable slopes and resultant erosion if multiple projects are constructed concurrently. The CWE analysis considered future development within the Project area watersheds combined with potential future development outside of the Project area and determined that the overall watersheds are below their Total Watershed TOCs, with the exception of Invervening Zone 7000 for reasons discussed above. The scenario of complete buildout within the watersheds as based on Bailey land coverage coefficients determined that even under this buildout scenario annualized total sediment would not exceed Total Watershed TOCs. Alternative 3 would require project-level mitigation measures for land coverage reduction in Intervening Zone 7000 prior to further development. The HMR CWE analysis concludes that annualized total sediment will be reduced through implementation of the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6.

Implementation of compliance and standard mitigation measures for erosion control during construction activities (i.e. Placer County and TRPA grading plans, TRPA Erosion Control Plan, geotechnical engineering recommendations, NPDES permit conditions and SWPPP) and during operations (i.e. Permanent BMP Plan, Landscaping and Revegetation Plan, Inspection, Operations and Maintenance Plan, Compliance Monitoring for Waste Discharge Requirements) will minimize the potential project-level effects to a level of less than significant. Permitting for other reasonable and foreseeable projects will require similar plans and BMP performance standards. The possibility for BMP failure exists on any Project area, especially when extreme runoff conditions exceed BMP design capacities. The likelihood of the effects of BMP failures in one Project area combining with those of other projects is low because BMP failures are typically localized. Therefore, the Project will not make significant contributions towards cumulative effects from erosion or unstable slopes.

Mitigation: No mitigation is required.

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15.0 HYDROLOGY, WATER RIGHTS, SURFACE WATER QUALITY AND GROUNDWATER

This chapter describes the existing conditions of the Homewood Mountain Resort (HMR) Ski Area Master Plan Area (Project area) and discloses the potential impacts of the HMR Ski Area Master Plan Project (Project) on hydrologic conditions, water rights and supply, surface water quality and groundwater in the Madden Creek, Ellis Creek and Quail Lake Creek watersheds and intervening areas that drain the Project area.

15.1 ENVIRONMENTAL SETTING

15.1.1 Lake Tahoe Basin

The Lake Tahoe Basin comprises a bowl-shaped watershed, characterized by steep, north/south trending mountain ranges to the east and west, with Lake Tahoe occupying nearly 40 percent of the watershed. Within the basin, 63 individual watersheds contribute their flow to Lake Tahoe. The climate consists of long, relatively mild winters with short, dry summers. Most of the area's precipitation comes in the form of snow, with occasional thunderstorms during the summer months. Precipitation that falls from June through September accounts for less than 20 percent of the annual total. The western portions of the basin receive between 35 and 90 inches of precipitation per year (in/yr), while the eastern portions receive between 20 and 40 in/yr (USGS 2002). The higher amounts of precipitation typically occur in the upper elevations.

Natural drainage systems surrounding Lake Tahoe convey surface and subsurface runoff from rain and melting snow that slowly erodes the land. Sediment, dissolved minerals, organic litter, and nutrients are transported through the drainage courses and stream environment zones (SEZ) to the lake. Delta marshes of tributary streams filter these sediments and nutrients whereby they are used for plant growth. Organic materials are decomposed in the oxygen-rich lake and stream waters and nutrients are used by aquatic biota. Water quality in Lake Tahoe and its tributaries can be adversely affected by runoff from surrounding lands. Suspended sediment can cause turbidity and result in sedimentation and suspended and dissolved nutrients can stimulate algal growth, depleting the lake of oxygen in the natural process of eutrophication (i.e., increasing biologic material and depletion of oxygen over time). Today significant portions of the Lake Tahoe Basin are urbanized. Many factors such as land disturbance, habitat destruction, air pollution, soil erosion, and roads can interact to degrade water quality (Murphy and Knopp 2000).

Robert Coats recently published *Climate change in the Tahoe Basin: regional trends, impacts and drivers* (2010), a study that quantified decadal-scale time trends in air temperature, precipitation phase and intensity, spring snowmelt timing, and lake temperature in the Lake Tahoe Basin. The results indicate strong upward trends in air temperature, a shift from snow to rain precipitation regime, a shift in snowmelt timing to earlier dates, increased rainfall intensity, increased interannual variability and continued increases in temperature of Lake Tahoe. The study concludes that continued warming in the Lake Tahoe Basin has important implications for efforts to manage biodiversity and maintain clarity of the lake. Climate change impacts are addressed in Chapter 19, Climate Change.

15.1.2 Homewood Mountain Resort

The Project area is located on the western slope of the Lake Tahoe Basin in Placer County in the town of Homewood, California. HMR is approximately 19 miles north of South Lake Tahoe and five miles south of Tahoe City along Highway 89 and lies within portions of Sections 1, 2, 10, 11, and 12 of Township 14 North and Range 16 East of the Mt. Diablo Meridian. Elevations of the Project area range from approximately 6,235 feet to 7,880 feet above mean sea level (msl).

Kleinfelder (2009) evaluated monthly average precipitation records for the Project area based on WETS data from the Tahoe City Station with normal range of precipitation defined as the 30% chance that precipitation will be either greater than or less than the average values. From 1971 to 2000, the average annual precipitation range was from 25.08 to 37.92 inches. Precipitation studies that evaluated a period of record ending in 2006 determined average precipitation for the Project area at 33.5 inches/year for the lower elevations and 37.5 inches/year for the upper elevations (Lumos and Associates 2006).

15.1.3 Homewood Mountain Resort Technical Studies and Monitoring Efforts

Project construction will occur within the Madden Creek, Homewood Creek (also called Ellis Creek) and Quail Lake Creek watersheds that drain the Project area, along with Intervening Zone 7000, which contains the North Base area and a portion of the South Base area. Figure 15-1 illustrates the watersheds and the Project area boundaries as delineated by the Tahoe Regional Planning Agency (TRPA) and defined for the Lake Tahoe Total Maximum Daily Load (TMDL) (Lahontan and NDEP 2010). HMR has worked with regulatory agencies, scientists and contracted consultants to study and report the existing conditions within the Project area and project vicinity. The following sections detail the analyses conducted to measure existing conditions within the Project area for hydrology and flooding, surface water quality, channel condition, cumulative watershed effects, and restoration. The results and conclusions of these technical studies are summarized and reported by watershed (i.e. Madden Creek, Homewood Creek, Quail Lake Creek, and Intervening Areas) in the sections that follow.

Hydrology and Flooding

In cooperation with the California Department of Transportation (Caltrans), the United States Geological Survey (USGS) estimates the flood frequencies of streams that enter Lake Tahoe. Information about potential flooding of these streams is used by Caltrans in the design and construction of roads and highways in the California portion of the basin. The stream-monitoring network in the Lake Tahoe Basin is part of the Lake Tahoe Interagency Monitoring Program (LTIMP), which combines the monitoring and research efforts of various Federal, State, and regional agencies, including both USGS and Caltrans. Table 15-1 presents estimated 50-year and 100-year peak discharge for Quail Lake Creek and Madden Creek. This data was not reported for Homewood Creek. The largest flood peaks for these drainages were recorded in 1973 and did not exceed the 50-year peak flood discharge based on the two years of data collected.

Figure 15-1. Project Area Watersheds

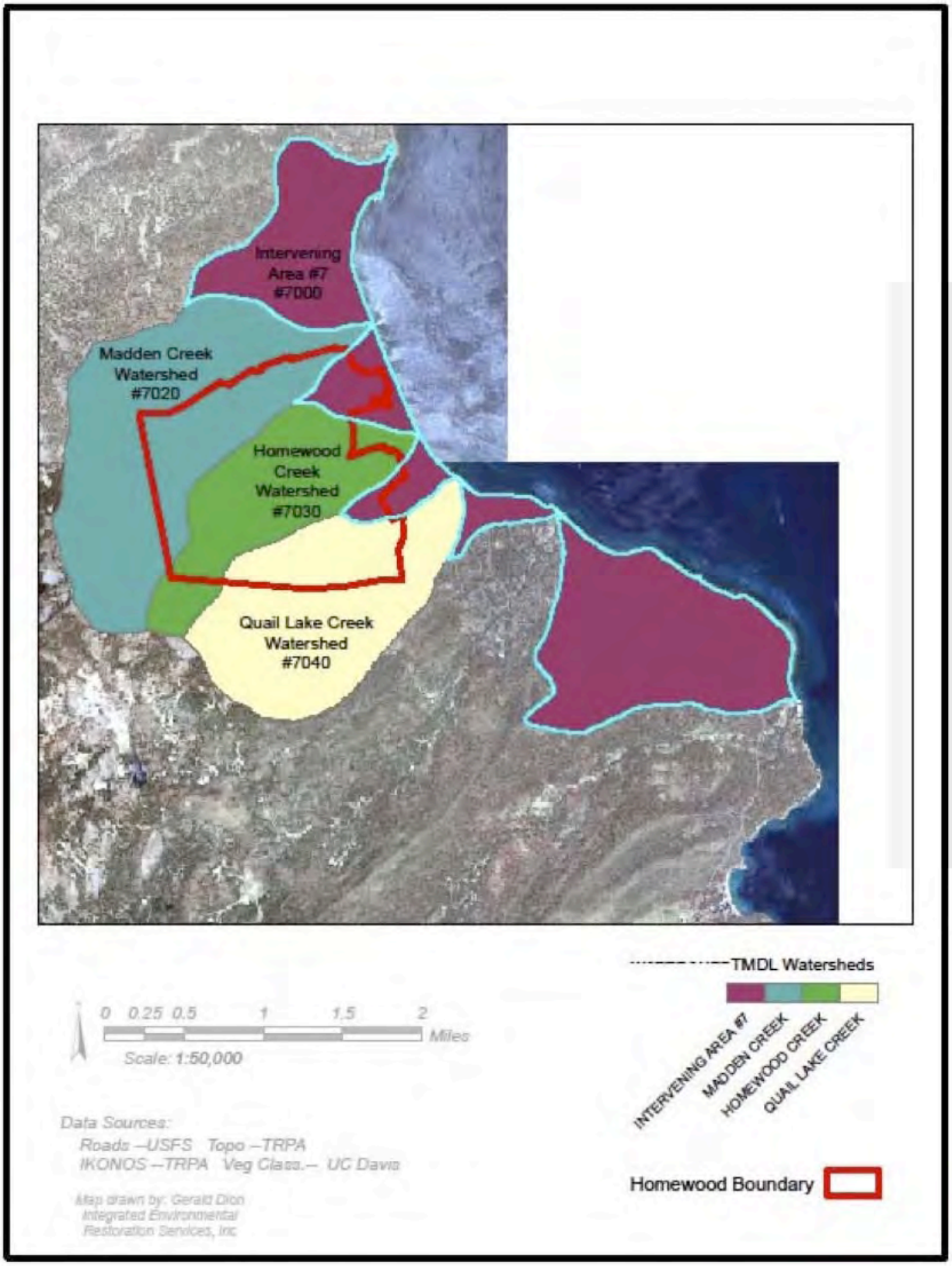


Table 15-1

Modeled and Historic Flood Data for USGS Monitoring Sites in Homewood, CA.

Monitoring Site	Period of Record	Drainage Area (mi^2)	50-year peak discharge [a] (cfs*)	100-year peak discharge [b] (cfs*)	Largest recorded flood peak (Date/Magnitude – cfs*)
10336650 Quail Lake at Homewood, CA.	1972-1974	1.48	150	207	May 14, 1973 / 24
10336655 Madden Creek near Homewood, CA.	1972-1973	1.67	146	195	May 17, 1973 / 43
10336658 Madden Creek at Homewood, CA.	1972-1973	2.04	178	204	May 17, 1973 / 86

Source: USGS http://pubs.usgs.gov/fs/fs03502/table01.html and USGS 2002

Note: * cubic feet per second or cfs

a. The 50-year peak discharge is theoretical and statistically has a 2-percent chance of happening in any given year.

b. The 100-year peak discharge is theoretical and statistically has a 1-percent chance of happening in any given year.

Surface Water Quality Sampling

Surface water quality sampling began at HMR in February 1989. More consistent monitoring commenced in 1995 upon issuance of the Updated Waste Discharge Requirements (WDR) under Board Order 6-95-86 by the California Regional Water Quality Control Board – Lahontan Region (Lahontan). Surface water quality monitoring must comply with the Amended WDR under Board Order 6-95-86A2, which was signed March 13, 2002. The details of the WDRs are presented in the Regulatory Setting section and surface water quality monitoring data are referenced to Appendix Y.

The WDRs established sampling stations at the following locations:

- Station M-1 – Madden Creek, immediately downstream of the outfall from Lake Louise;
- Station M-2 – Madden Creek, immediately downstream of the point where the creek exits the property;
- Station E-1 – Ellis (Homewood) Creek, immediately downstream of the point where the creek enters the property;

- Station E-2 – Ellis (Homewood) Creek, immediately downstream of the point where the creek exits the property;
- Station P-1 – North Parking Lot, at the outlet drain pipe; and
- Station P-2 – South Parking Lot, at the drop inlet on the south side of the parking lot.

Figure 15-2 illustrates the station locations, and the results from surface water quality compliance monitoring for Lahontan WDRs are discussed below. Appendix Y contains the data for each monitoring station for the periods of record for water years 1989 through 2009 and annual averages computed by Lahontan staff.

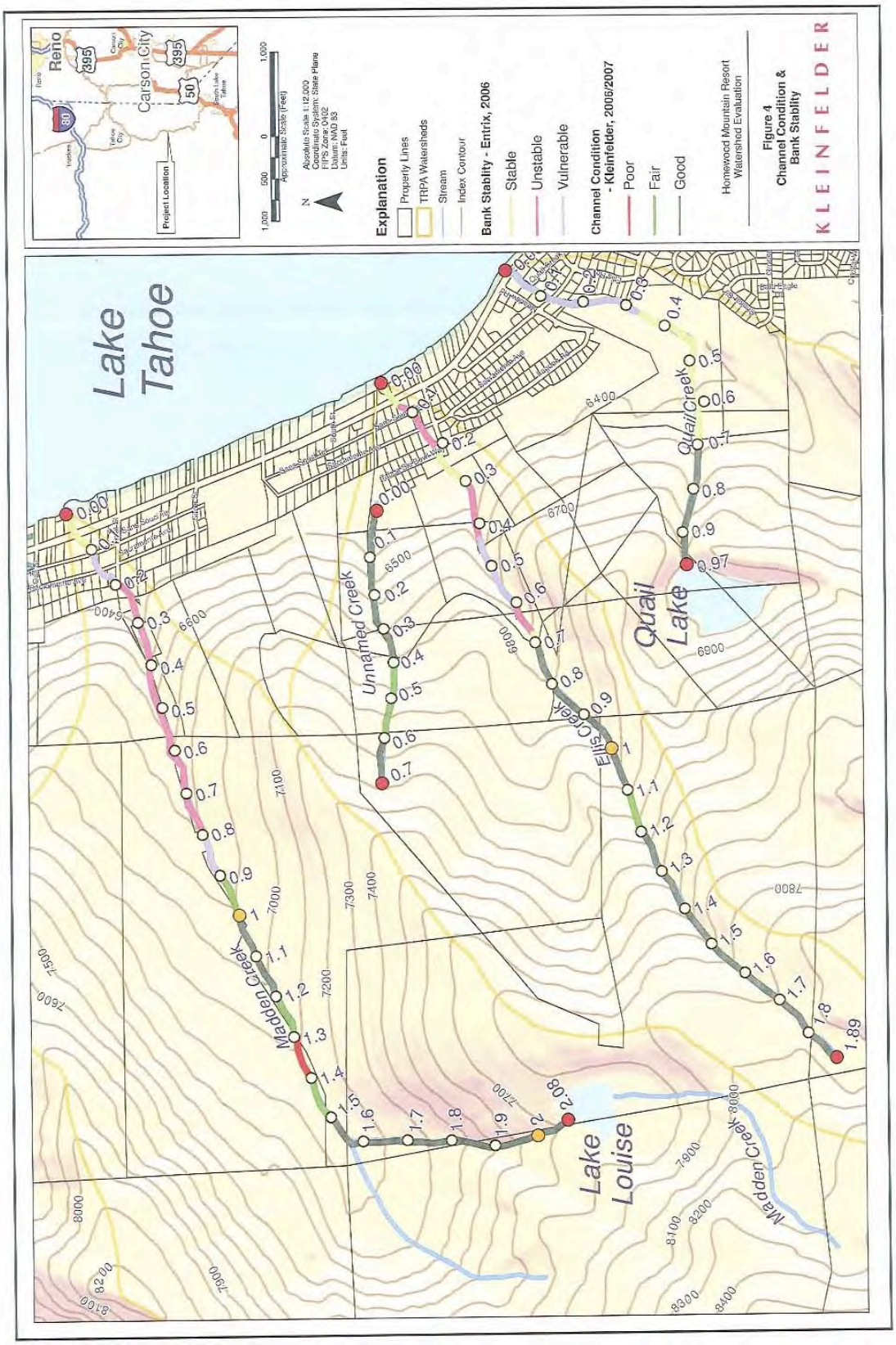
Beneficial uses for the Project area streams include: municipal and domestic supply, groundwater recharge, water contact recreation, noncontact water recreation, commercial and sportfishing, cold freshwater habitat, wildlife habitat, spawning, reproduction and development, and suspended sediment objective for Lake Tahoe. Compliance for the period of record is discussed below according to watershed. Figures 7, 8 and 9 in Appendix W, the HMR Cumulative Watershed Effects Analysis (IERS 2010), illustrate this dataset for Total Suspended Solids, Total Nitrogen and Total Phosphorus. As outlined in the WDRs, analysis of receiving water samples is addressed through calculation of annual average means while analysis of discharge to surface water samples is discussed according to single grab sample.

HMR complies with the base requirements outlined in Lahontan's current WDRs, which are summarized in the Regulatory Settings section below. Current WDRs have the purpose of determining compliance with pollutant concentration levels but not for determining annual loading. Because annual loading calculations are difficult to report based on the sampling regime of the surface water quality monitoring program, average annual loading has been estimated based on the methods of the Load Simulation Program in C++ (LSPC) model (http:www.epa.gov/Athens/wwqtsc/html/lspc.html) for the North Base, South Base, and Mid-Mountain areas and along Tahoe Ski Bowl Way (i.e., the developed base areas). The results are reported below in Subsection 15.1.6. This approach evaluates benchmark sediment values to better characterize the Project area with treatment/loading assumptions tested and BMP and stormwater treatment system performance evaluated.

Channel Condition Assessments

Placer County contracted Entrix, Inc. and Lumos and Associates to conduct an assessment of the Homewood, California watersheds for the purposes of identifying erosion control problems and opportunities for watershed and water quality improvements (Entrix, 2006 and Lumos and Associates, 2006). This assessment included an evaluation of the lower portions of Madden Creek, Homewood Creek, and Quail Lake Creek completed as part of the Homewood Erosion Control Project, which is identified by the TRPA as Environmental Improvement Program (EIP) Project No. 725. The lower portions of the streams exit the Project area and soon discharge to Lake Tahoe.

Figure 15-2. Channel Reach Delineations and Conditions



Kleinfelder completed the *Stream Channel and Baseline Surface Water Assessment for Homewood Mountain Resort* in 2007 (Kleinfelder 2007), an assessment that incorporated the Entrix, Inc. and Lumos and Associates assessments and expanded the study area to the upper limits and headwaters of the HMR watersheds with data collected in October and November 2006. The assessment provides baseline conditions for the following metrics:

- Steam Channel Classification is based on California Forest Practice Rules, Rosgen Level II and Montgomery-Buffington Stream Classification and Stream Condition Inventory methodologies. The delineated channel reaches are illustrated in Figure 15-2 and classification details are referenced to the Kleinfelder (2007) report. The overall condition assessments describe channel conditions as good, fair and poor for the upper reaches or stable, vulnerable and unstable for the lower reaches. The definitions that are used in the watershed summaries below are:
    - Good – Banks exhibit erosion only on outcurves, at obstructions and infrequently in other areas; OR
    - Stable – No instability factors and greater than 75 percent cover (cover includes vegetation, large rock, downed wood, or erosion resistant soil types with clay or conglomerate); and
    - Fair – Channels are eroded intermittently in locations not explained by stable fluvial processes; OR
    - Vulnerable – Greater than 75 percent cover, but at least one instability indicator (instability indicators include mass movement, slumping, fracturing, undercut banks or significant lengths of bank erosion); and
    - Poor – Extensive and continuous erosion on one or both banks; OR
    - Unstable – Less than 75 percent cover and at least one instability indicator.
- Baseline Surface Water Quality based on grab samples collected in October 2006, March 2007, May 2007 and September 2007 at the Lahontan Monitoring and Reporting Program No. 95-86A1 monitoring stations and at an additional 10 monitoring stations.
- Historic Surface Water Quality Trends based on grab samples collected since 1989.

Restoration

Starting in 2006, HMR teamed with Integrated Environmental Restoration Services (IERS) to complete sediment source control and restoration projects and monitoring. The value of removing unpaved roads in the upper watershed is defined in the *Lake Tahoe TMDL Pollutant Reduction Opportunity Report* (Praul and Sokulsky 2008). Unpaved roads at HMR are generally characterized by highly compacted soil conditions, low to no surface cover, and elevated runoff and sediment loading rates (IERS 2008).

In 2006 and 2007, six restoration projects, ranging in size from 3,500 square feet to 48,300 square feet, were completed for approximately 2.4 acres of restoration (Note that portions of these projects could be verified by TRPA as land coverage removal for banking or permanent retirement as detailed in Chapter 14, Geology, Soils and Seismicity). In years 2008 and 2009,

eight restoration projects were completed, ranging in size from 1,920 square feet to 38,788 square feet, for approximately 3.1 acres of land restoration. The project locations are illustrated on Figure 14-4 in Chapter 14, Geology, Soils and Seismicity, where these sediment source control projects are discussed in context with existing land coverage removal and reductions. Although land coverage has been removed and restored, the coverage is considered existing TRPA land coverage until the Project Applicant submits banking applications with TRPA, verification is completed and approval is granted.

The goals of the road restoration projects and monitoring are to:

- Increase watershed function through soil and plant community restoration;
- Reduce erosion potential through increasing infiltration, reducing soil compaction, increasing mulch cover and plant cover, and creating proper nutrient cycling to sustain the plant cover in the long-term;
- Monitor each treatment area to determine the level of effectiveness of the range of treatments and determine the most cost effective restoration techniques; and
- Use this information to develop a long-term treatment strategy for the Project area.

The restoration projects are discussed below according to watershed location. The road restoration includes Tier 1, Tier 2, and Tier 3 treatments that are directly tied to the pollutant load reduction opportunities described in the *Lake Tahoe TMDL Pollutant Reduction Opportunity Report* and are described below:

Tier 1: Lowest Treatment Intensity; treatments include surface mulch of varying types and depths.

Tier 2: Medium Treatment Intensity; treatments include light soil decompaction (ripping or targeted loosening), organic fertilizer, native seed and mulch. This treatment is implemented to test the cost-effectiveness of a very low-intensity soil decompaction process, which is currently thought to be less expensive than deeper tilling and/or recontouring (Tier 3). Tier 2 treatments were implemented with and without wood chips as a soil amendment to assess the effects of woody soil amendments on sediment source control.

Tier 3: High Treatment Intensity; treatments include deep soil loosening/tilling (minimum 12 inches) and recontouring as appropriate, incorporation of a high concentration of woody soil amendments, organic fertilizer, native seed and mulch. Tier 3 (also referred to as “full treatment”) describes a level of treatment that includes all the elements necessary to develop site conditions that will, in time, mimic and sustain “native” or “undisturbed” conditions.

Variations of treatment were implemented based on site-specific needs. A wide range of monitoring techniques, including rainfall and runoff simulations, soil density, soil moisture, and surface and vegetative cover and composition, were conducted.

Cumulative Watershed Effects (CWE) Model

CWE Overview

IERS completed the HMR Cumulative Watershed Effects (CWE) analysis for the Project area watersheds following the approach outlined in the TRPA's Ski Area Master Plan Guidelines (TRPA 1990) with guidance from TRPA Staff. Appendix 5 of the Ski Area Master Plan Guidelines outlines the requirements for preparation of a CWE analysis. The HMR CWE analysis assists in the planning and understanding of the cumulative impacts of redevelopment within the Project area, especially as they relate to sediment movement and water quality within the Project area as combined with sediment movement and water quality in the total watershed.

A CWE analysis is a qualitative evaluation of the overall health of a watershed and the sensitivity of the watershed to disturbances such as land use development and redevelopment. The analysis includes a qualitative evaluation of a watershed that is supported by quantitative measurable parameters. The purpose of the HMR CWE analysis is to estimate the relative impacts caused by facilities or activities related to past and proposed development and to determine appropriate mitigation if necessary. Appendix W contains the *Homewood Ski Area Master Plan Cumulative Watershed Effects Analysis* technical document that was prepared by IERS (IERS 2010).

Thresholds of Concern (TOC)

The HMR CWE analysis evaluates the relative impacts of the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 as compared to existing conditions (No Project or Alternative 2) and Thresholds of Concern (TOCs). TOCs are conceptual thresholds that describe a point beyond which a relatively irreversible trend of increasing degradation to 'beneficial uses' occurs. The TOC concept is roughly analogous to the TRPA Environmental Thresholds and the ecological concept of carrying capacity. For purposes of the HMR CWE analysis a TOC is defined as *"the point at which the watershed would undergo irreversible degradation supported by a positive environmental feedback loop"*(IERS 2010).

Two types of TOCs for the Project area watersheds are defined:

1. <u>Project Area TOCs</u> determine the point of impact significance for development and redevelopment actions taken within the Project area (i.e. those portions of Madden, Homewood and Quail Lake Creek and Intervening Zone 7000 watersheds within the Project area boundary). The Project Area TOCs help gauge 1) whether existing conditions within the Project area already exceed the Project Area TOCs, and 2) whether the actions within the Project area boundary from implementation of the Proposed Project (Alternative 1) or Alternatives 3, 4, 5 or 6 would cause exceedance of Project Area TOCs. Exceedance of a Project Area TOC constitutes a significant impact requiring mitigation under TRPA codified regulation.

2. <u>Total Watershed TOCs</u> determine the point of impact significance for future development and redevelopment actions that could be taken outside the Project area considered cumulatively with those actions taken, as defined by the Project, within the HMR Project area (i.e. the portions of the Madden, Homewood and Quail Lake Creek and Intervening Zone 7000 watersheds located upstream and downstream of the Project area <u>ADDED to</u> those portions of Madden, Homewood and Quail Lake Creek and Intervening Zone 7000 watersheds within the Project area boundary). The Total Watershed TOCs gauge the incremental contribution of the Project to cumulatively considerable impacts when

combined with future reasonable and foreseeable projects outside the Project area portions of the watersheds. Exceedance of a Total Watershed TOC could constitute a potentially cumulatively significant effect as defined by CEQA and TRPA.

The TOCs were developed using two main components. The first component is quantitative and provides modeled annualized sediment yields that could theoretically result from build-out of base allowable land coverage permissible under current TRPA Bailey land use coefficients. The second component is qualitative and consults several levels of stream condition assessments, surface water quality from a period of record dating back to 1989, and other watershed indicators (i.e., 2007 HMR Watershed Atlas, professional knowledge of the Project area hydrology, field evidence) to support or discount the quantitative TOC for the four watersheds of study.

HMR CWE Analysis

The HMR CWE analysis employs a process and model that reflect those utilized in the development of the Lake Tahoe Total Maximum Daily Load (TMDL) and described in the *Lake Tahoe TMDL Technical Study* (Lahontan and NDEP 2007). The Lake Tahoe TMDL process employed the Loading Simulation Program in C++ model (LSPC), a nationally recognized watershed model developed by the United States Environmental Protection Agency (USEPA) (http://www.epa.gov/ATHENS/wwqtsc/html/lspc.html). At its core, the LSPC model considers watershed hydrologic processes as they depend on climate, topography, and land-use to determine the runoff and sedimentation rates from each defined land-use category within a watershed. The sedimentation rates are summed to estimate the watershed sediment yields reported in metric Tonnes per year (T/yr).

The HMR CWE analysis utilizes the LSPC model land use inputs, topography and climate conditions and sediment rates from urban areas, as defined for the Lake Tahoe TMDL together with model computed runoff rates and Project area field-measured pervious area erosion rates to determine sediment yields from each land use as described by existing conditions (i.e., No Project or Alternative 2). By varying land uses within each of the four watersheds to reflect changes proposed by the Project, it is possible to estimate the relative impacts to annual sediment yields that could occur from the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6.

The following steps that resulted in a GIS dataset of some 20,000 polygons were taken to setup the HMR CWE analysis for the existing conditions and simulate each of the project alternative land-use conditions to estimate sediment yield (T/yr).

1. The 1-meter land use raster dataset are converted into a feature (polygon) dataset using the standard ESRI “raster to poly” toolset.

2. The average slope for each land use is calculated based on 10-meter grid dataset. This dataset is simplified to a 100-meter grid and intersected with the baseline land-use dataset. The slope for each land use is determined as an area-weighted average.

3. The soil parent material (volcanic or granitic origin) is used to determine sediment rates per unit of runoff from pervious areas. This key parameter for each watershed is derived from the 2007 NRCS soil survey GIS data layer.

4. The unpaved (dirt) roaded area, used in the original TMDL modeling effort, under-estimated the actual dirt roaded areas found in the Homewood area. As

such the dirt road land use category area is increased by approximately 958,311 square feet or 22 acres to reflect field-measured land use and land coverage conditions while adjoining vegetated land use category areas were reduced by an equivalent amount. This correction results in a more realistic representation of existing conditions.

5. For the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6, the land uses are adjusted (added or subtracted) for each watershed to reflect proposed changes in land use under each alternative. The total watershed areas are held constant.

6. Following the Lake Tahoe TMDL Pollutant Reduction Opportunities Report, reductions in sediment yield are established based on the pollutant load reduction measures proposed under each project alternative.

7. The resulting sediment yields from each set of land use conditions are summarized and graphically displayed.

Section 3 of Appendix W further details the HMR CWE analysis methodology.

Compliance with Project Area and Total Watershed TOCs

The modeled existing sediment yields from the Madden Creek, Quail Lake Creek and Homewood Creek watersheds and Intervening Zone 7000 are used as the baseline to describe existing conditions. Existing conditions (No Project, Alternative 2) are discussed below for each watershed.

As stated above, the HMR CWE analysis then simulates changes to the existing land uses (and thus sedimentation rates) and modifies TMDL pollutant load reduction measures to reflect the future conditions under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6. The Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 are discussed under Impact HYDRO-1 in the Environmental Impacts and Recommended Mitigation section.

Table 15-2 presents existing Project Area sediment yield for each watershed for comparison against the Project Area TOC for that watershed and the Total Watershed sediment yield, which combines the Project area sediment yield with the sediment yield for the portions of the watershed located upstream and downstream of the Project area, for comparison against the Total Watershed TOC for that watershed..

Table 15-2

Annualized Sediment Yield Estimates –Existing Conditions vs. Project Area and Total Watershed TOCs

	Baseline Sediment Yield for Project Area (T/yr)	TOC for Project Area (T/yr)	Baseline Sediment Yield for Total Watershed (T/yr)	TOC for Total Watershed (T/yr)*
Intervening Zone 7000	62	55	361	355
Madden Creek	459	435	1036	1085
Homewood Creek	828	865	906	955
Quail Lake Creek	152	147	409	462
Totals	**1501**	**1502**	**2712**	**2857**

Source: IERS 2010

Notes: * TOC for Total Watershed equates the Project Area TOC plus the Outside of Project Area TOC. The Outside of Project Area TOCs are as follows in T/yr: Intervening Zone 7000 – 300; Madden Creek – 650; Homewood Creek – 90; Quail Lake Creek – 315

The modeled results demonstrate that the Homewood Creek watershed has a sediment yield that is below its Project Area TOC and Total Watershed TOC. Quail Lake Creek and Madden Creek watersheds are estimated to have sediment yields that exceed their Project Area TOC, while the sediment yields for the whole watersheds are below the Total Watershed TOC. Intervening Zone 7000 is estimated to have a sediment yield that exceeds its Project Area TOC and the Total Watershed TOC.

15.1.4 Homewood Mountain Resort Watershed

The Project area affects portions of the Madden Creek, Homewood Creek and Quail Lake Creek watersheds. The North Base area is contained within Intervening Zone 7000. The South Base area is located primarily within Homewood Creek watershed with a small portion of the South Base area in Intervening Zone 7000. The following sections present the watershed characteristics for the Project area watersheds.

Madden Creek

Hydrology and Flooding. The Madden Creek watershed contains the perennial Madden Creek and Lake Louise and establishes the northern and western boundaries of the Project area. A weir structure spills water from Lake Louise into Madden Creek and the headwaters are located in a broader valley area. Madden Creek Watershed (also labeled H9 or TMDL watershed 7020) has an area of approximately 2.5 square miles or over 1,300 acres. The headwaters begin at Ellis Peak at an elevation of about 8,700 feet msl, flow over three miles and discharge into McKinney Bay of Lake Tahoe. Lake Louise is the only lake in this watershed and is located at approximately 7,700 feet msl. United States Department of Agriculture (USDA) Forest Service

Lake Tahoe Basin Management Unit (LTBMU) land is located adjacent to the north side of the drainage. The Project area covers the majority of the lower portion of the watershed and 27 percent, or 351 acres, of the total watershed.

The average slope of the watershed is 48 percent with a general aspect of southeast and northwest. The parent material underlying the watershed is primarily volcanic and about 10 percent glacial deposits (IERS 2010).

Madden Creek comprised the northern boundary of the Project area. A 100-year flood plain is mapped along the lower portions of Madden Creek at the confluence with Lake Tahoe. No portion of the Project area is within a FEMA designated floodplain within this watershed.

Surface Water Quality. Madden Creek is sampled above the Project area at station M-1 and below the Project area at M-2, as required for Lahontan WDRs. The period of record spans from water year 1992 through 2009. Average annual means for receiving water samples at M-1 ranged from 0.03 to 1.2 milligrams per liter (mg/L) for Total Nitrogen and 0.007 to 0.034 mg/L for Total Phosphorus. Annual means for Total Suspended Sediment concentrations ranged from 5.3 mg/L to less than 1.0 mg/L. Turbidity measurements do not exceed 3.4 are below the nephelometric Average annual means for receiving water samples at M-2 ranged from 0.02 to 0.97 mg/L for Total Nitrogen and 0.01 to 0.16 mg/L for Total Phosphorus. Annual means for Total Suspended Sediment concentrations ranged from 1.8 to 14.9 mg/L. Turbidity was typically measured below 2 ntu.

Figures 7, 8 and 9 in Appendix W, the HMR CWE Analysis (IERS 2010), illustrate the Madden Creek dataset for Total Suspended Solids, Total Nitrogen and Total Phosphorus. The data set does not indicate negatively trending degradation and the dataset does not indicate consistent pollutant values between downstream and upstream monitoring locations (IERS 2010).

Channel Condition. Most of the sediment delivered to Madden Creek is derived from mass wasting of very steep, unstable channel banks (Kleinfelder 2007). In the lower portion of Madden Creek, channel gradients are moderately high, at approximately four percent between Lake Tahoe and just above Highway 89. The majority of Madden Creek is typified by extremely high gradients ranging from 10 percent to over 20 percent upstream to Lake Louise. There is a portion of the stream, between R1.4 and R1.8 (see Figure 15-2) where multiple drainages confluence into the main channel and where the river valley widens and flattens out. The slopes are less than 10 percent in this reach and the stream has greater sinuosity and larger expanse of riparian vegetation.

For the lower portions of Madden Creek, these percentages shift with approximately 60 percent of the lower portion of Madden Creek (RM 0.0 – RM 1.0) rated Unstable, 20 percent rated Vulnerable and 20 percent rated Stable. The poor conditions observed included steep unvegetated banks with unstable soils. In the upper reach of Madden Creek, between Lake Louise and RM 1.5, the channel is in very Good condition with minor bank erosion in very limited areas. This section is located upgradient of the various confluences.

The condition ratings for the entire channel are summarized as: Good/Stable 42 percent; Fair/Vulnerable 21 percent; and Unstable/Poor 37 percent.

Madden Creek was inventoried by LTBMU in August 1994 for fish habitat. Based on the LTBMU information, it appears that most of Madden Creek may provide better potential habitat for adult trout than the other streams in the Project area due to the greater proportion of pools and

their greater depth. The lower portion of Madden Creek, outside of the Project area, does not provide good fish habitat due to alterations of the streambed for flood control.

Restoration. No restoration projects are reported for Madden Creek watershed.

Cumulative Watershed Effects. The Project area comprises 27 percent of the Madden Creek watershed. As presented in Table 15-2, the Total Watershed TOC for the Madden Creek watershed is calculated at 1085 T/yr for total sediment. The baseline (existing conditions) sediment yield for the total Madden Creek watershed is 1036 T/yr, which is 5 percent less than the Total Watershed TOC.

The Project area TOC for the Madden Creek watershed is calculated at 435 T/Yr. The baseline (existing conditions) sediment yield from the Project area is 459 T/Yr, which exceeds the Project area TOC by 24 T/yr or 5 percent.

Homewood (Ellis) Creek and South Base Area

Hydrology and Flooding. The watershed is titled Homewood Creek on the TRPA watershed map for priority drainages (http://www.trpa.org/documents/docdwnlds/Prioritywtrshd.pdf), Homewood Canyon Creek on the Jorgensen et al. watershed map (1978) and is sometimes referred to as Ellis Creek in past documents, including the Lahontan WDRs. The watershed contains: an unnamed ephemeral creek that flows through the Project area north of the terminus of Tahoe Ski Bowl Way; the perennial Homewood Creek; and several tributaries to Homewood Creek. Homewood Creek flows through the South Base area.

Homewood Creek watershed (also titled H40 or TMDL watershed 7030) has an area of approximately 1.3 square miles or 645 acres, the majority of which, 81 percent or 524 acres, is located within the Project area. The headwaters begin at Knee Ridge, flow over two miles through the Project area and then residential areas to discharge into McKinney Bay of Lake Tahoe.

The average slope of the watershed is 47 percent and the general aspect is southeast and northwest. The parent material underlying the watershed is primarily volcanic and less than 10 percent glacial deposits. The land uses in the watershed include roads, vegetated ski trails and a small amount of development in the South Base area and private residences (IERS 2009).

Portions of the South Base area are within a 100-year flood hazard area as defined and mapped by FEMA on panel 06061C0225F dated June 8, 2007. A Federal Emergency Management Agency (FEMA) flood hazard Zone A is delineated along Homewood Creek in the South Base area and estimated at 1.47 acres or 64,124 square feet of the Project area. Currently there is a parking lot and several structures located within the flood hazard zone. A-Zones are found on all Flood Hazard Boundary Maps (FHBM), Flood Insurance Rate Maps (FIRM), and Flood Boundary and Floodway Maps (FBFM). An A-Zone is an area that would be flooded by the Base Flood (known as a 100-year flood elevation or one-percent chance flood) and is the same as a Special Flood Hazard Area (SFHA) or a 100-year floodplain.

There is an unnamed drainage within the Homewood Creek watershed that receives runoff from an intervening area (identified as Intervening Zone D in the Kleinfelder Baseline Report - 2007). This area is located between Homewood Creek and Madden Creek and includes an unnamed intermittent drainage channel. The unnamed stream does not provide perennial or seasonal fish habitat but is capable of transporting sediment to Lake Tahoe and potentially Homewood Creek

(Kleinfelder 2007). Based on geomorphic features and observations by HMR staff, the channel conducts high volumes of water during large storm events and captures and conveys snowmelt during the spring.

Surface Water Quality. Homewood Creek is sampled above the Project area at station E-1 and below the Project area at E-2, as required for Lahontan WDRs. The period of record spans from water year 1989 through 2009.

Average annual means for receiving water samples at E-1 ranged from 0.03 to 0.23 mg/L for Total Nitrogen and 0.008 to 0.083 mg/L for Total Phosphorus. Annual means for Total Suspended Sediment concentrations ranged from 8.3 to less than 1 mg/L. Turbidity was typically measured below 2 ntu. Average annual means for receiving water samples at E-2 ranged from 0.04 to 0.5 mg/L for Total Nitrogen and 0.01 to 0.048 mg/L for Total Phosphorus. Annual means for Total Suspended Sediment concentrations ranged from 25 to 2.1 mg/L. Turbidity was typically measured below 2 ntu with a maximum measurement of 6.5 ntu in 1995.

Figures 3, 4 and 5 in Appendix W, the HMR Cumulative Watershed Effects Analysis (IERS 2010), illustrate the Homewood Creek dataset for annual monthly means for Total Suspended Solids, Total Nitrogen and Total Phosphorus. The data set does not indicate negatively trending degradation and the dataset does not indicate consistent pollutant values between downstream and upstream monitoring locations (IERS 2010).

Channel Condition. Channel gradients for Homewood Creek are approximately four percent in the lowest reach between Lake Tahoe and Ski Bowl Way and then range from 12 percent to 27 percent upstream to the headwaters where the gradient flattens to less than one percent.

The overall condition ratings for the entire channel are summarized as: Good/Stable 70 percent; Fair/Vulnerable 18 percent; and Unstable/Poor 12 percent. Approximately 48 percent of the stream channel located in the South Base area to Lake Tahoe (RM 0.0 – RM 0.7 as depicted on Figure 15-2) was rated as Unstable. Bank instability between RM 0.3 and RM 0.7 appears to be from mass wasting sites along a steep gradient. In the 0.2 mile of the channel confluence with Lake Tahoe, undercutting was observed. Erosion and undercut banks are observed near RM 1.15. Otherwise, the upper reaches (RM 0.7 – RM 1.89) have good channel conditions with substantial vegetation cover and no significant erosional features.

Homewood Creek was inventoried by LTBMU in August 1994 for fish habitat. Homewood Creek provides limited habitat for adult trout life stages, but there is substantial suitable spawning habitat. High gradients between RM 0.3 and RM 0.7 and RM 1.1 and RM 1.4 could act as natural barriers for migration in low flow years.

Kleinfelder assessed the portion of the unnamed channel in the Homewood Creek watershed that is located within the Project area. The unnamed channel has 72 percent of banks in Good/Stable condition with the exception of banks between RM 0.4 and RM 0.6, where banks have little or no vegetation along steep slopes and are rated as Fair/Vulnerable (28 percent). In this section, banks have erosional features such as slope failure, undercut banks, loose soil and exposed tree roots that are most likely contributable to road crossings.

Restoration. Thirteen restoration projects were completed between 2006 and 2009 in the Homewood Creek watershed within the Project area. The project locations are identified in Figure 14-4 in Chapter 14, Geology, Soils and Seismicity and the actions and results are summarized below.

Road 31 is 6,180 square feet and was previously used for forest management actions. The site had a shallow layer of surface woodchips (less than one inch), two water bars, and very little vegetation before treatment in 2006. The main goal at Road 31 was to reduce sediment movement and surface erosion by incorporating organic matter and applying fertilizer, native seed, and mulch to initiate a successional process that leads to diverse, mid-seral, and self-sustaining native grass and shrub plant communities. Variations in amendment depth and mulch type were tested to determine whether differences exist in either soil density, plant cover, or mulch cover. At Road 31, Tier 3 treatments were completed and sediment yield decreased by seven times after treatment, from 381 to 54 pounds per acre per inch (lbs/acre/in). This data suggests that restoration treatments applied at Road 31 were successful in controlling sediment at the source.

Road 37 is an old road near the top of the Overload ski trail and approximately one hundred vertical feet below the top of Quail Chair lift. The goal at Road 37 was to determine the level of improvement in infiltration capacity and hydrologic function within an abandoned roadbed when mature vegetation is mowed and soil is loosened. Large woody debris was spread across the site to prevent vehicular and pedestrian traffic. Tier 3 treatments were applied to 15,561 square feet.

Creek Road is an old road near the bottom of Ellis Chair lift. The top of Creek Road intersects with the Smooth Cruise ski trail and the bottom intersects an active mountain access road. The project goals were to restore an abandoned roadbed, to improve infiltration capacity and hydrologic function, and to initiate a successional process that leads to a diverse native grass and shrub plant community through amendment incorporation, fertilizer, native seed and mulch addition. Treatment included, tilling four inches of tub grindings to 18 inches, 2,000 lbs/acre of Biosol, 125 lbs/acre of native seed, and one inch of tub grinding mulch. These Tier 3 treatments were applied across 11,400 square feet.

Rainbow Ridge Road was treated in 2007. The site is a decommissioned road on Rainbow Ridge ski trail at an elevation of 7,338 ft msl. The Rainbow Road project goals were to restore an abandoned roadbed, to improve infiltration capacity and hydrologic function, and to initiate a successional process that leads to a diverse native grass and shrub plant community through amendment incorporation, fertilizer, native seed, and mulch addition. Tier 3 treatments included tilling four inches of tub grindings to 18 inches, 2,000 lbs/acre of Biosol, 125 lbs/acre of native seed, and two inches of pine needle mulch.

Upper Wedding Road was treated in 2007. The site is a road that is located under the top portion of the Quail chairlift and along part of the El Capitan ski trail. The Wedding Road project goals were to restore an abandoned roadbed, to improve infiltration capacity and hydrologic function, and to initiate a successional process that leads to a diverse native grass and shrub plant community through amendment incorporation, fertilizer, native seed, and mulch addition.

Wedding Road received four inches of pine needles tilled to 18 inches, 2,000 lbs/acre of Biosol, 125 lbs/acre of native seed, and two inches of pine needle mulch. A portion of the treatment area was divided into 12 sections. Each section received one of four different seed mixes or an individual species. Seed tests were implemented to determine which mixture of seeds and which seeds alone produced the highest plant cover by seeded species, after one growing season, and throughout subsequent growing seasons.

Homewood Canyon Creek road was treated in 2008. Tier 3 treatments were implemented on 20,840 square feet. Smooth Cruise Ditch was treated in 2008 for a total of 32,150 square feet of

restored coverage. Tier 1 treatments were applied to 1,440 square feet, Tier 2 treatments were applied to 11,680 square feet, and Tier 3 treatments were applied to 19,030 square feet.

In 2009, Spur Road received Tier 2 treatments on 8,400 square feet. Tier 1 treatments were applied to Lower Wedding Road (1,920 square feet). Road 33 received Tier 1, Tier 2 and Tier 3 treatments on a total of 18,907 square feet. Homewood Bound 0 received Tier 1, Tier 2 and Tier 3 treatments on a total of 38,788 square feet. Homewood Bound 1 received Tier 3 treatments on 3,624 square feet and Lower Ellis Road received Tier 2 and Tier 3 treatments on a total of 13,500 square feet. Monitoring results are not published for 2008 and 2009 sediment source control and road restoration projects.

Cumulative Watershed Effects. The Project area comprises 81 percent of the Homewood Creek watershed. As presented in Table 15-2, the Total Watershed TOC for the Homewood Creek watershed is calculated at 955 T/yr for total sediment. The baseline (existing conditions) total sediment for the total Homewood Creek watershed is 906 T/yr, which is 5 percent less than the Total Watershed TOC.

The Project area TOC for Homewood Creek is calculated at 865 T/Yr. The baseline (existing conditions) sediment yield from the Project area is 828 T/Yr, which is 5 percent or 37 T/yr less than the Project Area TOC.

Quail Lake Creek Watershed

Hydrology and Flooding. The Quail Lake Creek watershed contains several tributaries that discharge to Quail Lake and the perennial Quail Lake Creek that flows south out of the Project area. The Quail Lake Creek Watershed (also titled H64 or TMDL watershed 7040) has an area of approximately 1.7 square miles or 947 acres, of which 26 percent of the total watershed area is located within the Project area. The headwaters flow from an elevation of 8,400 feet msl at Knee Ridge and discharge into McKinney Bay of Lake Tahoe near Lagoon Road. The upper portion of this creek (RM 0.5 – RM 0.97) does not have water year-round. Quail Lake is located in the lower half of the watershed. Less than half of the runoff from this watershed actually flows through this lake. The abandoned Noonchester Gold Mine is located south and upgradient of Quail Lake.

During the summer and fall, Tahoe City Public Utility District (TCPUD) at times diverts its water rights in Homewood Creek to fill Quail Lake. Section 15.1.11 below details the existing points of diversion and water rights of the Project area.

The average slope in the watershed is 45 percent and the general aspect is southeast and northwest. The parent material underlying the watershed is approximately ten percent volcanic and 90 percent mixed volcanic and glacial deposits. The land uses in the watershed include roads and vegetated ski trails (IERS 2010).

There are no FEMA designed floodplains identified for Quail Lake Creek watershed within the Project area.

Surface Water Quality. Quail Lake Creek is not sampled as part of the monitoring and reporting program for Lahontan's WDRs. Kleinfelder conducted baseline surface water quality sampling in this drainage in October 2006, March 2007, May 2007 and September 2007. Sampling occurred at an upstream station and a downstream station as well as at two stations on tributaries to Quail Lake. Baseline sampling concludes:

- Chloride concentrations in tributaries to Quail Lake at times exceeded water quality objectives (WQOs) of 0.1 mg/L, indicating natural sources of Chloride in the upper watershed where no ski area management occurs;

- Total Nitrogen highest concentrations measured up to 1.3 mg/L near Quail Lake in areas where fish and aquatic life are abundant;

- Total Phosphorus highest concentrations measured up to 0.77 mg/L in tributaries to Quail Lake, concentrations are considered to derive from natural sources and not at levels to cause impairment to the stream or lake;

- Sulfate concentrations in five receiving water samples exceeded 1.0 mg/L with the highest levels (7.3 and 11 mg/L) measured at the sampling station downstream of the Noonchester Mine;

- 50 percent of the Dissolved Iron concentrations exceeded 0.15 mg/L with the highest reading taken at the Quality Lake outfall (3.2 mg/L); and

- Total Dissolved Solids and Turbidity measurements were consistently low.

Channel Condition. The channel gradient is moderately high, 4.5 percent, between RM 0.0 to RM 0.2 (see Figure 15-2). The majority of Quail Lake Creek has a steeper gradient of approximately nine percent between RM 0.2 and RM 0.9, except for the very steep segment between RM 0.9 and RM 0.97, which has slope of 28 percent.

Overall, most of the stream banks, 88 percent, along Quail Lake Creek are rated Stable (Entrix) and in Good condition (Kleinfelder 2007). The lower reach of this stream (RM 0.0 – RM 0.32) has banks considered Vulnerable (12 percent of total channel length) based on episodic soil movement as a result of a flood or a shift in the course of the stream. The channel received no ratings of Unstable or Poor. Overall, the stream banks had very good coverage of both vegetation and large material and no major erosional features were present. HMR does not operate ski trails prone to disturbance in close proximity to this stream (Kleinfelder 2007).

Restoration. No restoration is reported for the Quail Lake Creek watershed.

Cumulative Watershed Effects. The Project area comprises 26 percent of the Quail Lake Creek watershed. As presented in Table 15-2, the Total Watershed TOC for the Quail Lake Creek watershed is calculated at 462 T/yr for total sediment. The baseline (existing conditions) total sediment for the total Quail Lake Creek watershed is 409 T/yr, which is 11 percent less than the Total Watershed TOC.

The Project area TOC for the Quail Lake Creek watershed within the Project area is calculated at 147 T/Yr. The baseline (existing conditions) sediment yield from the Project area is 152 T/Yr, which exceeds the Project Area TOC by 5 T/yr or three percent.

Intervening Zone 7000 (North Base Area and Portion of South Base Area)

Hydrology, Flooding and Seiches. The Intervening Zone 7000 and is approximately 1,740 acres, of which 116 acres or seven percent is contained within the Project area. The North Base area and a portion of the South Base area are located in Intervening Zone 7000.

The average slope for this area is 26 percent and the general aspect is northeast. The parent material underlying the area is approximately two-thirds volcanic and one-third granitic. The land uses in the area include developed areas, roads and vegetated ski trails (IERS 2010).

The *Geologic Hazards and Preliminary Geotechnical Evaluation* (Kleinfelder 2007) reports that the existing development in the North and South Base areas could be inundated by waves with maximum amplitudes of approximately six meters from a lake seiche resulting from a magnitude 7.2 earthquake modeled on the West Tahoe Fault.

Figure 8-2, Stream Environment Zones and 100-Year Floodplain Boundaries (see Chapter 8, Biological Resources), illustrates that no FEMA designated floodplains are mapped within the Project area in Intervening Zone 7000. There is one FEMA Zone A (100 year floodplain) identified in the South Base area, but note that this floodplain is within the Homewood Creek watershed and not Intervening Zone 7000. One SEZ is delineated within Intervening Zone 7000. SEZ resource analysis is referred to Chapter 8, Biological Resources.

Surface Water Quality. Kleinfelder conducted baseline surface water sampling in the North and South Base parking lots in October 2006, March 2007, May 2007 and September 2007. Total Dissolved Solids concentrations exceeded the WQO (60 mg/L) at the culvert near the South Lodge and at the South Parking Lot with concentrations between 100 and 130 mg/L. These concentrations are concluded to be higher than background levels due to deicing of the parking lots and interaction of surface water in these locations with anthropogenic activities (Kleinfelder 2007).

Compliance monitoring at sampling station P-1 (North Parking Lot) measures overflow from the stormwater system installed in 2006. Overflow occurred once on May 2, 2007. Total Phosphorus, Total Nitrogen, and Turbidity were below discharge to land treatment limits. Total Suspended Solids measured 59 mg/L.

Compliance monitoring at sampling station P-2 (South Parking Lot) measures overflow from the stormwater system installed in 2006. Overflow occurred April 14, 2008, April 21, 2008, April 28, 2008, May 5, 2008, May 12, 2008, April 22, 2009 and May 4, 2009. Based on these samples, the discharge to surface water limits for Homewood Creek are typically exceeded for Total Phosphorus and for Total Nitrogen. Total Suspended Solids measured below 10 mg/L and Turbidity measured below 9.8 ntu.

Channel Condition. There are no perennial stream channels located in Intervening Zone 7000 within the Project area. A portion of the stormwater runoff from compacted soils and impervious surfaces is captured in stormwater treatment systems that were installed in 2006 in the North and South Base areas.

Restoration. The Lower Lombard site is 3,500 square feet and located at an elevation of 6,370 feet msl. The site is an old access road that connects the Lombard Street ski trail with maintenance building AA. Pre-treatment, Lower Lombard had large rills running the entire length of the slope, which were a result of erosion. The main project goal was to reduce sediment movement and surface erosion by incorporating organic matter and applying fertilizer, native seed, and mulch to initiate a successional process that leads to diverse, mid-seral, and self-sustaining native grass and shrub plant communities. The amendment types were varied between two treatment areas to determine whether there is an improvement in soil nutrient status.

At Lower Lombard, the average sediment yield after treatment was 24 lbs/acre/in, which is nearly a 16 times reduction when compared to the pre-treatment sediment yield. The soil at Lower Lombard infiltrated approximately 85 percent of the water applied. This data suggests that restoration treatments applied at Lower Lombard were successful in controlling sediment at the source. Although rainfall simulation results were promising at Lower Lombard, the continued foot traffic disturbance has already most likely reduced the erosion control capacity and will continue to affect the treatment until abated (IERS 2008).

Cumulative Watershed Effects. The Project area comprises seven percent of the Intervening Zone 7000. As presented in Table 15-2, the Total Watershed TOC for the Intervening Zone 7000 is calculated at 355 T/yr for total sediment. The baseline (existing conditions) total sediment for the total Quail Lake Creek watershed is 409 T/yr, which is 11 percent above the Total Watershed TOC.

The Project area TOC for Intervening Zone 7000 within the Project area is calculated at 55 T/Yr. The baseline (existing conditions) sediment yield from the Project area is 62 T/Yr, which exceeds the Project Area TOC by 7 T/yr or nine percent.

The area described as Intervening Zone 7000 in land use maps, runs from Blackwood Canyon in the north to Tahoma (Tahoe Cedars) in the south and consists of a number of areas that are considered between watersheds. These discrete areas were apparently grouped together for simplicity; however that grouping makes modeling somewhat confusing in that the interests in those areas are contiguous to and influenced by the Project area. The existing conditions analysis shows a sediment yield that is slightly over the Total Watershed TOC because: 1) all BMPs have not been implemented on private parcels and 2) there is currently no known available, official TRPA coverage data, either as a whole or for areas contiguous to the Project area and the LSPC analysis, which used GIS data from aerial images, suggests that Intervening Zone 7000 is already over its allowable coverage. This excess land coverage is likely the result of 'grandfathered' coverage in the near shore areas where a great deal of pavement and coverage was installed in commercial and even residential areas that are outside of the Project area (IERS 2010).

15.1.5 Existing Stormwater Treatment Systems

Stormwater treatment systems and water quality protection BMPs were permitted by TRPA and Lahontan and installed by HMR in September 2006 to establish interim compliance and reporting with Lahontan Board Order No. 6-95-86A2.

North Base Area

The North Base Parking Lot BMP Drainage Improvement Project was implemented in the fall of 2006 on Placer County APN 97-130-05. Sheet C-5 of the plan sheets present the sizing of the system capacity to contain the 20-yr, 1hr storm volume (Placer County APN97-130-05). The system captures and infiltrates runoff from the parking lot with 30-inch corrugated metal pipe SD-82 stormchamber units and a Vortclarex VCL100 by Contech with a trench drain catch basin. Overflows from the system are routed to the Caltrans and Placer County stormwater treatment systems along State Route (SR) 89.

South Base Area

The South Base Parking Lot BMP Drainage Improvement Project was implemented on Placer County APN 97-050-05 in the fall of 2006. Because TRPA and Lahontan permitted the system,

the five infiltration basins are assumed to be sized to capture and treat the 20-year, 1-hour storm volume. The basin capacities and treatment volume as listed on the project plan sets are provided below:

- Basin 1 – Sized at 9,050 square feet with a treatment capacity of 754 cubic feet;
- Basin 2 – Sized at 32,450 square feet with a treatment volume of 2,704 cubic feet;
- Basin 3 – Sized at 8,395 square feet with a treatment volume of 700 cubic feet;
- Basin 4 – Sized at 13,227 square feet with a treatment volume of 1,102 cubic feet; and
- Basin 5 – Sized at 9,273 square feet with a treatment volume of 773 cubic feet.

The maintenance building was retrofitted with BMPs that include Rainstore™ units and trench drains. An oil and water separation system was installed in the parking lot, along with curb and gutter, drainage swales, rock inlet and outlet protections. Overflow from the system discharges to Homewood Creek.

15.1.6 Load Simulation Program in C++ (LSPC) – Existing Annual Loading at North, South, and Mid-Mountain Area and Tahoe Ski Bowl Way

The document *HMR Water Quality – Quantification of Design Benefits* (Grismer 2010) details the LSPC stormwater management analysis (Grismer 2010), which relies on three tracks of information associated in part with the TMDL-related studies of 2007 and 2008. The detailed LSPC stormwater management analysis for the Project area is provided in Appendix Z, summarized below for the existing conditions, and discussed under Impact HYDRO-1 for the Proposed Project (Alternative 1) and Alternatives 2, 3, 4, 5 and 6.

Total sediment loads for existing conditions of the North Base, South Base, and Mid-Mountain areas and Tahoe Ski Bowl Way were estimated by combining:

1) Sediment yield factors (sediment loading factors per unit runoff) used in the Homewood Creek LSPC TMDL modeling to represent urban areas;

2) Sediment yield results from upslope areas developed from rainfall simulations within the Project area; and

3) Runoff, sediment, nutrient and flow measurements completed by Desert Research Institute (DRI) researchers (Heyveart et al. 2008) in the East Stateline Point watershed to represent comparable loading scenarios.

The second part of the analysis developed a routing/water-balance model of stormwater runoff from the Project area utilizing rainfall records used in previous TMDL analysis from water years (WYs) 1993-2006. WYs 1994 and 2003 are identified as “dry” WYs with less than average precipitation and WYs 1995 and 2006 are identified as “wet” WYs with above average precipitation. Additionally, the storm distributions within these water years were accessed to determine the effects on the amount of sediment loading generated. Table 15-3 presents the modeled annual stormwater volumes estimated to exit the redevelopment areas under the existing conditions of the Project area. This volume is defined as the portion not infiltrated or otherwise captured. Total sediment leaving the Project area can then be related to these estimated annual stormwater volumes through basic regression relationships and computation of

sediment loads estimated. Stormwater runoff volumes for the existing conditions of the Project area are estimated to range from 154,514 cubic feet/year for representative dry water years to 1,978,010 cubic feet for representative wet water years.

Table 15-3

Estimated Annual Stormwater Volumes (Cubic Feet) Leaving the Project Area – Existing Conditions

	1994 WY	1995 WY	2003 WY	2006 WY
North Base Area	86,621	1,063,148	431,469	1,085,104
South Base Area	12,311	431,985	151,781	419,998
Mid-Mountain Area	9,094	121,508	46,399	116,377
Tahoe Ski Bowl Way	44,495	359,373	153,662	336,298
TOTALS	154,514 ft^3	1,978,010 ft^3	785,314 ft^3	1,959,783 ft^3

Source: Dr. Mark Grismer, PE – HMR Water Quality – Quantification of Design Benefits (full document is in Appendix Z)

15.1.7 Existing Snow Storage

The North and South Base areas and access roads require regular snow removal during ski resort operations to allow for parking and mountain operations. Plowing of these areas typically begin upon accumulation of six or more inches of snow (Nichols 2007). A number of locations on or adjacent to the base areas are used as snow storage areas. Snow is stockpiled adjacent to the parking facilities and snowmelt drains to the stormwater treatment systems that were completed in the fall of 2006. To the maximum extent practicable, snow storage is located a safe distance from SEZs. Snow storage for the base areas are summarized below. The detailed plan is referenced to the *Homewood Mountain Resort Snow Removal Plan* – January 2007 (Nichols 2007).

North Base Area

The North Base area is grouped into three snow removal and storage areas. Each area has a primary and secondary snow storage area. Primary snow storage areas include an existing access road that runs from east to west at the northwest corner of the parking facility and the existing access road adjacent to the Madden Triple chair. Secondary snow storage areas are directly adjacent to the parking facility north of the main lodge, the parking facility south and west of the main lodge and the strip of land around the west, north and east perimeter of the parking facility. Snowmelt drains towards stormwater treatment systems installed in 2006 in the parking lot near the corner of SR 89 and Sacramento Street.

There is an SEZ at the south end of the parking facility. In this area, snow removal operations are minimized and the following precautions are taken:

- Ensure snow removal equipment stays on improved surfaces;
- Blade levels are set to a minimum of 2 inches above the surface of the parking facility to ensure no gravel or base material are transported into or out of the SEZ and that underlying soils are not disturbed;
- Vegetation within the SEZ is protected from disturbance or damage by snow removal equipment and operations; and
- No deicing or traction abrasive material is deployed within the SEZ boundary.

Snow is stored in the SEZ only during large snow events (greater than 12 inches) where clean snow can be harvested and safely stockpiled in the SEZ, but never the stream channel. Clean snow is defined as snow more than six inches above the surface layer of the parking facility. At all times, dirty snow (snow within six inches of the surface layer of the parking facility and any other snow that contains sediment, deicing material, abrasives or other debris, is stored outside the SEZ boundary and setback.

South Base Area

The South Base area consists of three snow storage areas. The primary snow storage areas include the access road to the north of the current lodge, the access road adjacent to the lodge, and the access road located at the south end of the parking facility. The secondary snow storage areas include the north edge of the parking facility, the east and north ends of the parking facility and the relatively flat section of the mountain at the bottom of the ski trail. Snow storage areas are sited to drain to the stormwater treatment system installed in 2006 and located east of the snow storage areas along the south side of El Capitan Way.

HMR currently operates outside of a proposed 80-foot setback (40 feet on either side of the centerline of Homewood Creek). Snow removal operations occurring within the 80-foot setback follow the measures described above for the North Base SEZ.

15.1.8 Existing Snowmaking System

Current snowmaking operations within the Project area use airless, tower mounted fan guns. The system has the capability to cover 23.8 acres and currently uses up to 14.2 million gallons of water per year or 43.6 acre-feet/year (Snowmakers 2010). The existing pumping capacity is 1300 gallons per minute. Currently 18.9 acres of ski trails have snowmaking on the north side of the Project area and 4.9 acres of ski trails have snowmaking on the south side of the Project area (Snowmakers Inc. 2010).

HMR operates one well in the North Base area for snowmaking and other uses that support ski area operations. The North Base well is not located near active stream channels. Additional water supplies currently used for snowmaking are domestic water available from the TCPUD and the Madden Creek Water Company (MCWC) between 6 p.m. to 6 a.m. HMR's North Base well has not operated since the 2006-2007 winter ski season, and snowmaking operations are currently limited to domestic water provided by the TCPUD and MCWC. Existing pumping at the project area includes: 500 gallons per minute at the North Base area; 500 gallons per minute at the Water Cooling structure; and 300 gallons per minute at the South Base area (Snowmakers Inc. 2010).

Snow enhancement chemicals or biological agents are not used in the existing snowmaking systems (personal communications; David Tirman, November 23, 2009).

15.1.9 Groundwater

The Project area involves the Tahoe Valley Groundwater Basin (TVGB). The TVGB is located within the larger structural feature referred to as the Lake Tahoe Basin. The TVGB is bounded on the east by the western shore of the Lake and on the west by the Sierra Nevada. The approximate north-south boundary is one-half mile west of Dollar Point and two miles west of Meeks Bay (Nichols 2009). Within this sub-basin elevations range from 6,225 feet msl at lake level to above 6,400 feet msl in the west (California Department of Water Resources 2003).

Groundwater recharge in the Project area is primarily from infiltration of precipitation into faults and fractures in bedrock, into soils and decomposed granite that overlies much of the bedrock and into unconsolidated basin-fill deposits (Nichols 2010). Except where the land surface is impermeable or where the groundwater table coincides with land surface, groundwater is recharged over the extent of the flow path (Thodal 1997).

Kleinfelder completed groundwater evaluations in 2006, 2007 and 2008 for the North and South Base areas. Existing conditions are summarized below as reported to TRPA in the *Revised Soils Hydrologic Scoping and Final Report* (Kleinfelder 2010). Based on the results of precipitation evaluations using data from the WETS station in Tahoe City (6,235 ft msl) and following the methodology outlined in the *Technical Standard for Water-Table Monitoring of Potential Wetland Sites and the Natural Resources Conservation Services (NRCS) Engineering Field Handbook* (1997), total precipitation preceding and during the 2007 and 2008 monitoring periods was within normal range. The long-term annual groundwater discharge within the Project area has not been calculated; although, historic groundwater levels are well documented. A portion of the discharge occurs as groundwater pumping and another portion occurs as groundwater discharge to perennial and seasonal stream baseflows.

The existing groundwater quality within the Project area is not well characterized. Given that groundwater is used for domestic uses at the North and South Base areas, groundwater quality is assumed to be good. Contamination from fuel tanks was detected during analysis for the Phase I Environmental Site Assessment (Robinson Engineering 2005). A low concentration of MTBE was measured in the groundwater in the North Base area. The assessment concluded that natural attenuation has reduced the MTBE concentration to levels near the California WQO and that additional natural attenuation will result in the groundwater reaching the WQO.

North Base Area

The North Base paved parking lots contain seasonal high groundwater at depths ranging from 5.44 to 10.45 feet below ground surface (bgs) in an interlayered colluvial and lake sediment depositional environment. The gravel parking lot south of the North Base parking lot contains seasonal high groundwater at depths ranging from 0.89 to 5.95 feet bgs in a lake depositional environment. The slopes above the North Base and between the North and South Base contain groundwater at depths ranging from 9 to 18 feet bgs.

Groundwater flow in the North Base area generally follows topography and is to the north and east towards Lake Tahoe. Monitoring data are found in Appendix Y.

South Base Area

Shallow groundwater measured at the north end of Tahoe Ski Bowl Way and above the north portion of the South Base area ranged between 1 and 4 feet bgs. The southern portion of the slopes above the South Base area contained groundwater at depths of approximately 9 feet bgs.

During Spring 2007 or 2008 evaluations, the borings drilled in the South Base parking lots did not encounter groundwater to drilling depths of 18 feet bgs.

Mottled soils indicative of seasonal groundwater were noted at depths of four to five feet bgs in the parking lot area of the South Base. These wells, however, did not contain measurable groundwater during Spring 2007 and 2008 to depths of approximately 19 feet bgs; however, monitoring wells nearby contained groundwater at depths of approximately 15 to 17 feet between 1997 through 2001. Based on these data, the seasonal high groundwater levels are at depths of approximately 15 to 19 feet bgs in this area.

Groundwater flow in the South Base area generally follows the topography and is to the east towards Lake Tahoe. Monitoring data are found in Appendix Y.

Mid-Mountain Area

The geotechnical investigation (Holdrege and Kull 2010b) encountered no groundwater during ten test pit excavations at the Mid-Mountain Lodge and water tank locations. Groundwater depths are expected to be substantial based on topography (e.g. site location is along a ridge) and soils (e.g. indicative of a colluvial depositional environment).

15.1.10 Water Balance

The hydrologic balance within the Project area, which compares the quantity of water deposited and withdrawn from a hydrologic system, relates surface and groundwater within a watershed. Water deposited includes snow, precipitation and water piped or otherwise conveyed into snowmaking and other systems from sources outside the Project area. Water withdrawn includes surface water diversions, groundwater pumping, streamflow discharges, deep percolation, evaporation, sublimation, and transpiration.

The geology of the Project area is discussed in Chapter 14, Soils, Geology and Seismicity. The mapping of fractures has not been conducted to date and exact fracture planes are unknown. Generalized studies for the Sierra Nevada suggest that fracture planes run generally parallel with the land surface and accompany the vertical or near-vertical fracturing (Bateman and Wahrhaftig 1966; Bateman 1992).

HMR operates one well in the North Base area for snowmaking and other uses that support ski area operations. The TCPUD and MCWC supply water to existing snowmaking systems from their existing municipal system. Existing snowmaking systems apply up to 14.2 million gallons of water in the form of snow across the Project area.

The TCPUD-owned McKinney No. 1 well is located approximately 2,500 feet south of the South Base area on TCPUD property. The well is an artesian flowing well with potential discharge rates of over 1000 gallons per minute. The well has a 60-foot cement seal and is completed in glacial moraine deposits to a depth of 800 feet. As an artesian well with the measured water level about 20 feet above ground surface, it is not connected to Quail Lake Creek, and will not affect the flow in Quail Creek during pumping as the source of water is much deeper than the creek. Quail Creek is located approximately 300 feet south of the well (personal communication with Kleinfelder on November 25, 2009).

The North Base well and water cooling structure are not located near active stream channels. The North Base well is located about 1,800 feet north of Homewood Creek in the existing gravel parking lot. This well has a 60-foot cement seal and is completed in lake deposits. The static level in this well is approximately five to 13 feet bgs. The source of groundwater for this well is annual snowmelt from the mountain and does not appear to be hydrologically connected to the stream.

Existing pumping at the Project area includes: 500 gallons per minute at the North Base area; 500 gallons per minute at the Water Cooling structure; and 300 gallons per minute at the South Base area (Snowmakers Inc. 2010).

15.1.11 Water Rights and Water Supply

In California, water rights are required for diversion of surface water but not for use of groundwater. Water rights in California are subject to a constitutional and statutory requirement of both beneficial use and reasonable method of use. Riparian rights are water rights associated with land that is bordered or crossed by a watercourse. An appropriative water right is a right to divert surface water either for direct use on property that is not riparian to the surface water source or to storage for later use on non-riparian property. Priority of appropriative rights is based on the adage of "first in time, first in right".

HMR contracted with Kleinfelder, Inc. in 2007 to conduct a thorough legal search of water rights associated with the Project area going back to the very beginning of such record keeping in California. This search and a query of the California State Water Resources Control Board's (State Board) water rights database for points of diversion (POD) located in the Project area identified six points of diversion were found and diversion, storage and annual use data, as described below.

- A020487 – This POD is located on Madden Creek at the downstream property line near Trout Street Bridge. No additional information is provided in the State Board database.

- A018934 – This POD is located at the Lake Louise outfall to Madden Creek. The water could be diverted for domestic purposes within the Project area. The maximum direct diversion is 0.24 cfs or 108 gallons per minute, the maximum storage is 3 acre-feet/yr, and maximum annual use is reported as 0 acre-feet/yr.

- A011449 – This POD is located in the upper portion of Ellis (Homewood) Creek. The water is diverted for both mining and domestic uses by the LTBMU. The maximum direct diversion is 0.34 cfs or 153 gallons per minute, the maximum storage is 130.5 acre-feet/yr and the maximum annual use is 0 acre-feet/yr.

- A027988 01– This POD is located near the Quail Lake outfall to Quail Lake Creek. Quail Lake Water Company was the original permit holder until acquisition of the company by TCPUD and the water is diverted for municipal use.

- A027988 02 – This POD is located approximately mid-stream on Ellis (Homewood) Creek. Quail Lake Water Company was the original permit holder until acquisition of the company by TCPUD and the water is diverted for municipal use. The combined maximum direct diversion from A027988-01 and -02 is 0.68 cfs or 306 gallons per minute. The maximum storage is 88 acre-feet/yr and the maximum annual use is 288 acre-feet/yr.

- S006462 – This POD is located on the lakeshore between Madden Creek and Ellis (Homewood Creek) Creek. HMR is the permit holder and the water could be diverted from Lake Tahoe.

Currently, there are no reservoirs or water tanks that directly serve operations in the Project area. HMR does not currently divert water from Madden Creek nor are there plans to do so. Accordingly, there is no storage basin or other storage facility associated with such a diversion. There are also no diversions from Quail Creek, Quail Lake, or Homewood Creek or plans for such diversions (personal communications David Tirman, email received September 17, 2010).

The TCPUD provides domestic and irrigation waters to the South Base area, APN 097-060-022 and Mid-Mountain operations from the Crystal Way Well (Designation North Lahontan USGS Groundwater Basin 6-5.02). This portion of the Project area is located in the McKinney/Quail Sub-District. California's Water Plan Update, Bulletin 160-98 states that no overdrafts are expected in the North Lahontan Hydrologic Study Area, even in drought years, by 2020 (TCPUD 2006). The projected annual demand is estimated at 385 acre-feet/year or 0.84 acre-feet/yr per connection. (Nichols 2010).

Madden Creek Water Company supplies the North Base portion of the Project area. No data is available from Madden Creek Water Company, but the current demand of 160 connections is being met and it can be assumed that the water supply is sufficient to produce 134 acre-feet/year, which is based on TCPUD's projected annual demand per connection of 0.84 acre-feet/year (Nichols 2010).

The Homewood Mountain Resort Water Supply Assessment (Nichols 2010) prepared for the Project area does not address the use of public or municipal water supply current used for snowmaking.

15.2 REGULATORY SETTING

Key regulatory agencies with respect to hydrology, water rights and supply, surface water quality and groundwater in the Project area are listed below.

- TRPA is designated by the United States Environmental Protection Agency (USEPA), California and Nevada as the water quality planning agency in the region;
- California Department of Water Resources;
- State Water Resources Control Board (State Board);
- California Regional Water Quality Control Board – Lahontan Region;
- Placer County; and
- Placer County Flood Control and Water Conservation District.

15.2.1 Tahoe Regional Planning Agency

The TRPA is the designated area-wide water quality planning agency under Section 208 of the Clean Water Act (CWA).

Surface Water Quality

In 1988 the States of California and Nevada and the USEPA adopted the TRPA Water Quality Management Plan for the Lake Tahoe Basin (TRPA 1988), commonly referred to as the 208 Plan. The 208 Plan identifies water quality problems, proposes solutions or mitigation measures, identifies those entities responsible for implementing solutions, and determines agencies or jurisdictions responsible for enforcement. The TRPA Environmental Thresholds (Resolution 82-11 adopted in 1982) and State of California WQOs establish over 30 separate water quality standards for Lake Tahoe and its tributaries. The standards address algal growth potential, plankton count, clarity, turbidity, phytoplankton productivity, phytoplankton biomass, zooplankton biomass, periphyton biomass, dissolved inorganic nitrogen (DIN) loading, nutrient loading in general, tributary water quality, surface runoff quality, and the quality of other lakes in the Lake Tahoe Basin.

TRPA water quality thresholds are as follows:

- WQ1—Decrease sediment load as required to attain turbidity values not to exceed three NTU in littoral Lake Tahoe. In addition, turbidity shall not exceed one NTU in shallow waters of Lake Tahoe not directly influenced by stream discharges.

- WQ2—Average Secchi depth, December–March, shall not be less than 33.4 meters.

- WQ3—Annual mean phytoplankton primary productivity shall not exceed 52 grams of carbon content per meter squared per year (gC/m2/yr). California: algal productivity shall not be increased beyond levels recorded in 1967–1971, based on a statistical comparison of seasonal and annual mean values.

- WQ4—Attain a 90th percentile value for suspended sediment of 60mg/L, total nitrogen range of 0.15 to 0.23 mg/L, total phosphorus range of 0.005 to 0.030 mg/L, and total iron range of 0.01 to 0.07 mg/L (annual average).

- WQ5—Dissolved inorganic nitrogen, 0.5 mg/L; dissolved phosphorus, 0.1 mg/L; dissolved iron, 0.5 mg/L; suspended sediment, 250 mg/L, grease and oil 2.0 mg/L, total phosphate as P, 0.1 mg/L, and turbidity, 20 NTU.

- WQ6—Surface water infiltration into the groundwater shall comply with the Uniform Regional Run Off guidelines. For total nitrogen, 5 mg/L; total phosphorus, 1 mg/L; total iron, four mg/L; turbidity, 200 NTU; and grease and oil, 40 mg/L.

- WQ7—Attain existing water quality standards.

Regional water quality standards are outlined in the TRPA Code of Ordinances, Chapter 81. The chapter sets forth standards for the discharge of runoff water from parcels, and regulates the discharge of domestic, municipal, or industrial wastewaters. The standards and prohibitions apply to discharges to both surface and groundwaters. Chapter 82 addresses water quality mitigation for projects and activities that result in the creation of additional impervious coverage.

Pollutant concentrations in surface runoff shall not exceed the values as stated in Table 15-4 at the 90th percentile. Surface runoff that is directed to infiltrate into the soil shall not exceed the discharges to groundwater standards. Stormwater running on to the Project area or stormwater generated on the Project area must be captured, conveyed and treated to these surface and ground water standards or spread and infiltrated on the Project area to receiving soils and spreading areas with suitable assimilative capacities.

TRPA is presently updating the Regional Plan, a draft of which is expected for release for public review in 2011. Integration of research, conducted as part of the water quality restoration plan being undertaken by Lahontan and NDEP, is a critical element of the Regional Plan Update. The research for the TMDL analysis for Lake Tahoe shows that emphasis on load reduction strategies for fine sediments entering the lake from urban areas is necessary. Another key component to the Regional Plan Update is the incorporation of the TMDL requirements and proposed implementation strategies and control measures contained in the TMDL technical analysis. The TMDL recommended implementation strategies or pollution reduction opportunities call for the deployment of new and more advanced water treatment technologies including: area-wide stormwater treatment systems; vacuum sweeping of roads; wetland and passive filtration basins; placing media filters in stormwater vaults; improving BMP compliance; and intensifying maintenance of stormwater infrastructure. With the Regional Plan Update, TRPA may begin to focus on load reduction rather than site design standards and infiltration only.

Table 15-4

TRPA Surface Water Discharge Limits

Parameter	Unit	Surface Runoff Limits	
		Surface Discharge	Discharges to Groundwater
Turbidity	NTU	--	200
Suspended Sediment Concentration*	mg/L	250	--
Oil and Grease	mg/L	2	40
Dissolved Inorganic Nitrogen (NO2+NO3+NH3)	mg/L	0.5	--
Total Nitrogen	mg/L	--	5
Dissolved Phosphorus	mg/L	0.1	--
Total Phosphorus	mg/L	--	1
Dissolved Iron	mg/L	0.5	--
Total Iron	mg/L	--	4

Source: TRPA Code or Ordinances Chapter 81

Note: *Suspended Sediment Concentration (SSC) is the TRPA discharge standard listed in Chapter 81. Many stormwater monitoring programs measure Total Suspended Solids/Sediment or TSS, an arguably cheaper and more appropriate parameter for stormwater runoff measurement.

Grading Standards

There are grading standards set forth in Chapters 20 and 64 of the TRPA Code of Ordinances. Limitations include no excavation, filling, or clearing of vegetation or other disturbance of the soil between October 15 and May 1 of each year, unless approval is granted by TRPA. Grading and construction schedules are established in Chapter 62 of the Code of Ordinances. A grading plan is required by TRPA prior to project approval and project construction.

Stream Environment Zones

TRPA defines a SEZ as a biological community that derives its characteristics from the presence of surface water or a seasonal high groundwater table. SEZs exhibit the ability to rapidly incorporate nutrients into the usually dense vegetation and moist to saturated soils. SEZs are riparian areas identified by the presence of at least one key indicator or three secondary indicators (TRPA Code Section 37.3.B). No additional land coverage or other permanent land disturbance is permitted in SEZs unless specific findings can be made to permit the exception (reference relevant Chap 20 code sections).

There are mapped and verified SEZs in the Project area. Potential impacts to SEZs are addressed in Chapter 8, Biological Resources.

Groundwater Regulations

According to the TRPA Code, Chapter 64, groundwater impacts are considered significant if implementation of the project results in the interception or interference of groundwater by:

- Altering the direction of groundwater;
- Altering the rate of flow of groundwater;
- Intercepting groundwater;
- Adding or withdrawing groundwater; or
- Raising or lowering the water table.

TRPA Code, Chapter 64, Section 64.7.B prohibits excavations in excess of five feet in depth or where there exists a reasonable possibility of interference of interception of a water table unless the following findings can be made:

"(1) A soils/hydrologic report prepared by a qualified professional, whose proposed content and methodology has been reviewed and approved in advance by TRPA, demonstrates that no interference or interception of groundwater will occur as a result of the excavation; and

(2) The excavation is designed such that no damage occurs to mature trees, except where tree removal is allowed pursuant to Subsection 65.2.E, including root systems, and hydrologic conditions of the soil. To ensure the protection of vegetation necessary for screening, a special vegetation protection report shall be prepared by a qualified professional identifying measures necessary to ensure damage will not occur as a result of the excavation; and

(3) Excavated material is disposed of pursuant to Section 64.5 and the Project area's natural topography is maintained pursuant to Subparagraph 30.5.A(1); or if groundwater interception or interference will occur as described in the soils/hydrologic report, the excavation can be made as an exception pursuant to Subparagraph 64.7.A(2) and measures are included in the project to maintain groundwater flows to avoid adverse impacts to SEZ vegetation, if any would be affected, and to prevent any groundwater or subsurface flow from leaving the Project area as surface flow."

HMR submitted the *Revised Soils Hydrologic Scoping and Final Report* (Kleinfelder 2010) to TRPA on October 7, 2010. The report includes a brief summary of the geologic, soil, and hydrologic conditions expected to be encountered within the construction areas at the North Base, South Base and Mid-Mountain areas. Qualifications of the personnel conducting the soil/hydrologic investigation are included in the report. The report specifies the dates and type of field exploration (whether conducted by backhoe excavation test pits or drill boring) and the depths to which the samples were taken. The boring logs reveal the vertical sequence of soil textures, percent rock fragment, soil colors, and depths associated with the contact boundaries of these features. The report proposes measures to ensure that SEZ vegetation will not be adversely impacted and that groundwater or subsurface flows will not exit the Project area as surface flow.

Public Water Supply

TRPA Code of Ordinance Chapter 83 sets forth regulations pertaining to recognition of source water, prevention of contamination to source water and protection of public health relating to drinking water. Source water is defined as water drawn to supply drinking water from an aquifer, or a well or from a surface water body by an intake, regardless of whether such water is treated before distribution.

Source water 09719101/11, operated by TCPUD and source water 08502048W11, operated by Agate Bay Water Company are located in the vicinity of the Project area. However, TRPA Source Water Assessment maps indicate that no source waters are located within 600 feet of the Project area.

The *HMR Water Supply Assessment* (Nichols 2010) was prepared for the Project area, which is attached in Appendix AA. Public water supply is further analyzed in Chapter 16, Public Services and Utilities.

Community Enhancement Program

The focus of the TRPA Community Enhancement Program (CEP) is to implement projects that demonstrate substantial environmental, as well as, social and economic benefits through mixed-use development projects on existing disturbed and/or underutilized sites. The CEP is based on the concept of net gain to achieve improvements that benefit the built and natural environments (TRPA 2007). One of the goals of the CEP is to provide area-wide (not parcel by parcel) urban water quality improvements that leverage private investment for environmental gain, linking existing or future systems, and providing long-term monitoring and maintenance.

The February 5, 2008 *Memorandum for Conditional Reservation of Allocations – Homewood Mountain Resort* (Governing Board Resolution) outlines the following requirements that relate to EIP projects for CEP participation:

> *For commodities to be reserved and projects to be approved, CEP projects must commit to substantial environmental improvements, which must include specifically identified EIP projects. The Project proposes a number of environmental benefits/improvements. TRPA requires written commitments regarding the funding, construction, and overall maintenance/monitoring for the specific EIP proposals. Some EIP components that were discussed in the pre- application or in verbal conversation are listed below:*
>
> *a. TRPA supports storm water from SR 89 and the Project area being diverted to properly sized treatment facilities that are constructed and maintained by Homewood Mountain Resort. Provide details and commitments regarding the Homewood water quality improvements and how they will be integrated with the Caltrans water quality improvements and the Placer County Homewood Erosion Control Project. Specifically, evaluate and specify the quantifiable reduction of sediment loads entering Lake Tahoe in the Homewood area garnered through the construction of these targeted water quality facilities.*
>
> *b. Provide design and written commitments for the implementation of the bike trail improvements referenced in the CEP application through the Homewood Project area.*
>
> *c. Provide details and commitments regarding the under grounding of the utilities that cross the Homewood site.*
>
> *d. Provide details and commitments regarding the day-lighting of the creek under the ski-bowl (new residential area) parking lot. Also, explore possibilities to restore creek/SEZ along proposed cat road between base areas.*
>
> *e. Additionally, consider participation in the SR 89 re-alignment EIP project # 855 at Tahoe City.*

15.2.2 Federal Emergency Management Agency (FEMA)

FEMA is part of the Department of Homeland Security and is tasked with responding to, planning for, recovering from and mitigating against disasters. Formed in 1979 to merge many of the separate disaster-related responsibilities of the federal government into one agency, FEMA is responsible for coordinating the federal response to floods, earthquakes, hurricanes, and other natural or man-made disasters and providing disaster assistance to states, communities and individuals. The Federal Insurance and Mitigation Administration (FIMA) within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that provide assistance for mitigating future damages from natural hazards. Established in 1968 with the passage of the National Flood Insurance Act, the NFIP is a federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the federal government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the federal government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods.

Placer County participates in the National Flood Insurance Program (NFIP) by adopting and enforcing floodplain management ordinances to reduce future flood damage. Placer County Ordinance Article 15.52 - Flood Damage Prevention Regulations addresses floodplain management.

15.2.3 State of California

The primary responsibility for the protection of surface water and groundwater quality in California rests with the State Water Resources Control Board (State Board) and nine Regional Water Quality Control Boards (RWQCBs).

State Water Resources Control Board (State Board)

The State Board administers State and federal regulations that pertain to water quality including Sections 401 and 402 of the federal Clean Water Act.

National Pollutant Discharge Elimination System (NPDES)– General Construction

The State Board regulates construction activities resulting in the disturbance of one or more acres of soils through the California General Permit for Storm Water Discharges Associated with Federal Clean Water Act Section 402 Construction Activities and Land Disturbance Activities (Order No. 2009-009DWQ). This permit does not cover disturbance to lands classified as SEZ and does not cover construction activities within the Lake Tahoe Hydrologic Unit. The State Board defers to Lahontan Board Order No. R6T-2005-007 for construction activities within the Lake Tahoe Hydrologic Unit.

Truckee River Operating Agreement (TROA)

The TROA governs diversions of surface water from the Truckee River Basin and the Lake Tahoe Basin. The States of Nevada and California executed the TROA in September 2008 but have not implemented the TROA to date. The TROA provides for the quantified allocation of water from Lake Tahoe and the Truckee River. The State Board held processing of applications for water rights in the Lake Tahoe Basin in accordance with the pending implementation of the

TROA and the amount of water available for appropriation will be determined pursuant to the TROA.

The TROA provides that the total annual gross diversions for use within the Lake Tahoe Basin from all natural sources, including groundwater, and under all water rights in the basin cannot exceed 34,000 acre-feet/yr. From this total, 23,000 acre-feet/yr are allocated to the State of California and 11,000 acre-feet/yr are allocated to the State of Nevada for use within the Lake Tahoe Basin.

The first 600 acre-feet used for snowmaking in California each year will not be charged to the gross diversion allocation of the State. Where water from the Lake Tahoe Basin is diverted and used to make snow in excess of this first 600 acre-feet, the percentage of such diversions chargeable to the gross diversion allocations of each State will be specified in the TROA once executed. The consumptive use of water to make snow is charged at 16 percent (TROA 2008).

The particular water rights for each California water supplier that would draw on Lake Tahoe surface waters are presently being evaluated. The TCPUD is granted Lake Tahoe surface water diversions at this time and does operate in accordance with the Settlement Act; however, the portion of diverted California waters to be allocated specifically to TCPUD is not finalized (Laliotis 2009; Nichols 2009). TCPUD expects to receive a sufficient amount of diversions to meet their projected demands (Laliotis 2009). MCWC does not utilize surface water and relies solely on groundwater sources (Nichols 2010).

Low Impact Development – Sustainable Stormwater Management

On January 20, 2005, the State Board adopted sustainability as a core value for all California Water Boards' activities and programs, and directed RQWCB staff to consider sustainability in all future policies, guidelines, and regulatory actions.

Low Impact Development (LID) is a sustainable practice that benefits water supply and contributes to water quality protection. Unlike traditional storm water management, which collects and conveys storm water runoff through storm drains, pipes, or other conveyances to a centralized storm water facility, LID takes a different approach by using site design and storm water management to maintain the site's pre-development runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall. LID has been a proven approach in other parts of the country and is seen in California as an alternative to conventional storm water management. The RWQCBs are advancing LID in California in various ways.

LID provides economical as well as environmental benefits. LID practices result in less disturbance of the development area, conservation of natural features, and less expensive than traditional storm water controls. The cost savings applies not only to construction costs, but also to long-term maintenance and life cycle cost. LID provides multiple opportunities to retrofit existing highly urbanized areas and can be applied to a range of lot sizes.

LID includes specific techniques, tools, and materials to control the amount of impervious surface, increase infiltration, improve water quality by reducing runoff from developed sites, and reduce costly infrastructure. LID practices include; bioretention facilities or rain gardens, sidewalk storage, grass swales and channels, vegetated rooftops, rain barrels and cisterns, vegetated filter strips, swales and buffers, tree preservation, roof leader disconnection, and permeable pavements and pavers, impervious surface reductions and disconnection, soil

amendments, pollution prevention and good housekeeping, found at (http://waterbaords.ca.gov/water_issues/programs/low_impact_development).

California Regional Water Quality Control Board – Lahontan Region

Lahontan is one of the nine RWQCBs in California. The nine RWQCBs maintain Basin Plans that include comprehensive lists of water bodies in each area, as well as detailed language about the components of applicable WQOs. As authorized by the USEPA, the State Board and nine RWQCBs implement the Section 402 Clean Water Act NPDES Permitting Program and requirements in California. Clean Water Act Section 401 requirements generally relate to State certification of federal permits, including those issued by a federal agency under Clean Water Act Section 404. In addition, the Lahontan regulates waste discharges under the California Water Code, Article 4 (Waste Discharge Requirements) and Chapter 5.5 (Compliance with the Provisions of the Federal Water Pollution Control Act as Amended in 1972).

California Porter-Cologne Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the State Board and each of the nine RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Clean Water Act. For the area in which the project would be sited, the applicable RWQCB is Lahontan. The Porter-Cologne Act, the State Board and Lahontan have the authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Each RWQCB must formulate and adopt a water quality control plan for its region. The regional plans must conform to the policies set forth in the Porter-Cologne Act and established by the State Board in its state water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

California Regional Water Quality Control Board's Basin Plan for the Lahontan Region

Lahontan implements the *California Regional Water Quality Control Board's Basin Plan for the Lahontan Region* or Basin Plan, which recognizes natural water quality, existing and potential beneficial uses, and water quality problems associated with human activities in Placer County (Lahontan 1995). Lahontan also has regulatory authority to enforce the requirements of the Clean Water Act and the California Water Code. This includes the regulatory authority to enforce the implementation of TMDLs, the adoption of waste discharge requirements (WDRs) to ensure compliance with surface WQOs, and groundwater management.

Specifically the Basin Plan outlines the narrative and numeric WQOs for water bodies within the Lake Tahoe Hydrologic Unit. Some water bodies have specific WQOs. In the Project area, Madden Creek has numeric WQOs for Total Dissolved Solids, Chloride, Total Nitrogen, Total Phosphorus, and Iron.

Waste Discharge Requirements and Anti-Degradation Findings

Lahontan previously established WDRs for the Project area under Board Order No. 6-79-51, which was adopted September 19, 1979, and Board Order No. 6-88-174, which was adopted November 9, 1988. The current Board Order No. 6-95-86 updated WDRs to be consistent with requirements placed on other ski resorts within the Region and established specific compliance dates, which extend those in Board Order No 6-88-174.

Lahontan must consider antidegradation pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16 to find that the subject discharges are consistent with the provisions of these policies. Anti-degradation findings that consistent with the policies are necessary for reissuance of waste discharge requirements for operations and actions within the Project area.

HMR is the discharger and the receiving waters are the surface waters of the North Tahoe Hydrologic Area of the Lake Tahoe Hydrologic Unit (Department of Water Resources Hydrologic Unit No. 634.20). The beneficial uses include: municipal and domestic supply; agricultural supply, groundwater recharge, fresh water replenishment, water-contact recreation; non-water-contact recreation, commercial and sportfishing; cold freshwater habitat; wildlife habitat, and spawning, reproduction and development.

The effluent limitations apply to all surface flows generated within the Project area, or as a result of the development on the Project area, which are discharged to land treatment systems and/or surface waters. These flows cannot contain constituents in excess of the concentrations listed in Table 15-5. The discharge of surface flows generated within the Project area to surface waters or to stormwater runoff conveyance systems cannot cause the concentrations in Lake Tahoe, Homewood Creek, Madden Creek or Quail Lake Creek to exceed the WQO limits listed in Table 15-5.

Surface flows generated within the Project area that are discharged to groundwater or to land treatment systems cannot cause a violation of limits listed in Table 15-4 for land treatment or of the following WQOs for groundwaters of the Lake Tahoe Hydrologic Unit:

- Groundwaters cannot contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses;

- The median concentration of coliform organisms, in groundwaters, over any seven-day period shall be less than 2.2/100 ml; and

- Groundwaters shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels or secondary maximum contaminant levels based upon drinking water standards specified by the more restrictive of the California Code of Regulations, Title 22, Division 4, Chapter 15 or 40 CFR, Part 141.

Table 15-5

Lahontan Water Quality Objectives – Board Order No. 6-95-86

Parameter	Unit	Effluent Limitations		Receiving Water Limitations		
		Surface Waters	Land Treatment	Homewood Creek	Quail Lake Creek	Madden Creek
Turbidity	NTU	20	200	*	*	*
Total Dissolved Solids	mg/L	--	--	60/65**	60/65**	60
Oil and Grease	mg/L	2.0	40	--	--	--
Chloride	mg/L	--	--	3.0/4.0**	3.0/4.0**	0.1/0.2
Total Nitrogen	mg/L	0.5	5.0	0.15	0.15	0.18
Total Phosphorus	mg/L	0.1	1.0	0.008	0.008	0.015
Sulfate	mg/L	--	--	1.0/2.0**	1.0/2.0**	--
Boron	mg/L	--	--	0.01	0.01	--
Total Iron	mg/L	0.5	4.0	--	--	--

Source: Lahontan Board Order No. 6-95-86

Notes:

* Turbidity of waters shall not be raised more than 3 NTU. In no instance can an increase in turbidity exceed natural levels by more than 10 percent as determined by the mean of monthly means over a calendar year.

** Values are based on annual mean concentrations (arithmetic mean of 30-day averages over a calendar year)/90th percentile concentration (90 percent of data points are equal to or below value).

National Pollutant Discharge Elimination System – Lake Tahoe Basin

Lahontan Board Order R6T-2005-0007, entitled *Updated Waste Discharge Requirements and National Pollutant Discharge Elimination System for Permit No. CAG616002 for Discharges of Storm Water Runoff Associated with Construction Activity Involving Land Disturbance in the Lake Tahoe Hydrologic Unit*, applies to construction sites and activities resulting in the disturbance of one or more acres of soil disturbance in the Lake Tahoe Hydrologic Unit. Construction activities include clearing, grading, demolition, excavation, construction or new structures and reconstruction. This permit sets maximum concentration levels for discharges into surface waters for nutrients, sediment, turbidity, and grease and oil.

The permit requires submittal of a Notice of Intent (NOI) and that the construction contractor develop and implement a site-specific stormwater pollution prevention plan (SWPPP) to prevent stormwater and groundwater pollution caused by construction activities. At a minimum, implementation of the SWPPP must prevent debris, soil, silt, sand, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from construction or operation from entering into receiving waters, their tributaries and adjacent wetlands. The SWPPP outlines erosion control measures to be taken as well as BMPs to control and prevent to the maximum extent practicable the discharge of pollutants to surface waters and groundwater. Although the SWPPP focuses primarily on protection of surface waters, it also contains a plan for

responding to and managing accidental spills during construction and a plan for management and storage of pumped groundwater. The SWPPP addresses overall management of the construction project site such as designating areas for material storage, equipment fueling, concrete washout, and stockpiles.

California Environmental Quality Act (CEQA)

Under CEQA, Lahontan is a responsible agency with regard to the Project. The California Water Code section 13050(e) reads as follows: "Waters of the State means any surface water or groundwater, including saline waters, within the boundaries of the state." State waters include irrigation canals and surface impoundments (other than those solely constructed for wastewater), wetlands, and waters of the United States (a subset of State waters). Lahontan's policies concerning wetland and riparian protection are stated in chapter four of the Basin Plan as outlined under sub-section Wetlands Protection and Management (pages 12-8 to 12-14).

Lake Tahoe Total Maximum Daily Load (TMDL)

Section 303(d) of the Clean Water Act requires States to compile a list of impaired water bodies that do not meet WQOs. The Clean Water Act also requires States to establish total maximum daily loads (TMDLs) for such waters. The deep water transparency standard for Lake Tahoe is the average annual Secchi depth measured between 1967 and 1971, an annual average Secchi depth of 39.7 meters or 97.4 feet. The transparency standard for Lake Tahoe has not been met since its adoption. In 2007, the average annual average Secchi depth was 70 feet or 27.6 feet from the standard. Transparency loss is considered a water quality impairment from the input of nutrients and sediment. Consequently, Lake Tahoe is listed under Section 303(d) as impaired by inputs of nitrogen, phosphorus and sediment. The goal of the Lake Tahoe TMDL is to set forth a plan to restore Lake Tahoe's historic transparency to 97.4 feet.

The *Final Lake Tahoe Total Maximum Daily Load* report was released for public review and comment in June 2010. The report and the adoption and approval process are fully compliant with CEQA. The document states that the forthcoming adoption of the Final Lake Tahoe TMDL will not have a significant adverse impact on the environment (Lahontan and NDEP 2009).

California Department of Water Resources (DWR)

The mission of the DWR is "to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments" DWR is responsible for promoting California's general welfare by ensuring beneficial water use and development statewide. To guide development and management of the State's water resources, DWR is responsible for preparing the California Water Plan Update (Water Code section 10000 et seq.).

Water Code section 10910(d) requires the identification of existing water supply entitlements, water rights or water service contracts relevant to the Project and a description of the quantities of water received in prior years by the public water supply system. Supplemental water demand and relevant analysis is provided in the *Homewood Mountain Resort Water Supply Assessment* (Nichols 2010).

Water Code section 10910 requires a determination if a project is included in the most recently adopted Urban Water Management Plan (UWMP). The McKinney/Quail Sub-district is included

in the urban water management plan (UWMP) prepared by TCPUD in March 2006 (TCPUD 2006), but this UWMP does not account for the Project.

Water Code section 10910 limits groundwater discussion to the basin or basins that serve the Project. Additional requirements for groundwater discussions are found in Water Code section 10631(b) and 10910(f)(5), which require adequate description of groundwater basins and assurance of sufficiency of the groundwater from the basin to meet the projected water demand of the Project.

15.2.4 Placer County

Placer County published the *Placer County Stormwater Management Manual* in 1990 *(Placer County 1990)* and the *Land Development Manual* in 2006 (Placer County 2006). The Placer County Tahoe Basin Stormwater Management Plan describes the Placer County stormwater quality improvement program to be implemented in compliance with Phase I of Lahontan Board Order No. R6T-2005-0026 (NPDES Permit No. CAG616001). Placer County shares a general permit with El Dorado County and the City of South Lake Tahoe for stormwater/urban runoff discharges within the Lake Tahoe Basin; however, the Project area is individually permitted under Board Order No. 6-95-86, which outlines the WDRs to specific to the ski area and its operations.

Placer County adopted the West Shore Area General Plan in 1998, which contains goals and policies that apply to the Homewood area and the Project area. The conservation element of the plan addresses issues related to natural resources of the Plan area, including water and fisheries and establishes goals and policies relevant to these subjects. The safety element identifies goals and policies related to the protection of the public from risks associated with flooding.

Placer County General Plan

The following Placer County General Plan (Placer County 1994) goals and policies pertain to water supply and delivery, stormwater drainage, water resources, and flood hazards and protection. The Grading, Erosion, and Sediment Control Ordinance is addressed in Chapter 14, Soils, Geology and Seismicity. This ordinance also contains policies addressing stormwater drainage.

Water Supply and Delivery

Goal 4.C: To ensure the availability of an adequate and safe water supply and the maintenance of high quality water in water bodies and aquifers used as sources of domestic supply.

Policies

4.C.1 The County shall require proponents of new development to demonstrate the availability of a long-term, reliable water supply. The County shall require written certification from the service provider that either existing services are available or needed improvements will be made prior to occupancy. Where the County will approve groundwater as the domestic water source, test wells, appropriate testing, and/or report(s) from qualified professionals will be required substantiating the long-term availability of suitable groundwater.

4.C.2 The County shall approve new development based on the following guidelines for water supply:

a. Urban and suburban development should rely on public water systems using surface supply.

b. Rural communities should rely on public water systems. In cases where parcels are larger than those defined as suburban and no public water system exists or can be extended to the property, individual wells may be permitted.

c. Agricultural areas should rely on public water systems where available, otherwise individual water wells are acceptable.

4.C.3 The County shall encourage water purveyors to require that all new water services be metered.

4.C.4 The County shall require that water supplies serving new development meet state water quality standards.

4.C.5 The County shall require that new development adjacent to bodies of water used as domestic water sources adequately mitigate potential water quality impacts on these water bodies.

4.C.6 The County shall promote efficient water use and reduced water demand by:

a. Requiring water-conserving design and equipment in new construction;
b. Encouraging water-conserving landscaping and other conservation measures;
c. Encouraging retrofitting existing development with water-conserving devices; and
d. Encouraging water-conserving agricultural irrigation practices.

4.C.7 The County shall promote the use of reclaimed wastewater to offset the demand for new water supplies.

4.C.8 When considering formation of new water service agencies, the County shall favor systems owned and operated by a governmental entity over privately- or mutually-owned systems. The County will continue to authorize new privately- or mutually-owned systems only if system revenues and water supplies are adequate to serve existing and projected growth for the life of the system. The County shall ensure this through agreements or other mechanisms setting aside funds for long-term capital improvements and operation and maintenance.

4.C.9 The County shall support opportunities for groundwater users in problem areas to convert to surface water supplies.

4.C.11 The County shall protect the watersheds of all bodies of water associated with the storage and delivery of domestic water by limiting grading, construction of impervious surfaces, application of fertilizers, and development of septic systems within these watersheds.

4.C-13 In implementation of groundwater use policies, the County will recognize the significant differences between groundwaters found in bedrock or 'hardrock' formations of the foothill/mountain region and those groundwaters found in the alluvial aquifers of the valley. The County should make distinctions between these water resources in its actions.

Stormwater Drainage

Goal 4.E: To collect and dispose of stormwater in a manner that least inconveniences the public, reduces potential water-related damage, and enhances the environment.

Policies

4.E.1 The County shall encourage the use of natural stormwater drainage systems to preserve and enhance natural features.

4.E.2 The County shall support efforts to acquire land or obtain easements for drainage and other public uses of floodplains where it is desirable to maintain drainage channels in a natural state.

4.E.3. The County shall consider using stormwater of adequate quality to replenish local groundwater basins, restore wetlands and riparian habitat, and irrigate agricultural lands.

4.E.4 The County shall ensure that new storm drainage systems are designed in conformance with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the County Land Development Manual.

4.E.5 The County shall continue to implement and enforce its Grading Ordinance and Flood Damage Prevention Ordinance.

4.E.6 The County shall continue to support the programs and policies of the watershed flood control plans developed by the Flood Control and Water Conservation District.

4.E.8 The County shall consider recreational opportunities and aesthetics in the design of stormwater ponds and conveyance facilities.

4.E.9 The County shall encourage good soil conservation practices in agricultural and urban areas and carefully examine the impact of proposed urban developments with regard to drainage courses.

4.E.10 The County shall strive to improve the quality of runoff from urban and suburban development through use of appropriate and feasible mitigation measures including, but not limited to, artificial wetlands, grassy swales, infiltration/sedimentation basins, riparian setbacks, oil/grit separators, and other best management practices (BMPs).

4.E.11 The County shall require new development to adequately mitigate increases in stormwater peak flows and/or volume. Mitigation measures should take into consideration impacts on adjoining lands in the unincorporated area and on properties in jurisdictions within and immediately adjacent to Placer County.

4.E.12 The County shall encourage project designs that minimize drainage concentrations and impervious coverage and maintain, to the extent feasible, natural site drainage conditions.

4.E.13 The County shall require that new development conforms with the applicable programs, policies, recommendations, and plans of the Placer County Flood Control and Water Conservation District.

4.E.14 The County shall require projects that have significant impacts on the quantity and quality of surface water runoff to allocate land as necessary for the purpose of detaining post-project flows and/or for the incorporation of mitigation measures for water quality impacts related to urban runoff.

4.E.15 The County shall identify and coordinate mitigation measures with responsible agencies for the control of storm sewers, monitoring of discharges, and implementation of measures to control pollutant loads in urban storm water runoff (e.g., California Regional Water Quality Control Board, Placer County Division of Environmental Health, Placer County Department of Public Works, Placer County Flood Control and Water Conservation District).

Flood Protection

Goal 4.F: To protect the lives and property of the citizens of Placer County from hazards associated with development in floodplains and manage floodplains for their natural resource values.

Policies

4.F.1 The County shall require that arterial roadways and expressways, residences, commercial and industrial uses and emergency facilities be protected, at a minimum, from a 100-year storm event.

4.F.3. The County shall continue to work closely with the U.S. Army Corps of Engineers, the resource conservation district, the Federal Emergency Management Agency, the State Department of Water Resources, and the Placer County Flood Control District, in defining existing and potential flood problem areas.

4.F.4 The County shall require evaluation of potential flood hazards prior to approval of development projects. The County shall require proponents of new development to submit accurate topographic and flow characteristics information and depiction of the 100-year floodplain boundaries under fully-developed, unmitigated runoff conditions.

4.F.5 The County shall attempt to maintain natural conditions within the 100-year floodplain of all rivers and streams except under the following circumstances:

a. Where work is required to manage and maintain the stream's drainage characteristics and where such work is done in accordance with the Placer County Flood Damage Prevention Ordinance, California Department of Fish and Game regulations, and Clean Water Act provisions administered by the U.S. Army Corps of Engineers; or

b. When facilities for the treatment of urban runoff can be located in the floodplain, provided that there is no destruction of riparian vegetation.

4.F.6 The County shall continue to coordinate efforts with local, state, and federal agencies to achieve adequate water quality and flood protection.

4.F.7 The County shall cooperate with the Placer County Flood Control and Water Conservation District, surrounding jurisdictions, the cities in the County, and other public agencies in planning and implementing regional flood control improvements.

4.F.9 The County shall continue to implement floodplain zoning and undertake other actions required to comply with state floodplain requirements, and to maintain the County's eligibility under the Federal Flood Insurance Program.

4.F.10 The County shall preserve or enhance the aesthetic qualities of natural drainage courses in their natural or improved state compatible with flood control requirements and economic, environmental, and ecological factors.

4.5.11 To the extent that funding is available, the County shall work to solve flood control problems in areas where existing development has encroached into a floodplain.

4.F.12 The County shall promote the use of natural or non-structural flood control facilities, including off-stream flood control basins, to preserve and enhance creek corridors.

4.F.13 The County shall continue to implement and enforce its Grading Ordinance and Flood Damage Prevention Ordinance.

4.F.14 The County shall ensure that new storm drainage systems are designed in conformance with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the County's Land Development Manual.

Water Resources

Goal 6.A: To protect and enhance the natural qualities of Placer County's streams, creeks and groundwater.

Policies

6.A.2 The County shall require all development in the 100-year floodplain to comply with the provisions of the Placer County Flood Damage Prevention Ordinance.

6.A.5 The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff and to encourage the use of BMPs for agricultural activities.

6.A.7 The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.

6.A.10 The County shall protect groundwater resources from contamination and further overdraft by pursuing the following efforts:

a. Identifying and controlling sources of potential contamination;
b. Protecting important groundwater recharge areas;
c. Encouraging the use of surface water to supply major municipal and industrial consumptive demands;
d. Encouraging the use of treated wastewater for groundwater recharge; and
e. Supporting major consumptive use of groundwater aquifer(s) in the western part of the County only where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area.

Flood Hazards

Goal 8.B: To minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from flood hazards

Policies

8.B.1. The County shall promote flood control measures that maintain natural conditions within the 100- year floodplain of rivers and streams.

8.B.2 The County shall continue to participate in the Federal Flood Insurance Program.

8.B.3 The County shall require flood-proofing of structures in areas subject to flooding.

8.B.4 The County shall require that the design and location of dams and levees be in accordance with all applicable design standards and specifications and accepted state-of-the-art design and construction practices.

8.B.5 The County shall coordinate with neighboring jurisdictions to mitigate the impacts of new development in Placer County that could increase or potentially affect runoff onto parcels downstream in a neighboring jurisdiction.

8.B.6 The County shall prohibit the construction of facilities essential for emergencies and large public assembly in the 100-year floodplain, unless the structure and access to the structure are free from flood inundation.

8.B.7. The County shall require flood control structures, facilities, and improvements to be designed to conserve resources, incorporate and preserve scenic values, and to incorporate opportunities for recreation, where appropriate.

8.B.8. The County shall require that flood management programs avoid alteration of waterways and adjacent areas, whenever possible.

Placer County Flood Control and Water Conservation District

The Placer County Flood Control and Water Conservation District (District) was established in 1984 by the State Legislature as a Special District and is separate from County government, to address flood control issues arising with growth. District boundaries are the same as Placer County boundaries. A nine-person board of directors governs the District. Members include a representative from each of the six incorporated cities in Placer County, two representatives from the Board of Supervisors and one Member-at-large appointed by the Board of Supervisors.

The primary purpose of the District is to protect lives and property from the effects of flooding by comprehensive, coordinated flood prevention planning. The District uses consistent standards to evaluate flood risk, and implements flood control measures such as requiring new development to construct detention basins and operation and management of a flood warning system.

The District:

- Implements regional flood control projects;
- Develops and implements master plans for selected watersheds in the county;
- Provides technical support and information on flood control for the cities, the county, and the development community;

- Operates and maintains the County flood warning system;
- Reviews proposed development projects to see they meet District standards;
- Develops hydrologic and hydraulic models for county watersheds; and
- Provides technical support for Office of Emergency Services activities.

A Stormwater Management Manual is maintained by the District, which contains the following relevant regulations:

Section VI – Drainage Systems, Item 2. Design Storms

New development shall be planned and designed so that no damages occur to structures or improvements during the 100-yr event and no inundation on private property occurs during the 10-yr event.

a. Local Drainage – The 10-yr event is the minimum design storm for new developments in all drainages and all dedicated drainage facilities will be sized for this event.

b. The development plan shall identify the effects of the 100-yr event and provision will be made in the plan to prevent loss of life and damages to property during a 100-yr event.

15.2.5 Tahoe City Public Utility District

TCPUD provides services for water, sewer and recreational facilities to the west and north shore areas of Lake Tahoe, including unincorporated parts of Placer and El Dorado Counties. TCPUD operates five independent water sub-districts that have separate groundwater supply wells (Nichols 2010). Since water is not diverted from one sub-district to another, the sub-districts are considered separate entities (Laliotis 2009). The sub-districts include Tahoe City Sub-Regional, Rubicon, McKinney/Quail, Alpine Peaks and Tahoe-Truckee Forest Tract.

The Project area is within the McKinney/Quail sub-district, which is not considered a “public water system” by Water Code section 10912. TCPUD prepared their UWMP in March 2006. The UWMP does not account for the Project. The *HMR Water Supply Assessment* (Nichols 2010) provides the supplemental analysis of the projected water demand for the Project.

15.2.6 Madden Creek Water Company

MCWC provides water to the North Base area of the Project area. MCWC is not considered a “public water system” by Water Code section 10912 and has not prepared an UWMP. The projected water demand for the service district is included in the TCPUD annual water demand in the *HMR Waster Supply Assessment* (Nichols 2010).

15.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

The evaluation criteria for hydrology, water rights (supply), surface water quality and groundwater are presented in Table 15-6. These criteria are drawn from a review of the relevant literature on hydrology, water supply, surface water resources and groundwater, including a review of TRPA policies and procedures and Placer County regulations. The planning and technical documents prepared for the Project and consulted for the following impact analyses include:

Grismer, M. 2010. *HMR Water Quality – Quantification of Design Benefits*. May 26, 2010.

Integrated Environmental Restoration Services. 2010. *Homewood Mountain Resort Cumulative Watershed Effects Analysis*.

Integrated Environmental Restoration Services. 2008. *Homewood Mountain Resort Annual Report Restoration and Monitoring 2007-2008*. Prepared by Rachel Arst and Michael Hogan. July 21, 2008.

Holdrege and Kull, Inc. 2010a. *Geotechnical Investigation of the North Base Lodge, Homewood Mountain Resort.*

Holdrege and Kull, Inc. 2010b. *Geotechnical Investigation of the Mid-Mountain Lodge, Homewood Mountain Resort.*

Homewood Mountain Resort. *Homewood Mountain Resort Bi-Annual Waste Discharge Data and Reports* – Water Years 1989 - 2009

Kleinfelder. 2010a. *Second Revised Soils Hydrologic Scoping and Final Report. October 7, 2010.*

Kleinfelder.2010b. *Submittal of Revised Soils Hydrologic Exhibits . December 1, 2010. Revised Replacement exhibits dated December 15, 2010.*

Kleinfelder, Inc. 2008. *Updated Groundwater Investigation Report Homewood Mountain Resort Homewood, California*. July 14, 2008.

Kleinfelder West, Inc. 2007. *Stream Channel and Baseline Surface Water Assessment, Homewood Mountain Resort Homewood, California.* Submitted November 12, 2007.

Nichols Consulting Engineers. 2010. *Preliminary Drainage Report of Homewood Mountain Resort. December 2010.*

Nichols Consulting Engineers. 2010. *Homewood Mountain Resort Water Supply Assessment*

Nichols Consulting Engineers. 2009. *On-site Water Treatment of Stormwater*. Schematic memorandum submitted to TRPA September 22, 2009.

Nichols Consulting Engineers. 2007a. *Preliminary Technical Drainage Report for Homewood Mountain Resort, Placer County, California. Submitted to Tahoe Regional Planning Agency November 2007.*

Nichols Consulting Engineers. 2007b. *Homewood Mountain Resort Snow Removal Plan*. January.

Placer County - Flood Control and Water Conservation District. 1990. *Stormwater Management Manual*. September 1990.

Robison Engineering. 2005. *Phase I Environmental Site Assessment Homewood Mountain Resort Property Placer County, California.* December 12, 2005.

Snowmakers, Inc. 2010. *Homewood Mountain Resort Snowmaking Planning.* September 2010.

TRPA. 2010. *Soils Hydrologic Approval Homewood Mountain Resort – EIS/EIR Master Plan Alternative 1, Placer County, APNs 097-060-024, 097-050-072 and 075, TRPA File Numbers: LCA2010-0029, 0063 and 0064. January 5, 2011.*

TRPA. 2009. *Homewood Mountain Resort Land Capability Challenge*. Approved August 8, 2009.

TRPA. 2008. *Memorandum for Resolution 2008 – Exhibit 7 – Conditional Reservation Of Allocations – Homewood Mountain Resort*. February 5, 2008.

Table 15-6

Evaluation Criteria with Significance Thresholds – Hydrology, Water Rights, Surface Water Quality and Groundwater

Evaluation Criteria	Point of Significance	Justification
HYDRO-1. Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?	a) Failure to implement effective, reasonable and appropriate measures to protect water quality b) Non-compliance with Board Order No R6T-2005-0007 and Board Order No. 6-95-86A2 c) Exceedance of Cumulative Watershed Effects (CWE) Project area Threshold of Concerns (TOCs)	a) TRPA Initial Environmental Checklist II (3e); TRPA 2006 Threshold Evaluation (WQ-4, tributaries, WQ-5 storm water runoff to surface water and WQ-6, storm water runoff to groundwater); TRPA Code of Ordinances, Chapters 25 (Best Management Practices), 64 (Grading Standards), and 81 (Water Quality Standards); CEQA Appendix G Checklist IX (a, f) and XVI (a); Lahontan Basin Plan Water Quality Objectives (Chapter 5); Placer County General Plan Policies 4.E.10, 4.E.15 b) CEQA Appendix G Checklist XVI (a); Lahontan Board Order No R6T-2005-0007 (NPDES General Permit) and 6-95-86A2 (Waste Discharge Permit) c) Requirements of TRPA's Ski Area Master Plan Guidelines
HYDRO-2. Will Project construction or operation alter the existing surface water drainage patterns or cause increased runoff resulting in flooding or stream bank erosion or contribute runoff in rates or volumes that will exceed the capacity of existing or planned stormwater drainage systems so that a 20-year, 1-hour	a) Change in existing watercourse alignment or capacity by Project construction or operations b) Increase in runoff (from disturbed areas because of compaction, vegetation removal and impervious surfaces)	a) CEQA Appendix G Checklist IX (c, d,); TRPA Initial Environmental Checklist II (3a, b and 16 e) TRPA Code of Ordinances, Chapters 25 (Best Management Practices), 64 (Grading Standards) and 81 (Water Quality Standards); Placer County General Plan Policies 6.A.5, 4.E.1, 4.E.3, 4.E.4, 4.E.5, 4.E.6, 4.E.8, 4.E.9, 4.E.11, 4.E.12, 4.E.13,

Evaluation Criteria	Point of Significance	Justification
storm runoff (approximately 1 inch per hour) cannot be contained on the site?	resulting from the 20-year, 1-hour design storm that cannot be captured by existing or proposed storm water drainage systems	4.E.14, 4.F.6, 4.F.7, 4.F.13, 4.F.14 b) CEQA Appendix G Checklist IX (e); TRPA Initial Environmental Checklist II (3 b); TRPA Code of Ordinances, Chapters 25 (Best Management Practices), 64 (Grading Standards) and 81 (Water Quality Control); Lahontan Basin Plan (Chapter 5) and Board Order No R6T-2005-0007; Placer County Stormwater Management Manual and Land Development Manual
HYDRO-3. Will Project construction activities or long-term operations result in a substantial degradation of groundwater or result in a substantial change in the quality, quantity, elevation, infiltration, or movement of groundwater?	a) Installation of improvements that intercept groundwater or otherwise cause substantial changes in existing groundwater quality, quantity, elevations or movement b) Excavations greater than 5 feet that intercept or interfere with groundwater movement c) Failure to comply with Lahontan requirements for disposal of groundwater during construction	a) TRPA Initial Environmental Checklist II (1 d, 3 f, g, j) TRPA Code of Ordinances, Chapters 25 (Best Management Practices), 64 (Grading Standards) and 81 (Water Quality Control); CEQA Appendix G Checklist IX (b); Placer County General Plan Policies 6.A.10, 4.C.1, 4.C.13 and 4.E.3 b) TRPA Initial Environmental Checklist II (1d); TRPA code of Ordinances Chapter 64 (Grading Standards) c) Lahontan Basin Plan Chapter 5.7; Board Order No R6T-2005-0007
HYDRO-4. Will the Project alter the course or flow of the 100-year floodwaters or expose people or structures to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches?	Alteration of the course or flow of the 100-year floodwaters or inundation by seiche	CEQA Appendix G Checklist IX (g, h, i); TRPA Initial Environmental Checklist II (3c, i); TRPA Code of Ordinances Chapter 28 (Natural Hazard Standards); TRPA Code of Ordinance Chapter 64 (Grading Standards); Lahontan Basin Plan Chapter 5.7 and 5.8; Placer County General Plan Policy 6.A.2, 4.F.1 to 4.F.14, 8.B.1 to 8.B.8
HYDRO-5. Will the Project change the amount of surface water in any water body, substantially reduce the amount of water otherwise available for public water supplies, or be located within 600 feet of a drinking water source?	a) Substantial reduction in the amount of surface water in a water body b) A demand that exceeds available public water supplies c) Contaminating land use within 600 feet of a drinking water source identified on TRPA Source Water Assessment Maps d) TRPA Instream Flow Thresholds are Not Attained or Maintained e) Water diversions and/or uses that do not comply with the	a) TRPA Initial Environmental Checklist II (3d); TRPA Code of Ordinances Chapter 83 (Source Water Protection) and 64 (Grading Standards) b) TRPA Initial Environmental Checklist II (3h); TRPA Code of Ordinances Chapter 83 (Source Water Protection); CEQA Appendix G Checklist XVI (d); Placer County General Plan Policies 4.C.1 to 4.C.9, 4.C.11, 4.C.13 c) TRPA Initial Environmental Checklist II (3k); TRPA Code of Ordinances Chapter 83 (Source Water Protection) d) TRPA non-degradation of instream flows for all streams that flow to Lake

Evaluation Criteria	Point of Significance	Justification
	water rights or contractual entitlement for HMR or the entity from which the water was purchased and/or use of acre-feet of surface or ground waters not applied for in Truckee River Operating Agreement (TROA)	Tahoe e) TROA

Source: Hauge Brueck Associates 2010

15.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

Impact: **HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?**

Analysis: *Significant Impact; No Project (Alternative 2)*

The No Project (Alternative 2) alternative will construct no new buildings or facilities and thus no impacts from construction activities will occur. Operations and maintenance activities will continue in support of existing conditions of the Project area.

Effective, reasonable and appropriate measures to protect water quality. HMR has worked with IERS since 2006 to complete a number of restoration projects addressing land coverage and disturbance as described in the Environmental Settings section above. Variations of treatment were implemented based on site-specific needs. A range of monitoring techniques, including rainfall and runoff simulations, soil density, soil moisture, and surface and vegetative cover and composition, were conducted. The *Homewood Mountain Resort Annual Report – Restoration and Monitoring 2007 - 2008* (IERS 2008) concludes that erosion control capacity, which was quantified through monitoring, increased significantly after treatments. Sediment yield was reduced by seven to 16 times and penetrometer depths increased on average by a factor of 4.3. Results and conclusions are not yet published for restoration projects completed in 2009 and 2010.

In 2006, stormwater treatment systems were installed and in 2007 a snow management plan was implemented in the North and South Base areas in compliance with the requirements of the Cease and Desist Order issued by Lahontan on December 23, 2005. Stormwater monitoring is inconsistent because of the absence of overflow from the systems and thus the results for stations P-1 (North Base parking lot) and P-2 (South Base parking lot) do not report trends. The absence of overflow from the systems is actually a metric gauging the treatment effectiveness. As discussed in the Environmental Setting section, the seven overflow events sampled at P-2 for the South Base stormwater treatment system measured Total Suspended Solids concentrations and Turbidity to be low, while Total Nitrogen and Total Phosphorus exceeded WQOs in these seven samples.

The effectiveness of the systems cannot be definitively quantified using the data collected for compliance with Lahontan monitoring and reporting requirements; however, because annual and post-storm inspection and maintenance occurs in compliance with Board Order No R6T-2005-0007 and overflow does not typically occur from the systems during spring runoff and typical storm events (see Appendix Y for monitoring data for water years 2006 through 2009), the systems are capturing and infiltrating stormwater runoff as designed and permitted. The potential impact to surface water quality and beneficial uses under Alternative 2 is considered less than significant based on the implementation of effective, reasonable and appropriate measures to protect water quality of the Project area.

Compliance with Board Order No R6T-2005-0007 and Board Order No. 6-95-86A2. Presently, surface water quality in Madden Creek, Quail Lake Creek and Homewood Creek is not significantly degraded by ski operations (personal communications 11/17/2009, Bud Amorfini, Lahontan Staff; IERS 2010; personal communications 10/8/2010, Bud Amorfini, Lahontan Staff). Since background Total Nitrogen and Total Phosphorus concentrations measured at monitoring stations above the Project area (stations M-1 and E-1) are occasionally above WQOs and no statistically significant increase is measured at the monitoring stations below the Project area (stations M-2 and E-2), exceedances of WQOs are not directly linked to ski area operations and could be attributable to sources such as atmospheric loading (for nitrogen) and soil, plant and animal material (for nitrogen and phosphorus) (Kleinfelder 2007). Turbidity in receiving water samples consistently measure below 4 to 6 ntu with most samples measuring below 2 ntu. Concentrations for Total Suspended Solids are typically below 10 mg/L (Appendix Y; Appendix W Figures 7, 8 and 9). The data do not indicate negatively trending degradation as a result of ski area operations and do not indicate consistent pollutant values between the downstream and upstream monitoring locations. The potential impact to surface water quality and beneficial uses under Alternative 2 is considered less than significant based on compliance with Board Order No R6T-2005-0007 and Board Order No. 6-95-86A2 (see Section 15.2.3).

Compliance with CWE Project area TOCs. Table 15-2 details the HMR CWE analysis results for the existing conditions of the Project area. Figure 15-6, presented in the analysis for the Proposed Project (Alternative 1) and alternatives, provides a graphical representation of the No Project (Alternative 2) compared to the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6. Based on the results, sediment yields generated under the No Project (Alternative 2) exceed Project area TOCs for Intervening Zone 7000, Madden Creek and Quail Lake Creek watersheds. Exceedance of Project area TOCs is a significant impact. Because the No Project (Alternative 2) will not change existing conditions of the Project area, the sediment yield in Intervening Zone 7000, Madden Creek and Quail Lake Creek would remain above the Project area TOCs as measured by the HMR CWE analysis. Based on the points of significance for the evaluation criteria for HYDRO-1, this impact is significant.

Mitigation: No mitigation is available.

After Mitigation: *Significant and Unavoidable Impact; No Project (Alternative 2)*

Existing BMPs, stormwater treatment systems, and restoration areas will be maintained under the No Project (Alternative 2). However, compliance with Project area TOCs (for Quail Lake Creek, Madden Creek and Intervening Zone 7000) will not be achieved because the No Project (Alternative 2) does not allow for redevelopment of the North and South Base areas, the installation of expanded stormwater treatment systems and land coverage removal. Under the No Project, the Project area continues to operate as a ski area and no Ski Area Master Plan approval results. TRPA, Lahontan and Placer County could require restoration projects and BMP retrofitting for adequate maintenance of the Project area, but it is the discretionary action of Ski Area Master Plan approval that requires conformance with Project Area TOCs as discussed in the Ski Area Master Plan Guidelines (TRPA 1990). Because sediment yields in Madden Creek, Quail Lake Creek and Intervening Zone 7000 currently exceed the Project Area TOCs and the No Project alternative does not propose specific actions to reduce sediment yields, the impact remains significant.

Analysis: *Less than Significant Impact; Alternative 4*

Under Alternative 4, the Project area will no longer operate as a ski facility. The Project area will be subdivided and sold as 16 residential estate lots. The North Base area will remain a commercial development lot. Short-term impacts to surface water quality from construction of residences will be reduced and minimized through compliance with State, Placer County and TRPA regulations and permit requirements, which require the implementation of effective, reasonable and appropriate measures to protect water quality and beneficial uses. Runoff will be contained on-site through application of temporary BMPs during construction activities and disturbed soils will be revegetated and stabilized in compliance with construction permits.

Compared to existing conditions, contributions to runoff, snowmelt and atmospheric deposition from the Project area will be reduced because of removal of impervious surfaces and decreased management of the Project area (i.e., less application of road abrasives on Placer County roads and reductions in stormwater runoff and snowmelt and associated pollutants from impervious surfaces). The existing stormwater treatment and infiltration system in the North Base area will be operated, maintained and retrofitted to comply with TRPA Code of Ordinance Chapter 25 and WDRs, as required by Lahontan.

As measured in the HMR CWE analysis (see Figure 15-6), the sediment yield generated from the Project area under Alternative 4 would be reduced as compared to baseline conditions and would not exceed the Project area TOCs for Madden Creek, Homewood Creek, Quail Lake Creek and Intervening Zone 7000 watersheds.

Because Alternative 4 represents a reduced project and reduced contribution to potential impacts as compared to the existing conditions of the Project area, the level of impact to surface water quality and beneficial uses is less than significant based on the evaluation criteria for impact HYDRO-1.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5 and 6*

Accelerated erosion potential and surface water quality impacts are present during construction phasing and occur when protective vegetative cover is removed and soils are disturbed. Site disturbance during construction could pose temporary impacts to surface water quality and beneficial uses of Project area receiving waters through increased pollutant concentrations in stormwater runoff. Runoff from disturbed and modified impervious surfaces, ski trails, roads and snow storage areas could occur as permanent

long-term impacts from ski area operations. Indirect impacts from atmospheric deposition of particulates could occur. If not addressed by the Project, potentially significant impacts to surface water quality could occur under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 from construction runoff, post-construction runoff, eroding slopes, atmospheric deposition, snowmelt, accidental spills, or cumulative watershed effects within the Project area. A number of compliance measures, which are required by codified regulations or law, and standard engineering features and permanent BMPs are incorporated into the Project to avoid, reduce and minimize potential impacts to surface water quality and beneficial uses.

The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will pose similar temporary and long-term potential impacts to surface water quality and beneficial uses and the strategies available for avoiding and reducing short-term and long-term, potential impacts will be similar under these alternatives. The potential impacts are analyzed below and followed by a discussion of the compliance measures built into the Project to address potential impacts. If the compliance and standard engineering measures and permanent BMPs are determined to be insufficient to assure that potential impacts to surface water quality and beneficial uses are avoided, reduced and minimized, then mitigation measures are recommended.

Effective, Reasonable and Appropriate Measures to Protect Water Quality. Construction activities associated with the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will involve land disturbance and earthwork, including excavation and backfill, stockpiling of soils, trenching and removal of vegetative cover. These activities could cause temporary increases in runoff, erosion and sedimentation from the Project area if precautions and measures are not taken to contain runoff and erosion on site and to stabilize disturbed soils. The degree of disturbance is related to the amount of land coverage associated with each alternative, which is detailed in Chapter 14, Geology, Soils and Seismicity, under Impact GEO-3.

The Project will implement a number of compliance measures to control erosion, contain runoff and erosion on-site during construction activities and stabilize disturbed areas following construction activities to reduce potential impacts from erosion, loss of topsoil, or unstable soil conditions to a level of less than significant. Civil Sheets C15 through C18 details the BMP Plans for the developed portions of the Project area.

TRPA and Placer County codified regulations and Lahontan construction permit conditions require these compliance measures and plans for project-level permitting and approval and include, but are not limited to, the following:

- HMR Erosion and Sediment Control and BMP Plan (including Winterization Plans per TRPA Code Chapters 25, 64 and 81; Placer County Grading and Erosion Control Ordinance);
- Stormwater Pollution Prevention Plan (SWPPP – required for NPDES Construction Permit);
- Properly Locate and Protect Stockpile Areas (TRPA Code Chapter 64 and Placer County standard mitigation measure);
- Properly Locate and Manage Snow Storage Areas (TRPA Code Chapter 81, Lahontan WDRs);
- Landscaping/Revegetation Plan (per TRPA Code Chapters 20 and 77 and Placer County standard mitigation measure); and

- Conformance to TRPA and Placer County grading ordinances.

The following subsections discuss potential short-term, temporary impacts to surface water quality and beneficial uses from: general construction activities; soil disturbance, trenching and cut and fill slopes; landscaping, revegetation and irrigation; winter roadway and snowmelt managements; fuel storage; and atmospheric deposition. The analyses detail the effective, reasonable and appropriate measures of the Project for the protection water quality and beneficial uses of the Project area receiving waters.

General Project Construction Activities. Ground disturbance within the Project area will exceed one acre and is subject to the construction stormwater quality permit requirements of the NPDES program. The Project Applicant must obtain this permit from Lahontan and provide evidence of a state-issued WDID number or filing of a Notice of Intent (NOI) and fees prior to start of construction.

The Project is required to implement a TRPA-approved Erosion and Sediment Control Plan in conjunction with the Lahontan-approved SWPPP that is required under Board Order No. R6T-2005-007 (General Permit No. CAG616002) for discharges of stormwater runoff associated with construction activity involving land disturbance in the Lake Tahoe hydrologic unit. Installation of site-specific temporary BMPs and maintenance and monitoring to ensure that disturbed areas, SEZs and stream channels are protected during precipitation events and for over wintering will be required to minimize effects from construction activities (e.g., ground disturbance) associated with the Project. The Project Applicant will prepare a site-specific Erosion Control and BMP Plan based on the final project design to define and map temporary BMPs for the control of erosion and runoff from ground disturbing activities. BMPs will be installed in accordance with Chapter 25 of the TRPA Code of Ordinances and Placer County codified regulations as required for project permitting. The HMR Erosion and Sediment Control Plan will be complimentary to the SWPPP that is required by Lahontan for NDPES permitting.

At a minimum, the SWPPP must prevent debris, soil, silt, sand, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from construction or operation from entering into receiving waters, their tributaries and adjacent wetlands. The SWPPP outlines erosion control measures to be taken as well as BMPs to control and prevent to the maximum extent practicable the discharge of pollutants to surface waters and groundwater. Although the SWPPP focuses primarily on protection of surface waters, it also contains a plan for responding to and managing accidental spills (e.g., Spill Response Plan) during construction and a plan for management and storage of pumped groundwater (e.g., Dewatering Plan). The SWPPP addresses overall management of the construction project such as designating areas for material storage, equipment fueling, concrete washout, and stockpiles. The SWPPP components are further defined in Chapter 14, Geology, Soils and Seismicity, under impact GEO-4.

Placer County considers impacts from grading and earthwork potentially significant unless standard mitigation measures are applied to assure compliance with codified regulations to avoid and minimize construction-related impacts to soils. Standard mitigation measure GEO-4a outlines the requirements for Placer County Construction BMPs to control erosion and contain runoff and sediment on-site, as previously discussed for reduction in potential impacts related to grading activities under impact GEO-4 in Chapter 14, Geology, Soils and Seismicity.

To minimize effects to surface water quality and drainage patterns, Placer County requires the submittal of preliminary grading plans to County Staff for review and approval. Proposed grading, drainage improvements, vegetation and tree removal are shown on Civil Plan Sheets. Sheets C11, 12, 13 and 14 are specific to grading. Grading must conform to provisions of the County Grading, Erosion, and Sediment Control Ordinance (Ref. Article 15.48, Placer County Code) and Stormwater Quality Ordinance (Ref. Article 8.28, Placer County Code) that are in effect at the time of submittal. Approval of Improvement Plans, including project grading,will be required for project permitting, as detailed in mitigation measure GEO-4b. Placer County requires that stockpiling and/or vehicle staging areas be identified on the Improvement Plans and located as far as practical from existing dwellings and protected resources in the area. Mitigation measures GEO-4c details stockpiling for compliance with Placer codified regulations, as previously discussed for reduction in potential impacts related to grading activities under impact GEO-4 in Chapter 14, Geology, Soils and Seismicity.

Disturbed Areas, Trenching, and Cut and Fill Slopes. Approximately 59,300 linear feet of snowmaking pipe and 37,550 linear feet of utilities (water, sewer, gas and electrical will be installed and require trenching (Snowmakers, Inc. 2010 and NCE 12/1/2010 email) under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6. Portions of the Project area will be graded and fill and cut slopes ranging from 6:1 to 2:1 will be created. Portions of the Project area will be trenched during installation of utility lines and piping for water and sewer system. Trenches will not be greater than four feet in depth and 2 to 2.5 feet in width according to details provided on the preliminary Civil Plans. The majority of the utility lines and piping will be installed within existing access roadways, but some lines will require placement in ski trails.

Temporary BMPs to contain loose soils within the disturbance area will be installed prior to trenching activities and maintained until trenching is completed. A Revegetation and/or Landscaping Plan is required for TRPA and Placer County project permitting to assure that portions of the Project area that are disturbed during construction activities are revegetated and stabilized to minimize erosion and sedimentation; thus reducing potential impacts to surface water quality and beneficial uses.

Ski trails, ski chairlift lines, access roadways and hiking trails represent previously disturbed portions of the Project area. The Project commits to continued revegetation and restoration of previously disturbed areas under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6. A total of 500,000 square feet of existing land coverage will be removed and restored, with a portion permanently retired.

Alternatives 3, 5 and 6 will create cut and fill slopes of up to approximately 20.5 feet, as associated with the water tanks at the Mid-Mountain, and 29 to 32 foot retaining walls, as associated with the North Base underground parking structure, and 19 to 21 foot retaining walls, as associated with the South Base underground parking structure. Aboveground retaining walls range from 15 feet to one foot in height. The Project's impacts will be reduced to a level of less than significant through compliance with Placer County codified regulations. Mitigation measures GEO-4b and GEO-4f detail standard Placer County mitigation measures for mitigation of impacts associated with alteration of topography and relief features, as previously discussed for reduction in potential impacts related to grading activities under impact GEO-4 in Chapter 14, Geology, Soils and Seismicity.

Landscaping, Revegetation, and Irrigation. Due to the increase in landscaped area, nitrogen and phosphorus inputs could increase significantly if typical fertilizer and

irrigation regimes are employed. The preliminary revegetation plan outlines the methods for revegetating and stabilizing portions of the Project area that are disturbed during construction activities or will be utilized as bioretention areas for stormwater treatment. The landscaping and revegetation strategies are detailed in Chapter 3, Proposed Project and Alternatives. Impact HYDRO-2 provides analysis for the bioretention areas.

The Project Applicant has prepared a preliminary landscaping plan and calculated the expected irrigation requirements. The Landscaping Plan will apply to public use areas of the North Base, South Base and Mid-Mountain areas. Appendix CC contains the preliminary irrigation calculations, narrative explaining the assumptions for the irrigation calculations, defined hydrozone areas for the public use areas, and TRPA plant species lists associated with each hydrozone. The Project landscaping objective is to present a natural and native visual experience to the user while achieving erosion control, fire safety, water quality and water conservation.

The North Base, South Base and Mid-Mountain areas were delineated as high, medium and low hydrozones according to irrigation requirements. Areas of high visibility or use such as near project area or building entries are defined as high; areas of less visibility or use are medium; and revegetation areas further out from use areas, including areas of slope disturbance, are low. Plant species proposed for use in the high, medium and low hydrozone seed mixtures are native or adapted species that are approved by TRPA, the majority of which are drought-tolerant after establishment. Landscaping water usage for irrigation is estimated at 10.8 acre-feet/year for the first two years of plant establishment substantially declining after the first few growing seasons.

The Project proposes the following measures to minimize the potential for nutrients to enter surface water or escape the root zone and be delivered to groundwater:

- Use of non-mowed or slow-growing turf grass species, locally native or adapted species with annual fertilizer requirements that do not exceed 1.5 pounds per 1,000 square feet;
- Implementation of a Fertilizer Management Plan that meets the requirements of Section 81.7 of TRPA Code or Ordinances;
    - Determination of appropriate fertilizer rates by a soil-revegetation specialist and based on the results of soil nutrient testing;
    - Incorporation of fertilizer into soils prior to seed application to prevent burning and low germination rates;
    - Use of Biosol or other organic, slow-release fertilizers that do not contain nitrate or ammonium with careful application to avoid application on hardscape;
- Prohibition of fertilizer use on bioretention areas for stormwater treatment after initial establishment; and
- Installation of a highly controlled spray irrigation system to avoid over irrigation and overspray onto hardscape.

The final Landscaping Plan and irrigation demand will be developed based on the configuration of the preferred alternative and submitted to TRPA and Placer County for review and approval. To reduce potential impacts from landscaping on surface water quality and beneficial uses, a final landscaping/revegetation plan and fertilizer management plan are necessary and are outlined as mitigation measure BIO-9.

Atmospheric Deposition. Atmospheric sources are determined to contribute to surface water quality degradation, as more than half of the nitrogen loading in Lake Tahoe is delivered by air (TRPA and NDEP 2008). Several sources of airborne pollutants include motorized vehicle exhaust, dust and particulates from unvegetated slopes and driving on unpaved access roads during summer operations, and pulverized road salts and abrasives.

Short-term impacts to water quality from construction dust will be reduced to a level of less than significant through compliance with TRPA codified requirements (e.g., TRPA Erosion and Sediment Control Plan) and Lahontan NPDES permit requirements (e.g., SWPPP). These plans require the application of dust abatement actions during construction activities. Dust abatement is analyzed in Chapter 12, Air Quality.

Long-term, potential impacts to surface water quality from atmospheric deposition will be reduced through project design and maintenance, including watering of roadways during periods of high use and reductions in vehicle miles traveled (VMT), which is described in Chapter 11, Transportation and Circulation. Revegetation and landscaping of slopes and disturbed areas within the Project area will protect surface water quality by covering bare soils, stabilizing slopes and reducing sediment sources.

Combined Level of Construction Impact to Surface Water Quality and Beneficial Uses. In summary, the Proposed Project (Alternative 1), Alternatives 3, 5 and 6 will implement effective, reasonable and appropriate measures to protect water quality and beneficial uses of Project area receiving waters and will comply with TRPA, Lahontan and Placer County codified regulations and construction permit conditions.

Based on the evaluation criteria for impact HYDRO-1, the potential short-term, temporary impacts to surface water quality and beneficial uses during construction activities are reduced to less than significant under TRPA codified regulations and less than significant after mitigation for Placer County CEQA analysis. Placer County standard mitigation measures, detailed as HYDRO-1a GEO-4a, GEO-4b, GEO-4c and GEO-4e below, assure compliance with Placer County codified regulations. The mitigation measures serve to protect surface water quality and beneficial uses by requiring temporary BMPs be designed according to the California Stormwater Quality Association Stormwater BMP Handbooks and Improvement Plan approval to conform to the Placer County Grading, Erosion, and Sediment Control Ordinance.

Long-Term Operational Impacts and Compliance with Board Order No R6T-2005-0007 and Board Order No. 6-95-86A2. Runoff from impervious surfaces and disturbed slopes can carry a variety of pollutants, such as metals, oils and grease and sediment and chemical residues, from Project area roadways, parking lots, rooftops, and other surfaces and deposit them in adjacent waterways. Pollutant concentrations vary depending on storm intensity, land use, elapsed time between storms, and the volume of runoff generated in a given area that reaches a receiving water. Upon approval of a preferred project alternative, the Project Applicant will be required to submit a Form 200 for Application/Report of Waste Discharge for new facilities and changes in design and operations from the existing WDRs. Lahontan will then process the application for updated WDRs for the Project area. Ski area operations cannot violate WDR provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and WQOs are not maintained. Additionally, the Project will have to meet the anti-degradation findings under State Board Resolution 68-16.

The Project implements stormwater treatment systems, LID strategies (pervious pavement and pavers, cisterns, heated walk ways, bioretention areas for stormwater treatment and slope revegetation to improve infiltration of runoff), improved snow

storage and fuel storage, and revegetation and landscaping to protect beneficial uses and preserve and improve surface water quality.

Winter Roadway and Snowmelt Management. Snowmelt from snow disposal areas can represent not only a significant source of nutrients but also harmful hydrocarbons, metals, and biological oxygen demand. The current TRPA Code of Ordinances references the Handbook of Best Management Practices, which is Volume II of the 208 Plan and provides snow storage guidelines, including: adequate sizing of the area according to estimated snow amounts, avoidance of SEZ areas, and placement of storage areas up-gradient of stormwater treatment and BMP facilities. The TRPA CEP has a goal of improved snow storage. The Project improves upon existing snow storage and management under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 through location of storage areas a greater distance from SEZ areas and in areas that will drain to bioretention areas and to stormwater treatment systems. Figure 15-4 illustrates the proposed snow storage areas in the North Base and Figure 15-5 illustrates proposed snow storage areas in the South Base. Snow storage will not occur within Placer County ROWs.

Sanding activities on Placer County roadways will continue between the months of October through May as dependent on weather conditions. In 2008/2009 Placer County Department of Public Works applied approximately 8.5 tons of sand in the vicinity of the Project area. In 2009/2010 approximately 21.5 tons were applied (Placer County Road Application Logs for Zone 1, Area 22 – 2008, 2009, 2010). Placer County Department of Public Works will typically send out a sweeper within 72 hours after the sand is applied and weather conditions permit removal of loose sand. Placer County Department of Public Works uses Vactor equipment each summer to clean out road culverts and remaining sand that was applied the prior winter season. Typically the amount of sand removed each year exceeds the amount applied by the County because Placer County also removes some abrasives applied to SR 89 by Caltrans as well as some incidental naturally occurring sediment/soils (personal communications, April 19, 2010 email from Allen Breuch, Supervising Planner with Placer County).

Figure 15-3. Snow Storage Areas Proposed for the North Base Area

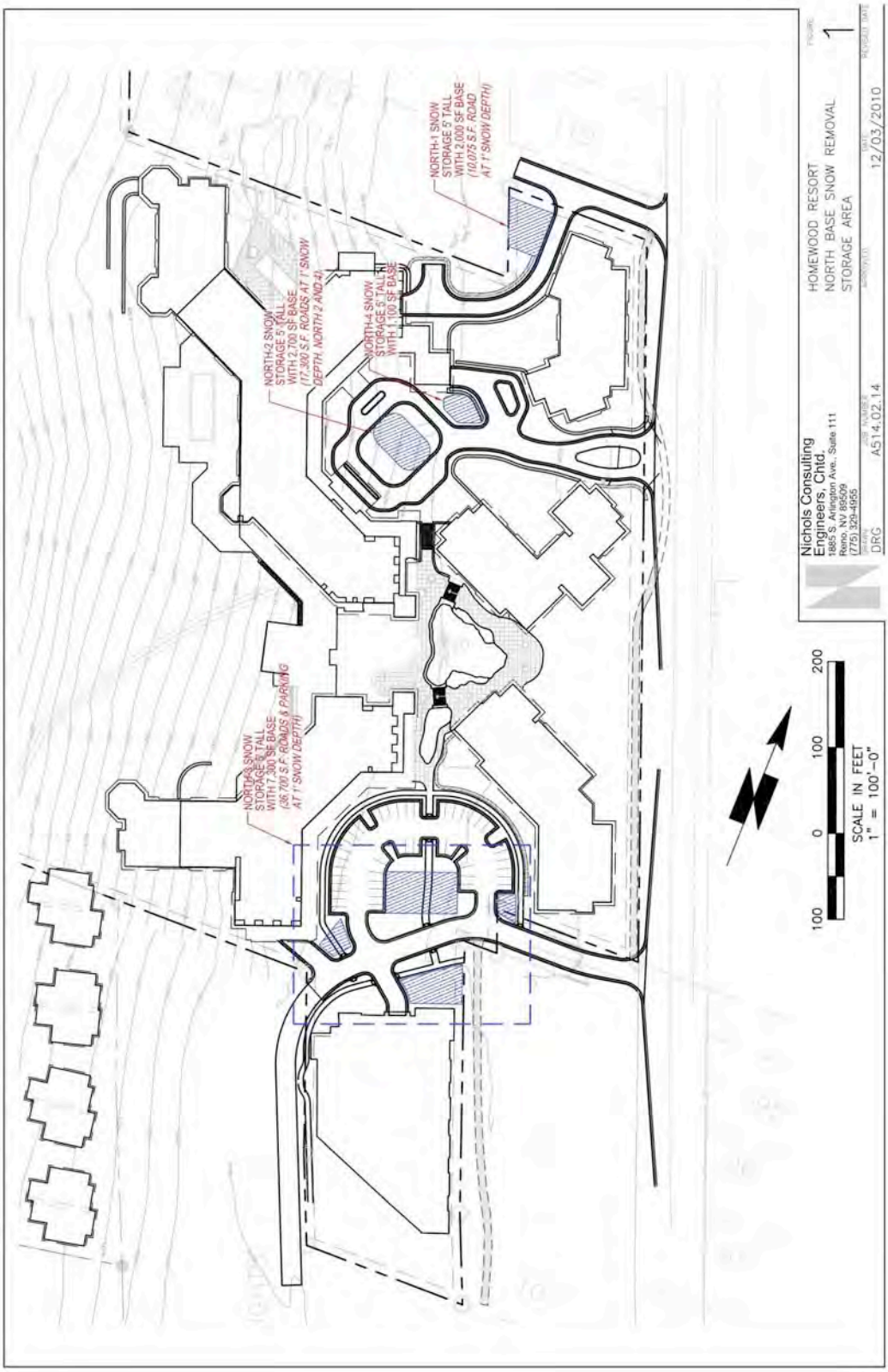
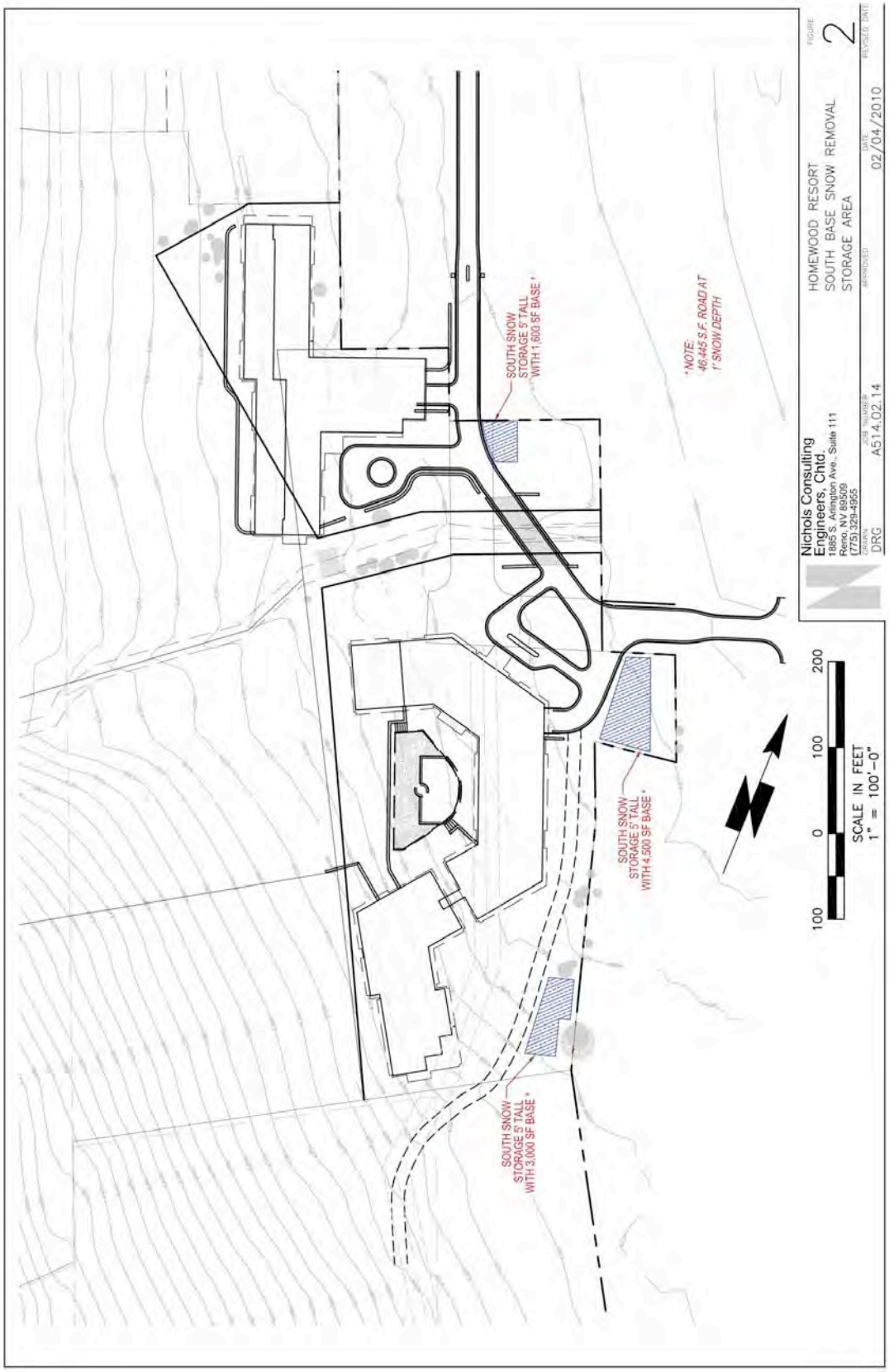


Figure 15-4. Snow Storage Areas Proposed for the South Base Area



Fuel Storage. Under Alternatives 1, 3, 5 and 6 the maintenance facility currently located in the South Base area and in proximity to Homewood Creek will be relocated to the Mid-Mountain area. The existing 5,000-gallon fuel tank will remain in use at the South Base area until the start of Phase 2 development when it will be removed. At that point, new diesel fuel tanks constructed at the new Mid-Mountain area maintenance facility in Phase 1 development will be used exclusively. These Mid-Mountain tanks will be sized to sustain operations throughout the winter since they will be inaccessible by fuel trucks when roadways are snow covered. The estimates for winter operations total 40,000 gallons that would be stored in two 20,000-gallon above ground tanks located beneath the maintenance facility within the crawl space. The tanks will be serviced from the paved apron adjacent to the maintenance building. The use and operations are required to conform to the California Fire Code and receive approval from the North Lake Tahoe Fire Protection District (NLTFPD), as discussed in Chapter 17, Public Safety and Hazards.

Moving fuel tanks from the South Base area, where accidental spills could reach Homewood Creek and SEZ areas, to the Mid-Mountain area, which contains no active stream channel, reduces the potential for surface water quality impacts from accidental spills.

Stormwater Treatment Systems and Bioretention Areas. There are three perennial stream channels draining the Project area and potential hydraulic connections between ground and surface waters within the Project area. TRPA environmental thresholds WQ-4, which outlines tributary standards, WQ-5, which outlines runoff water quality parameters and standards, WQ-6, which addresses discharges to groundwater, and WQ-7, which requires attainment of existing water quality standards, apply to the Project area. TRPA discharge limits are listed in Table 15-4 and Lahontan WQOs are listed in Table 15-5.

Madden Creek and Homewood Creek are sampled during spring runoff conditions. Sample stations M-1 and E-1 are located just above the Project area boundary. Sample stations M-2 and E-2 are located just below the Project area boundary. Because of the inability to obtain grab samples at stations M-1 and E-1 due to access issues and low or absent surface flows, comparison with pollutant concentration levels of stations M-2 and E-2 is difficult. No statistically significant degradation of surface water quality due to operations within the Project area have been measured (personal communications 11/17/2009, Bud Amorfini, Lahontan; IERS 2010; 10/8/10, Bud Amorfini). In other words, the nutrient concentrations measured on samples taken above the Project area boundary exceed WQOs as often as samples taken below the Project area, with no statistical increase in concentrations measured between the samples.

To address potential long-term effects to beneficial uses and surface water quality, the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will revegetate disturbed areas (as discussed in Chapter 3 and under potential construction impacts above) and install permanent BMPs, LID strategies and stormwater treatment systems. The combined stormwater treatment approach will capture, treat and infiltrate runoff from the Project area for expected improvements in stormwater quality as compared to existing conditions.

The State Board defines LID as a sustainable practice that benefits water supply and contributes to water quality protection. Unlike traditional storm water management, which collects and conveys storm water runoff through storm drains, pipes, or other conveyances to a centralized storm water facility. LID takes a different approach by using site design and stormwater management to maintain the site's pre-development

runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall. LID has been a proven approach in other parts of the country and is seen in California as an alternative to conventional storm water management. LID provides economical as well as environmental benefits. LID practices result in less disturbance of the development area, conservation of natural features, and prove less expensive than traditional storm water controls. The cost savings applies not only to construction costs, but also to long-term maintenance and life cycle cost. LID includes specific techniques, tools, and materials to control the amount of impervious surface, increase infiltration, improve water quality by reducing runoff from developed sites, and reduce costly infrastructure. LID practices include; bioretention facilities or rain gardens, sidewalk storage, grass swales and channels, vegetated rooftops, rain barrels and cisterns, vegetated filter strips, swales and buffers, tree preservation, roof leader disconnection, and permeable pavements and pavers, impervious surface reductions and disconnection, soil amendments, pollution prevention and good housekeeping (http://waterbaords.ca.gov/water_issues/programs/low_impact_development).

A stormwater treatment "train", detailed in impact HYDRO-3, has been designed for the North and South Base areas. Runoff will be conveyed to a bioretention area prior to a stormwater drop inlet where grades permit or directly to stormwater drop inlets to be routed via stormdrain pipe. Once infiltrated or conveyed to the underground system, runoff will enter a Contech Vortech® treatment vault for coarse sediment and hydrocarbon removal and then be routed to a Contech Stormfilter® for secondary treatment and fine sediment removal down to 15 microns. After exiting the secondary treatment facility, the stormwater enters the underground infiltration gallery for infiltration and soil treatment. Civil Plan Sheets C10 through C13 detail the Grading and Drainage Plans for the North Base, South Base and Mid-Mountain areas.

Contech Stormfilters® target a range of pollutants in stormwater runoff, including TSS, soluble heavy metals, oil and grease and total nutrients. This is a passive filtration systems included in the stormwater treatment train for the removal of fine sediment and particles. The Contech Vortech® system is a high flow hydrodynamic separation system that removes coarse sediment, particles, free oil and debris from stormwater runoff. The design allows for inspection of components and unobstructed maintenance access. Product evaluations for Contech Stormfilters® report mean Total Suspended Solids removal efficiencies to be 87 percent by mass (P=0.05) over the range of stormwater event mean concentrations tested. The studied systems were capable of removing particles in the vicinity of 10 microns when operating at a test standard of 7.5 gallons per minute (Contech Stormwater Solutions Inc. 2004). Other results can be reviewed at http://www.stormwater360.co.nz/?s1=products&s2=StormFilter.

Stormwater treatment system configurations at the North and South Base areas will differ depending on the total impervious area and building layout, and will treat, at a minimum, the runoff volume from the 20-year, 1-hour storm event and function to reduce pollutant concentrations to levels that comply with Lahontan and TRPA discharge limits through pretreatment actions and infiltration. The stormwater treatment systems as designed for the Proposed Project (Alternative 1) are sized in excess of the 20-year, 1-hour storm volume with capacities maximized as site conditions allow. Alternative 3 would construct more impervious surfaces as a result of larger building footprints and compared to the Proposed Project (Alternative 1) would slightly increase stormwater runoff volumes. Alternatives 5 and 6 would construct slightly less impervious surfaces, which

would slightly decrease stormwater runoff volumes. Stormwater treatment system capacity is analyzed in more detail for impact HYDRO-2.

Placer County requires installation of standard mitigation measures to permanently mark/emboss with prohibitive language such as "No Dumping! Flows to Creek" or other language as approved by the ESD, and/or graphical icons to discourage illegal dumping. Diversion of stormwater runoff around trash storage areas to minimize contact with pollutants is also required. Mitigation measures to assure compliance with these Placer County codified regulations are detailed as mitigation measures HYDRO-1b and HYDRO-1c.

CEP Resolution Compliance – Reduction in Land Coverage and Sediment Loading. The CEP Resolution for the Project requires reductions in land coverage and sediment loading for the Project area. The Proposed Project (Alternative 1), Alternatives 3, 5 and 6 reduce total existing land coverage within the Project area by 13, 8, 23 and 20 percent, respectively, and relocate land coverage from lower capability LCDs 1a and 1b to higher capability LCDs 2, 4, 5 and 6. Land coverage is detailed in Chapter 14, Geology, Soils and Seismicity under impact GEO-3.

Reductions in land coverage are expected to result in reductions in sediment loading. Sediment loading was modeled for the North Base, South Base and Mid-Mountain areas and for Tahoe Ski Bowl Way (redevelopment areas). The LSPC stormwater management analysis for quantification of the Project design benefits relies on three tracks of information associated in part with the TMDL-related studies of 2007 and 2008. The detailed LSPC stormwater management analysis for the Project area is provided in Appendix Z. Using measured infiltration and sediment yield data and daily climate data for a range of WYs and conditions three treatment scenarios were modeled. These include the runoff and the treatment effectiveness of the existing stormwater treatment systems (termed "Existing Conditions"), the proposed stormwater treatment systems (termed the "Project SWMP") and the stormwater treatment systems that would meet the TRPA 20-year, 1-hour design storm requirements (termed the "20-year BMP SWMP"). Results are presented as annual total sediment load, expressed as kilograms per year (kg/yr).

It is important to note that this loading exercise is based on daily data representing particular water year conditions and cannot be directly compared to the HMR CWE modeling analysis that considers long-term averaged data to represent relative annualized sediment yields.

Table 15-7 summarizes the annual total sediment load modeled for the redevelopment areas under wet WYs 1995 and 2006 and dry WYs 1994 and 2003 precipitation regimes. The focus of the comparison is between the Project SWMP and the 20-year BMP SWMP, with the Project SWMP representing what is proposed under the Proposed Project (Alternative 1) and the 20-year BMP SWMP representing what is required under current TRPA Code of Ordinances. The North and South Base areas are the more substantial areas of the overall Project area affecting loading and serve to illustrate the model concepts.

Table 15-8 compares annual sediment loads between the 20-year BMP SWMP and the Project SWMP. Annual total sediment leaving the project area is connected to the amount of stormwater runoff leaving the Project area each year. The Project SWMP will capture more of the stormwater volume and thus more of the annual total sediment load as shown as the percent decreases in Table 15-8. The Mid-Mountain area and Tahoe Ski Bowl Way show a negative percentage and a smaller percentage decrease, respectively,

because the 20-year BMP SWMP does not include the uphill runoff that could enter the Project area. This runoff must be contained by the Project and is thus included in the Project SWMP analysis. As a result there is a net greater excess runoff and annual sediment load from the 20-year BMP SWMP than from the Project SWMP at the Mid-Mountain area. In the Tahoe Ski Bowl Way area, there is sufficient "over-design" in the Project SWMP conditions to contain uphill runoff such that there is still a slight improvement over 20-year BMP SWMP conditions.

Appendix Z presents additional graphs for comparisons of annual sediment loading for WYs 1994, 2003 and 2006. Figure 15-5, which represents comparisons of annual sediment loading for the North and South Base areas for WY 2006, is presented below to represent a worst-case scenario under a very wet WY. Under a precipitation regime for a very wet WY, the Project SWMP for the North and South Base areas is expected to decrease annual total sediment by approximately 85 percent as compared to the 20-year BMP SWMP.

While simple summary statements are difficult to make, given the complexity of storms, antecedent soil moisture conditions and other variables, the data shows that in wetter years, which represent worst-case scenarios, sediment and presumably fine sediment loads from the Project SWMP design are 80 to 86 percent less than those produced by the standard 20-year BMP SWMP design (Grismer 2010).

Table 15-7

Annual Stormwater Sediment Loads for Existing, 20-year BMP and Project SWMP Designs - Wet (1995 & 2006) and Dry (1994 & 2003) WY Analyses

Project Area	Existing Conditions (kg)*				20-yr BMP SWMP (kg)*				Project SWMP (kg)*			
	1994WY	1995WY	2003WY	2006WY	1994WY	1995WY	2003WY	2006WY	1994WY	1995WY	2003WY	2006WY
North Base Area	246,584	3,749,270	1,496,700	3,715,798	520,583	4,489,815	1,925,338	4,387,778	10,339	652,201	222,518	646,511
South Base Area	56,549	1,851,045	651,730	1,800,059	249,545	2,420,741	1,023,528	2,411,095	9,479	372,205	131,627	368,548
Mid-Mtn Base Area	15,353	475,818	166,708	461,902	21,493	491,426	177,498	497,680	28,649	187,886	68,063	162,855
Tahoe Ski Bowl Way	98,685	1,324,050	522,235	1,260,036	100,199	1,209,091	492,269	1,125,043	72,542	510,820	219,642	491,384
Total	**419,165**	**7,402,179**	**2,839,377**	**7,239,801**	**893,813**	**8,613,068**	**3,620,637**	**8,423,602**	**123,003**	**1,725,107**	**643,854**	**1,671,304**

Source: HMR Water Quality – Quantification of Design Benefits, Dr. Mark Grismer, May 26, 2010

Notes: * 1 kilogram = 0.001 Metric Tonnes

Table 15-8

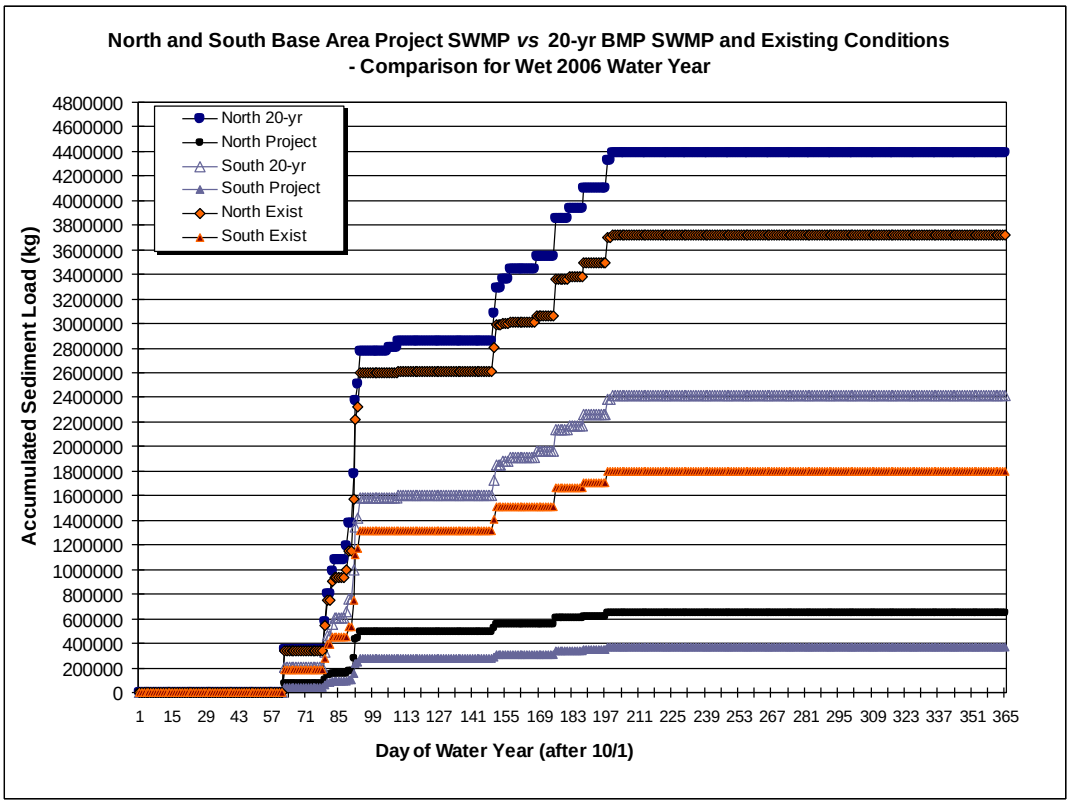
Decrease in Stormwater Sediment Loads for Project SWMP Compared to 20-year BMPs SWMP Designs in Wet (1995 & 2006) and Dry (1994 & 2003) WY Analyses

Project Area	Project SWMP (kg*)							
	1994WY	% Change	1995WY	% Change	2003WY	% Change	2006WY	% Change
North Base Area	510,243	98.0%	3,837,614	85.5%	1,702,820	88.4%	3,741,267	85.3%
South Base Area	240,065	96.2%	2,048,536	84.6%	891,901	87.1%	2,042,547	84.7%
Mid-Mtn Base Area	-7,156	-33.3%	303,540	61.8%	109,435	61.7%	334,825	67.3%
Tahoe Ski Bowl Way	27,657	27.6%	698,271	57.8%	272,627	55.4%	633,659	56.3%
Overall	**772,804**	**86.5%**	**6,889,956**	**80.0%**	**2,978,786**	**82.3%**	**6,754,304**	**80.2%**

Source: HMR Water Quality – Quantification of Design Benefits, Dr. Mark Grismer, May 26, 2010

Notes: * 1 kilogram = 0.001 Metric Tonnes

Figure 15-5. Accumulated sediment load from the North and South Base Areas Under Wet WY Conditions (WY 2006)



Source: HMR Water Quality – Quantification of Design Benefits, Dr. Mark Grismer, May 26, 2010

Combined Level of Long-term Impact to Surface Water Quality and Beneficial Uses. Compared to existing conditions, long-term contributions from the Project area to stormwater runoff, snowmelt and atmospheric deposition will be reduced and minimized through installation of stormwater treatment systems, bioretention areas, reductions in land coverage, and continued revegetation of disturbed areas and ski trails. Conclusive results concerning effectiveness of compliance measures cannot be adequately stated without inspection, monitoring and maintenance of the proposed treatment systems and permanent BMPs, however.

As a result, the level of impact is considered potentially significant until monitoring results prove compliance with TRPA discharge standards, as outlined in the TRPA Code of Ordinances Chapter 81, and State WQOs, as outlined in the Lahontan Basin Plan and forthcoming updated WDRs. Mitigation measure HYDRO-1d outlines the requirements of the Inspection, Operations, Maintenance and Monitoring Plan for Stormwater Treatment Systems and Permanent BMPs. Mitigation measure HYDRO-1e outlines follow up measures to be taken should monitoring results report compromised effectiveness of permanent BMPs or stormwater treatment systems.

Compliance with CWE Project Area TOCs. The HMR CWE analysis was completed in compliance with TRPA Ski Area Master Plan requirements and models the annualized total sediment (T/yr) or sediment yield that could result from implementation of the Proposed Project (Alternative 1) and alternatives. Following the methodology outlined in Section 3 of Appendix W, sediment yield is modeled for the four Project area watersheds. Figure 15-6 compares the four sediment yields predicted under the conditions of each alternative to the Project Area TOCs for Madden, Homewood and Quail Lake Creek watersheds and Intervening Zone 7000. Exceedance of an individual Project Area TOC is considered a significant impact. Each of the four watersheds is considered individually so that a significant decrease in total sediment in one watershed does not mask an increase in another watershed.

The existing sediment yields for Intervening Zone 7000, Madden Creek, and Quail Lake Creek Project area watersheds currently exceed the Project Area TOCs, while the existing sediment yield for Homewood Creek watershed is below its Project area TOC. Note that existing sediment yields are termed "Baseline" in Figure 15-6.

The HMR CWE analysis concludes that implementation of the Proposed Project (Alternative 1) or Alternative 3, 5 and 6 will reduce sediment yields originating within the Project area watersheds as compared to existing conditions. Three of the four sediment yields will be at or below their Project Area TOC through implementation of the Project. The results are discussed below according to watershed.

Intervening Zone 7000. The existing sediment yield for Intervening Zone 7000 is 62 T/yr, which exceeds the Project Area TOC (55 T/yr) by 7 T/yr. Under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6, the sediment yield will be reduced to 56, 58, 56, and 56 T/yr, respectively, a reduction of 5.3 T/yr which is within 1 T/yr of the Project Area TOC for Intervening Zone 7000. This 1 T/yr is within the expected 10 percent margin of error of the CWE model (personal communications September 22, 2010 – Mark Grismer). The HMR CWE analysis takes into consideration the installation of the stormwater treatment systems proposed for Alternatives 1, 3, 5 and 6 in the North Base area that are located in Intervening Zone 7000; however, because the model is based on standardized sedimentation rates that are applied to certain land uses, the model may not adequately assess the treatment levels of these systems. Additionally, treatment level sediment reduction assumptions for the model exercise erred on the conservative side when treatment systems, BMPs and other approaches had a reported range of effectiveness. The Project installs a number of higher-level treatments that are not reflected fully in the CWE model, as to not overstate the treatment effects. If higher level treatment assumptions were incorporated into the model, post-project sediment yields under Alternative 1, 3, 5 and 6 conditions would likely decrease by 2 to 10 Percent. Thus, where sediment yields are close to the TOC, specifically in Intervening Zone 7000, the actual reduction can be expected to be greater than modeled (IERS 2010).

Furthermore, the sediment loading analysis specific to the North and South Base areas and the Mid-Mountain and Tahoe Ski Bowl Way considers the affects of the proposed stormwater treatment "trains" (Please see Figure 15-8 below for the treatment train schematic). When considering the results from the base area loading analysis presented in Table 15-7, the Project is measured to reduce annual sediment loads originating from the North Base area by approximately 83 percent compared to existing conditions during a wet water year such as WY2006. It is recognized that the sediment loading results for the North and South Base areas cannot be directly compared to the HMR CWE results because of the scale differences; the HMR CWE analysis considers annualized sediment yields, while the loading exercise considers data on a daily timescale for particular water

years. The conclusion can be made, however, that the relative yield reduction from the North and South Base stormwater treatment systems would be reflected as more than a 1 T/yr decrease sediment yield.

Additional analysis and support for the conclusion that post-project conditions reduce sediment yield from Intervening Zone 7000 to the level of the TOC are referenced to Appendix W.

Figure 15-6. Sediment Yields (T/yr) for Project Area Watersheds vs. Project Area TOCs

	Baseline	TOC	Project	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
INT 7000	62	55	56	62	58	49	56	56
Madden	459	435	425	459	425	380	425	425
Homewood	828	865	799	828	777	814	784	784
Quail	152	147	151	152	149	136	149	150
Combined	1500	1502	1431	1500	1409	1379	1414	1415

Source: IERS 2010

Notes: Existing Sediment Yields are termed "Baseline" in this figure. The terms are used interchangeably.

Madden Creek Watershed. Sediment yield in Madden Creek watershed is currently 459 T/yr, which exceeds the Project Area TOC for this watershed (i.e., 435 T/yr) by 24 T/yr. Under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6, sediment yield would be reduced to 425 T/yr, which is below the Project Area TOC for Madden Creek watershed.

Homewood Creek Watershed. Sediment yield in Homewood Creek watershed is currently 828 T/yr, which is below its Project Area TOC (865 T/yr). Under the Proposed Project (Alternative 1) the sediment yield will be reduced to 799 T/yr and under

Alternatives 3, 5 and 6, sediment yield will be reduced to 777, 784 and 784 T/yr, respectively.

Quail Lake Creek Watershed. Sediment yield from Quail Lake Creek watershed is currently 152 T/yr, which exceed the Project Area TOC (147 T/yr) by 5 T/yr. Under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6, sediment yield will be reduced to 151, 149, 149 and 150 T/yr, respectively, but the sediment yield would still exceed the Project Area TOC for Quail Lake Creek watershed by 2 to 4 T/yr. This is likely within the expected error range of the CWE analysis as discussed above for Intervening Zone 7000, but because no supplemental analysis can be referenced in support of this conclusion, the impact is considered significant. Implementation of mitigation measure HYDRO-1f is recommended to reduce this impact to a level of less than significant.

Combined Compliance with CWE Project Area TOCs. Project Area TOCs for Madden Creek and Homewood Creek watersheds and Intervening Zone 7000 will not be exceeded under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6. Sediment yields from the Project area are expected to decrease through implementation of these alternatives, as supported by the CWE analysis results and conclusions summarized above and detailed in Appendix W. Implementation of the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will reduce sediment yield in Quail Lake Creek watershed but could still result in exceedance of the Project Area TOC. This is a potentially significant impact that requires mitigation based on the evaluation criteria for HYDRO-1.

Mitigation: **HYDRO-1a. Design Water Quality Protection BMPs According to the California Stormwater Quality Association Stormwater BMP Handbooks and TRPA's Handbook of BMPs**

Water quality Best Management Practices (BMPs) shall be designed according to the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development / Redevelopment, and/or for Industrial and Commercial, (and/or other similar source as approved by the Engineering and Surveying Department (ESD)).

Storm drainage from on- and off-site impervious surfaces (including roads) shall be collected and routed through specially designed catch basins, vegetated swales, vaults, infiltration basins, water quality basins, filters, etc. for entrapment of sediment, debris and oils/greases or other identified pollutants, as approved by the ESD. BMPs shall be designed at a minimum in accordance with the Placer County Guidance Document for Volume and Flow-Based Sizing of Permanent Post-Construction Best Management Practices for Stormwater Quality Protection. Post-development (permanent) BMPs for the project include, but are not limited to: underground water quality treatment vaults, infiltration galleries, sediment basins, bioretention areas and revegetation of disturbed areas. No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals.

No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals. All BMPs shall be maintained as required to insure effectiveness. The Project Applicant shall provide for the establishment of vegetation, where specified, by means of proper irrigation. Proof of on-going maintenance, such as contractual evidence, shall be provided to ESD upon request. Maintenance of these facilities shall be provided by the project owners/permittees unless, and until, a County Service Area is created and said facilities

are accepted by the County for maintenance. Contractual evidence of a monthly parking lot sweeping and vacuuming, and catch basin cleaning program shall be provided to the ESD upon request. Failure to do so will be grounds for discretionary permit revocation. Prior to Improvement Plan or Final Map approval, easements shall be created and offered for dedication to the County for maintenance and access to these facilities in anticipation of possible County maintenance.

HYDRO-1b. Storm Drain Stenciling

All storm drain inlets and catch basins within the Project area shall be permanently marked/embossed with prohibitive language such as "No Dumping! Flows to Creek" or other language as approved by the Engineering and Surveying Department and/or graphical icons to discourage illegal dumping. Message details, placement, and locations shall be included on the Improvement Plans. ESD-approved signs and prohibitive language and/or graphical icons, which prohibit illegal dumping, shall be posted at public access points along channels and creeks within the project area. The Homeowners' and/or Property Owner's association is responsible for maintaining the legibility of stamped messages and signs.

HYDRO-1c. Stormwater Routing for Refuse Management

All stormwater runoff shall be diverted around trash storage areas to minimize contact with pollutants. Trash container areas shall be screened or walled to prevent off-site transport of trash by the forces of water or wind. Trash containers shall not be allowed to leak and must remain covered when not in use.

HYDRO-1d. Inspection, Operations, Maintenance and Monitoring Plan for Stormwater Treatment Systems and Permanent BMPs

The Project Applicant shall prepare and implement an Inspection, Operations, Maintenance and Monitoring Plan for Stormwater Treatment Systems and Permanent BMPs. This plan shall comply with TRPA Code of Ordinances Chapter 25 and Chapter 81 and Lahontan's updated WDRs. TRPA, Lahontan, and Placer County shall review the plan prior to issuance of final Project approval. Post-project monitoring shall include post-project BMP effectiveness monitoring and stormwater monitoring as detailed below.

<u>Post-Project BMP Effectiveness Monitoring.</u> Revegetation/Landscaping and slope stabilizing measures shall be visually monitored annually for the first five years following construction to assess adequacy and effectiveness of BMPs. Additional BMPs shall be prescribed by the TRPA if existing treatments fail to protect the site from accelerated erosion. A qualified consultant or trained HMR staff (Note: completion of the TRPA contractor certification training is recommended) shall monitor restoration progress.

Visual monitoring of the condition and effectiveness of BMPs shall occur before and after storm events, and if necessary, corrective actions shall be taken. The contractor shall be required to maintain the effectiveness of the BMPs until the disturbed areas are stabilized and erosion is no longer a substantial threat. Restoration of disturbed areas shall be in accordance with the Restoration/Landscaping Plan.

<u>Post-Project Stormwater Monitoring.</u> Post-project stormwater monitoring shall be performed for comparison with pre-project monitoring results and for determination of compliance with State and TRPA discharge standards. Fine sediment shall be monitored as specified by TRPA and future Lake Tahoe TMDL research directives.

Monitoring results shall address the following components:

- Compliance of project area runoff with State and TRPA discharge standards;
- Stormwater treatment system effectiveness;
- Permanent BMP effectiveness;
- Revegetation/Landscaping effectiveness;
- Assessment of performance of strategies outlined in the Stormwater treatment calculations; and
- BMP and Stormwater treatment system maintenance regimes.

Miscellaneous Monitoring. Performance of LID strategies (pervious pavement and pavers, cisterns, heated walk ways, bioretention areas for stormwater treatment and revegetation of slopes to improve infiltration of runoff) shall be monitored in accordance with requirements and conditions outlined in the TRPA Project Permit.

Inspection and Maintenance Program. All stormwater treatment systems and permanent BMPs shall be visually inspected monthly and maintained as necessary to assure optimal performance of systems. A long-term maintenance program shall be developed as based on monitoring results.

Reporting. Monitoring results shall be submitted to TRPA in the Post-Project Bi-Annual Monitoring Report. Recommended reporting dates are December 1st to accommodate for winterization of the project area and stormwater quality reporting according to water year (i.e., October 1, 2010 to September 30, 2011 is Water Year 2011) and June 1st during spring runoff. The report shall summarize site conditions, maintenance activities, physical observation on water quality and the degree of sedimentation, if apparent. The report will include 6 months worth of observations and corresponding field measurements and laboratory analytical results.

Surface water that is infiltrated onto groundwater shall not exceed the TRPA and State discharge to land treatment limits:

- Total Nitrogen as N: 5 mg/L;
- Total Phosphorus as P: 1mg/L;
- Iron as Fe: 4 mg/L;
- Turbidity: 200 NTU; and
- Oil and Grease: 40 mg/L.

Surface water runoff discharged to Homewood Creek shall not exceed the TRPA surface runoff concentrations stated in Chapter 81 of the TRPA Code of Ordinances and the water quality objectives of the State for receiving waters outlined in the WDRs.

HYDRO-1e. Apply Project Security Fee Towards BMP and Stormwater System Improvements and/or Restoration Projects if Discharge Limits are Not Met

If post-project monitoring determines that TRPA or State discharge standards are exceeded, the TRPA Security Deposit shall be used to implement additional water quality treatment needs in Madden Creek, Quail Lake Creek and Homewood Creek watersheds and portions of Intervening Zone 7000. The Project Applicant and its contractors shall make repairs or improvements to the proposed permanent BMPs, LID strategies (pervious pavement and pavers, cisterns, heated walk ways, bioretention areas for stormwater treatment, and revegetation of slopes to improve infiltration if runoff) and

stormwater treatment systems to improve performance and effectiveness per TRPA and Lahontan requirements. If the repairs and/or improvements result in compliance with receiving water quality objectives and discharge to land treatment and surface water limits, then no additional mitigation is required.

HYDRO-1f. Restrict Development within Quail Lake Creek Watershed until Compliance with Project Area TOC

The Project proposes no development or change in existing conditions within this watershed. Based on exceedance of the Quail Lake Creek Project Area TOC, no development within Project area portion of the Quail Lake Creek Watershed shall be permitted until annualized total sediment (T/yr) is reduced to below the Project Area TOC (147 T/yr). The Project Applicant shall identify sediment source control and land coverage removal projects within this watershed that will be completed prior to implementation of capital improvements or other actions that create soil disturbance. The Project Applicant shall monitor the effectiveness of these projects and update the HMR CWE analysis for the Quail Lake Creek watershed based on the results.

BIO-9. Final Landscape/Revegetation Plan and Fertilizer Management Plan

The Project Applicant shall prepare and implement a landscape and fertilizer management plan for the Project area. This plan shall comply with TRPA Code of Ordinances Section 31.7 Landscaping Standards and Section 81.7 Fertilizer Management. The plan shall be reviewed and approved by TRPA and the Placer County Planning Department prior to issuance of the final Project approval.

See Impact BIO-9 in Chapter 8, Biological Resources for further description.

GEO-4a. Design Construction-related BMPs According to the California Stormwater Quality Association Stormwater BMP Handbooks and TRPA's Handbook of BMPs

See impact GEO-4 in chapter 14, Soils, Geology and Seismicity.

GEO-4b. Conform to Provisions of Placer County Grading, Erosion and Sediment Control Ordinance

See impact GEO-4 in chapter 14, Soils, Geology and Seismicity.

GEO-4c. Identify Stockpiling and/or Vehicle Staging Areas on Improvement Plans

See impact GEO-4 in chapter 14, Soils, Geology and Seismicity.

GEO-4e. Obtain NPDES Permit

See impact GEO-4 in chapter 14, Soils, Geology and Seismicity.

GEO-4f. Satisfy the requirements of Section II of the Land Development Manual. (LDM).

See impact GEO-4 in chapter 14, Soils, Geology and Seismicity.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 5 and 6*

Temporary construction-related impacts to surface water quality will be avoided and reduced through implementation of effective, reasonable and appropriate measures (compliance measures) to protect water quality as required by federal, regional, State and local regulations and TRPA and NPDES permit requirements. Revegetation and

landscaping are required for all disturbed areas to protect and stabilize soils and thus minimize potential impacts to surface water quality and beneficial uses. Fertilizer management (i.e. mitigation measure BIO-9) will conform to TRPA Code of Ordinances Section 81.7 to minimize the potential for fertilizers to enter surface waters. Implementation of mitigation measures HYDRO-1a, 1b and 1c and GEO-4a, 4b, 4c and 4e, respectively, assure that permanent BMPs are designed to proven effectiveness levels identified in the California Stormwater Quality Association Stormwater BMP Handbooks, that storm drain inlets are marked to discourage illegal dumping, that stormwater runoff is diverted around trash storage areas, and that final grading plans conform to Placer County grading and erosion control ordinance.

The degree of surface water quality improvement is based on engineering design objectives (e.g. Vortech treatment vault and Contech Stormfilter specifications), sediment models (e.g. project area LSCP base area loading and HMR CWE sediment yield exercises), BMP and stormwater treatment effectiveness ratings, and best available science (Referenced to IERS 2010; Grismer 2010; Ballestero, T.P. et al. 2009; Clear Creek Solutions 2005; Kennedy Jenks Consultants 2007; NDOT 2006; Praul and Sokulsky 2008; Roseen et al 2009; Puget Sound Action Team 2005; USEPA 2000; Hood et al. 2007; Funkhouser 2007; Montalto et al. 2007). Post-project monitoring, to be outlined as a requirement of mitigation measure HYDRO-1d, will determine the degree of predicted improvements to surface water quality and ensure that stormwater treatment systems and permanent BMPs are maintained to the highest levels of effectiveness.

If the appropriate plans are approved and post-project monitoring (HYDRO-1d) determines compliance, project design and recommended mitigation measures are effective in reducing ski area operational impacts to surface water quality, then long-term impacts are reduced to a level of less than significant. Should post-project monitoring determine that measures are ineffective, mitigation measure HYDRO-1e shall be implemented, which requires the application of the TRPA project security fee towards replacement, expansion and/or upgrade of BMPs and stormwater treatment systems to maintain surface water quality and beneficial uses. If monitoring shows WQOs are continually exceeded, the Project Applicant will be required to make repairs or improvements to BMPs and stormwater treatment systems to improve effectiveness per TRPA permit requirements and WDRs. If WQOs continue to be exceeded, the Project will be subject to Lahontan and TRPA directives towards the upgrade and/or expansion and/or replacement of the installed stormwater treatment systems. These additional measures, if necessary, will ensure continued efforts toward installation and maintenance of effective, reasonable and appropriate measures to protect surface water quality and beneficial uses.

Impact: **HYDRO-2: Will Project construction or operation alter the existing surface water drainage patterns or cause increased runoff resulting in flooding or stream bank erosion or contribute runoff in rates or volumes that will exceed the capacity of existing or planned storm water drainage systems so that a 20-year, 1-hour storm runoff (approximately one inch per hour) cannot be contained on the site?**

Analysis: *Significant Impact; No Project (Alternative 2)*

Snow storage management was upgraded at HMR and stormwater treatment systems were installed in the South and North Base areas in 2006. The existing systems were permitted by TRPA and Lahontan and are assumed to capture and treat the 20-year, 1-hour peak runoff volume based on permitting conditions and on the absence of overflow from the current systems. Revegetation of ski trails and restoration of Project area roadways have reduced erosion on the upper mountain (IERS 2008), and changes in ski area operations management, such as establishing setbacks for snow storage and improving road crossings, have been made to protect Project area SEZs and stream channels.

New construction will not occur under the No Project Alternative, but continued operations of the resort could contribute to streambank erosion downstream of the Project area, as noted in the Stream Channel and Baseline Water Assessment (Kleinfelder, Inc. 2007). Existing structures will not be removed from the TRPA-delineated SEZ or 100-year FEMA flood hazard zone in the South Base area and day lighting of this reach of Homewood Creek will not occur. Existing flood risk within the Project area and to downstream private residences will persist. Based on evaluation criteria for Impact HYDRO-2, this is a significant impact.

The existing impact to surface water drainage patterns is significant based on baseline conditions, which indicate degradation of streambanks and incised channel conditions downstream of the South Base portion of the Project area (Kleinfelder 2007). Under the No Project (Alternative 2), existing impacts to Homewood Creek alignment and channel instability will persist.

Mitigation: No mitigation is available.

After Mitigation: *Significant and Unavoidable Impact; No Project (Alternative 2)*

The existing culvert conveying Homewood Creek under the Placer County Tahoe Ski Bowl Way ROW through the South Base area poses flood risk potential within the Project area and to private residences downstream. Existing flood risk and existing impacts to Homewood Creek channel stability will persist if reconfiguration of the South Base area and concurrent SEZ restoration does not occur for compliance with TRPA and Placer County set back requirements. The level of impact remains significant and unavoidable based on non-compliance with TRPA codified regulations. For purposes of Placer County, there would be no change in conditions, and therefore no impact.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternative 3*

Construction and operation of the Proposed Project (Alternative 1) or Alternative 3 will not cause increased runoff resulting in flooding or stream bank erosion or contribute runoff in rates or volumes that will exceed the capacity of existing or planned storm water drainage systems so that a 20-year, 1-hour storm runoff (approximately one inch per hour) cannot be contained on the site. Stormwater treatment systems are proposed to capture, treat, and infiltrate a minimum of the 20-year, 1-hour storm volume on-site; thus

removing this stormwater volume from entering existing stormwater systems downgradient from the North Base area and Homewood Creek in the South Base area. Stormwater treatment system capacities are maximized for measured site conditions.

The current surface water drainage patterns of Homewood Creek will be altered through the removal of the existing culvert under Tahoe Ski Bowl Way in the South Base area. The Proposed Project (Alternative 1) and Alternative 3 will implement the Homewood Creek SEZ Restoration project in the South Base area for improvements to existing surface water drainage patterns and stream bank and channel conditions and to alleviate flood risk within the Project area and to private residences down stream. Figures 15-7, 15-8, and 15-9 were prepared by Nichols Consulting Engineers to analyze the potential downstream impacts of removing the existing culvert crossing at Tahoe Ski Bowl Way and replace it with a bottomless arch bridge crossing. Figure 15-7 shows the calculated pre- and post-project 100-year flood plain for Homewood Creek. Removal of the culvert will improve the existing condition, which currently overtops the roadway during a 100-year event. The proposed bridge crossing will convey the 100-year peak flow without overtopping the roadway, and there will be no downstream impacts to existing structures or property, as the creek attenuates to the 100-year water surface elevation prior to leaving the Homewood property.

Section VI (Drainage Systems, Item 2. Design Storms) of the Placer County Stormwater Management Manual (SWMM) (Placer County 1990) requires that new development be planned and designed so that no damages occur to structures or improvements during the 100-year/1-hour storm and no inundation on private property occurs during the 10-year/1-hour event. The 10-year, 1-hour storm is the minimum design storm for new developments in drainages and dedicated drainage facilities in Placer County. The Project's systems are sized in excess of this event to meet the minimum TRPA 20-year/ 1-hour storm volume capacities. The development plans must identify the effects of the 100-year/1-hour storm and provision be made in the plan to prevent loss of life and damages to property during a 100-year, 1-hour storm.

Figure 15-7. Homewood (Ellis) Creek 100-Year Flood Plain

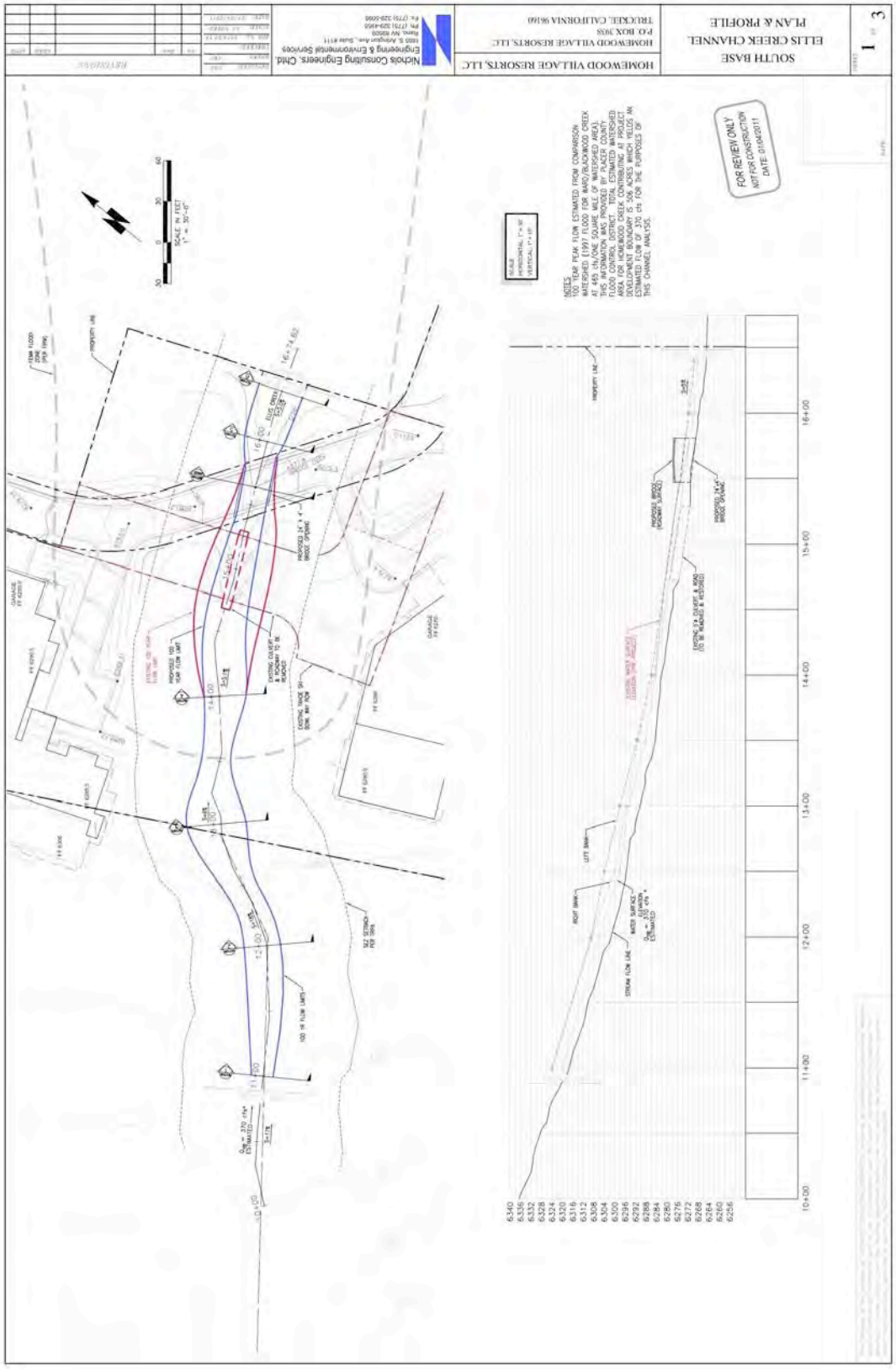


Figure 15-8. Homewood (Ellis) Creek Cross Sections

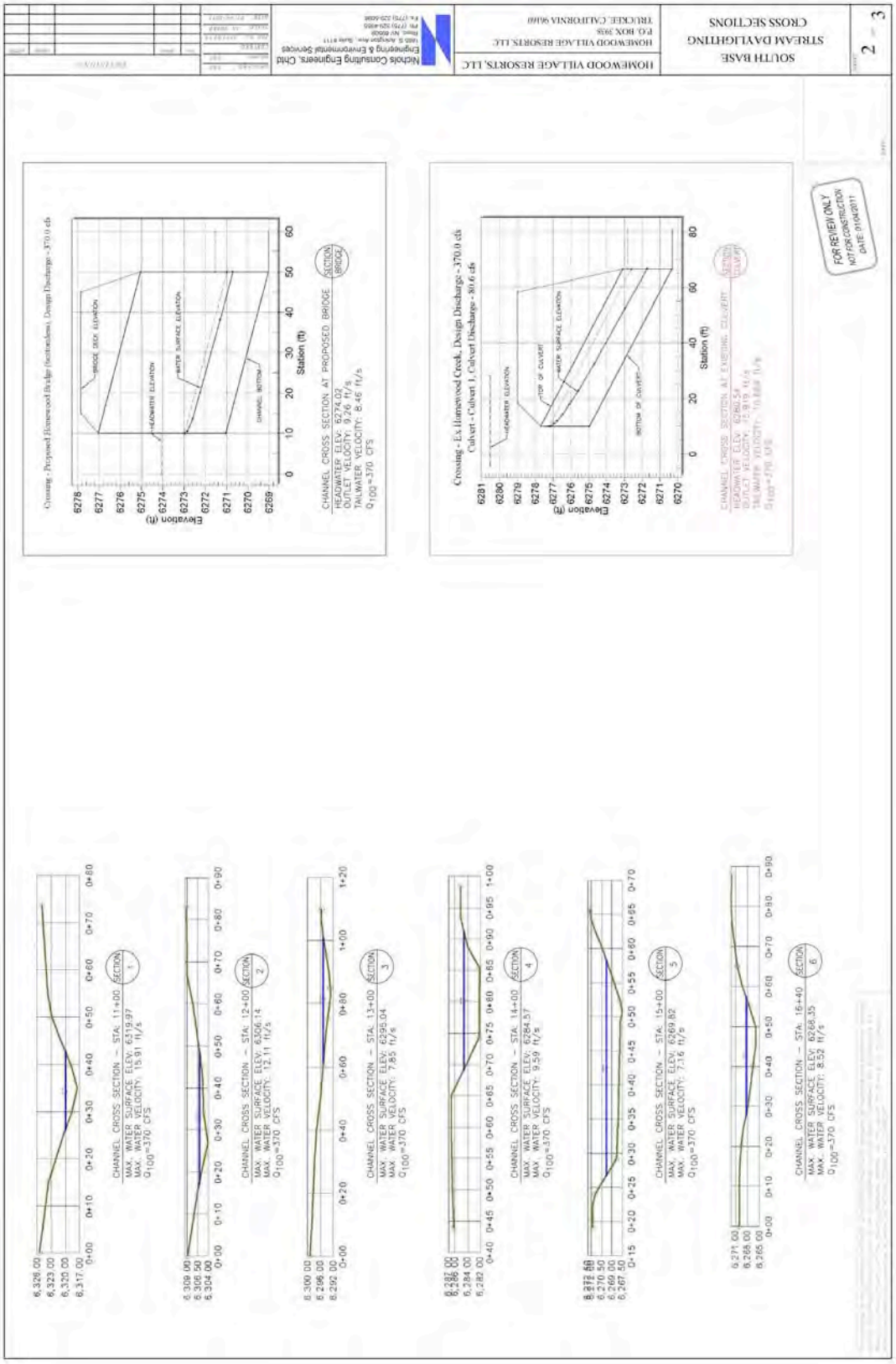
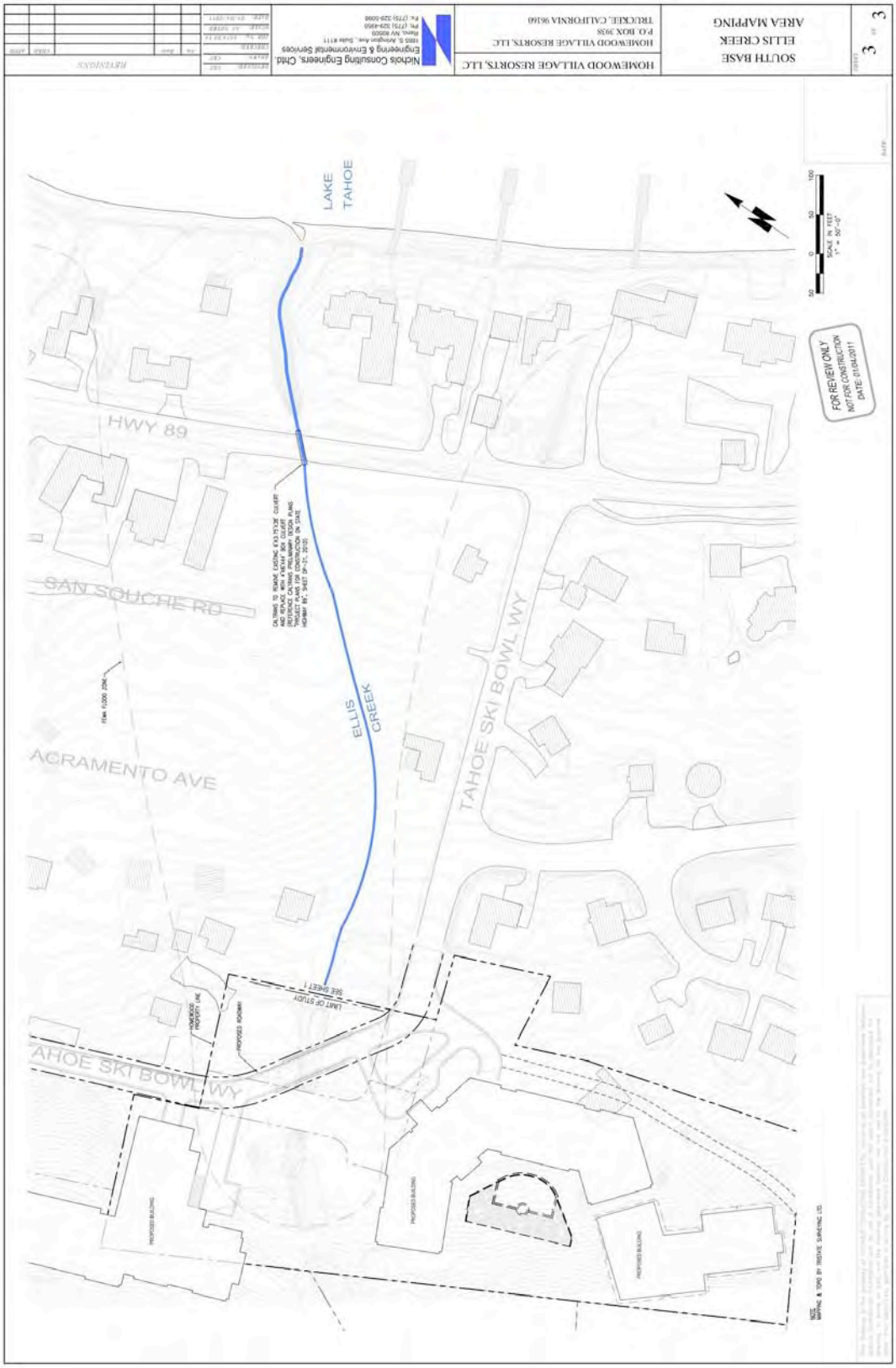


Figure 15-9. Homewood (Ellis) Creek 100-Year Flood Plain (Below Project Area)



TRPA 20-year/1-hour Storm Volumetric Analysis (TRPA Code 25.5.A). Stormwater treatment systems are proposed for the North Base, South Base and Mid-Mountain areas, Tahoe Ski Bowl Way extension, and off-site Caltrans/Placer County/HMR EIP project, as described below. The systems are considered part of the Project and are outlined as compliance measures for conformance with TRPA and Lahontan requirements for project approval and permitting. Under the Proposed Project (Alternative 1) and Alternative 3 existing stormwater treatment systems will be replaced and expanded with systems that are located and sized to capture and treat runoff from proposed impervious coverage and contributing watershed areas in the North Base, South Base and Mid-Mountain areas and along the extended Tahoe Ski Bowl Way.

A range of site-design measures and stormwater treatment measures allow for improved stormwater treatment and infiltration as categorized below:

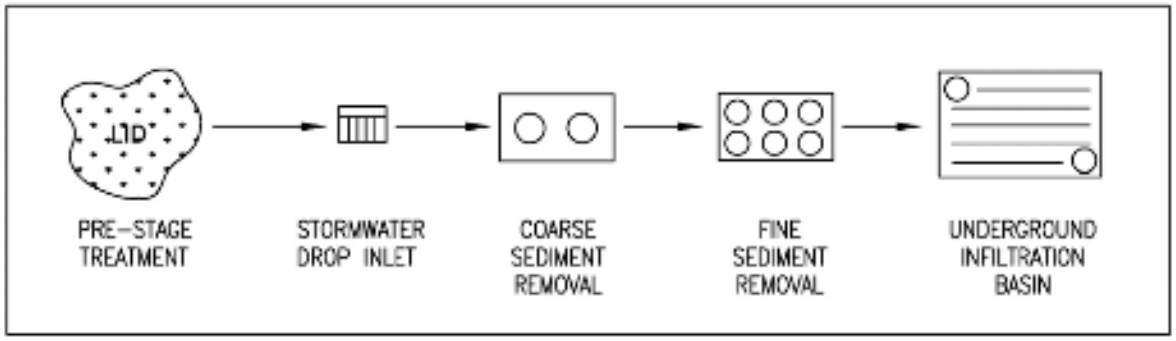
- Site design measures such as clustering development or otherwise laying out the site to reduce impervious area, routing drainage from building roofs to landscaped or bioretention areas, and using pervious pavement.

- Indirect infiltration methods, which allow stormwater runoff to percolate into surface soils. The infiltrated water may either percolate down into subsurface soil sand eventually reach groundwater, or it may be underdrained into subsurface pipes. Examples of indirect infiltration methods include bioretention areas and vegetated swales. Bioretention is defined as an integrated stormwater management practice that uses the chemical, biological and physical properties of plants, microbes and soils to remove, or retain, pollutants from stormwater (Puget Sound Action Team 2005).

- Direct infiltration methods, which are designed to bypass surface soils and transmit runoff directly to subsurface soils and eventually groundwater. These types of devices must be located and designed to limit the potential for groundwater contamination. Examples of direct infiltration methods include infiltration trenches, infiltration basins, infiltration galleries and dry wells.

Figure 15-10 illustrates the typical “treatment train” schematic for the North and South Base areas. Roof runoff and other clean runoff (i.e. stormwater that does not interact directly with pollutant sources) will be conveyed to a bioretention area for indirect infiltration. “Dirty” runoff from parking areas, streets and other managed areas are conveyed directly to stormwater drop inlets to be routed via stormdrain pipe. Runoff conveyed by stormdrain will enter a Contech Vortech® treatment vault for coarse sediment and hydrocarbon removal and then be routed to a Contech Stormfilter® for secondary treatment and fine sediment removal down to 10 microns. After exiting the secondary treatment facility, the stormwater enters the underground infiltration gallery for infiltration and soil treatment. In instances where bioretention areas overlay stormwater infiltration galleries, a portion of clean runoff will bypass the primary and secondary treatment to enter the gallery for infiltration and soil treatment.

Figure 15-10. Treatment Train Schematic Proposed for the North and South Base Areas



Source: Nichols Consulting Engineers 2010

The impervious areas of the North and South Base areas, with the exception of the 16 residential units (Townhomes) and expanded Tahoe Ski Bowl Way, were considered in the capacity sizing for the six underground on-site stormwater infiltration galleries, which effectively function as six individual stormwater treatment systems: North-1, North-2, North-3, North-4, South-1 and South-2 as depicted on Figures 15-11 and 15-12. Civil Plan Sheet D2 illustrates the stormwater gallery design schematic. Stormwater runoff along the Tahoe Ski Bowl Way extension will be treated by bioretention areas for stormwater treatment, as discussed below.

The Project will utilize LID strategies such as porous pavers and pavement, cisterns, heated walkways, revegetation of slopes to improve infiltration of runoff, bioretention areas for stormwater treatment, and revegetation of slopes to improve source control. The bioretention areas will include soil amendments to balance infiltration rates with nutrient uptake, spreading of upland seed mixtures for revegetation, soil stabilization and vegetative uptake, as detailed in Chapter 3 and on preliminary Civil Plan Sheet C2.

The stormwater infiltration galleries are designed to maximize separation between bottom of galleries and the seasonal high water table. TRPA Code of Ordinances Section 25.5.A requires that the bottom of infiltration facilities be a minimum of one foot (12 inches) above the seasonal high water table. The stormwater infiltration galleries are designed to maintain at least 18 to 24 inches of separation between the bottom of the galleries and the seasonal high water table as measured in 2006, 2007 and 2008 (see Appendix D for groundwater data, modeling results and cross-sections of the North and South Base areas).

To determine the vertical and horizontal sphere of influence of stormwater infiltration galleries infiltrating a 20-year, 1-hour storm volume, Kleinfelder staff modeled a 7-day period of infiltration using the UCAM2 model (Unconfined or Confined Analytical Model authored by Brian J. Peck, PG, CHG of Schlumberger Water Services, Inc. Reno Nevada 89502). The maximum-modeled groundwater rise is 0.7 feet directly under stormwater infiltration galleries with the extent of a 0.5-foot rise in the water table extending up to 20 feet from the edge of the gallery. The effect will extend radially because the background groundwater gradient is 0.02 feet/1.0 foot, an extremely shallow gradient. Soil-Hydrologic exhibits attached in Appendix D illustrate the spheres of influences modeled for the stormwater infiltration galleries. The vertical sphere of influence will not result in impacts to stormwater infiltration gallery capacities or function; however, the vertical sphere of influence reduces the separation of bottom of

gallery to the seasonal high water table to 0.8 feet (North-1) and 1.5 feet (North-2, North-3 and North-4) in the North Base area. The seasonal high water table measured at the South Base area is of sufficient depth to maintain separations of 11 feet and 4 feet from the bottom of stormwater infiltration galleries South-1 and South 2, respectively, with consideration of the 0.5-foot vertical sphere of influence.

Because of the complexity of the North Base area and its proximity to Lake Tahoe, TRPA Soil Hydrologic approval conditions require final stormwater systems designs to maintain a minimum two (2) foot separation between bottom of galleries and the seasonal high water table. Mitigation measure HYDRO-2a outlines the conditions for Soil Hydrologic Approval from TRPA.

A description of the proposed stormwater treatment systems follows. Figure 15-11 illustrates the Alternative 1 overall stormwater treatment design for the North Base Area and Figure 15-12 illustrates the overall stormwater treatment design for the South Base Area, noting that the South Base stormwater treatment systems have subsequently been relocated outside of the proposed Placer County ROW as updated on preliminary Civil Plan Sheet C12 (see Figure 3-9). Table 15-9 details the calculations in support of sizing for the stormwater treatment system capacities.

Figure 15-11. Stormwater Treatment Systems – North Base Area (Alternative 1)

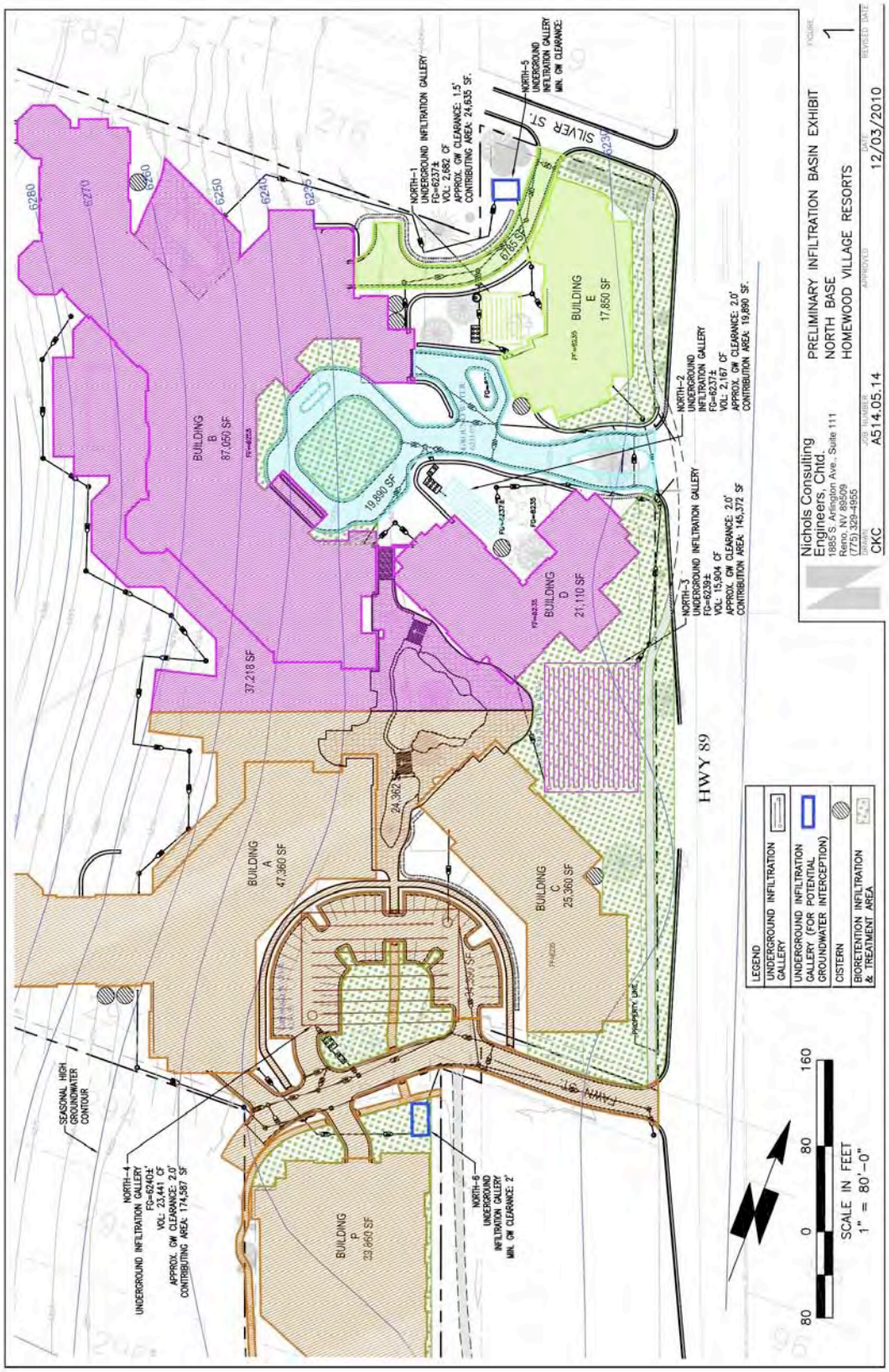


Figure 15-12. Stormwater Treatment Systems – South Base Area (Alternative 1)

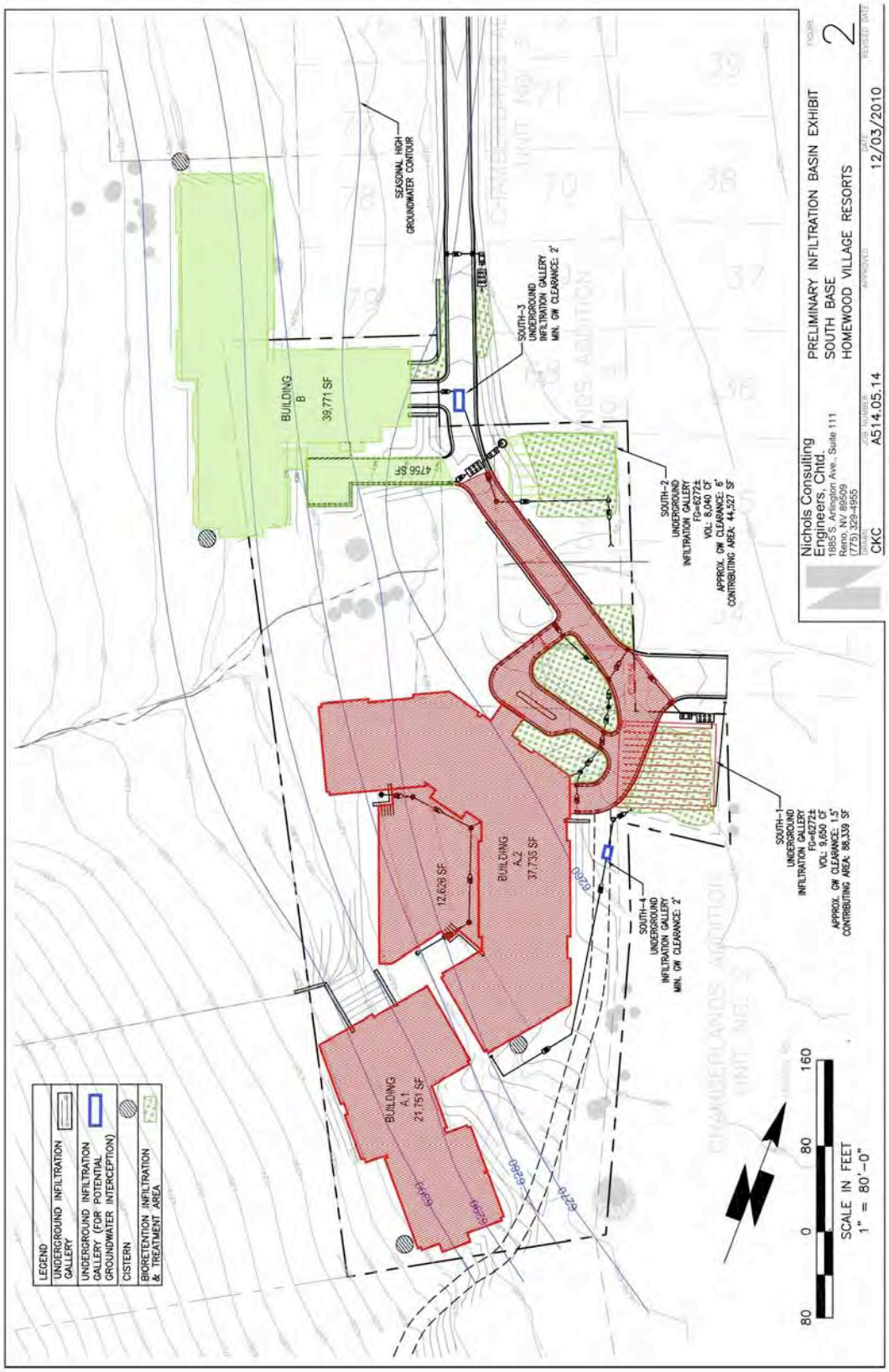


Table 15-9

Stormwater Treatment System Calculations – North, South, Mid-Mountain Areas, Tahoe Ski Bowl Way and Off-site Caltrans/Placer/HMR EIP Project (Alternative 1)

	North #1 Underground Basin	North #2 Underground Basin	[illegible]	North #4 Underground Basin	[illegible]	South #2 Underground Basin	Tahoe Ski Bowl Way #1	Tahoe Ski Bowl Way #2	Tahoe Ski Bowl Way #3	Mid Mountain	CALTRANS
CONTRIBUTING WATERSHED AREA (sf) *	55,420	43,800	285,400	337,400	332,900	169,030	71,200	33,600	157,400	280,400	
OPEN SPACE AREA* (sf)											
Total Open Space Area	30,785	23,910	47,416	108,027	114,853	75,253	9,271	17,534	85,891	158,289	
TREATED PERVIOUS AREA* (sf)											
Type A Revegetation Strategy (cf) **	0	0	45,293	16,423	45,810	2,450	15,140	0	0	64,023	
Type B Revegetation Strategy (cf) **	0	0	47,313	45,523	82,930	46,800	27,000	0	0	12,100	
Total Contributing Pervious Area	0	0	92,606	61,946	128,740	49,250	42,140	0	0	76,123	
CONTRIBUTING IMPERVIOUS AREA* (sf)											
North Base Buildings											
Building A	0	0	0	47,380	0	0	0	0	0	0	0
Building B	0	0	87,050	0	0	0	0	0	0	0	0
Building C	0	0	0	25,380	0	0	0	0	0	0	0
Building D	0	0	21,110	0	0	0	0	0	0	0	0
Building E	17,850	0	0	0	0	0	0	0	0	0	0
Building P	0	0	0	32,700	0	0	0	0	0	0	0
Hardscape	0	0	37,218	27,617	0	0	0	0	0	0	0
Road	8,785	19,890	0	34,390	0	0	0	0	0	0	0
South Base Buildings											
Building A 1	0	0	0	0	21,751	0	0	0	0	0	0
Building A 2	0	0	0	0	37,735	0	0	0	0	0	0
Building B	0	0	0	0	0	39,771	0	0	0	0	0
Hardscape	0	0	0	0	12,626	0	0	0	0	0	0
Road	0	0	0	0	17,195	4,756	0	0	0	0	0
Tahoe Ski Bowl Way											
Townhomes	0	0	0	0	0	0	0	0	43,280	0	0
Road	0	0	0	0	0	0	19,789	16,066	28,429	0	0
Mid-Mountain											
Building	0	0	0	0	0	0	0	0	0	45,988	0
Off-site Water Quality Mitigation (CALTRANS ROW)											
Roadway											28,314
Total Impervious Area (sf)	**24,635**	**19,890**	**145,378**	**167,427**	**89,307**	**44,527**	**19,789**	**16,066**	**71,709**	**45,988**	**28,314**
Required Infiltration Volume - 20yr/1hr Storm (cf)	**2,053**	**1,658**	**12,115**	**13,952**	**7,442**	**3,711**	**1,649**	**1,339**	**5,976**	**3,832**	
INFILTRATION VOLUME (cf)											
REQUIRED											
Required Infiltration Volume (cf)	2,053	1,658	12,115	13,952	7,442	3,711	1,649	1,339	5,976	3,832	
PROPOSED											
Proposed Infiltration Gallery Capacity (cf)	2,681	2,167	15,904	23,441	9,650	8,040	See LID	See LID	See LID	See LID	
"OVER & ABOVE" INFILTRATION											
Proposed Infiltration Gallery Capacity "Over and Above" 20yr/1hr Capacity (cf)	628	510	3,789	9,489	2,208	4,329	NA	NA	NA	NA	
Percentage "Over and Above" 20yr/1hr Capacity **	**30.6%**	**30.7%**	**31.3%**	**68.0%**	**29.7%**	**116.7%**	-	-	-	-	

	North #1 Underground Basin	North #2 Underground Basin	[illegible]	North #4 Underground Basin	[illegible]	South #2 Underground Basin	Tahoe Ski Bowl Way #1	Tahoe Ski Bowl Way #2	Tahoe Ski Bowl Way #3	Mid Mountain	CALTRANS
LID* STRATEGY REDUCTIONS (cf)											
Porous Pavers/Pavement (cf) **	0	0	321	525	0	0	0	0	0	0	
Cisterns (cf) (Roof Runoff Volume Removed)**	800	0	2,400	2,400	1,200	1,200	0	0	0	0	
Bioretention Area for Stormwater Treatment (cf) **	4,205	4,327	6,808	8,969	3,036	566	1,780	1,600	7,436	4,000	
Total LID Volume Reductions (cf)* **	**4,805**	**4,327**	**9,527**	**11,894**	**4,236**	**1,766**	**1,780**	**1,600**	**7,436**	**4,000**	
TOTAL REDUCTIONS											
REQUIRED											
Required Infiltration Volume (cf)	2,053	1,658	12,115	13,952	7,442	3,711	1,649	1,339	5,976	3,832	
PROPOSED											
Proposed Infiltration Gallery Capacity "Over and Above" 20yr/1hr Capacity (cf)	828	510	3,789	5,489	2,208	4,329	0	0	0	0	
Proposed LID Volume Reductions (cf)	4,805	4,327	9,527	11,894	4,236	1,766	1,780	1,600	7,436	4,000	
"OVER & ABOVE" INFILTRATION											
Total "Over and Beyond" Capacity (cf)**	5,433	6,494	25,431	35,335	13,886	9,806	1,780	1,600	7,436	4,000	
Total Percentage "Over and Above" 20yr/1hr Capacity **	**165%**	**292%**	**110%**	**153%**	**87%**	**164%**	**8%**	**20%**	**24%**	**4%**	
TREATMENT VAULT FLOW (cfs)											
REQUIRED											
Treatment Vault Flow for 20yr/1hr (cfs)	0.148	0.443	–	0.750	0.375	0.161	0.431	0.351	0.62	–	
PROPOSED											
Proposed Treatment Vault Flow (cfs)	0.222	0.665	–	1.125	0.563	0.242	0.647	0.527	0.930	–	
"OVER & ABOVE" TREATMENT CAPACITY (cfs)											
Percentage "Over and Above" 20/yr/1hr Vault Flow	50%	50%	–	50%	50%	50%	50%	50%	50%	–	

Source: NCE and HBA 2010

Table 15-9 Notes:
Impervious coverage (i.e., land coverage) is detailed in Tables 14-4 and 14-6 in Chapter 14, Geology, Soils ands Seismicity.

*** Definition of Terms:**

1. Contributing watershed area = Open Space + Pervious Area + Impervious Area
2. Open Space = undisturbed area with no change to existing infiltration rates
3. Pervious Areas = areas that have no land coverage but will have infiltration rates increased through Type A or Type B Revegetation Strategies as described in Chapter 3.
4. Impervious Areas = area that will have land coverage and will require infiltration of captured and conveyed stormwater runoff
5. LID = a site design strategy with a goal of maintaining or replicating the pre-development hydrologic regime through the use of design strategies to create a functionally equivalent hydrologic landscape (EPA 2000). LID Strategies effectively attenuate, disconnect or remove a volume of runoff that does not require mechanical pretreatment prior to entering the stormwater system.

**** Calculations and Assumptions:**

1. Type A Revegetation Strategy (cf) = Area (sf) * Depth (12 inches) * 30% void space = Volume (cf). Strategy is detailed in Chapter 3, Description of Proposed Project and Alternatives.
2. Type B Revegetation Strategy (cf) = Area (sf) * Depth (12 inches) * 30% void space = Volume (cf). Strategy is detailed in Chapter 3, Description of Proposed Project and Alternatives.
3. Infiltration Rates = To be suitable for infiltration, underlying soils should have an infiltration rate of 0.52 in/hr or greater, as initially determined from NRCS soil textural classification, and subsequently confirmed by field geotechnical tests (SMRC www.stormwatercenter.net accessed October 8, 2010). The soils within the North and South Base areas have infiltration rates measured at 4 in/hr (Kleinfelder 2010)
4. Bioretention calculation= (Bioretention area, sf) * (depth, 1.5 ft) * (void space, 30%); Minimum soil depth is 1.5 feet (18 inches to provide acceptable minimum pollutant attenuation and good growing conditions for selected plants. Void space is recommended at 30% to dictate the composition of engineered soils and maintain a minimum long-

term hydraulic conductivity of 1.0 in/hr; up to 40% void space is typically used in bioretention planting mix soils (Puget Sound Action Team 2005). A porosity value or void space (Vv/Vt) of 0.32 can be used to design for infiltration practices (SMRC www.stormwatercenter.net accessed October 8, 2010).

5. Porous Paver Calculation= (porous paver area, sf) * (20Yr-1Hr storm, 1 inch) = volume (cf) * 40%= reduction of stormwater volume; Porous pavers and pavement allow stormwater to infiltrate into underlying soils promoting pollutant treatment and recharge as opposed to producing large volumes of runoff requiring conveyance and treatment. Porous pavers have been measured to reduce stormwater runoff volumes by up to 80% depending on site conditions and maintenance (EPA 2000). The conservative assumption of 40% is used in the reduction equation to assure systems are not undersized and to consider late winter and early spring site conditions for cold weather climates.
6. Cisterns = Total Cistern Capacity, cf = Total Volume Reduction from Stormwater Treatment System, cf; the reduction is long-term storage and is primarily clean runoff from roofs that does not require mechanical treatment.
7. Percentage "Over & Above" Capacity= [(Proposed Infiltration Gallery Capacity, cf) - (Required Infiltration Volume, cf)] / (Required Infiltration Volume, cf)
8. Total "Over and Above" Capacity = (Proposed Infiltration Gallery Capacity "Over and Above" 20yr/1hr Capacity (cf) + Proposed LID Volume Reductions, cf)
9. Total Percentage "Over and Above" 20yr/1hr Capacity = (Total "Over and Beyond" Capacity - Required Infiltration Volume, cf)/(Required Infiltration Volume, cf))

***** Bioretention Area Reductions**

1. The calculations do not consider runoff directed to bioretention areas located directly above stormwater infitlration galleries North-3, North-4, South-1 and South-2 in reduction pecentages, as to not overstate the "over and above" treatment capacities. To provide the most conservative calculations a 5 -foot buffer from the edge of gallery is included in the adjustment. This runoff will still enter stormwater infiltration galleries for further soil treatment but will not increase runoff volumes to Vortech vaults and Contech Stormfilters.

Underground Gallery North-1. North-1 conveyance begins at the northern most entrance road off of Silver Street. Stormwater runoff is collected in the drop inlets near the Silver Street intersection and conveyed south to the first treatment vault (Vortechs) for coarse sediment removal. The vault is sized to convey 0.222 cfs, which is 50 percent greater than the required flow rate. After leaving the Vortechs unit the stormwater is routed to the secondary treatment facility (Contech Stormfilter) for fine sediment removal down to 15 microns. Immediately after exiting the secondary treatment facility the stormwater enters the stormwater infiltration gallery for soil treatment. North-1 has the capacity to infiltrate up to 2,681 cubic feet of runoff, which exceeds the TRPA Code of Ordinances requirement to capture and treat the 20-year/1-hour storm volume (2,053 cubic feet) by close to 31 percent.

One cistern tank (600 cubic feet removed) will capture a portion of Building E roof runoff. The remaining runoff is routed to North-1. A bioretention area is proposed along SR 89. The bioretention area and cistern hydrologically disconnect or attenuate 4,805 cubic feet of runoff to increase the treatment capacity of North-1 to 165 percent above the TRPA required infiltration volume.

The separation of the bottom of North-1 to the seasonal high water table is 1.5 feet. During stormwater infiltration, this separation decreases to 0.8 feet, which poses a potentially signficant impact. Mitigation measure HYDRO-2a details the actions required to reduce this potential impact from planned stormwater treatment systems to a level of less than significant.

Underground Gallery North-2. North-2 conveyance begins on the hotel entrance road with snowmelt occurring over the heated walkway area. Stormwater runoff sheet flows across the hotel building road and into the bioretention area for stormwater treatment in the middle of the roundabout. Overflow for this bioretention area is provided through a curb cut-out to a drop inlet on the east side of the roundabout that ultimately ends in the stormwater infiltration gallery.

Stormwater that does not enter the bioretention area is conveyed through a stormdrain pipe to the first treatment vault (Vortechs) for coarse sediment removal. The vault is sized to convey 0.665 cfs, which is 50 percent greater than the required flow rate. After leaving the Vortechs unit the stormwater is routed to the secondary treatment facility, a Contech Stormfilter, for fine sediment removal down to 15 microns. Immediately after exiting the secondary treatment facility the stormwater enters the stormwater infiltration gallery for soil treatment. North-2 has the capacity to infiltrate up to 2,167 cubic feet of runoff, which exceeds the TRPA Code of Ordinances requirement to capture and treat the 20-year/1-hour storm volume (1,658 cubic feet) by close to 31 percent.

Bioretention areas are proposed around the hotel entrance road and roundabout, which will hydrologically disconnect or attenuate 4,327 cubic feet of runoff, increase the potential treatment capacity of North-2, reduce total runoff volumes entering North-2 and allow for treatment capacity that is 292 percent more than the TRPA required infiltration volume.

Underground Gallery North-3. North-3 conveyance begins at the hardscape (i.e., ice skating rink area) in the middle of the North Base area redevelopment. Runoff from the hardscape is directed to the bioretention area east of the ice rink for stormwater treatment. Roof runoff is directed to the four cisterns located next to Buildings B and D, the bioretention areas sited along the perimeter of the hotel roundabout and east of the ice rink towards SR 89, or the stormwater infiltration gallery by means of stormdrain pipe.

Three cistern tanks (approximately 1,800 cubic feet of storage) will capture Building B roof runoff and one cistern tank (approximately 600 cubic feet) will capture Building D roof runoff. The remaining runoff is routed to the bioretention area east of the ice rink and to North-3.

North-3 has the capacity to infiltrate up to 15,904 cubic feet of runoff, which exceeds the TRPA Code of Ordinances requirement to capture and treat the 20-year/1-hour storm volume (12,115 cubic feet) by just over 31 percent. LID strategies, including porous pavers and pavement (321 cubic feet reduction), the cisterns (2,400 cubic feet removed and stored), bioretention areas (6,806 cubic feet reduction) described above, and serve to hydrologically disconnect or attenuate runoff volumes to North-3. The reduction and attenuation in runoff volume increases the potential treatment capacity of North-3 to 110 percent above the TRPA required infiltration volume.

Type A and Type B revegetation techniques that increase soil infiltration rates and water holding capacity on the slopes above the North Base area will be applied to 45,293 and 47,313 square feet, respectively. These revegetation areas are not considered in the direct stormwater treatment capacity calculations, but are noted as important LID alternatives in replacement of cutoff trenches that would capture and convey surface runoff from these steeper contributing slope area to existing down stream drainage systems or channels.

The separation of the bottom of North-2 to the seasonal high water table is 2 feet. During stormwater infiltration, this separation decreases to 1.5 feet, which poses a potential impact. Mitigation measure HYDRO-2a details the actions required to reduce this potential impact from planned stormwater treatment systems to a level of less than significant.

Underground Gallery North-4. North-4 conveyance begins at the eastern end of Fawn Street. This road runoff sheet flows to drop inlets along the curb and gutter. Runoff is then conveyed west to the first treatment vault (Vortechs) for coarse sediment removal. The vault is sized to convey 1.125 cfs, which is 50 percent greater than the required flow rate. After leaving the Vortechs unit the stormwater is routed to the secondary treatment facility, a Contech Stormfilter, for fine sediment removal down to 15 microns. Immediately after exiting the secondary treatment facility, runoff enters the infiltration gallery for soil treatment.

Hardscape runoff (ice rink area) is directed to the bioretention area east of the ice rink. Roof runoff from Buildings C and P is directed to bioretention areas surrounding the buildings. Overflow for the bioretention areas is provided by curb cutouts at low points to direct the runoff into the above mentioned drop inlet system, ultimately reaching the underground infiltration gallery. Three cistern tanks (1,800 cubic feet removed and stored) will capture Building A roof runoff and one cistern tank (600 cubic feet removed and stored) will capture Building C roof runoff. The remaining runoff is routed to the adjacent bioretention areas and infiltration gallery, North-4, under the horseshoe parking lot area.

North-4 has the capacity to infiltrate up to 23,441 cubic feet of runoff, which exceeds the TRPA Code of Ordinances requirement to capture and treat the 20-year/1-hour storm volume (14,549 cubic feet) by 61 percent. LID strategies, including porous pavers and pavement (545 cubic feet reduction), four cisterns (2,400 cubic feet removed and stored) and bioretention areas (11,894 cubic feet reduction) described above, serve to hydrologically disconnect or attenuate runoff volumes to North-4. This reduction and attenuation of this runoff volume subsequently increases the potential treatment capacity of North-4 to 153 percent above the TRPA required infiltration volume.

Type A and Type B revegetation techniques to increase soil infiltration rates and water holding capacities on the slopes above the North Base area will be applied to 16,423 and 45,523 square feet, respectively. These revegetation areas are not considered in the direct stormwater treatment capacity calculations, but are noted as important LID alternatives in replacement of cutoff trenches that would capture and convey surface runoff from these steeper contributing slope area to existing down stream drainage systems or channels.

The separation of bottom of North-4 to the seasonal high water table is 2.0 feet. During stormwater infiltration, this separation decreases to 1.5 feet, which poses a potential impact. Mitigation measure HYDRO-2a details the actions required to reduce this potential impact from planned stormwater treatment systems to a level of less than significant.

Underground Gallery South-1. South-1 conveyance begins on the road just north of Homewood Creek. Runoff sheet flows south over the road to drop inlets and is conveyed to the first treatment vault (Vortechs) for coarse sediment removal. The vault is sized to convey 0.563 cfs, which is 50 percent greater than the required flow rate. After leaving the Vortechs unit the stormwater is routed to the secondary treatment facility, a Contech Stormfilter, for fine sediment removal down to 15 microns. Immediately after exiting the secondary treatment facility the stormwater enters the infiltration gallery for soil treatment.

Two cistern tanks (1,200 cubic feet removed and stored) will capture Building A.1 & A.2 roof runoff. Excess roof and hardscape runoff will be directed to bioretention areas surrounding Buildings A.1 & A.2. In case of overflow, curb cutouts are provided at low points to direct the runoff into the above mentioned drop inlet system, ultimately accessing South-1 adjacent to the drop-off area.

South-1 has the capacity to infiltrate up to 9,650 cubic feet of runoff, which exceeds the TRPA Code of Ordinances requirement to capture and treat the 20-year/1-hour storm volume (7,442 cubic feet) by almost 30 percent. LID strategies, including the cisterns (1,200 cubic feet removed and stored) and bioretention areas (5,481 cubic feet reduction) described above, serve to hydrologically disconnect or attenuate runoff volumes to South-1. This reduction and attenuation of runoff volume subsequently increases the potential treatment capacity of South-1 to 87 percent above the TRPA required infiltration volume.

Type A and Type B revegetation techniques to increase soil infiltration rates on the slopes above the North Base area will be applied to 45,810 and 82,930 square feet, respectively. These revegetation areas are not considered in the direct stormwater treatment capacity calculations, but are noted as important LID alternatives in replacement of cutoff trenches that would capture and convey surface runoff from these steeper contributing slope area to existing down stream drainage systems or channels.

Underground Gallery South-2. South-2 conveyance begins at the roundabout drop-off area for Building B. Stormwater is conveyed east to the first treatment vault (Vortechs) for coarse sediment removal. The vault is sized to convey 0.242 cfs, which is 50 percent greater than the required flow rate. After leaving the Vortechs unit the stormwater is routed to the secondary treatment facility, a Contech Stormfilter, for fine sediment removal down to 15 microns. Immediately after exiting the secondary treatment facility the stormwater enters the infiltration gallery for soil treatment.

Approximately 150 linear feet of road runoff north of the Building B drop-off road sheet flows to the curb and gutter and is conveyed north to the drop inlets on Tahoe Ski Bowl Way. The stormwater flows through the drop inlets and enters the first treatment vault

(Vortechs) for coarse sediment removal. The vault is sized to convey 0.242 cfs, which is 50 percent greater than the required flow rate. After leaving the Vortechs unit the stormwater is routed to the secondary treatment facility, a Contech Stormfilter, for fine sediment removal down to 15 microns. Immediately after exiting the secondary treatment facility the stormwater is dispersed into a bioretention area adjacent to the road for infiltration and soil treatment.

Roof runoff will be directed to bioretention areas adjacent to the buildings or to the stormwater treatment system described above. Overflow for the bioretention areas is provided by curb cutouts at low points to direct the water into the above mentioned drop inlet system, ultimately entering South-2. Two cistern tanks (1200 cubic feet removed and stored) is provided to capture Building B roof runoff with the remaining runoff routed to the bioretention area and South-2.

South-2 has the capacity to infiltrate up to 8,040 cubic feet of runoff, which exceeds the TRPA Code of Ordinances requirement to capture and treat the 20-year/1-hour storm volume (3,711 cubic feet) by almost 117 percent. LID strategies, including the cisterns (1,200 cubic feet removal) and bioretention areas (2,686 cubic feet reduction) described above, serve to hydrologically disconnect or attenuate runoff volumes to South-2. This reduction and attenuation of runoff volume subsequently increases the potential treatment capacity of South-2 to 164 percent above the TRPA required infiltration volume.

Type A and Type B revegetation techniques to increase soil infiltration rates on the slopes above the North Base area will be applied to 2,450 and 46,800 square feet, respectively. These revegetation areas are not considered in the direct stormwater treatment capacity calculations, but are noted as important LID alternatives in replacement of cutoff trenches that would capture and convey surface runoff from these steeper contributing slope area to existing down stream drainage systems or channels.

Maintenance for Underground Infiltration Galleries North, 1, North-2, North-3, North-4, South-1 and South-2. An Inspection, Maintenance and Monitoring Plan will be completed based on the final design of the selected alternative and as required for project approval and permitting. Underground infiltration galleries will be regularly inspected and cleaned, seasonally and following significant precipitation events, to prevent an accumulation of build up that could inhibit filtration effectiveness or reduce treatment capacities. Cleaning will be completed at the discretion of maintenance personnel to maintain proper storage and flow, preferably during a relatively dry period. The Monitoring and Reporting Program of the WDRs require sampling of discharge from the systems to measure compliance with discharge to land water quality objectives. The following is the manufacturers recommended procedure for inspections and maintenance:

1) Remove lid from riser.

2) Measure sediment buildup at each riser and cleanout location. If measured buildup is between five and 20 percent of the pipe diameter, cleaning should be planned based on occurrence and severity of next precipitation event. If sediment buildup exceeds 20 percent, cleaning should be performed at the earliest opportunity.

3) Inspect and remove sediment build up from each manifold, all laterals and outlet pipes.

4) A thorough cleaning of the system (manifolds and laterals) should be performed by either manual methods or by a vacuum truck. A vacuum truck or a water-jetting can be connected to the system at the cleanout ports. These are

usually four, six or eight-inch diameter pipe and are placed on the manifold fittings.

Tahoe Ski Bowl Way Extension. Figure 15-13 illustrates the stormwater treatment approach for the Tahoe Ski Bowl Way portion of the Project area, including treatment vault and bioretention area layout. Bioretention areas will infiltrate the roadway runoff after the stormwater is conveyed through pre-treatment facilities.

Stormwater conveyance along the Tahoe Ski Bowl Way Extension is broken into two sections. The first section includes road runoff sheet flowing to a drop inlet at a low point on Tahoe Ski Bowl Way approximately half way in between the South Base Area and the proposed Townhomes. The runoff will enter the primary and secondary treatment vaults before being dispersed into the bioretention area for stormwater treatment. Stormwater is conveyed first to the treatment vault (Vortechs) for coarse sediment removal. The vault is sized to convey 0.647 cfs, which is 50 percent greater than the required flow rate. After leaving the Vortechs unit the stormwater is routed to the secondary treatment facility, a Contech Stormfilter, for fine sediment removal down to 15 microns. Immediately after exiting the secondary treatment facility the stormwater enters a bioretention area sized to infiltrate 1,780 cubic feet of runoff, which exceeds the TRPA Code of Ordinances requirement to capture and treat the 20-year/1-hour storm volume (1,649 cubic feet) by 8 percent.

The second section includes approximately 600 linear feet of the roadway leading up to the Townhome turnaround. Stormwater runoff will sheet flow to the curb and gutter and flow north to the drop inlets south of the Townhomes. The runoff will enter the primary and secondary treatment vaults before being dispersed into the bioretention area for soil treatment. The vault is sized to convey 0.527 cfs, which is 50 percent greater than the required flow rate. The bioretention areas are sized to treat 1,600 cubic feet of runoff, which exceeds the TRPA Code of Ordinances requirement to capture and treat the 20-year/1-hour storm volume (1,339 cubic feet) by 20 percent.

Approximately 15,140 square feet will receive Type A revegetation treatment and 27,000 square feet of Type B revegetation to increase soil infiltration rates.

Townhome roof runoff is directed to adjacent bioretention areas for infiltration and soil treatment. Bioretention areas are sized to treat 7,436 cubic feet of runoff, which exceeds the TRPA Code of Ordinances requirement to capture and treat the 20-year/1-hour storm volume (5,976 cubic feet) by 24 percent.

Figure 15-13. Stormwater Treatment Systems – Tahoe Ski Bowl Way

The proposed systems are based on a design that assumes maximum allowable land coverage for each unit or a worst-case scenario for analysis to assume that at a minimum, peak runoff volumes from the TRPA design storm can be retained, treated and infiltrated on site.

Mid-Mountain Area. Figure 15-14 illustrates the stormwater treatment approach for the Mid-Mountain portion of the Project area. The bioretention areas proposed at the Mid-Mountain assume a maximum depth of five feet. The layout consists of several bioretention infiltration areas, each serving the proposed buildings.

Stormwater runoff uphill of the Mid-Mountain Lodge will be infiltrated in the Type B revegetation area uphill of the proposed gravel access road. Runoff downhill of the proposed road will sheet flow to the bioretention area adjacent to the lodge and proposed road. Overflow from the bioretention area will be conveyed through stormdrain pipe under the proposed road into a secondary bioretention area and ultimately reach the over-sized bioretention areas downhill of the development for infiltration and soil treatment.

Mid-Mountain roof runoff is conveyed separately for each building via stormdrain pipe to bioretention areas downhill of the proposed development for infiltration and soil treatment. The Mid-Mountain system will treat 4,000 cubic feet of runoff, which is 4 percent greater than the required 20-year/1-hour storm volume.

Type A and Type B revegetation strategies will be applied to 64,023 and 12,100 square feet of disturbed area to increase soil infiltration rates by increasing void space to approximately 30 percent up to one foot in soil depth (See Chapter 3 for additional details on revegetation strategies). These revegetation areas are not considered in the direct stormwater treatment capacity calculations, but are noted as important LID alternatives in replacement of cutoff trenches for the water tanks that would capture and convey surface runoff from steep slope areas to traditional infiltration systems. A swale is proposed at the top of the water tank slopes per preliminary Civil Plan sheet C18. Runoff will be infiltrated on the length of the slopes of the water tanks. No runoff will flow along the access road and thus no ditch improvements will be necessary.

Off-Site Caltrans/HMR EIP Project.

Working in conjunction with Caltrans, HMR will provide additional treatment for off-site stormwater through a cooperative formed between the HMR and Caltrans. Caltrans will implement EIP project No. 996 and install two water quality treatment basins. HMR will contribute between $150,000 to $200,000 dollars towards a Contech Stormfilter or similar vault for treatment of fine sediment removal down to 15 microns particle size. The vault will serve as secondary treatment for the removal of fine sediments. HMR will not construct physical improvements; HMR will provide a monetary contribution only towards the EIP project, with Caltrans being responsible for environmental review, permitting, design, and construction of the improvements.

The runoff generated from the contributing areas along SR 89 and conveyed through the stormwater treatment system is approximately 3,600 cubic feet (cf) for the 20-year/1-hour storm. Vault flows would equal: 10-year = 3.54 cfs, 25-year = 4.28 cfs, 100-year = 5.39 cfs.

A simple schematic to document the proposed off-site project is illustrated in Figure 15-15. Preliminary civil plans for the EIP project are found in Appendix BB.

Figure 15-14. Stormwater Treatment Systems – Mid-Mountain Area

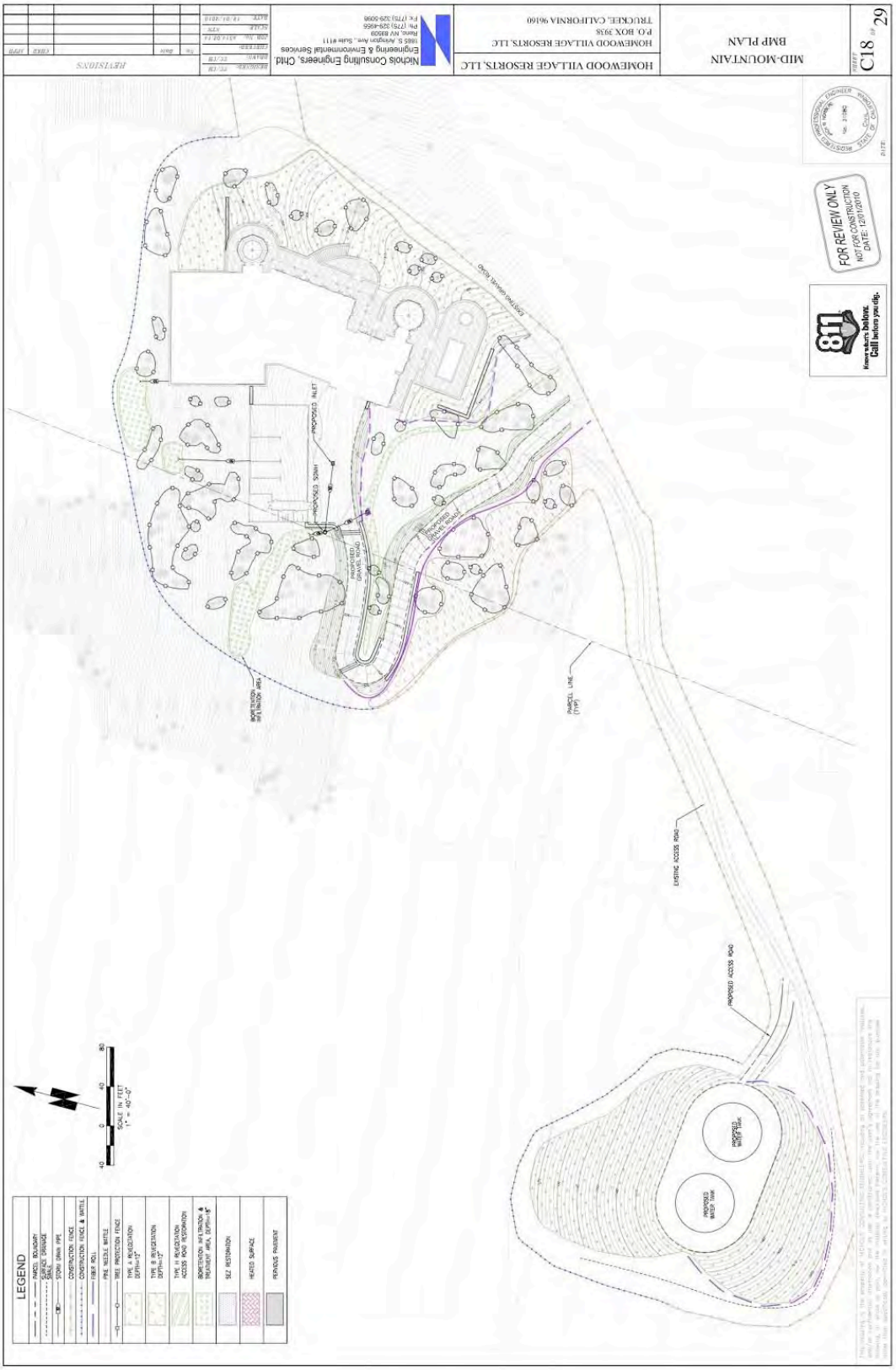
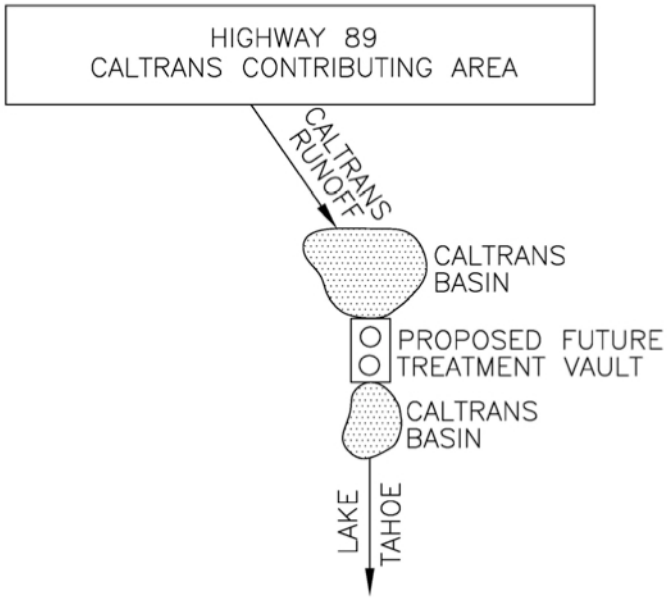


Figure 15-15. Off-Site EIP Project Design Schematic



Source: Nichols Consulting Engineers 2009

Placer County 10-year and 100-year Peak Flow Analysis. The following analysis is based on the Preliminary Drainage Report for Homewood Mountain Resort attached in Appendix X (NCE 2010). Placer County will require a final drainage report at the time of Improvement Plan review that addresses project design criteria. Typically, Placer County considers the impacts of a project "altering existing drainage of the site or area" or "increasing the rate or amount of surface runoff" as significant impact requiring mitigation. Under Placer County codified regulations, the 10-year event is the minimum design storm for sizing drainage facilities and new development must be planned and designed so that no damage occurs to structures or improvements and to prevent loss of life during the 100-year storm event.

The criteria set forth in the Placer County SWMM dictate the evaluation of existing and proposed stormwater runoff peak flows from the Project area, as analyzed using the Small Watershed Peak Flow Worksheet outlined in the SWMM. The method is based on the relationship between the characteristic watershed response time and peak flow per unit area form precipitation patterns typical for the region. The peak flow is a function of the area, unit peak flow, infiltration rate and impervious surface area, as reported in the tables in section 3.2, Peak Flow Analysis, of Appendix X for summer and winter precipitation regimes. Conclusions in the Preliminary Drainage Report state that the design for the Proposed Project (Alternative 1) and Alternative 3 incorporates current requirements by Placer County for stormwater collection and conveyance as well as the requirements by the TRPA. The SWMM post-development calculations show a cumulative reduction in peak flow from existing to proposed conditions for the 10 and

100-year storm events. The proposed stormwater treatment systems for collection, conveyance and infiltration will comply with the Placer County SWMM dated September 1, 1990.

Placer County staff review of the Preliminary Drainage Report indicates that the report adequately demonstrates that the proposed development has a less than significant impact on peak flow runoff leaving the Project area. Therefore, Placer County does not require onsite stormwater detention capacity in excess of the systems proposed as part of the Proposed Project (Alternative 1) and Alternative 3.

Although the Project will improve upon project area drainage, reduce post-project runoff volumes and maintain peak flows compared to existing conditions, implementation of standard mitigation measures HYDRO-2b, HYDRO-2c and HYDRO-2d assure compliance with Placer County codified regulations to reduce impacts from drainage and stormwater runoff to a level of less than significant. Implementation of these measures minimize potential impacts to down-gradient properties and existing drainage facilities by assuring that the rate or amount of surface runoff does not exceed existing conditions and does not significantly impact downstream properties or existing drainage facilities.

Existing Surface Water Drainage Patterns, Flooding, and Stream Bank Erosion. The Proposed Project (Alternative 1) and Alternative 3 will not alter the existing surface water drainage patterns of Quail Lake Creek, Madden Creek or the unnamed channels within the Project area. No existing flooding impacts have been identified along these drainages. The Proposed Project (Alternative 1) and Alternative 3 do not propose changes in the Project area that will increase flood risk or stream bank erosion resulting from increased flooding along these drainages.

The Proposed Project (Alternative 1) and Alternative 3 will daylight Homewood Creek, which is currently collected and piped under the north-south extension of Tahoe Ski Bowl Way. Downstream impacts to Homewood Creek streambanks below the Project area were identified during channel evaluations completed in 2006 and 2007 (Kleinfelder 2007). Approximately 48 percent of the stream channel located in the South Base area to Lake Tahoe (RM 0.0 – RM 0.7 as depicted on Figure 15-2) was rated Unstable. Bank instability between RM 0.3 and 0.68 appears to be from mass wasting sites along a steep gradient. Overall Stable and Vulnerable banks are 29 percent and 23 percent, respectively. In the lower 0.2 mile of the channel, undercutting was observed.

The SEZ in the South Base area will be restored to a more natural state with the removal of the culvert and the day lighting of the stream channel under Alternatives 1 and 3. In its existing condition, Homewood Creek is highly constrained with steep banks and a culverted section under the South Base parking area. To alleviate the Project area's contribution to downstream channel impacts and flood risk, the existing culvert in the South Base parking lot will be removed, TRPA verified existing land coverage within the SEZ and floodplain will be removed to comply with TRPA and Placer County setbacks, and SEZ and floodplain functions will be restored as described in Chapter 3. The FEMA flood hazard area within the Project area is estimated at 1.47 acres or 64,124 square feet and is illustrated on Figure 8-1 in Chapter 8, Biological Resources, along with the TRPA SEZ boundaries. Figures 15-7, 15-8, and 15-9 illustrate the pre and post-project conditions associated with the Homewood Creek unmitigated 100-year floodplain, as defined in the Placer County LDM. Removal of the culvert will improve the existing condition, which currently overtops the roadway during a 100-year event. The proposed bridge crossing will convey the 100-year peak flow without overtopping the roadway, and there will be no downstream impacts to existing structures or property, as the creek

attenuates to the 100-year water surface elevation prior to leaving the Homewood property.

A bridge will be used to cross the stream channel, which will be reconstructed to increase the overall cross-sectional area and flow length to maximize stream function and connection to the floodplain. The restoration area is within the FEMA flood hazard area. The bridge span will be constructed at a height and width that accommodates the 100-year floodway. Improving channel conditions in conjunction with reducing land coverage in the FEMA flood hazard areas will reduce the Project area's contribution to downstream impacts to stream channels.

The SEZ restoration plan for Homewood Creek (see Appendix C) includes widening of the creek to allow for increased cross sectional area and will contain primary and secondary flood plains (IERS, April 2010). Widening of the stream cross-section results in a reduction of the kinetic energy and creates benefits to the SEZ. The following benefits have been taken from a memo prepared by IERS dated April 3, 2010:

- Flood Attenuation – Widening of the stream channel allows for more space for the water to be contained in and allows flood water to stay within the banks.
- Culvert Removal – Culverts present an increased potential for clogging by debris in large flow events. Clogging often lead to failure of the culvert and can result in channel incision, increased sediment delivery to the creek, overtopping of culvert and/or stream banks, destruction of adjacent infrastructure and/or habitats. Removal of the culvert will eliminate the potential for clogging.
- Bed Contact – Expansion of the SEZ allows for increase area for groundwater recharge and increase aquatic invertebrate habitat.
- Ground Water Recharge – Widening of the SEZ channel and reduction of flow rates allows for increased residence time for water to infiltrate into the groundwater system. Increased width of the SEZ channel also allows for lateral rewatering of the soil profile in the restoration area.
- Bank Erosion Reduction – Widening of the SEZ channel results in decreased flow rates which thereby decreases the energy available for bank cutting and erosion.
- Fish Passage – Passage of fish will be enhanced though the expansion of aquatic habitat. The restoration plan includes step pools and removal of the culvert which drastically improves habitat in the area.
- Aeration – Water moving through the restored area will pass through step pools which results in the infusion of oxygen. This reintroduction of oxygen into the water column results in increased availability of oxygen to aquatic species, carbon dioxide reduction and ammonia and hydrogen sulfide reduction.
- Habitat – Improvements to riparian habitat and function in the area are likely to result from restoration activities. Increased diversity of plant species will be planted which will result in improved avian habitat. Shading of the creek bed will become more consistent, thereby maintaining water temperature for aquatic species.
- Sediment Load and Transport Reduction– Velocity reduction of the stream will allow for decreased transport of sediment.

The proposed restoration will provide a connection to two day lighted areas that exist above and below the South Base development area. The restoration may have a positive impact on downstream floodplains as it will allow for increased area for groundwater recharge and also allow for the floodplain downstream to retain its character. The restoration of the Homewood Creek and SEZ will likely result in improvements to the SEZ; however, TRPA staff determines that the Preliminary Conceptual Revegetation and SEZ Restoration Plan described in Appendix C is insufficient to allow for permitting and subsequent construction and does not provide sufficient detail to substantiate a conclusion that impacts will be beneficial and no negative impacts will occur to the SEZ or check channel below the Project area. This impact is considered potentially significant and implementation of mitigation measure BIO-5a will be necessary to assure that potential impacts to existing surface water drainage patterns and stream bank erosion are reduced to a level of less than significant.

The Proposed Project (Alternative 1) and Alternative 3 will install stormwater treatment systems capable of containing and treating the stormwater runoff in excess of the 20-year, 1-hour storm volume, effectively removing this volume of runoff from entering existing downstream drainage systems. Based on the evaluation criteria for HYDRO-2, the level of impact from stormwater runoff and flooding is less than significant.

The Proposed Project (Alternative 1) and Alternative 3 will implement measures to improve stream bank conditions and related streambank erosion and will not cause increased runoff resulting in flooding. However, because the Preliminary Conceptual Revegetation and SEZ Restoration Plan described in Appendix C is insufficient to allow for TRPA permitting and subsequent construction, the potential impacts to existing surface water drainage patterns and stream bank erosion are considered significant, requiring implementation of mitigation measure BIO-5a to reduce potential impact to a level of less than significant.

For Placer County, impacts associated with alterations to drainage patterns of the Project area will be mitigated to a less than significant level by implementing mitigation measures GEO-4b and GEO-4f.

Mitigation: **HYDRO-2a. TRPA Soil Hydrologic Approval Conditions for BMPs**

The TRPA soil hydrologic review does not give approval for the BMP design, but rather, evaluates the location and depths of BMPs as currently presented on the Civil Plans. As the Project is not at 100 percent design, it is understood that the design for BMPs may be modified and could potentially require an additional soil hydrologic review at the time of the project application. It is recognized that the project area has site-specific constraints related to the depth of excavations in relationship to groundwater, interception of groundwater by subterranean garages (i.e. underground parking structures) and significant amounts of stormwater and surface water that need to be treated and infiltrated as part of the proposed development. As such, the TRPA Stormwater Management Program staff has indicated that they require the bottom of all stormwater infiltrating features to be at least two (2) feet above the seasonal high water table, which will aid in achieving ‘above and beyond’ mitigation measures required for this Project as a participant in the CEP. These guidelines have been met under the current proposed design in all areas except “North-1”. For this area, or any stormwater infiltrating areas that may have less than two (2) feet of separation to the seasonal high water table, the stormwater being infiltrated must meet TRPA Code of Ordinances Chapter 81 in regard to surface water discharge standards and/or be redesigned to provide the required two (2)

feet separation. The final BMP plan to be submitted as part of the project application will be reviewed, and approved, by TRPA Stormwater Management Program staff.

The soil hydrologic review gives conceptual approval for the depth (18 inches) and location of bioretention areas as presented on the site plans. This approval is based on the concept that bioretention areas are located over open and infiltrating matrices, but does not apply to bioretention over closed impermeable pretreatment vaults.

HYDRO-2b. Submit Final Drainage Report– Conformance with Section 5 of the Placer County Land Development Manual and Stormwater Management Manual

The Project Applicant shall prepare and submit with the project Improvement Plans, a Final drainage report for each project phase in conformance with the requirements of Section 5 of the LDM and the Placer County Storm Water Management Manual that are in effect at the time of submittal, to the Engineering and Surveying Department for review and approval. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include: A written text addressing existing conditions, the effects of the improvements, all appropriate calculations, a watershed map, increases in downstream flows, proposed on- and off-site improvements and drainage easements to accommodate flows from this project. The report shall identify water quality protection features and methods to be used both during construction and for long-term post-construction water quality protection. "Best Management Practice" (BMP) measures shall be provided to reduce erosion, water quality degradation, and prevent the discharge of pollutants to stormwater to the maximum extent practicable.

HYDRO-2c. Drainage Facilities to Conform to Placer County Stormwater Management Manual

Drainage facilities, for purposes of collecting runoff on individual lots, shall be designed in accordance with the requirements of the County Storm Water Management Manual that are in effect at the time of submittal, and shall be in compliance with applicable stormwater quality standards, to the satisfaction of the Engineering and Surveying Department (ESD). These facilities shall be constructed with subdivision improvements and easements provided as required by ESD. Maintenance of these facilities shall be provided by the Homeowners' Association.

HYDRO-2d. Reduce Stormwater Runoff to Pre-Project Volumes

The Improvement Plan submittal and Drainage Report shall provide details showing that storm water runoff shall be reduced to pre-project conditions through the installation of detention facilities. Detention facilities shall be designed in accordance with the requirements of the Placer County Storm Water Management Manual that are in effect at the time of submittal, and to the satisfaction of the Engineering and Surveying Department (ESD). No detention facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals.

BIO-5a: Homewood Creek Restoration Plan

See impact BIO-5 in chapter 8, Biological Resources

GEO-4b. Conform to Provisions of Placer County Grading Ordinance

See impact GEO-4 in chapter 14, Soils, Geology and Seismicity.

GEO-4f. Satisfy the requirements of Section II of the Land Development Manual. (LDM).

See impact GEO-4 in chapter 14, Soils, Geology and Seismicity.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alternative 3*

Implementation of mitigation measure HYDRO-2a assures compliance with TRPA Soil Hydrologic Approval conditions that a separation of 2 feet from the bottom of stormwater infiltration galleries and seasonal high water table is maintained and soil treatment remains effective.

Mitigation measures HYDRO-2b, HYDRO-2c, HYDRO-2d, GEO-4b and Geo-4f are standard mitigation measures required by Placer County to assure compliance with codified regulations. HYDRO-2b requires a drainage report for each phase of the Project that identifies water quality protection features and methods to be used during construction and post-construction to reduce erosion, water quality degradation and prevent the discharge of pollutants to stormwater to the maximum extent practicable. HYDRO-2c assures that stormwater treatment facilities are designed in accordance with the requirements of the Placer County Stormwater Management Manual. HYDRO-2d assures that post-development runoff is reduced to at or below pre-project conditions. Compliance with codified regulations adequately reduces potential impacts to a level of less than significant. GEO-4b and GEO-4f satisfy the requireme5tns of the Placer County Grading Ordinance and LDM for the protection of existing drainages.

Implementation of BIO-5a will improve the level of detail presented in the Preliminary Conceptual Revegetation and SEZ Restoration Plan to allow for TRPA permitting and subsequent construction. Through adequate site-specific restoration measures, the potential impacts to existing surface water drainage patterns and streambank erosion are reduced to a level of less than significant.

Analysis: *Significant Impact; Alternative 4*

For Alternative 4, the Project area will no longer operate as a ski resort. The Project area will be subdivided into 16 estate parcels and one commercial parcel, Homewood Creek will not be daylighted and SEZ restoration will not occur. It is assumed that the stormwater treatment system in the South Base area will be removed to allow for residential land use and that residential units will not be located within SEZ setbacks. It is also assumed that the South Base parking lot will be removed and restored leaving the County ROW and existing mountain access roadway for access to the estate home sites. The North Base parking areas will be sold for redevelopment as a commercial use area.

Stormwater Treatment Systems. Stormwater treatment systems will be reconfigured to contain and treat the 20-year, 1-hour storm runoff volume from 248,696 square feet of impervious surfaces in accordance with future redevelopment in the North Base area. On-site containment of the 20-year, 1-hour storm runoff volume will be required as a condition of project permitting for construction on the residential lots proposed in Alternative 4. Placer County requires drainage facilities, for purposes of collecting runoff from individual lots to be designed in accordance with the requirements of the County Storm Water Management Manual that are in effect at the time of submittal, and to comply with applicable stormwater quality standards, to the satisfaction of the

Engineering and Surveying Department (ESD). These facilities will be constructed with subdivision improvements and easements provided as required by ESD. Maintenance of these facilities will be provided by the Homeowners' and/or Property Owner's Association. No detention facility construction is permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals.

Existing Surface Water Drainage Patterns, Flooding, and Stream Bank Erosion. Land coverage will be required to conform to TRPA land coverage coefficients, including SEZ setbacks. Removal of the South Base area parking lot could cause direct and indirect effects to Homewood Creek from changes in site grades, land coverage, and land uses.

The existing impact to surface water drainage patterns and channel conditions of Homewood Creek is significant based on baseline conditions, which indicate degradation of streambanks and incised channel conditions downstream of the South Base portion of the Project area (Kleinfelder 2007). Under Alternative 4 existing impacts to Homewood Creek alignment and channel stability could persist and could be exacerbated by land use changes proposed in the South Base area. This is a significant impact based on criteria for Impact HYDRO-2.

Off-site Caltrans/Placer/HMR EIP Project. Alternative 4 is not a CEP compliant alternative and does not propose implementation of the off-site EIP project.

Mitigation: **HYDRO-2e. Implement the Homewood Creek SEZ Restoration Plan for Alternatives 4, 5 and 6**

Should Alternative 4, 5 or 6 be approved as the preferred project alternative, the Project Applicant shall design and submit an SEZ restoration plan to TRPA for review and approval. Because the culvert is associated with County ROW for Tahoe Ski Bowl Way, it is possible that Placer County would participate in a restoration plan. Alternative 4, 5 or 6 shall comply with TRPA (Code of Ordinance Chapter 37) and Placer County setback requirements (General Plan Section 6). The plan shall be based on the final configuration of the South Base area and provide for protection of Homewood Creek within and downstream of the Project area.

BIO-5a. Homewood Creek SEZ Restoration Plan

See description above for the Proposed Project (Alternative 1) and Alternative 3.

After Mitigation: *Less than Significant Impact; Alternative 4*

Implementation of HYDRO-2e and BIO-5a will assure that Project area contributions to downstream impacts along Homewood Creek will be reduced to a level of less than significant based on criteria for Impact HYDRO-2. Implementation of the mitigation measures will assure that the Project area is brought into compliance with TRPA and Placer County setbacks and that the impact to existing surface water patterns and stream bank erosion is less than significant.

Analysis: *Significant Impact; Alternatives 5 and 6*

For Alternatives 5 and 6, existing structures in the South Base area, with the exception of skier services, will be removed and uses relocated to the North Base area. The South Base area will be redeveloped as 16 residential lots and a small skier services building.

Stormwater Treatment Systems. Land coverage in the North Base area will increase to approximately 340,865 square feet under Alternatives 5 and 6 and stormwater treatment

systems will be designed similarly to those described for the Proposed Project (Alternative 1) and Alternative 3 to accommodate runoff from new impervious surfaces.

TRPA 20-yr, 1-hr Storm Volumetric Analysis (TRPA Code 25.5.A). Given that the impervious surfaces proposed for the South Base area under Alternatives 5 and 6 are less than those of Alternatives 1 and 3, stormwater treatment systems can be designed to adequately contain and treat the 20-year, 1-hour storm runoff volume on-site. Based on calculations in Table 15-9 for Alternatives 1 and 3, the proposed system capacities could exceed the 50-year, 1-hour storm runoff volume from the North Base area under Alternatives 5 and 6, assuring containment and treatment of stormwater runoff on-site. Mitigation measure HYDRO-2a described for the Propose Project (Alternative 1) and Alternative 3 is still necessary for North Base stormwater galleries to maintain 2 foot separation from bottom of infiltration galleries to the seasonal high groundwater table and to assure potential impacts to planned stormwater systems are reduced to a level of less than significant.

Placer County 10-year and 100-year Peak Flow Analysis. The SWMM post-development calculations, presented in Appendix X, show a cumulative reduction in peak flow from existing to proposed conditions for the 10 and 100-year storm events. Placer County staff review of the Preliminary Drainage Report indicates that the report adequately demonstrates that the proposed development has a less than significant impact on peak flow runoff leaving the Project area. Because Alternatives 5 and 6 propose less impervious surface than Alternatives 1 and 3, the conclusions of the Preliminary Drainage Report support that under Alternatives 5 and 6, the stormwater treatment systems for collection, conveyance and infiltration will comply with the Placer County SWMM dated September 1, 1990.

Although the Project will improve upon project area drainage, reduce post-project runoff volumes and maintain peak flows compared to existing conditions, implementation of standard mitigation measures HYDRO-2b, HYDRO-2c and HYDRO-2d assure compliance with Placer County codified regulations to reduce impacts from drainage and stormwater runoff to a level of less than significant. Implementation of these measures minimize potential impacts to down-gradient properties and existing drainage facilities by assuring that the rate or amount of surface runoff does not exceed existing conditions and does not significantly impact downstream properties or existing drainage facilities.

Existing Surface Water Drainage Patterns, Flooding, and Stream Bank Erosion. On-site containment of the 20-year, 1-hour storm runoff volume will be required as a condition of project approval and permitting for construction on the residential lots proposed in Alternatives 5 and 6. Land coverage will be required to conform to TRPA LCD coefficients, including SEZ setbacks. Removal of the South Base area parking lot could cause direct and indirect effects to Homewood Creek from changes in site grades, land coverage, and land uses. Alternatives 5 and 6 do not propose SEZ restoration along Homewood Creek under the County ROW for Tahoe Ski Bowl Way.

The existing impact to surface water drainage patterns of Homewood Creek is significant based on baseline conditions, which indicate some degradation of streambanks and incised channel conditions downstream of the South Base portion of the Project area (Kleinfelder 2007). Under Alternatives 5 and 6 existing impacts to Homewood Creek alignment and channel stability could persist and could be exacerbated by changes proposed in the South Base area. This is a significant impact based on the criteria for Impact HYDRO-2, requiring mitigation as proposed under mitigation measure HYDRO-2e. TRPA staff determines that the Preliminary Conceptual Revegetation and SEZ

Restoration Plan described in Appendix C is insufficient to allow for permitting and subsequent construction. Because the restoration effects have not adequately defined and minimized, mitigation measure BIO-5a will be necessary to assure that potential impacts to existing surface water drainage patterns and stream bank erosion are reduced to a level of less than significant.

Mitigation: **HYDRO-2a. Soil Hydrologic Approval Conditions**

See description above for the Proposed Project (Alternative 1) and Alternative 3.

HYDRO-2b. Submit Final Drainage Report to Placer County

See description above for the Proposed Project (Alternative 1) and Alternative 3.

HYDRO-2c. Drainage Facilities to Conform to Placer County Stormwater Management Manual

See description above for the Proposed Project (Alternative 1) and Alternative 3.

HYDRO-2d. Reduce Stormwater Runoff to Pre-Project Volumes

See description above for the Proposed Project (Alternative 1) and Alternative 3.

HYDRO-2e. Implement the Homewood Creek SEZ Restoration Plan for Alternatives 4, 5 and 6

See description above for Alternative 4.

BIO-5a. Homewood Creek Restoration Plan

See mitigation description provided above for the Proposed Project (Alternative 1) and Alternative 3.

GEO-4b. Conform to Provisions of Placer County Grading Ordinance

See impact GEO-4 in chapter 14, Soils, Geology and Seismicity.

GEO-4f. Satisfy the requirements of Section II of the Land Development Manual. (LDM).

See impact GEO-4 in chapter 14, Soils, Geology and Seismicity.

After Mitigation: *Less than Significant Impact; Alternatives 5 and 6*

Mitigation measure HYDRO-2e requires the Project Applicant to design and submit an SEZ restoration plan to reduce existing impacts to drainage patterns and channel stability of Homewood Creek to TRPA for review and approval based on the South Base configurations under Alternatives 5 and 6. Because the culvert is associated with County ROW for Tahoe Ski Bowl Way, it is possible that Placer County would participate in a restoration plan. Implementation of HYDRO-2e assures that Project area contribution to downstream impacts along Homewood Creek will be reduced to a level of less than significant based on criteria for Impact HYDRO-2. Implementation of the mitigation measure will assure that the Project area is brought into compliance with TRPA and Placer County setback requirements.

Implementation of mitigation measure HYDRO-2a assures compliance with TRPA Soil Hydrologic Approval conditions that a separation of 2 feet from the bottom of stormwater infiltration galleries and seasonal high water table is maintained and soil treatment remains effective.

Mitigation measures HYDRO-2b, HYDRO-2c, HYDRO-2d, GEO-4b and Geo-4f are standard mitigation measures required by Placer County to assure compliance with codified regulations. HYDRO-2b requires a drainage report for each phase of the Project that identifies water quality protection features and methods to be used during construction and post-construction to reduce erosion, water quality degradation and prevent the discharge of pollutants to stormwater to the maximum extent practicable. HYDRO-2c assures that stormwater treatment facilities are designed in accordance with the requirements of the Placer County SWMM. HYDRO-2d assures that post-development runoff is reduced to at or below pre-project conditions. Compliance with codified regulations adequately reduces potential impacts to a level of less than significant. GEO-4b and GEO-4f satisfy the requirements of the Placer County Grading Ordinance and LDM for the protection of existing drainages.

Implementation of BIO-5a will improve the level of detail presented in the Preliminary Conceptual Revegetation and SEZ Restoration Plan to allow for TRPA permitting and subsequent construction. Through adequate site-specific restoration measures, the potential impacts to existing surface water drainage patterns and streambank erosion are reduced to a level of less than significant.

Impact: **HYDRO-3. Will Project construction activities or long-term operations result in a substantial degradation of groundwater or result in a substantial change in the quality, quantity, elevation, infiltration, or movement of groundwater?**

Analysis: *Less than Significant Impact; No Project (Alternative 2)*

Groundwater flows around and within the Project area have been previously modified by the construction of parking lots, SR 89 and Placer County Roads, affecting historic surface and groundwater conditions. No construction activities or changes in long-term ski area operations will occur for the No Project Alternative. Groundwater monitoring conducted over the period of record from 2006 to 2008 does not conclude that Project area and resort operations are causing substantial change in quality, quantity, elevation, infiltration or movement of groundwater. The groundwater data is referenced to Appendix D. Based on the evaluation criteria for HYDRO-3, the potential impacts to groundwater under the No Project (Alternative 2) is less than significant.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternative 4*

Under Alternative 4, the ski resort will be closed and the Project area subdivided into 16 estate lots, with the North Base area sold for commercial use. Closure of the ski resort will eliminate the need for an underground parking structure and groundwater extractions for snowmaking. Alternative 4 will not result in construction of large buildings that require excavations for foundation footings. The construction of residential homes will be required to follow TRPA and Placer County Codes for development of residential parcels. Potential construction related impacts to groundwater are discussed in Chapter 14, Geology, Soils and Seismicity under impact GEO-3. Compliance with these development codes reduces potential impacts to groundwater to a level of less than significant.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5 and 6*

Construction of the Project as described under the Proposed Project (Alternatives 1) and Alternatives 3, 5 and 6 involves grading, excavation and fill activities. Excavation of earth below existing ground surfaces presents the potential to intercept or interfere with seasonal groundwater movement during construction activities and long-term operations of the Project area. Groundwater flows around and within the Project area have been previously modified by the construction of parking lots, mountain access roads, SR 89, and Placer County Roads, affecting historic surface and groundwater conditions.

Potential impact to groundwater movement during construction of the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 are analyzed in Chapter 14, Geology, Soils and Seismicity, in impact GEO-4. Long-term operational impacts to groundwater quality, quantity and movement are addressed below.

Groundwater Movement. To assure that no additional modifications to groundwater quantity and movement occur from proposed developments, TRPA requires that site-specific geotechnical investigations be completed for project permitting and approval.

TRPA Code of Ordinances Subsection 64.7.B prohibits excavations in excess of five feet in depth unless certain findings can be made to demonstrate that no interference or interception of groundwater will occur as a result of the excavation, no damage occurs to mature trees as a result of the excavation, and that the topography of the site is maintained. These findings are made in Chapter 14, Geology, Soils and Seismicity, for impact GEO-4 for the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6.

TRPA may approve exceptions to the prohibition of groundwater interception or interference under Code Section 64.7.A.2(i) (*It is necessary to provide below grade parking for projects, qualifying for additional height under Subsection 22.4.D* ***or 22.4.G****, to achieve environmental goals including scenic improvements, land coverage reduction, and area-wide drainage systems; and measures are included in the project to prevent groundwater from leaving the Project area as surface flow and that groundwater flow to avoid adverse impacts to hydrologic conditions, SEZ vegetation, and mature trees*) if amended as proposed for the Project.

As reported in the Second Revised Soils Hydrologic Scoping and Final Report (Kleinfelder 2010) submitted to TRPA, the maximum proposed excavation at the North Base area ranges from 29 to 32 feet bgs. Maximum depths assume a two-foot deep foundation below the finished floor elevations. Interception could occur over a distance of 878 feet along the western retaining wall of the proposed underground parking structure. The maximum depth of excavation will be approximately 17 feet below seasonal high groundwater levels measured in this area.

The maximum depth of proposed excavation at the South Base area ranges from 19 to 21 feet bgs. The maximum estimated depth of groundwater interception ranges from 4 to 13 feet. Interception could occur over a distance of 376 feet along the western retaining wall of the proposed parking structure for the North Building, along 100 feet of the northwestern retaining wall of the South Building parking structure and along 110 feet of the southwestern retaining wall of the South Building parking structure. The maximum depth of excavation could be from 4 to 13 feet below seasonal high groundwater levels measured in this area.

The maximum depth of proposed excavation at the Mid-Mountain area ranges from 8 to 20.5 feet. Based on the presence of shallow bedrock and site topography, which is close

to a ridgeline, groundwater should not be encountered to the proposed depths of the retaining walls.

The conclusions are based upon the building and underground parking structure cross-sections prepared for the North Base, South Base and Mid-Mountain areas superimposed over modeled groundwater elevations, which were based on groundwater monitoring well observations during 2006, 2007 and 2008 (see Appendix D for groundwater data). The cross-sections are presented on Sheets C19, C20 and C21 of the Civil Plan set. Because groundwater movement will be intercepted, the impact is considered significant based on TRPA Code of Ordinances and requires mitigation to reduce and minimize impacts to groundwater.

Preliminary calculations are shown below for proposed groundwater reinjection galleries North-5, North-6, South-3 and South-4 identified in Figures 15-8 and 15-9. Note that the groundwater reinjection galleries are separate and distinct systems from the proposed stormwater treatment systems. Two soil infiltration values were used to estimate the range of flows, 1×10^{-3} centimeters per second (cm/sec) or 9 inches per hour and 4×10^{-4} cm/sec or 4 inches per hour. These values are typical for silty sand and silty sand with gravel materials that were logged in test pits by Holdrege and Kull Associates in the areas of the retaining walls (see Appendix D for data).

The assumptions for calculations detailed in Table 15-10 and summarized below are as follows:

- Depth of walls include the two foot foundation footings;
- Soil infiltration rate = four inch/hour or 0.33 feet/hour and nine inch/hour or 0.75 feet/hour; and
- The groundwater flow rate utilized in each calculation is the average between the potential high and low flow rate provided by the geotechnical engineer detailed in Table 15-10 below.

<u>North-5 (Parking Garage)</u>

Projected Flow Rate: 13 gallons per minute = = 104 cubic feet/hour
Required Infiltration Basin Footprint Area: (104 cubic feet/hour) / (0.33feet/hour) = 315 square feet
Reinjection Gallery Size: 25 feet x 18 feet = 450 square feet

<u>North-6 (Parking Garage)</u>

Projected Flow Rate: 13 gallons per minute = =104 cubic feet/hour
Required Footprint Area: (104 cubic feet/hour) / (0.33feet/hour) = 315 square feet
Reinjection Gallery Size: 30 feet x 15 feet = 450 square feet

<u>South-3 (North Parking)</u>

Building B Parking -
Projected Flow Rate: 6.0 gallons per minute = 48.1 cubic feet/hour
Required Footprint Area: (48.1 cubic feet/hour) / (0.33feet/hour) = 146 square feet
Reinjection Gallery Size: 20 feet x 11 feet = 220 square feet

<u>South-4 (South Parking)</u>

Building A.1 Parking -

Projected Flow Rate: 1.0 gallons per minute = 8.0 cubic feet/hour
Required Footprint Area: (8.0 cubic feet/hour) / (0.33feet/hour) = 25 square feet

Building A.2 Parking -
Projected Flow Rate: 0.75 gallons per minute = 6 cubic feet/hour
Required Footprint Area: (6 cubic feet/hour) / (0.33feet/hour) = 18 square feet

Reinjection Gallery Combined Size for Buildings A.1 & A.2: 10 feet x 5 feet = 50 square feet

Table 15-10

Projected Groundwater Flows for Operational Mitigation of Intercepted Groundwater

Location	Finished Floor Elevation (ft)	Length of Retaining Wall (ft)	Depth of Retaining Wall (ft)	Maximum Depth of Groundwater Interception (ft)	Groundwater Gradient (ft)	Flow Rate of 4 in/hr (gpm)	Flow Rate of 9 in/hr (gpm)
North Base							
Parking Garage (Cross-Sections 1 through 4)	6,240	878	29 to 32	17	0.17	15	37
North Base Total						15	37
South Base							
North Building Parking (Cross-Section 5)	6,280	376	19	13	0.12	3	9
South Building Parking (Cross-Section 6)	6,270	100	19	4	0.2	0.5	1
South Building Parking (Cross-Section 7)	6,270	110	21	4	0.2	1	1
South Base Total						4	11
Mid-Mountain							
Retaining Walls (Cross-Section 8)	7,285		14				
	7,323		8				
	7,327		11.5				
Cut slopes for Water Tanks (Cross-Section 10)	7,480		20.5				

Source: Kleinfelder 2010

To determine the vertical and horizontal sphere of influence of the groundwater reinjection galleries, Kleinfelder staff modeled a 30-day period of reinjection of intercepted groundwater using the UCAM2 model (Unconfined or Confined Analytical Model authored by Brian J. Peck, PG, CHG of Schlumberger Water Services, Inc. Reno Nevada 89502). The maximum-modeled groundwater rise is 0.8-foot directly under the groundwater reinjection galleries with the extent of a 0.5-foot rise in groundwater extending up to 40 feet from the edge of gallery. The effect will extend radially because the background groundwater gradient is 0.02 foot/1.0 foot, an extremely shallow gradient. Soil-Hydrologic exhibits attached in Appendix D illustrate the spheres of influences modeled for the groundwater reinjection galleries. As depicted on the Soil-Hydrologic exhibits, the sphere of influence of the groundwater reinjection galleries will not extend beyond the Project area boundaries and will not cause effects to parcels adjacent to the North and South Base areas.

Because groundwater will be intercepted during long-term operations of the underground parking structures in the North and South Base areas, the level of impact is significant. Mitigation measure HYDRO-3a is necessary to assure that intercepted groundwater does not leave the Project area as surface flow and to assure that groundwater movement is not significantly altered.

Groundwater Quality. The existing groundwater quality within the Project area is not well characterized, but groundwater quality in the Lake Tahoe Basin is generally of high quality and used to supplies public drink supplies with minimal treatment for pollutants (California's Groundwater Bulletin 118 2004). The Project is not likely to violate potable water quality standards because it will be utilizing potable water from MCWC and the TCPUD. The Phase I Environmental Site Assessment (Robinson Engineering 2005). Reported a low-level MTBE in one of the existing groundwater monitoring wells in the North Base area. The assessment concluded that natural attenuation has reduced the MTBE concentration to levels near the California water quality objective and that additional natural attenuation will result in the groundwater reaching the water quality objective. Because the levels are low and the well is under standard monitoring by the Lahontan, this is not considered to be a significant impact.

The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 propose underground infiltration galleries for stormwater treatment in areas of seasonal high groundwater. TRPA Code of Ordinances Subsection 25.5.A(1) requires that the bottom of infiltration facilities, which would include underground infiltration galleries, be a minimum of one foot (12 inches) above the seasonal high groundwater table. Underground infiltration galleries in the North and South Base areas are designed to maximize this separation. Galleries North-2, North-3, and North-4 will have separations of two feet (24 inches), Galleries North-1 and South-1 will have separations of 1.5 feet (18 inches) and Gallery South-2 will have a separation of 6.5 feet (78 inches). Although the galleries maintain the separations required by TRPA Code, fluctuations in the seasonal high water table are likely and the potential for degradation of groundwater quality exists if the separation between the bottom of the galleries and the seasonal high water table intersect to negate soil treatment necessary for stormwater treatment. Mitigation is necessary to reduce this potential impact to a level of less than significant. A post-project groundwater monitoring program will also be necessary.

Due to the increase in landscaped area within the North and South Base areas, nitrogen and phosphorus inputs or loading in the Project area could increase if components of fertilizer leach past the root uptake zone towards seasonal high groundwater. To minimize potential impacts to groundwater quality the Project proposes the use of slow-

growing turf grass in high pedestrian traffic areas and has replaced much of the higher water demand landscape areas with bioretention areas, which serve to both infiltrate stormwater and uptake pollutants and nutrients.

The Project proposes the following measures to minimize the potential for nutrients to escape the root zone and be delivered to groundwater:

- Use of non-mowed or slow-growing turf grass species, preferably local native or naturalized species with annual fertilizer requirements that do not exceed 1.5 pounds per 1,000 square feet;
- Implementation of a Fertilizer Management Plan that meets the requirements of Section 81.7 of TRPA Code or Ordinances;
- Determination of appropriate fertilizer rates by a soil-revegetation specialist and based on the results of soil nutrient testing;
- Incorporation of fertilizer into soils prior to seed application to prevent burning and low germination rates;
- Use of Biosol or other organic, slow-release fertilizers that do not contain nitrate or ammonium with careful application to avoid application on hardscape;
- Prohibit fertilizer use on bioretention areas for stormwater treatment after initial establishment; and
- Installation of a highly controlled spray irrigation system to avoid over irrigation and overspray onto hardscape.

Implementation of these project measures will reduce potential impacts to groundwater quality from landscaped areas. However, to assure long-term protection of groundwater quality, a post-project groundwater monitoring program will be necessary.

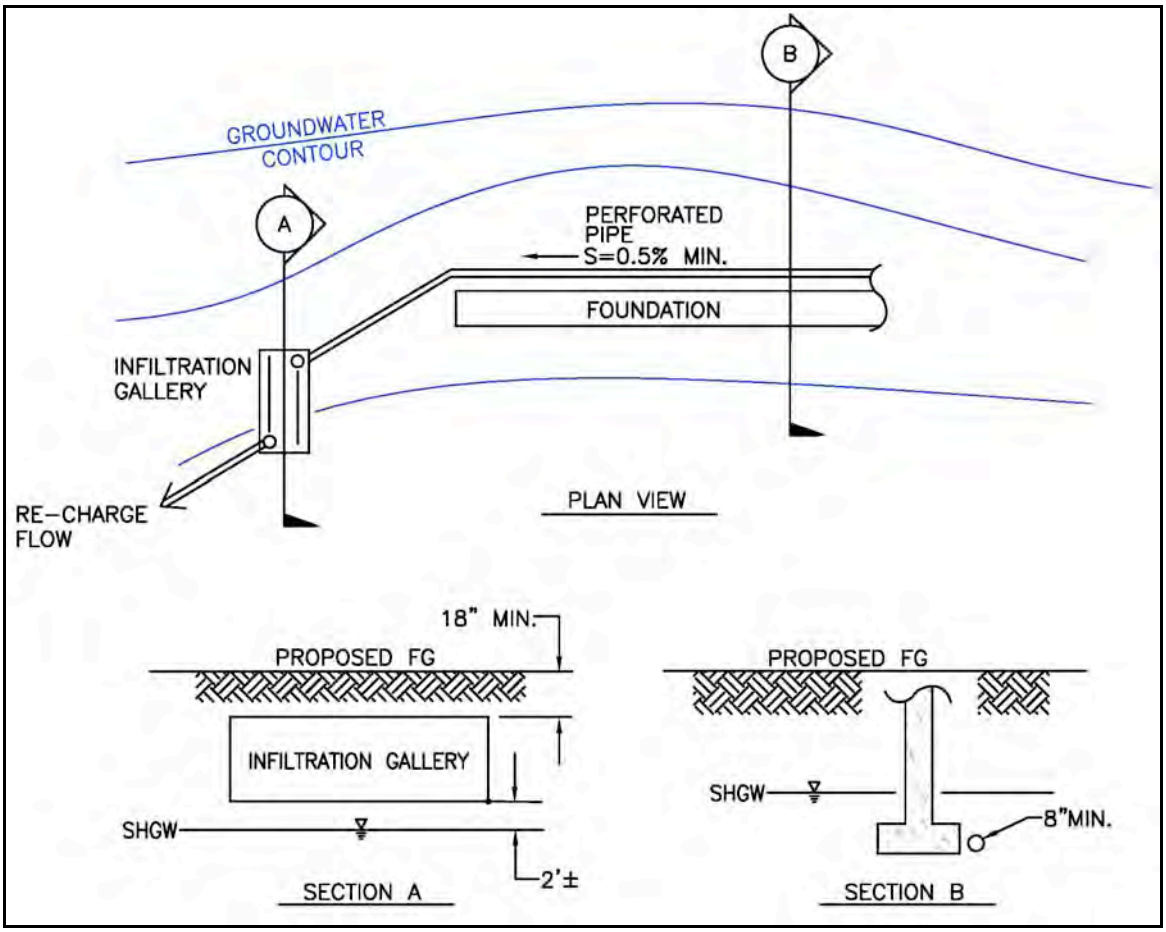
Groundwater Quantity. The Project could substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lessening of local groundwater supplies (i.e. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted). Groundwater recharge will not be affected by changes in impervious surfaces because land coverage will decrease in the watersheds comprising the Project area and stormwater systems will capture treat and infiltrate stormwater runoff from impervious surfaces. However, groundwater quantity could be impacted by increased diversions of groundwater for use in existing and proposed snowmaking systems under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6.

The North Base well has an estimated 500 gallons per minute pumping rate and the McKinney well has a rate of around 1,000 gallons per minute. HMR proposes to use these wells for a portion of the 60.8 million gallons per year of snowmaking water needed with the proposed snowmaking system expansion. Because the recharge, recovery and storage capacities of the Project area wells and the proposed TCPUD McKinney well are unknown, the potential impact to groundwater quality is considered significant. The potential impacts to groundwater quantity as related to source water protection are analyzed in impact HYDRO-5 below.

Mitigation: **HYDRO-3a. Implement Operation Dewatering Plan/ Implement Engineered Groundwater Mitigations**

The operational mitigation measures for groundwater interception for the underground parking foundations shall include foundation drains conveying intercepted groundwater to underground galleries for reinjection back into groundwater flows towards Lake Tahoe. Each groundwater reinjection gallery shall be designed to serve a specific area of each underground parking structure that could intercept groundwater and shall be sized to adequately infiltrate no less than 208.5 cubic feet/hour (North-5 and North -6), 48.1 cubic feet/hour (South-3) and 14 cubic feet/hour (South-4). Intercepted groundwater shall be conveyed away from the foundation via stormdrain pipe to the corresponding underground reinjection gallery serving that area of the building. Figure 15-16 illustrates the mitigation approach. The reinjection galleries for intercepted groundwater shall be separate entities from the stormwater treatment infiltration galleries and the distance between the groundwater and stormwater infiltration galleries shall be maximized to minimize potential for mixing.

Figure 15-16. Schematic for Operational Groundwater Interception Mitigation



Source: Nichols Consulting Engineers 2010

HYDRO-3b. Inspection, Maintenance and Monitoring Plan Groundwater Infiltration Systems for Underground Parking Structures

The Project Applicant shall prepare an Inspection, Operation, Maintenance and Monitoring Plan for the groundwater infiltration systems for the underground parking structures. TRPA, Lahontan, and Placer County shall review the plan prior to issuance of final Project approval.

The Plan shall include, but is not limited to the following components:

- Introduction; planning and design, sampling objectives and water quality objectives;
- Well construction details and/or system sampling access points;
- Water level data for existing and new wells;
- Groundwater sampling and analysis, sample collection methods, decontamination, sampling frequency, sampling handling, field analysis, laboratory analysis;
- Maintenance scheduling; and
- Quarterly reporting.

Sample results shall be provided to the TRPA on a quarterly basis. The report shall present site conditions, physical observations of groundwater quality and the degrees of sedimentation observed within the underground groundwater infiltration galleries, and include three months worth of observations and corresponding field measurements and laboratory analytical results.

Single samples of groundwater shall not exceed the discharge to land treatment water quality objectives at the following concentrations: Total Nitrogen as N of 5 mg/L; Total Phosphorus as P of 1 mg/L; Total Iron as Fe at 4 mg/L; Turbidity at 200 ntu; and Oil and Grease at 40 mg/L.

HYDRO-3c. Complete a Water Balance Analysis for the HMR-Operated Well and the TCPUD McKinney Well

The Project Applicant shall prepare a hydrogeologic report for the HMR-operated wells and the TCPUD McKinney well to determine recharge, recovery and storage capacities of the aquifers. The report shall:

- Characterize the cone of depression that will result based on maximum proposed consumption, determine if this will result in a gross adjustment of the near static deep groundwater level for this aquifer,
- Characterize the zone of influence and determine if the proposed extractions will negatively other source waters;

- Identify or characterize the hydrogeologic conditions that impose constraints on Time and Drawdown;
- Identify the well efficiency and the expected lifetime;
- Determine and disclose what water rights could be potentially influenced; and
- Determine the potential impacts towards the Truckee River Operating Agreement (TROA) allocations to the State of California.

Lahontan may require the characterization of the subsurface water chemistry to meet the general requirement for drinking water wells even though the water will be used for snowmaking. Should a decline in groundwater levels occur that exceeds seasonal fluctuations and that is attributable to the Project, pumping from the groundwater source shall cease and other supplies of water shall be utilized until groundwater levels return to historic levels.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 5 and 6*

Implementation of HYDRO-3a, 3b, and 3c will assure that Project area contribution to groundwater impacts will be reduced to a level of less than significant based on criteria for Impact HYDRO-3. Implementation of the mitigation measures will assure that the Project is brought into compliance with TRPA groundwater protection measures.

Impact: HYDRO-4. Will the Project alter the course or flow of the 100-year floodwaters or expose people or structures to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches?

Analysis: *Significant Impact; No Project (Alternative 2)*

According to the U.S. Geological Survey, a seiche is a standing wave in an enclosed or partly enclosed body of water. Seiches are normally caused by an earthquake or high wind activity, and can affect harbors, bays, lakes, rivers and canals. See Chapter 14, Geology, Soils and Seismicity for details on geologic hazards associated with the Project area.

The *Geologic Hazards and Preliminary Geotechnical Evaluation* (Kleinfelder 2007) reports that the existing development in the North and South Base areas could be inundated by waves with maximum amplitudes of approximately six meters from a lake seiche resulting from magnitude 7.2 earthquake modeled on the West Tahoe-Dollar Point Fault. This fault, as well as the Genoa Fault, is capable of producing earthquakes of this magnitude (Holdrege and Kull 2010). The North Tahoe and Incline Faults have estimated maximum momentum magnitudes of around 7.0 and 6.6, respectively. Due to the proximity of the Project area to active faults and to the shorezone of Lake Tahoe, the risk of inundation from a lake seiche is considered potentially significant.

The FEMA FIRM for the Project area indicates a Zone A area located along the lower reach of Homewood Creek, which flows through the South Base area. The lower reach of Madden Creek is also mapped Zone A, but is to the north and outside of the Project area.

Placer County requires evaluation of potential flood hazards prior to approval of development projects and requires the Project Applicant to submit accurate topographic and flow characteristics information and depiction of the 100-year floodplain boundaries under fully developed, unmitigated runoff conditions. Figures 15-7, 15-8 and 15-9 depict the existing (pre-project), unmitigated 100-year floodplain as defined by the Placer County LDM. Under the No Project alternative the existing culvert and road crossing remains and no change to downstream effects occurs.

The Kleinfelder evaluation states that debris flows are not mapped within the Project area but may exist in the Madden Creek, Homewood Creek, Quail Lake Creek and the unnamed creek drainages. The risk is considered low based on the absence of mapped debris flow areas.

Mitigation: No mitigation is available.

After Mitigation: *Significant and Unavoidable Impact; No Project (Alternative 2)*

Under the No Project alternative, the Project area continues to operate under current conditions and no discretionary action would be taken that would require mitigation to reduce the risk of inundation from a lake seiche. Regardless, the Project Applicant may choose to prepare this plan with respect for public safety. Because no mitigation is required under the No Project (Alternative 2), the risk of people or structures to inundation by seiche would not be avoided, minimized, reduced or otherwise mitigated. The level of impact remains potentially significant based on the evaluation criteria for impact HYDRO-4 and therefore is considered a significant and unavoidable impact.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6*

According the U.S. Geological Survey, a seiche is a standing wave in an enclosed or partly enclosed body of water. Seiches are normally caused by an earthquake or high wind activity, and can affect harbors, bays, lakes, rivers and canals. See Chapter 14, Geology, Soils and Seismicity for details on geologic hazards associated with the Project area.

The *Geologic Hazards and Preliminary Geotechnical Evaluation* (Kleinfelder 2007) reports that the existing development in the North and South Base areas could be inundated by waves with maximum amplitudes of approximately six meters from a lake seiche resulting from magnitude 7.2 earthquake modeled on the West Tahoe-Dollar Point Fault. Due to the proximity of the Project area to active faults and to the shorezone of Lake Tahoe, the risk of inundation from a lake seiche is considered potentially significant. The preparation of an emergency response and evacuation plan, as outlined in mitigation measures HYDRO-4a, is necessary to mitigate disaster damages and avoid potential loss of life from inundation by seiche.

An alteration of the course or flow of the 100-year floodwaters constitutes a significant impact. The FEMA FIRM indicates a Zone A area located along the lower reach of Homewood Creek, which flows through the South Base area. The lower reach of Madden Creek is also mapped Zone A, but is to the north and outside of the Project area. A FEMA Zone A corresponds to the 100-year floodplain with undetermined base flood elevations.

The Proposed Project (Alternative 1) and Alternative 3 will remove existing structures in the South Base area from the FEMA 100-year floodplain, conform to TRPA and Placer County setbacks and will replace the existing culvert crossing with a bridge span across

Homewood Creek to reduce the potential for flood flows to be impeded or redirected. Alternatives 4, 5 and 6 will remove existing structures from the floodplain and conform to TRPA and Placer County setbacks but will not replace the culvert crossing with a bridge span, as proposed. Mitigation HYDRO-2e would require implementation of the Homewood Creek SEZ Restoration Plan for these alternatives, however, and the effects would be comparable to those of Alternatives 1 and 3.

The Placer County FCWCD requires the submittal of a detailed pre- and post-project hydraulic analysis of Homewood Creek for project permitting. The analysis identifies increases in runoff leaving the Project area as a result of the 10-year and 100-year storm events and a determination of the Project's effects on the 100-year water surface elevations. The Preliminary Drainage Report identifies no significant increase in runoff leaving the Project area or increase in the 100-year water surface elevations as a result of the Proposed Project (Alternative 1). No alternative results in placement of housing or habitable structures within the 100-year flood hazard area as mapped on the FIRM and no structures are proposed in the 100-yr future, unmitigated, fully developed floodplain, as defined by Placer County's LDM.

The bridge span is designed to comply with Placer County Flood Damage Prevention Ordinance. As a result, the 100-year floodwaters will not be impeded or redirected and people or structures will not be exposed to significant risk or loss, injury or death from flooding.

The potential impact is further reduced through compliance with Placer County codified regulations. Standard Placer County mitigation measures HYDRO-4b and HYDRO-4c reduce the potential impact to 100-yr floodwaters to a level of less than significant through delineation of adequate setbacks from and establishment of building pad elevations above the 100-year floodwater elevations.

The Kleinfelder evaluation (2007) states that debris flows are not mapped within the Project area but may exist in the Madden Creek, Homewood Creek, Quail Lake Creek and the unnamed creek drainages. The Proposed Project (Alternative 1) and Alternatives, 3, 4, 5 and 6 do not propose changes to the Project area that would increase the potential for debris flows. The risk of debris flows is considered to be less than significant based on the existing conditions of the Project area and the absence of mapped debris flow areas.

Mitigation: **HYDRO-4a. Emergency Response and Evacuation Plan**

The Project Applicant shall prepare and submit an emergency response and evacuation plan to TRPA, Placer County ESD and the North Tahoe Fire Protection District (NTFPD) for review and approval before construction permits are issued. The plan shall include detailed descriptions of how emergency response and evacuation will occur in the case of a large earthquake and potential seiche or the 100-yr event. Emergency response and evacuation measures shall address the requirement of Placer County Local Hazard Mitigation Plan and at a minimum identifies steps that help avoid, reduce, alleviate, and mitigate disaster damages and potential loss of life.

HYDRO-4b: Comply with Placer County Stormwater Management Manual Section VI

The Project Applicant shall show the limits of the future, unmitigated, fully developed, 100-year flood plain (after grading) for Homewood Creek on the Improvement Plans and designate same as a building setback line unless greater setbacks are required by other project conditions.

HYDRO-4c: Comply with Placer County Flood Damage Prevention Ordinance

To comply with Placer County Flood Damage Prevention Ordinance, Article 15.52, specifically 15.52.170 C.1 Elevation and Floodproofing, the Project Applicant shall show finished structure pad elevations 2 feet above the 100-year flood plain line for South Base buildings A and B on the Improvement Plans and Informational Sheet filed with the Final Map. Pad elevations shall be certified by a California registered civil engineer or licensed land surveyor and submitted to the Engineering and Surveying Department. This certification shall be completed prior to construction of the foundation or at the completion of final grading, whichever comes first. No construction is allowed until this certification has been received by the ESD and approved by the Flood Plain Manager. Benchmark elevation and location shall be shown on the Improvement Plans and Informational Sheet to the satisfaction of DRC.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 4, 5 and 6*

The Project area cannot be relocated out of the potential inundation area of a seiche from Lake Tahoe, but the risk of inundation can be minimized through the proper and timely execution of an Emergency Response and Evacuation Plan. Compliance with Placer County SWMM Section VI and the Flood Damage Prevention Ordinance results in the avoidance of alteration of the course or flow of the 100-year floodwaters and minimizes exposure to significant risk or loss, injury or death from flooding.

Impact: HYDRO-5. Will the Project change the amount of surface water in any water body, substantially reduce the amount of water otherwise available for public water supplies, or be located within 600 feet of a drinking water source?

Analysis: *Less than Significant Impact; No Project (Alternative 2)*

The No Project Alternative (Alternative 2) will not change the existing public water demand within the TCPUD McKinney-Quail Water Service Area or the Madden Creek Water Service Area. Source water 09719101/11, operated by TCPUD and source water 08502048W11, operated by Agate Bay Water Company are located in the vicinity of the Project area. However, TRPA Source Water Assessment maps indicate that no source waters are located within 600 feet of the Project area. Additionally, no contaminating land uses are identified within 600 feet of a drinking water source as identified on TRPA Source Water Assessment Maps.

Existing snowmaking operations at the South Base are supplied by domestic water from the TCPUD. The HMR-owned North Base well supplies snowmaking operations at the North Base along with potable water from the MCWC. Snowmaking demand will not change under the No Project (Alternative 2).

Homewood Creek instream flows are not currently degraded by withdrawals from the South Base well. Existing wells prove to be of sufficient distance from active creek channels so as to not impact instream flows.

The forthcoming requirements of the TROA will require metering and reporting of all surface water diversions, including the use of waters for snowmaking within the Lake Tahoe Basin to be reported at a 16 percent consumptive use under the TROA. The existing snowmaking system applies approximately 43.6 acre-feet/year of water over 23.8 acres in the form of snow (Snowmakers Inc. 2010). The existing snowmaking system includes metering of the application of water to cover existing ski trails.

Because the No Project Alternative will not result in a change to the Project area facilities or alter the ability of the TCPUD or MCWC to meet the demands of their service areas, the level of impact to public water supplies is less than significant for Alternative 2.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternative 4*

Under Alternative 4 the Project area will cease to operate as a ski area and the need to use groundwater diversions or public water supply for snowmaking will be eliminated. The future property owners of the 16 residential properties and the commercial area in the North Base area will to required to coordinate with TCPUD and MCWC, depending on the location of the parcel, to establish domestic water supply. Compared to existing conditions, Alternative 4 will not increase demands on public water supplies, affect TRPA instream flows, create contaminating land uses within 600 feet of a drinking water source as identified on TRPA Source Water Assessment Maps or require the metering and reporting of the consumptive use of water for snowmaking operations. Based on the evaluation criteria for HYDRO-5, the level of impact to public water supply is less than significant for Alternative 4.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5 and 6*

Source Water Protection. TRPA Code of Ordinance Chapter 83 sets forth regulations pertaining to recognition of source water, prevention of contamination to source water and protection of public health relating to drinking water. Source water is defined as water drawn to supply drinking water from an aquifer, or a well or from a surface water body by an intake, regardless of whether such water is treated before distribution.

Source water 09719101/11, operated by TCPUD and source water 08502048W11, operated by Agate Bay Water Company are located in the vicinity of the Project area. However, TRPA Source Water Assessment maps indicate that no source waters are located within the boundary or within 600 feet of the Project area. The potential impact from the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 to source waters is less than significant.

Public Water Supply. The *Draft HMR Water Supply Assessment* (NCE 2010) was prepared for the Project area, which is attached in Appendix AA. The demand of the Proposed Project and Alternatives 3, 5 and 6 on TCPUD and MCWC public water supplies are referenced to Impact PSU-1 in Chapter 16, Public Services and Utilities. The annual demand is communicated in acre-feet/year for discussions concerning the TROA and source water protection. The potential effects of the Project on the ability of the water purveyors (i.e. TCPUD and MCWC) to meet the public water supply needs are analyzed in Chapter 16, Public Services and Utilities.

Table 16-3 presents estimated domestic and snowmaking demand rounded to the nearest acre-foot. Estimated annual domestic water consumption for residential, commercial, and irrigation uses for the Proposed Project (Alternative 1) and Alternative 3 is 64 acre-feet, 17 acre-feet for Alternative 4, 80 acre-feet for Alternative 5, and 68 acre-feet for Alternative 6 (Table 16-3). Snowmaking is estimated to require 187 acre-feet per year (Snow Machines, Inc. 2010) under Alternatives 1, 3, 5 and 6.

Snowmaking. Build out of the Project area under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will increase the use of surface water and groundwater for snowmaking from a current annual use of 43.6 acre-feet/year to cover 23.8 acres of ski

trail to approximately 187 acre-feet/year to cover 102.3 acres of ski trail (SnowMakers Inc. 2010).

The potential water supplies identified for snowmaking operation total between 2,100 and 2,400 gallons per minute and include: 1,000 gallons per minute from the TCPUD McKinney well (non-potable supply); 800 gallons per minute from the HMR-owned North Base well (non-potable supply); 300 gallons per minute from TCPUD domestic supplies that are available from 6 am to 6 pm; and 300 gallons per minute from MCWC domestic supplies that are available from 6 am to 6 pm and would serve only as a supplemental supply source (Snowmakers Inc. 2010). Snowmaking operations intend to use the 1,800 gallons per minute non-potable supply as the primary water sources. Maximum pumping requirements are identified as 2,000 gallons per minute on the North Side and 1,300 gallons per minute on the South side of the Project area. The opening and continued maintenance of ski trails with snowmaking can be phased as to minimize the use of water from the TCPUD and MCWC supplies, but under a worst case scenario these supplies would be utilized. As concluded for impact PSU-1, the current rate of flow is not sufficient to meet peak demand for snowmaking under the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6. HMR and the TCPUD McKinney-Quail Water Service Area would require upgraded extraction, pumping, treatment, conveyance, and storage capacity to serve the new demand of the Project area. This is considered a significant impact on public water supply and mitigation is required.

Under the TROA, the total annual gross diversions for use within the Lake Tahoe Basin from all natural sources, including groundwater, and under all water rights in the Basin cannot exceed 34,000 acre-feet/year. From this total, 23,000 acre-feet/year are allocated to the State of California and 11,000 acre-feet/year are allocated to the State of Nevada for use within the Lake Tahoe Basin. The first 600 acre-feet/year diverted for snowmaking uses in California each year will not be charged to the gross diversion allocation of the State. Where water (surface and groundwater) from the Lake Tahoe Basin is diverted and used to make snow in excess of this first 600 acre-feet/year, the percentage of such diversions chargeable to the gross diversion allocations of each State will be specified in the TROA once executed (TROA 2009). The consumptive use for snowmaking will be charged at 16 percent of the total diversion in excess of this first 600 acre-feet/year.

Based on the estimates reported in the snowmaking plan (SnowMakers, Inc. 2010) 16 percent of up to 187 acre-feet/year would be chargeable to the gross diversion allocation of California if Project area snowmaking diversions are not a portion of the first 600 acre-feet/year reserved for snowmaking. HMR and portions of Heavenly Mountain Resort and Alpine Meadows are within the California-side of the Lake Tahoe Basin. Heavenly Mountain Resort has applied for 592 acre-feet/year with the State Board (personal communications with Heavenly Staff Andrew Strain and TRPA Staff Rita Whitney, November 24, 2009). To date, HMR and Alpine Meadows have not submitted applications to the State Board for diversion allocations for snowmaking uses (personal communication with DWR Staff, John Headless, November 23, 2009).

The DWR submitted a letter dated April 3, 2009 on the Project Notice of Preparation (NOP). The letter recommends that Placer County review the terms of the TROA for applicability in connection with the Project. Discussions with TRPA and State Board staff and John P Headless, P.E. with DWR determine that there is a situation where snowmaking interests could find themselves pushed up through the interstate allocation of 23,000 acre-feet/year in the Tahoe Basin by holders of senior water rights. Notably if there are water rights that are only partially exercised and therefore not known to DWR,

that are senior to those obtained by the snowmakers and if those rights were to be fully exercised at some later date, then the snowmaking use which appears to be at or above the first 600acre-feet/year could be diminished because of their junior status. Given the state of knowledge about the number and quantity of under used water rights in the Lake Tahoe Basin, there is no assurance that increases in snowmaking might not at some point cause an exceedence of the Tahoe Basin allocation for California (communications with John T Headlee, P.E., November 23, 2009).

Based on the information provided in the HMR Water Supply Assessment (Nichols 2010) and the Snowmaking Planning document (Snowmakers 2009) and the HMR Master Plan (JMR 2010) the impacts of expanding snowmaking operations on domestic water supplies of TCPUD and MCWC service districts are unclear. Given the uncertainty associated with the snowmaking demand with the forthcoming diversion allocations for the TROA, the impact is potentially significant based on the evaluation criteria for HYDRO-5.

Irrigation. Landscaping proposed for the Project area has been designed to reduce total irrigation demand through the use of low-water use vegetation and incorporation of LID measures such as cisterns for storage of roof runoff and bioretention areas for stormwater treatment. The approach for calculating landscape water uses for the Project area is from a landscape rehabilitation focus because the Project needs to achieve revegetation, erosion control, fire safety, water quality and water conservation in concert with scenic improvements for the North and South Base areas. Based on the DWR's Water Budget Workbook, which calculates the maximum applied water allowance and estimated total water use, the following irrigation demand is estimated for the Project area (L+P Design Works 2010):

- North Base Area – 8.32 acre-feet/year;
- South Base Area – 2.12 acre-feet/year; and
- Mid-Mountain Area – 0.36 acre-feet/year.

For the Proposed Project (Alternative 1) the total maximum irrigation demand for the Project area is estimated at 10.8 acre-feet/year based on calculations presented in Appendix CC. Once landscaping has been established this irrigation demand is expected to decrease substantially.

Alternative 3 proposes an irrigation regime comparable to the Proposed Project (Alternative 1), as discussed above. Irrigation water demand would be less than the Proposed Project because the North and South Base areas will be comprised of more impervious coverage to accommodate large building footprints because of reduced heights.

Alternatives 5 and 6 propose an irrigation regime comparable to the Proposed Project (Alternative 1) for the North Base Area, as discussed above. However, irrigation water demand under Alternatives 5 and 6 could be up to 25 percent more than the Proposed Project because the North and South Base areas will be comprised of more landscaped area and less impervious coverage. Total maximum irrigation demand for Alternatives 5 and 6 is estimated around 13.5 acre-feet/year.

Given that TCPUD's existing McKinney/Quail supply system is inadequate to meet current peak demands during the summer and must be supplemented by interim intake from Lake Tahoe, the use of potable water for irrigation during summer months poses a potentially significant impact to public water supplies.

In-Stream Flows. The Proposed Project (alternative 1) and Alternatives 3, 5 and 6 do not propose development of existing points of diversion located within the Project area. The Proposed Project (Alternative 1), and Alternatives 3, 5 and 6 will not significantly impact the instream flows in Quail Lake, Homewood, and Madden Creeks. New wells are not proposed as part of the Project, and the existing wells that supply the Project area are not located near perennial stream channels (North Base well) or are of sufficient distance from streams and are not directly connected to surface flows.

The TCPUD-owned McKinney No. 1 well is located approximately 2,500 feet south of the South Base area on TCPUD property as shown in topographic maps. The well is an artesian flowing well that discharges at a rate of over 100 gallons per minute without a pump. It has a 60-foot cement seal and is completed in glacial moraine deposits to a depth of 800 feet. Because it is an artesian well with the measured water level about 20 feet above ground, it could not be connected to Quail Creek and will not affect the flow in Quail Creek during pumping as the source of water is much deeper than the creek. Quail Creek is located approximately 300 feet south of the well (personal communications with Dave Herzog of Kleinfelder, November 25, 2009).

The HMR-owned North Base well is located within the gravel parking lot, proposed parking structure area about 30 feet west of the small structure. It is about 1,800 feet north of Homewood Creek. This well also has a 60-foot cement seal and is completed in lake deposits. The estatic level in this well is approximately 5 to 13 feet below ground surface. The source of groundwater for this well is annual snowmelt from the mountain (personal communications with Dave Herzog of Kleinfelder, November 25, 2009).

Based on available information and locations of the wells as described in the Environmental Settings section, the level of impact from the Proposed Project (Alternative 1), Alternative 3, 5 and 6 to TRPA instream flow thresholds is less than significant.

Mitigation: **HYDRO-5. Water Use/Water Rights Monitoring Program/Install meters at Points of Diversions and Application or Use**

To ensure that water from HMR's various supplies is used in appropriate quantities and locations, a Water Use/Water Rights monitoring program shall be implemented. The goal of the program shall be to measure or estimate the quantity of water supplied by each source and document the location at which the water is used or applied. Meters shall be installed to monitor the monthly pumpage from individual wells. Additionally, the monitoring shall include monthly measurements of groundwater levels in the existing and proposed wells.

With the existing and proposed water supply monitoring facilities, determination of the quantity of water supplied to Homewood from each water supply source and the points of application or use of this water shall occur. By knowing the use restrictions on water from each source, the maximum water use permitted in any area shall be known, and thus water uses shall be limited to the maximum permitted.

The Project Applicant shall prepare an annual report indicating the quantity of water used from each of its sources and the maximum entitlement from each of its sources. The report shall be provided to TRPA and Placer County for use in ensuring compliance with existing regulations.

HYDRO-3c. Complete a Water Balance Analysis for the HMR-Operated Well and the TCPUD McKinney Well

See Impact HYDRO-3 above for language for the mitigation measure HYRO-3c.

PSU-1a. Water Supply Assessment and Infrastructure

See Impact PSU-1 in Chapter 16, Public Services and Utilities for mitigation measure PSU-1a.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 5* and 6

Implementation of mitigation measures HYDRO-5, HYDRO-3c, and PSU-1a will assure compliance with the forthcoming TROA regulations for the State of California allocations. The payment of connection and service fees approved by TCPUD and MCWC will ensure sufficient water to meet peak demand in the Project area. The preparation of a final WSA to identify the quantity and source of potable and non-potable water to serve the Project must demonstrate that water source(s) are adequate and meet State and Federal requirements for quality and quantity.

15.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact: HYDRO-C1: Will the Project have significant cumulative impacts to water resources?

Analysis: *Significant Impact; No Project (Alternative 2)*

The No Project (Alternative 2) has significant and unavoidable impacts identified for Impacts HYDRO-1, HYDRO-2 and HYDRO-4. The impacts are significant in that existing Project area conditions present some level of non-compliance with provisions of federal, TRPA, State and local codified regulations or regulatory prescriptions. The impacts are unavoidable because under the No Project Alternative no discretionary decision or action occurs to mandate mitigation of impacts to hydrology, surface water quality, groundwater or water rights.

The HMR CWE analysis estimates existing sediment yields that exceed Project Area TOCs for Madden Creek, Quail Lake Creek and Intervening Zone 7000. When considering the existing conditions of the Project area cumulatively within the context of the total watersheds, the combined sediment yields do not exceed Total Watershed TOCs, with the exception of Intervening Zone 7000 (see Table 15-2), which could exceed the TOC by 5 T/yr.

The existing impact to surface water drainage patterns is significant based on evidence of streambank degradation along Homewood Creek downstream of the Project area.

The Project area is at risk of inundation by a lake seiche, with existing conditions offering inadequate measures for public safety and evacuation.

Under the No Project Alternative 2), the existing impacts would not be avoided, reduced or minimized to levels of less than significant. Therefore, the Project could contribute to incremental effects that are cumulatively significant under Alternative 2.

Mitigation: No mitigation is available.

After Mitigation: *Cumulatively Significant and Unavoidable, No Project (Alternative 2)*

Existing BMPs, stormwater systems, and restoration areas will be maintained under the No Project (Alternative 2). However, compliance with Project area TOCs (for Quail Lake Creek, Madden Creek and Intervening Zone 7000) will not be achieved because the No Project (Alternative 2) does not allow for redevelopment of the North and South Base areas, the installation of expanded stormwater treatment systems or extensive land coverage removal. Under Alternative 2, the Project area continues to operate as a ski area and no Ski Area Master Plan approval results. TRPA, Lahontan and Placer County could require restoration projects and BMP retrofitting for adequate maintenance of the Project area, but it is the discretionary action of Ski Area Master Plan approval that requires conformance with Project Area TOCs as discussed in the Ski Area Master Plan Guidelines (TRPA 1990). Because sediment yields in Madden Creek, Quail Lake Creek and Intervening Zone 7000 currently exceed the Project Area TOCs and the No Project does not propose specific actions to reduce sediment yields or reduce downstream effects to Homewood Creek, the impact remains significant and is therefore considered cumulatively significant.

Analysis: *Less than Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6*

The geographic context for this cumulative analysis is the Homewood, California watersheds, which are tributary to Lake Tahoe through Madden, Homewood and Quail Lake Creeks and stormwater flows through Caltrans and Placer County roadways and neighborhood drainage systems. The analysis considers current and foreseeable development in the entirety of the Project area watersheds and evaluates whether the Project, together with the potential effects of cumulative development, will result in a significant impact that will remain and potentially increase over time, and if so, whether the contributions of the Project will be considerable. Both conditions must apply in order for the Project's cumulative impacts to rise to the level of significant.

Construction of the Project, other projects in the Homewood, California watersheds and projects in the western and northwestern portions of Lake Tahoe could occur concurrently and has the potential to disturb soils and create unstable slopes, which could result in sedimentation and erosion or otherwise mobilize pollutants. Excavations associated with future projects could intercept the water table and introduce pollutants into groundwater sources. The operations of future projects could increase long-term pollutant loads in urban and upland runoff. Increased impervious areas or changes in land use associated with future projects could alter drainage patterns and increase the likelihood of flooding. Combined water demands associated with future development and permissible uses could impact public water supplies.

<u>Effective, Reasonable and Appropriate Measures to Project Surface Water Quality and Beneficial Uses.</u> TRPA, federal, State and local policies and programs are in place to avoid, minimize and mitigate known potential impacts to surface and ground water resources at the project, State, federal and regional scales. Project-level permit conditions and Placer County standard mitigations, such as compliance with grading and erosion control ordinance, requirements to implement water quality protection measures, BMPs, and stormwater treatment systems, and minimization of disturbance areas and adequate revegetation of those areas, serve to avoid and minimize potential impacts from individual projects to a level of less than significant so that effects from individual projects do not persist and potentially increase over time. Regional-level regulations, programs and mitigations, such as implementation of regional stormwater treatment systems, Lake Tahoe TMDL pollutant load reduction goals, and the CEP serve to

integrate the goals and objectives of individual projects for the expansion of water quality improvement capabilities and connectivity of communities and associated services. State-level programs often serve to balance the needs of local jurisdictions with statewide goals and initiatives and policies.

TRPA 20-year, 1-hour Design Storm/Placer County 10-year and 100-year Design Storms.

The Preliminary Drainage Report (NCE 2010) reports no significant increase in post-project peak flows resulting from the 10-year and 100-year events compared to pre-project flows. Under the Proposed Project (Alternative 1) stormwater treatment systems will effectively remove over 61,000 cubic feet of stormwater runoff from leaving the Project area and entering existing downstream drainage facilities along SR 89 and Homewood Creek, with LID measures sized to remove an additional 111,000 cubic feet per storm event. As detailed in Table 15-9, the system capacities are over and above the TRPA 20-year/1-hour design storm volumes.

Groundwater. The Project creates no impacts to groundwater quality or quantity. Groundwater will be intercepted by underground parking structures that are necessary to reduce surface parking impacts but will be captured and conveyed around these structures for reinjection into the same groundwater basin. Groundwater modeling determines that the mitigation measures for the reinjection of intercepted groundwater will create localized effects (i.e., discussed as a sphere of influence that creates a 0.8-foot increase directly beneath reinjection galleries with a 0.5-foot rise in the seasonal high water table that extends up to 40 feet radially from the edge of gallery) that will not affect stormwater treatment gallery capacities or effectiveness. The sphere of influence would not extend past the Project area boundary and combine with potential effects from other projects in the area that intercept groundwater.

Surface Water Drainage Patterns and Flooding. The Proposed Project (Alternative 1) and Alternative 3, 4, 5 and 6 (Note that HYDRO-2e requires implementation of the Homewood Creek SEZ Restoration Plan for Alternatives 4, 5 and 6 and the effects would be comparable to those of Alternatives 1 and 3) will remove existing structures in the South Base area from the FEMA 100-year floodplain conform to TRPA and Placer County setbacks and will replace the existing culvert crossing with a bridge span across Homewood Creek to reduce the potential for flood flows to be impeded or redirected. No alternative results in placement of housing or habitable structures within the 100-year flood hazard area as mapped on the FIRM and no structures are proposed in the 100-yr future, unmitigated, fully developed floodplain, as defined by Placer County's LDM. The bridge span is designed to accommodate the FEMA Zone A base flood elevation and comply with Placer County Flood Damage Prevent Ordinance. As a result, the 100-year floodwaters will not be impeded or redirected and people or structures will not be exposed to significant risk or loss, injury or death from flooding. The Project intends to alleviate downstream effects to surface water drainage patterns through implementation of the Homewood Creek SEZ Restoration Plan effectively minimizing the Project area contribution to downstream effects to drainage patterns and flooding.

Water Rights/Source Water Protection. The Project proposes no development of existing surface water rights. Groundwater diversions for snowmaking will be metered and reported as determined by the forthcoming TROA. The Project, along with other future projects in the TCPUD and MCWC service districts will be required to pay the connection and service fees approved by TCPUD and MCWC to support infrastructure that is necessary to ensure sufficient water delivery to meet peak demand in the Project area. SB 210 requires the preparation of WSAs to identify the quantity and source of

potable and non-potable water to serve project areas to demonstrate that water source(s) are adequate and assure that they meet State and Federal requirements for quality and quantity to that cumulatively significant impacts to public water supply do not occur.

Combined Cumulative Impacts. No significant project-level impacts to hydrology or surface water or groundwater resources from construction or long-term operation of the Project are identified that would persist after implementation of compliance measures, Placer County standard mitigation measures and impact specific mitigation measures. At present, there are no other known projects in the Madden, Homewood, and Quail Lake Creek watersheds or Intervening Zone 7000 with direct or indirect impacts to water resources with the exception of roadway improvement projects in planning by Placer County and Caltrans.

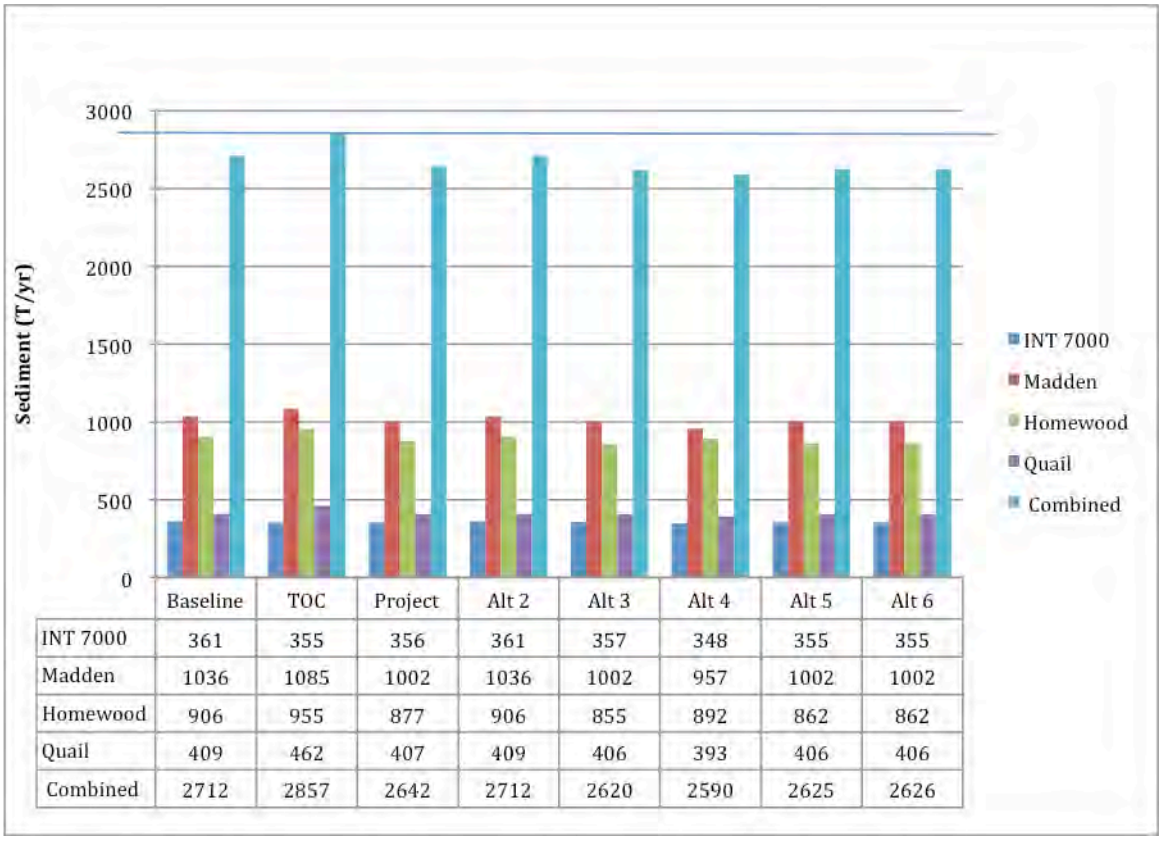
Improvement upon existing channel conditions, surface water quality and stormwater quality will result from implementation of the Project, and as such, potential incremental effects will not result in cumulatively considerable impacts to hydrology and water resources. Cumulatively the Project is expected to provide direct beneficial effects to beneficial uses and surface water quality in the Homewood, California area through reductions in impervious surfaces and resultant runoff quantity and the active treatment of stromwater prior to infiltration to groundwater. The Project will participate in TRPA EIP Project No. 996 in cooperation with Caltrans to install an off-site stormwater treatment system. Other benefits of the Project include: reduced effects from surface parking and snowmelt from parking lots, landscaping with goals of water conservation and bioretention for stormwater treatment, along with indirect effects from improved site management that reduces airborne contaminants.

Land use changes will occur both inside and outside of the Project area in each of the four watersheds. Four actions are assumed to occur outside of the Project area and these actions are incorporated into the No Project (Alternative 2), the Proposed Project (Alternative 1) and the alternatives. The land coverage changes within the Project area are detailed in Chapter 14, Geology, Soils and Seismicity. The four actions assumed for outside of the Project area include: new homes will be built, existing homes will have water quality BMP retrofits (BMP), existing commercial buildings will have water quality BMP retrofits, and environmental improvement projects will be completed by Placer County and Caltrans. Land coverage will be maintained under Alternative 2 and reduced under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6.

The HMR CWE analysis modeled proposed reductions in existing land coverage to result in decreases in sediment yield from the Madden Creek, Homewood Creek and Quail Lake Creek watersheds and Intervening Zone 7000. Figure 15-17 illustrates the sediment yields for whole watersheds as compared to the Total Watershed TOCs. As displayed in Figure 15-17, the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 will reduce Total Watershed sediment yields from the four watersheds as compared to existing conditions. As compared to the Total Watershed TOCs, sediment yields modeled for conditions of the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 will not exceed Total Watershed TOCs for Madden Creek, Homewood Creek or Quail Lake Creek watersheds and Intervening Zone 7000, noting that the modeled sediment yield in Intervening Zone 7000 approaches the TOC and is within the expected range of error for the HMR CWE analysis. The development and redevelopment actions defined by the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 could reduce combined sediment yields to Lake Tahoe by approximately 69 T/yr for cumulatively beneficial effects to surface water quality and beneficial uses.

As further explained in Appendix W, the HMR CWE analysis also modeled the range of proposed conditions that would be reflected under build-out of maximum allowable base land coverage as permitted under a Bailey Classification System revised by the 2007 Soil Survey (NRCS 2007). Exceedance of the TOC for Intervening Zone 7000 is not measured under forthcoming TRPA allowable base land coverage limitations.

Figure 15-17. Sediment Yields (T/yr) for Total Watershed vs. Total Watershed TOCs



	Baseline	TOC	Project	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
INT 7000	361	355	356	361	357	348	355	355
Madden	1036	1085	1002	1036	1002	957	1002	1002
Homewood	906	955	877	906	855	892	862	862
Quail	409	462	407	409	406	393	406	406
Combined	2712	2857	2642	2712	2620	2590	2625	2626

Source: IERS 2010

Note: Existing condition is termed "baseline" in Figure 15-17. The terms are used interchangeably.

Cumulative impacts to water resources are measured at a level of less than significant. Based on proposed phasing, future projects will be implemented over a number of years, minimizing the possibility for overlapping effects. Other projects in the Homewood, California watersheds and the Lake Tahoe Basin will be subject to similar programmatic requirements (TRPA and NPDES permit regulations, SWPPPs, regional and community stormwater treatment initiatives, pre- and post-project water quality and BMP effectiveness monitoring) and performance standards (revegetation success criteria, TMDL load reductions and stormwater treatment performance and BMP effectiveness) and thereby avoid, reduce and minimize the potential for cumulative adverse impacts. Mitigation measure HYDRO-1a requires post-project monitoring of BMP effectiveness, revegetation success and storm water treatment system performance. Should monitoring results measure impacts to surface or ground water resources from the Project, remedial

actions have been identified to avoid, reduce or further mitigate incremental contributions to cumulative effects.

Mitigation: No additional mitigation is required.

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16.0 PUBLIC SERVICES AND UTILITIES

16.1 ENVIRONMENTAL SETTING

16.1.1 Public Water Supply

Information on the existing water supply in the Project area and vicinity is derived largely from the *Homewood Mountain Resort Water Supply Assessment* (Nichols Consulting Engineers 2010). This section discusses two types of water used in the Project area: domestic and raw water. Domestic water has been treated to meet California Department of Health Services (DHS) standards, whereas raw water is untreated and supplied directly from its source. Domestic water includes water for residential, commercial, retail, maintenance, and landscape irrigation. Domestic water and raw water can be supplied from groundwater wells or surface water. Surface water sources include diversions from Lake Tahoe and streams.

The Madden Creek Water Company (MCWC), a private water utility in Tahoma, California, provides approximately 43.7 million gallons (134 acre-feet) of domestic water per year from groundwater sources to 160 service connections in the North Base area, Mid-Mountain Base area, and Project vicinity. The water source for the MCWC is the Silver Street Well, located in Homewood. A DHS evaluation found that the Silver Street Well is vulnerable to contamination from sewer collection systems (DHS 2003).

The Tahoe City Public Utilities District (TCPUD) McKinney-Quail Water Service Area provides domestic water to the South Base area. The McKinney-Quail Water Service Area is functionally isolated from other portions of the TCPUD service area, and provides 125.5 million gallons (385 acre-feet) per year to 453 service connections, with 95.5 – 60.3 million gallons (293-185 acre-feet) from groundwater from the Crystal Way Well, and 65.2 millions gallons (200 acre-feet) from Lake Tahoe (Nichols Consulting Engineers 2010).

Groundwater produced from the Crystal Way Well is normally sufficient to meet winter demand, but supply is augmented by pumping water from Lake Tahoe to meet summer peak demand (Nichols Consulting Engineers 2010). The Crystal Way Well produces 500 gallons per minute from, and pumps from Lake Tahoe provide 300 gallons per minute. Total capacity of the water supply system is 1.15 million gallons (3.5 acre-feet) per day and there is a peak day demand of 0.75 million gallons (2.3 acre-feet) per day. The system has a 28 million gallon (85.9 acre-feet) storage tank (TCPUD 2009).

Infrastructure for the McKinney-Quail Water Service Area water system is near the end of its service life and many elements are undersized to meet current requirements. Regulatory mandates for surface water treatment, water quality source redundancy and fire protection have changed since the system was designed. To meet critical water deficiencies, TCPUD prepared a 5-year, $26.2 million Capital Improvement Plan (CIP) to replace and upgrade its facilities through 2013. In the Project area, the CIP includes the McKinnney-Quail Secondary Source Projects to meet local, State, and federal requirements with a permanent surface water treatment facility for diversions from Lake Tahoe. Planning and designs are scheduled to be completed in 2010 with construction beginning in 2011. The TCPUD plans to construct a new water treatment plant (WTP) in 2012 to replace the existing temporary WTP in this area (Homolka, 2010).

Snowmaking constitutes the largest existing demand for water at HMR. Snowmaking operations at HMR currently cover approximately 23.8 acres and use 14.2 million gallons (43.6 acre-feet) per year (assuming

three feet of total artificial snow cover per season). The current water pumping capacity is 1,300 gallons per minute. Water supplies available for snowmaking are (Hoopingarner 2010, Nichols Consulting Engineers 2010):

- The TCPUD McKinney Well, currently producing raw water at 300 gallons per minute, and tested by TCPUD as capable of producing 1,000 gallons per minute;
- TCPUD domestic water from the Crystal Way Well and Lake Tahoe, supplied to the South Base area at 300 gallons per minute, available from 6:00 PM to 6:00 AM (requires the use of a cooling tower);
- HMR well in the North Base area gravel parking lot, not currently operating but capable of producing raw water at 800 gallons per minute. When operational, flows are restricted to 500 gallons per minute due to the size of the pipe on the discharge side of the well pump and the tank in the pump house.
- MCWC domestic water supplied at 300 gallons per minute, available from 6:00 PM to 6:00 AM.

16.1.2 Wastewater

TCPUD provides wastewater removal to about 7,540 customers, including the Project area. Homewood is within the boundaries of Sewer Assessment District A53 and the West Shore Export II conveyance. TCPUD has a 5-year CIP for its sewerage system to replace and improve facilities. The CIP period runs from 2009 to 2013 and includes improvements budgeted at $6.04 million (TCPUD 2009).

The TCPUD delivers wastewater to the Tahoe-Truckee Sanitation Agency (TTSA), which operates a 9.6 million gallon per day advanced Water Reclamation Plant in Martis Valley north of the Lake Tahoe Basin. The TTSA manages the Truckee River Interceptor (TRI), a 17-mile long pipeline that carries wastewater out of the Lake Tahoe Basin from Tahoe City to the Water Reclamation Plant. The TTSA plant provides primary and secondary treatment, phosphorus removal, biological nitrogen removal, disinfection, and effluent filtration. Final effluent polishing is achieved by routing through a Soil Aquifer Treatment system, having the soil remove additional constituents as the effluent percolates through.

16.1.3 Reclaimed Water

The Porter-Cologne Water Quality Control Act of 1970 prohibits the use of reclaimed wastewater within the Lake Tahoe Basin. Wastewater is transported out of the Basin to the TTSA plant in Martis Valley, and no reclaimed water is imported back into the Basin.

16.1.4 Solid Waste

Eastern Placer County is primarily rural, located in the Tahoe National Forest. The household and commercial waste stream consists largely of glass, cardboard, paper, plastic, metal, organics, and construction debris. According to CalRecycle, the average household consists of 2.6 persons and the average resident generates seven pounds of waste per day. The Placer County Facility Services Department, Environmental Engineering Division administers and manages the countywide solid waste programs. Programs include garbage collection contracts, education and outreach, the Eastern Regional Materials Recovery Facility (MRF), the Household Hazardous Waste Facility, recycling centers, and satellite recycling bins (Placer County 2010).

Construction and demolition debris is waste material generated in the process of construction or demolition of structures, typically includes concrete, asphalt, wood, metals, gypsum wallboard, roofing, and land clearing debris such as stumps, woody material rocks, and dirt. Construction and demolition

waste varies greatly by structure type. Nationally, residential construction generates 2.4 – 11.3 (4.4 average) pounds per square foot of new residential construction, and non-residential construction generates 1.6 – 4.2 (3.9 average) pounds per square foot. Demolition of non-residential structures generates an average of 155 pounds per square foot (Franklin Associates 1998). In California, construction and demolition debris accounts for up to 22% of the waste stream by volume, and 11% by weight. The California Integrated Waste Management Board (CIWMB, now CalRecycle) identified construction and demolition materials as a top priority for waste reduction under its 2005 Action Plans (California Integrated Waste Management Board 2002, 2005, CalRecycle2009).

Solid waste collection services are provided by the Tahoe-Truckee Sierra Disposal Company, Inc. (TTSD) for the west shore of Lake Tahoe from Emerald Bay to Crystal Bay. TTSD transports materials to the MRF, where they are sorted to meet California's mandatory solid waste diversion requirements. The MRF is located on property owned by Placer County and the County between Truckee and Squaw Valley west of the Truckee River, contracts with Eastern Regional Sanitary Landfill, Inc. (ERSL) to conduct the day-to-day operations and maintenance of the Facility. The MRF receives, separates, processes and markets recyclable materials removed from the waste stream. Non-recyclable materials are sent to the Lockwood Regional Landfill in Nevada. The MRF handles household recyclables, including plastics, aluminum, tin, glass, cardboard, newspaper, carpet, computers, "white goods," (i.e. refrigerators and freezers), wood waste, and lot clearing debris. Wood waste is chipped for mulch or biomass fuel, pine needles are chipped and used for slope stabilization, and inert materials are crushed for reuse as aggregate or in on-site land remediation. MRF staff evacuates any chlorofluorocarbon (CFC) or other refrigerants from white goods before marketing the materials as scrap metal (Placer County 2008, 2010). The MRF has a permitted capacity of 800 tons of material per day and 832 vehicles per day. In 2009, the facility received and processed nearly 63,000 tons of solid waste (approximately 29,000 tons of which were from unincorporated Placer County).

Non-hazardous solid waste is consolidated and transported to the Lockwood Regional Landfill, a 1,535-acre municipal solid waste facility located in Storey County, Nevada. TTSD has a 30-year contract (1995-2025) with a 30-year option to dispose of non-hazardous solid waste at the Lockwood Regional Landfill. The landfill does not accept hazardous waste. Lockwood Regional Landfill has a capacity of up to 250 years (Placer County 2008).

The Eastern Regional Landfill, ,is a closed landfill and does not accept waste. The ERL occupies 65.6 acres adjacent to the MRF. A separate 32 acres area is currently being reclaimed using inert materials (crushed rock and concrete) diverted from the MRF (Placer County 2010).

Hazardous waste from households and Conditionally Exempt Small Quantity Generators is collected at a permanent Household Hazardous Waste Facility, located next to the MRF. The facility is open, by appointment, during ten, two-day collection days each year. Materials accepted include paint, paint products, household batteries, car batteries and fluids, pesticides, household cleaners, used oil and filters, sharps, and pharmaceuticals. The facility is operated subject to the Permit-by-Rule requirements under the jurisdiction of Placer County Environmental Health Services and as an Approved Home-Generated Sharps Consolidation Point under the jurisdiction of the California Department of Public Health, Medical Waste Management Program. Hazardous wastes are collected, transported, and disposed of by a licensed contractor at other facilities outside of the region (Placer County 2010).

16.1.5 Electricity, Gas and Energy

NV Energy (formerly known as Sierra Pacific Power Company) provides electric service in the Project area. As a regulated utility based in Nevada, NV Energy is required to serve projects within its designated service area, which includes 54,500 square miles, 2.4 million people, and 1.194 million

customers in Nevada and northeastern California, including 46,000 customers in the Lake Tahoe area (NV Energy 2010).

NV Energy had a peak generating capacity of 5,581 megawatts (MW) in 2009, and the 2009 peak load was 7,140 MW; thus the utility is able to generate about 78% of the power it supplies. The remaining supplies are purchased on an as-needed basis (NV Energy 2010). Provided that electricity is available for purchase, no shortfall in electrical energy supply is anticipated in the future.

The NV Energy substation serving the Project area is located in Tahoe City, with aboveground power lies running to Homewood roughly parallel to West Lake Boulevard. The Tahoe City substation is nearing its maximum load capacity, and any large additional loads will require an upgrade of the facility (Hutton 2009).

Natural gas service in the Lake Tahoe Basin is provided by Southwest Gas Corporation, which also serves customers in portions of Arizona, Nevada, and portions of northeastern and southeastern California (Southwest Gas Corporation 2009, CNN Money 2009). Southwest Gas Corporation acquires its gas supplies from a variety of sources – the company used 46 suppliers in 2008 and has an active program to seek a diversity of supply. The company is the largest distributor of natural gas in the States of Arizona and Nevada, and no shortfalls in natural gas supply are anticipated in the future.

16.1.6 Parks and Recreation

Recreational facilities are described in detail in Chapter 18.

16.1.7 Schools

The Tahoe-Truckee Unified School District (TTUSD) provides public school services for elementary through high school (grades K–12). TTUSD encompasses more than 720 square miles and serves approximately 4,114 students (2008-2009 school year) in Nevada, Placer, and El Dorado Counties, making it one of the geographically largest districts in California (Education Data Partnership 2010, TTUSD 2009). TTUSD has two comprehensive high schools, one continuation high school, two middle schools, five elementary schools, and one K–12 alternative school. Their respective attendance areas are divided between the Truckee area and the Lake Tahoe Basin.

Table 16-1 summarizes current enrollment and residual school capacity for the 2009-2010 school year at the school facilities that would serve students from the Project area (TTUSD Facilities Master Plan, August 22, 2007; Education Data Partnership 2010; TTUSD 2009). In August 2007, TTUSD adopted a Facilities Master Plan, which identifies major facility issues and detailed information on future school needs, options, and costs (TTUSD 2007). Using historic and current enrollment data, student resident location, birthrates, and the anticipated impact of future residential development and demographic trends, enrollment projections were provided through the 2010–2011 school year. The K–12 enrollment projection for the Tahoe area shows that enrollment is expected to decline by 4.67% from 2006 to 2011.

Table 16-1

Tahoe Area K-12 Current School Enrollment and Capacity

School	Grades	Enrollment 2009-2010	Capacity	Residual Capacity 2009-2010
Tahoe Lake Elementary School, 375 Grove Street, Tahoe City	K-3	291	304	13
North Tahoe Elementary School, 2945 Polaris Road, Tahoe City	4-5	198	535	40
North Tahoe Middle School, 2945 Polaris Road, Tahoe City	6-8	277		
North Tahoe High School, 2945 Polaris Road, Tahoe City	9-12	336	637	301
Total	**K-12**	**1,102**	**1,476**	**354**

Source: TTUSD 2007, Education Data Partnership 2010

16.1.8 Fire Protection and Emergency Medical Services

Calfire is responsible for wildfire suppression in the upper mountain portion of the Project area. The lower portion of the Project area is within the service boundary of the North Tahoe Fire Protection District (NTFPD), which has primary responsibility for structure fire protection and related emergency services (NTFPD 2009). The NTFPD provides service through six stations and 50 uniformed and support personnel to nearly 20,000 people in a 31-square-mile area that includes Placer County portions of the Lake Tahoe Basin. NTFPD provides fire protection, fire prevention, fire safety education, emergency medical service, and other emergency response services in its service area and has mutual, automatic aid agreements with other fire agencies throughout the area (NTFPD 2009).

Calls for fire or emergency service are typically received by the Placer County Sheriff Department (PCSD) Office and directed to one of the NTFPD fire stations. The station nearest to the Project area is Station #53, located at 5425 West Lake Boulevard (SR 89), adjacent to the South Base area. Station #53 is equipped with a water tender, engine company truck, and ambulance. Two firefighters normally staff Station #53, at least one of who has received emergency medical technician training (Martin 2009.) If needed, Station #53 is assisted from the NTFPD fire stations at Tahoe City and Meeks Bay.

The Insurance Service Organization (ISO) Public Protection Classification (PPC) program assigns ratings to locations that reflect the level of fire protection services expected in a given area. The ISO is an independent organization that serves insurance companies, fire departments, insurance regulators, and others by providing information about risk. The PPC program provides information and analysis for fire departments and public officials to plan for improvements. ISO staff analyze relevant data and assign a PPC value from 1 – 10. Class 1 represents exemplary fire protection, and Class 10 indicates that the area's fire-suppression program does not meet ISO's minimum criteria.

PPC ratings consider factors such as the proximity to a fire station and the ability of the fire station to provide services to the area, fire alarm and communications systems, dispatching systems, fire department equipment and staffing, training, geographic distribution of fire companies, water supply systems, condition and maintenance of hydrants, and the amount of available water compared with the amount needed to suppress fires. In general, the price of fire insurance in a community with a lower PPC rating is

substantially lower than in a community with a higher PPC rating. The ISO PPC classification for Homewood is either PPC Class 4 or PPC Class 9, with the lower PPC based on closer proximity to hydrants. Protection from wildland fire hazards is discussed in Chapter 17 - Hazardous Materials and Public Safety.

16.1.9 Sheriff and Police

Police protection services in the Project area is provided by the Placer County Sheriff's Department (PCSD). The PCSD has a service area of approximately 125 square miles, stretching from Tahoma on the southern boundary, around the northern and western shores of Lake Tahoe to the California/Nevada State line, north to Truckee, and west to the crest of the Sierra Nevada.

Approximately 35 full-time sworn PCSD officers serve the Lake Tahoe area from the Tahoe Vista substation located at 2501 North Lake Boulevard in Tahoe City. *Placer County General Plan* Policy 4.H.1 states a goal to provide one officer per 1,000 persons in the County. Due to the transient nature and widely fluctuating seasonal populations, there is no specific service ratio goal for the Lake Tahoe area (Granum, pers. comm., 2009). Normally three officers are on patrol at one time. Response times to the Project area vary depending upon weather conditions and other calls for service.

16.1.10 Library Services

Library services are provided in the Homewood, California area by the Placer County Library Department. Placer County operates a branch library in Tahoe City at 740 North Lake Boulevard. The library is open Tuesday through Saturday (Placer County 2009).

16.1.11 Telecommunications Service

The Project area is in the AT&T service area. AT&T provides telecommunications services, including local, long distance, DSL, wireless, data networks, satellite television, and directory, to the Lake Tahoe area (AT&T 2009). AT&T communication infrastructure has sufficient capacity to meet expected future demands for service.

16.1.12 Other County/Community Services

The Homewood Post Office is located at 5375 West Lake Boulevard. Street delivery service is not available in Homewood and mail is delivered to post office boxes for pickup at the station. The post office is open Monday-Friday and has excess capacity to meet increased service demands (Brown 2009). Approximately 500 postal customers currently have boxes at the Homewood Post Office. Of the 1,217 post office boxes in the Homewood Post Office, approximately 500 are currently in use by customers.

16.2 REGULATORY SETTING

TRPA *Code of Ordinances* Chapter 27 and the *1994 Placer County General Plan* provide regulations for utilities and public services. The Public Facilities and Services Elements articulate policies that guide the provision of adequate public facilities and services. Policy 4.A.1 requires new developments to fund its fair share of the construction of new public facilities. Policy 4.A.2 states that the County shall ensure that adequate public facilities and services are available to serve new development (Placer County 1994).

16.2.1 Public Water Supply

Public Law 101-618 (Settlement Act) and the Truckee River Operating Agreement (TROA), when it is implemented, govern diversions of surface water from the Lake Tahoe Basin and the Truckee River Basin. Settlement Act §204 limits California water diversions in the Lake Tahoe Basin to 23,000 acre-feet per year. TCPUD is granted surface water diversions from Lake Tahoe and operates in accordance with the Settlement Act, but the specific water rights of TCPUD and other suppliers has not been finalized (Nichols Consulting Engineers 2010).

The TROA was executed by the State of Nevada and State of California in September 2008, but has not yet been implemented. The TROA provides for a quantified allocation of water for California and Nevada. The State Water Resources Control Board (SWRCB) has held water right applications in abeyance pending TROA implementation. It is expected that the SWRCB will resume processing water right applications when allocations are finalized (Nichols Consulting Engineers 2010). Consequently, for planning and disclosure purposes, the effect of Project water use in relation to the TROA is considered in this document.

Tahoe Regional Planning Agency

TRPA Code of Ordinances §27.3A requires basic water services (adequate water rights and supply systems) for projects designed or intended for human occupancy, including reconstruction or expansion projects. Specifically, Ordinance §27.3A states that development requiring water shall not be approved unless:

1. There is an adequate water supply within an existing water right recognized under the laws of the State in which the use is to occur; or
2. Adequate water rights recognized under the laws of the State in which the use is to occur are furnished with the development (TRPA 2009).

TRPA Code of Ordinances §27.3.B(1) states that the applicable local, state, federal, or utility district standards shall determine adequate fire flow standards. If no such standards exist, Ordinance §27.3.B(1) requires 3,500 to 6,000 gallons per minute over a three to six hour period at 20 pounds per square inch (psi) residual pressure for the Project area (TRPA 2009).

The TRPA *Goals and Policies*, Chapter VI – Public Services and Facilities Element, includes several goals and policies related to public water supply:

Goal #1: Public services and facilities should be allowed to upgrade and expand to support existing and new development consistent with the *Regional Plan*.

<u>Policy 1:</u> Public services and facilities should be allowed to upgrade and expand to support consistent with the Land Use Element of the *Regional Plan* and federal, State, and local standards.

<u>Policy 3:</u> All new development shall employ appropriate devices to conserve water and reduce water consumption. Existing development shall be retrofitted with water conservation devices on a voluntary basis in conjunction with a public education program operated by the utility districts.

Goal #2: Consider the existence of adequate and reliable public services and facilities in approving new development under the Plan.

Policy 1: No additional development requiring water should be allowed in any area unless it can be demonstrated that there is adequate water supply within an existing water right.

Policy 3: No additional development requiring water should be allowed in any area unless there exists adequate storage and distribution systems to deliver an adequate quantity and quality of water for domestic consumption and fire protection.

California

Under California State Laws SB 610 (Water Supply Assessments) and SB 221 (Written Verifications of Water Supply), new development projects are required to prepare a Water Supply Assessment (WSA) to identify the source and quantity of water available prior to the publication of a draft EIR. SB 221 and SB 610 apply to residential development projects with 500 or more dwelling units or projects that increase a public water system's existing service connections or demand by 10%. Under Water Code §10912(a)(7), SB 610 applies to projects that demand an amount of water equivalent to, or greater than, the amount of water required by a 500-unit project (California Department of Water Resources 2003).

Local

The MCWC provides water to the North Base area and 160 service connections. The TCPUD provides municipal water to the McKinney-Quail Water Service Area, which serves the South Base area. The TCPUD Water Ordinance promulgates the rules, regulations, conditions of service, and rates for water service. Water Ordinance §3 stipulates the following conditions that must be met for new developments to receive water service connection:

- The property to be served is in the service area of TCPUD;
- A District water main of adequate capacity and pressure, as only determined by the District, exists in a publicly traveled right-of-way, or District easement abutting a principal boundary of the land to be served; or adequate mains, pumps and storage facilities, as only determined by the District, are constructed; and
- The customer shall make application for said service and pay the charges as provided in the Ordinance.

TCPUD Water Ordinance §9 establishes requirements for the size, alignment, materials of construction, and construction methods of water supply infrastructure.

TCPUD Water Conservation Ordinance No. 106 requires plumbing fixtures for new construction to meet the following low flow requirements:

- Toilets: 1.6 gallons/flush;
- Showers: 3.5 gallons/minute;
- Faucets: 4 gallons/minute; and
- Water pressure shall not exceed 60 psi at ground floor level.

The *1994 Placer County General Plan* includes the following Goal and Policies relating to water supply:

Goal 4.C. of the Public Facilities and Services Element of the Placer County General Plan is to ensure the availability of an adequate and safe water supply and the maintenance of high-quality water in water bodies and aquifers used as sources of domestic supply.

- 4.C.1. The County shall require proponents of new development to demonstrate the availability of a long-term, reliable water supply. The County shall require written certification from the service provider that either existing services are available or needed improvements will be made before occupancy.
- 4.C.2. The County shall approve new development based on the following guidelines for water supply:

  a. Urban and suburban development should rely on public water systems using surface supply.

  b. Rural communities should rely on public water systems. In cases where parcels are larger than those defined as suburban and no public water system exists or can be extended to the property, individual wells may be permitted.

  c. Agricultural areas should rely on public water systems where available, otherwise individual water wells are acceptable.
- 4.C.3. The County shall encourage water purveyors to require that all new water services be metered.
- 4.C.4. The County shall require that water supplies serving new development meet State water quality standards.
- 4.C.5. The County shall require that new development adjacent to bodies of water used as domestic water sources adequately mitigate potential water quality impacts on these water bodies.
- 4.C.6. The County shall promote efficient water use and reduced water demand by:
  a. Requiring water-conserving design and equipment in new construction;
  b. Encouraging water-conserving landscaping and other conservation measures;
  c. Encouraging retrofitting existing development with water-conserving devices; and
  d. Encouraging water-conserving agricultural irrigation practices.

16.2.2 Wastewater

TRPA Code of Ordinances §27.4 requires new, reconstruction, or expansion projects designed for human occupancy and that generate wastewater, to be served by treatment and export facilities where wastewater is transported directly from the parcel to a treatment plant (TRPA 2009).

Wastewater services for the Project area will be provided by the TCPUD and the TTSA. The TCPUD Sewer Ordinance (TCPUD 2000) establishes rules and regulations pertaining to the use, maintenance, and charges for the sewage works in the boundaries of the TCPUD, and requires connections to public sewers. TTSA's Ordinance 3-90, as amended, contains rules, regulations, and procedural requirements for the use of TTSA's sewerage system.

The *1994 Placer County General Plan* contains the following Goal and Policies applicable to wastewater:

Goal 4.D. To ensure adequate wastewater collection and treatment and the safe disposal of liquid and solid waste.

- 4.D.2. The County shall require proponents of new development within a sewer service area to provide written certification from the service provider that either existing services are available or needed improvements will be made before occupancy (Placer County 2004).
- 4.D.3. The County shall discourage extension of sewer service outside of city spheres of influence and community plan areas, except in limited circumstances to resolve a public health hazard resulting from existing development, or where there is a substantial overriding public benefit.
- 4.D.4. The County shall promote efficient water use and reduced wastewater system demand by:
    a. Requiring water-conserving design and equipment in new construction;
    b. Encouraging retrofitting with water-conserving devices; and
    c. Designing wastewater systems to minimize inflow and infiltration to the extent economically feasible.

16.2.3 Solid Waste

Volume 40 of the Code of Federal Regulations, Part 258 contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the locations, operation, design, groundwater monitoring, and closure of landfills.

The California Integrated Waste Management Act (AB 939, 1989) contains regulations affecting solid waste disposal in California. AB 939 requires that Counties prepare Integrated Waste Management Plans to implement landfill diversion goals and prepare and adopt Source Reduction and Recycling Elements (SRRE). The SRRE must establish a program for managing and reducing waste generated in the County.

SB 1016 (2007) amended portions of the California Integrated Waste Management Act. The Act allows the Department of Resources, Recovery and Recycling (CalRecycle) to use per capita disposal as an indicator in evaluating compliance with the requirements of AB 939. Jurisdictions track and report their per capita disposal rates to the CIWMB.

Solid waste facilities are required to obtain a Solid Waste Facilities Permit from the Placer County Local Enforcement Agency and obtain Waste Discharge Requirements from the California Regional Water Quality Control Board.

The Solid Waste Reuse and Recycling Access Act (AB 1327, 1991) requires jurisdictions to adopt ordinances requiring development projects to provide adequate storage area for collection and removal of recyclable materials. Placer County adopted such an ordinance (Municipal Code Section 8.16.080).

The TRPA does not regulate solid waste. Placer County Ordinance 8.16.266 requires waste receptacles to be bear-resistant. The *1994 Placer County General Plan* contains the following Goal and Policies that apply to solid waste:

Goal 4.G: To ensure the safe and efficient disposal or recycling of solid waste generated in Placer County.

- 4.G.1. The County shall require waste collection in all new urban and suburban development.
- 4.G.2. The County shall promote maximum use of solid waste source reduction, recycling, composting, and environmentally-safe transformation of wastes.

16.2.4 Electricity, Gas and Energy

Under Appendix F of the CEQA Guidelines, the State of California sets forth goals for energy conservation, including decreasing per capita energy consumption and reliance on fossil fuels, and increasing reliance on renewable energy sources. CEQA requires EIRs to describe potential energy impacts of projects, with an emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (PRC §21100(b)(3)).

HMR facilities will be required to comply with Title 24 of the California Code of Regulations (CCR). TRPA does not directly regulate the provision of electric or natural gas services in the Lake Tahoe Basin. *TRPA Code of Ordinances* §27.5 requires new, reconstruction, and expansion projects to be served by adequate electrical supply facilities (TRPA 2009). The *1994 Placer County General Plan* contains the following Goal and Policies that apply to energy:

> Goal 2.G: To increase the efficiency of energy use in new and existing homes, with a concurrent reduction in housing costs to Placer County residents.
>
> - 2.G.1. All new dwelling units shall be required to meet current State requirements for energy efficiency. The retrofitting of existing units shall be encouraged.
> - 2.G.2. New land use patterns should encourage energy efficiency, to the extent feasible.

16.2.5 Fire Protection and Emergency Medical Services

TRPA does not regulate fire protection and emergency medical services. Under *1994 Placer County General Plan* Policy 4.I.2, the County strives to meet the following response time standards for calls for emergency and fire protection services:

- 4 minutes in urban areas,
- 6 minutes in suburban areas,
- 10 minutes in rural areas.

1994 Placer County General Plan Policy 4.I.1 states that the County strives to maintain the following minimum fire protection standards based on ISO PPC program ratings:

- ISO PPC Class 4 in urban areas,
- ISO PPC Class 6 in suburban areas,
- ISO PPC Class 8 in rural areas.

The *1998 West Shore Area General Plan* states the following goal and policies related to fire protection:

> VI. Safety Element. Goal 1. To protect the lives and property of the citizens of the West Shore Area General Plan from unacceptable risks associated with seismic, flooding, or wildfire hazards.
>
> > 6. Ensure that all proposed developments are reviewed for fire safety standards by all local fire agencies responsible for its protection, including providing adequate water supplies and ingress and egress.
> >
> > 8. Inform residents and visitors of the wildfire hazard associated with occupancy in the basin. Encourage use of fire resistant materials and fire preventative techniques when constructing structures, especially in the highest fire hazard areas. Manage forest fuels to be consistent with State laws ad other goals and policies of this Plan.

16.2.6 Police Protection

TRPA does not regulate police protection services. *Placer County General Plan* Policy 4.H.1 states a goal to provide one officer per 1,000 persons in the County. Due to the transient nature and widely fluctuating size of the population in the Lake Tahoe area, there is no specific service ratio goal for the Lake Tahoe area (Granum, pers. comm., 2009).

Under Policy 4.H.2, the PCSD strives to meet the following response time standards:

- 6 minutes in urban areas,
- 8 minutes in suburban areas,
- 15 minutes in rural areas,
- 20 minutes in remote rural areas.

16.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

For the purposes of this document, an impact to public services and utilities is defined as a physical change to the existing conditions. An impact is determined to be significant if environmental constraints do not allow for the provision of adequate public services or utilities.

Table 16-2 presents the evaluation criteria for Public Services and Utilities. These criteria are drawn primarily from local plans, adapted where necessary to reflect CEQA and TRPA requirements. The stated applicable points of significance determine whether implementing the Project will result in a significant impact. These points of significance are based upon Appendix G of the State CEQA Guidelines and the TRPA Initial Environmental Checklist. A Public Services and Utilities impact is significant if implementation of the Project exceeds the point of significance shown in Table 16-2.

The EIR/EIS does not address certain CEQA and TRPA evaluation criteria for on-site sewage systems because the Project Team determined during Project planning and development that the criteria are not applicable to the Project.

CEQA Appendix G Checklist item XVI-c (Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects) is addressed in Chapter 11 – Hydrology and Water Quality, Impact HYDRO-2.

Table 16-2

Evaluation Criteria with Point of Significance - Public Services & Utilities

Evaluation Criteria	Significance Threshold	Justification
PSU-1. Will the Project increase demand or exacerbate peak period service demand of fire, law enforcement, schools, government services, water, sewage treatment and disposal, communication systems, solid waste, gas, or electric to such a degree that service standards and objectives cannot be maintained or new facilities are needed that could cause significant environmental effects?	a) Increased demand for personnel, equipment, or infrastructure that cannot be met by existing staffing or facilities b) Demonstrated need for expanded or new infrastructure c) Inconsistency with TROA	CEQA Appendix G Checklist XIV (a) and XVI (b-g); TRPA Initial Environmental Checklist II (14a-d, 15 a-b, and 16a-d, f); *TRPA Code of Ordinances* and *Regional Plan* Goals and Policies, Chapter 27; *Placer County General Plan* Public Facilities and Services Element, Goal 4.D, Policies 4.D.2, 4.D.3, 4.D.4.; TROA
PSU-2. Does the Project have the potential to damage existing utility infrastructure?	Damage to utility infrastructure that is not repaired during Project construction	TRPA Initial Environmental Checklist II (16 a)
PSU-3. Will Project construction interfere with law enforcement and fire protection services?	Loss of emergency services access such that access and response time standards are not met	TRPA Initial Environmental Checklist II (14a, b); *Placer County General Plan* Policies 4.H1, 4.H2, 4.I.1, and 4.I.2.

Source: Hauge Brueck Associates 2009.

Note: CEQA Appendix G Checklist item XVI-c (Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects) is addressed in impact HYDRO-2.

16.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

IMPACT: **PSU-1. Will the Project increase demand or exacerbate peak period service demand of fire, law enforcement, schools, government services, water, sewage treatment and disposal, communication systems, solid waste, gas, or electric to such a degree that service standards and objectives cannot be maintained or new facilities are needed that could cause significant environmental effects?**

Analysis: *No Impact; No Project (Alternative 2)*

Alternative 2 (No Project) involves no new land uses, facilities, or construction activities, and will create no demand for fire or police protection services, schools, water, sewage treatment and disposal, communication systems, solid waste disposal, energy (gas, or electric) or other public services and utilities. Consequently, Alternative 2 would have no impact on public services and utilities.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

Water Supply. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 are expected to increase demand for domestic and raw water. Alternative 4 would result in a net decrease in total water demand due to the cessation of snowmaking operations, but would have a small increase in demand for domestic water.

This impact analysis for water supply focuses on the volume and rate of new water demand of the Project. Volume refers to the total quantity of water required by the Project, and is expressed as acre-feet per year. Volume is related to legal water rights and delivery capacity available to supply the Project. Rate refers to the flow of water to be supplied at one time to meet the various needs of end users, and is expressed as gallons per minute. Rate of flow is related to the production and conveyance capacity of wells, pumps, pipelines, and other infrastructure. Rate of flow estimates are important for planning and designing for the necessary capacity of the water delivery infrastructure. Both analyses rely on relatively conservative assumptions.

Nichols Consulting Engineers has prepared a WSA for the Project: *Draft Final Homewood Mountain Resort Water Supply Assessment* (Nichols Consulting Engineers 2010). The Project Applicant retained Beaudin Ganze Consulting Engineers, Inc. and Snow Machines, Inc. to assess Project demand and rate of flow for snowmaking (Beaudin Ganze Consulting Engineers, Inc. 2007; Snow Machines, Inc. 2010). Estimated peak day and annual total water demand for commercial, retail, and single- and multi-family residential uses (including on-site residences and affordable housing developed by the Project Applicant and Project-related workforce/affordable housing located off-site) is derived from Beaudin Ganze Consulting Engineers, Inc. (2007) and Nichols Consulting Engineers (2010) data.

Water volume demand calculations are based on occupancy at buildout, applying empirically derived demand factors from similar projects in the vicinity. The analysis assumes new plumbing fixtures would meet or exceed TCPUD Water Conservation Ordinance No. 106 requirements for new construction. Recent similar projects in the region consume an average of 0.14 acre-feet per year per residential and transient dwelling unit, and commercial/retail areas use 0.07 acre-feet per year per 1,000 square feet (Nichols Consulting Engineers 2010). For this impact analysis, commercial, skier support services, gondola terminal, and maintenance uses were included in the estimate of domestic water demand at the same rate as commercial/retail uses to provide a more conservative estimate. Rate of flow calculations are based on peak demand periods, such as the full operation of snowmaking equipment and full occupancy of Project facilities.

An estimate of domestic water consumption for Alternative 4 is based on average values for single-family homes obtained from the (United States Department of Agriculture [USDA] 2009, United States Geological Survey [USGS] 2009). California households use 0.5 – 1.0 acre-foot of water per year on average (USDA 2009). It was therefore assumed that each single family home would use 1.0 acre-foot of water for a total demand of 16 acre-feet. Individuals use between 80-100 gallons of water per day (USGS 2009). Assuming employees spend one-third of their day at work, 33 gallons of water per individual would be consumed at the commercial facility. Based on the daily trip rate for the commercial lot, it is estimated that 30 individuals will be employed at the facility.

If employees work 250 days per year, domestic water consumption would be 0.25 million gallons, or 0.77 acre-foot, per year.

Table 16-3 presents estimated domestic and snowmaking demand rounded to the nearest acre-foot. Estimated annual domestic water consumption for residential, commercial, and irrigation uses for the Proposed Project (Alternative 1) and Alternative 3 is 64 acre-feet, 17 acre-feet for Alternative 4, 80 acre-feet for Alternative 5, and 68 acre-feet for Alternative 6 (Table 16-3). Proposed Snowmaking operations, including existing and proposed terrain, is estimated to require 187 acre-feet per year (Snow Machines, Inc. 2010).

The TCPUD McKinney-Quail Water Service Area and MCWC currently provide approximately 14 acre-feet of domestic water per year to HMR (Tirman pers. comm. [B]). Snowmaking at HMR currently uses approximately 14.2 million gallons per year or 43.6 acre-feet per year (Snow Machines, Inc. 2010). The impact analysis assumes that new domestic water supply required to meet Project demands would come from a combination of MCWC and the TCPUD McKinney-Quail Water Service Area, and water for snowmaking would continue to be provided by a combination of TCPUD, MCWC, and HMR onsite sources.

As a result, during Project operation, the estimated annual total demand for domestic water use in the TCPUD McKinney-Quail Water Service Area is 449 acre-feet with the Proposed Project (Alternative 1) and Alternative 3, 402 acre-feet with Alternative 4, 465 acre-feet with Alternative 5, and 453 acre-feet with Alternative 6. A total of 187 acre-feet per year of raw water (60.8 million gallons) would be required for snowmaking operations under the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6.

The TCPUD McKinney-Quail Water Service Area, including the Crystal Way Well and surface diversions from Lake Tahoe, has sufficient available water rights to meet the expected increased demand for water due to the Project (Nichols Consulting Engineers 2010). TCPUD has been granted Lake Tahoe surface water diversions and operates in accordance with the Settlement Act, but allocations under the TROA have not been finalized (Nichols Consulting Engineers 2010). TCPUD expects to be allocated a sufficient amount of diversions to meet the demands of the Project and other users in the McKinney-Quail Water Service Area (Nichols Consulting Engineers 2010). However, because the TROA has not been implemented, the TCPUD and HMR would be required to demonstrate that water used for domestic consumption and snowmaking comply with a final allocation agreement. Consequently, the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 may have a significant impact on water supply and mitigation is required.

Table 16-3

Annual Water Demand by Alternative

Category	Alternative				
	1	3	4	5	6
HMR Master Plan Project Area					
Residential and Tourist Accommodation Units	329	329	16	441	361
Commercial/Retail and Ski Area Facilities (square feet)	105,000	105,000	15,000	105,000	95,000
Residential Water Use (acre-feet per year)[1]	46	46	16	62	51
Commercial/Retail and Ski Area Water Use (acre-feet per year)[2]	7	7	1	7	7
Landscape Irrigation (acre-feet per year)[3]	11	11	0	11	11
Subtotal New Domestic Water Demand (acre-feet per year)	**64**	**64**	**17**	**80**	**68**
Snowmaking Raw Water Demand (acre-feet per year)[4]	187	187	0	187	187
Total New Water Demand (acre-feet per year)	**251**	**251**	**17**	**267**	**255**
TCPUD McKinney-Quail Water Service Area					
Current Domestic Water Demand (acre-feet per year)	385	385	385	385	385
With Project Domestic Water Demand (acre-feet per year)	**449**	**449**	**402**	**465**	**453**
With Project Domestic + Snowmaking Water Demand (acre-feet per year)	**636**	**636**	**402**	**652**	**640**

Notes:

1 – 0.14 acre-foot (45,620 gallons) per year per residential and tourist accommodation unit (Nichols Consulting Engineers 2010).

2 – 0.07 acre-foot (22,810 gallons) per year per 1,000 square feet of commercial/retail and ski area facilities (Nichols Consulting Engineers 2010).

3 – Landscape irrigation demand of 10.5 acre-feet (3.4 million gallons) per year based on the State of California department of Water Resources Water Budget Workbook, Beta Version 1.0, December 17, 2009 (Nichols Consulting Engineers 2010).

4 – Expected supply includes raw and domestic sources (Nichols Consulting Engineers 2010).

The TCPUD water supply system infrastructure operates at capacity for its existing customers and does not have additional capacity available to serve the proposed South Base Area of the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6. In 2012, TCPUD plans to construct a new WTP to replace the existing temporary WTP in this area. According to the TCPUD, the new WTP would be sized for the District's domestic water needs, the proposed HMR South Base Area's domestic water needs, and likely would include some capacity for regional expansion to serve adjacent private water companies. Two alternatives for the new WTP are currently being studied. One would utilize the existing Chamber's Landing lake intake, with a new WTP, to be built at one of two potential locations, and includes approximately 1,200 feet of raw water pipe from the intake to the WTP and connections to the distribution system. The other alternative would be to retrofit and use the existing lake intake at McKinney Shores Homeowners Beach, with a new WTP facility located at the HMR South Base Area. This alternative may include approximately 2,400 feet of raw water pipe in addition to connections to the

existing distribution system (Homolka, 2010). Development of the new WTP and associated pipelines would be designed, evaluated and permitted by TCPUD under their existing Capital Improvement Program and according to their schedule, would occur prior to development of HMR's South Base area development (HMR MP Phase 2). TCPUD did not identify the need for any additional offsite infrastructure improvements to accommodate the proposed HMR MP implementation.

Calculations conducted for the MCWC indicate that MCWC facilities have water supply to serve the proposed HMR North Base area domestic water needs, but that some offsite improvements may be required to meet higher fire flows associated with the new development. The improvements proposed by MCWC include a new 500,000-gallon water tank and associated distribution pipelines and a new groundwater well in the vicinity of Sacramento Avenue to improve system reliability (Twomey, 2010).

TCPUD's fire flow capabilities are also deficient in the area adjacent to the South Base Area and require improvements to meet current fire flow requirements of 1,000 gallons per minute. While capital improvement projects are already planned by TCPUD for existing service, the South Base area will require a level of fire protection beyond TCPUD's typical requirements that would be addressed through additional improvements. According to TCPUD, these improvements can occur through one of three options. One option would be to construct approximately 7,500 feet of 12-inch pipe from the Quail #1 Tank to the existing distribution system in the South Base area. This option is less desirable due to the length of pipeline and because flow duration requirements may exceed the capabilities of the Quail #1 Tank. A second option would be to construct a new water storage tank at the northern end of the District's water system to serve the South Base area, and approximately 1,000 feet of 12-inch pipe from the tank to the South Base area. The third option would be to interconnect TCPUD's water system with the proposed HMR water tanks at the Mid-Mountain area.

According to HMR, the two 250,000 gallon water tanks proposed at the Mid Mountain area have been designed to provide adequate fire flows (volume and rate) necessary for the proposed HMR MP development at the Mid Mountain, South Base and North Base areas (Tirman, 12/30/10). If HMR's proposed onsite water facility design and engineering calculations are accepted by TCPUD and MCWC, then no offsite water system improvements would be required for implementation of the HMR MP. However, HMR's current water system designs do not adequately demonstrate how water stored at the Mid Mountain would be distributed to the South Base area to provide necessary fire flows requested by TCPUD. The water system plans show a connection of the Mid Mountain area water tanks to the North Base area and the MCWC existing connection, but intertie to the South Base area and the TCPUD service area. Since HMR has not demonstrated how the Mid Mountain water tanks may supply fire flows to the South Base area (HMR MP Phase 2), this impact is considered to be potentially significant.

In addition to domestic water demand, the HMR MP will increase demand for snowmaking water supplies. Existing water production and delivery infrastructure is not sufficient to meet the expected new peak demand for snowmaking with Proposed Project (Alternative 1) and Alternatives 3, 5, and 6. The proposed snowmaking system requires installation of nearly 8 miles of onsite pipeline (4-inch to 10-inch diameter), 10 miles of electrical lines, 55 snowguns, 127 hydrants and pedestals, and electrical service connections to cover an additional 78.5 acres of existing ski runs (Snowmakers Inc. 2010). The snowmaking system has an operational capacity of 4,400 gallons per minute,

with a minimum required operating pressure of 300 pounds per square inch (Snow Machines, Inc. 2010). The snowmaking plan indicates that water supplies are presently available at up to 2,400 gallons per minute (Hoopingarner 2010; Nichols Consulting Engineers 2010; Snow Machines, Inc. 2010). Sources include:

- The TCPUD McKinney Well, currently producing raw water at 300 gallons per minute, and tested by TCPUD as capable of producing 1,000 gallons per minute;
- TCPUD domestic water from the Crystal Way Well and Lake Tahoe, supplied to the South Base area at 300 gallons per minute, available from 6:00 PM to 6:00 AM (requires the use of a cooling tower);
- HMR well in the North Base area gravel parking lot, not currently operating but capable of producing raw water at 800 gallons per minute. When operational, flows are currently restricted to 500 gallons per minute due to the size of the pipe on the discharge side of the well pump and the tank in the pump house; and
- MCWC domestic water supplied at 300 gallons per minute, available from 6:00 PM to 6:00 AM.

Current rate of flow is not sufficient to meet peak demand for snowmaking under the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6. HMR and the TCPUD McKinney-Quail Water Service Area would require upgraded extraction, pumping, treatment, conveyance, and storage capacity to serve the total new snowmaking demand for the Project area. This is considered a significant impact on water supply and mitigation is required.

Wastewater Treatment. Implementation of the Proposed Project (Alternative 1) or Alternatives 3, 4, 5, or 6 includes the construction of new residences and affordable/employee housing units, and improved winter sports, recreational and commercial facilities. Wastewater quantities generated by the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 are expected to be similar to the demand for domestic water (Beaudin Ganze Consulting Engineers, Inc. 2007). The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 require up to 70,431 gallons per day of domestic water, and are expected to generate up to that volume during peak use periods (Beaudin Ganze Consulting Engineers, Inc. 2007).

TCPUD's and TTSA's existing wastewater conveyance and treatment facilities are considered adequate to accept wastewater from the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, or 6 (Laliotis 2009, Parker 2010). TTSA facilities are currently operating with about 20% available excess capacity. The TRI has a design capacity of 6.0 million gallons per day, and current excess capacity in the pipeline is 1.2 million gallons per day. The TTSA Water Reclamation Plant has a treatment capacity of 9.6 million gallons per day, and currently has an excess capacity of 1.92 million gallons per day. On peak demand days, Project wastewater may occupy up to 6% of available excess capacity in the TTSA conveyance and treatment systems. Excess capacities in the TRI and at the water reclamation plant are available on a first come/first serve basis.

TCPUD requires a detailed domestic sewer study engineering report prepared by a registered civil engineer prior to Project approval. However, according to TCPUD, it is anticipated that the proposed development will connect directly to the District's West

Shore Export (WSE) sewer facility. The WSE has greater than sufficient capacity to accommodate the proposed project since the sewer collection and export systems were originally designed to serve a much larger population than presently exists. At this time, the District does not have any future projects planned for the WSE for which HMR would be responsible (Homolka, 12/15/10). TCPUD adopted water and sewer connection fees (Ordinance 259a) and user and service fees (Ordinance 295b) fees will apply to the Project. In addition to paying these fees, HMR will install the connections from the Project area to the TCPUD wastewater main in accordance with the District's standards, rules, and regulations.

TCPUD and the TTSA finance facility improvements and expansions through connection charges, service charges, and tax revenue. Developers are assessed connection charges, based on the number of new residential units and other uses, at the time development occurs. The TTSA Connection Fee Schedule (TTSA 2010) is based on the quantity of wastewater that would be generated by type of dwelling unit or commercial use.

Due to existing available capacity in the wastewater conveyance and treatment system, and the fee schedules in place designed to recover agency costs to upgrade and maintain systems, the impact of the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 on the wastewater system is considered less than significant.

Solid Waste Disposal. The analysis of solid waste disposal is based on TTSD permitted capacity to handle waste on a daily basis, and the total lifespan capacity of disposal areas. The MRF has a permitted capacity of 800 tons of material per day and 832 vehicles per day. TTSD handled approximately 63,000 tons of solid waste in 2009 (average of approximately 210 tons per day of operation). The Lockwood Regional Landfill handles non-hazardous solid waste material and has a capacity of up to 250 years (Placer County 2008, 2010). The analysis considers waste generated during construction and demolition, and waste expected to be generated during project operation.

Construction and Demolition Waste. According to a national survey, the national average construction waste generation is 4.38 pounds per square foot for residential buildings, 3.89 pounds per square foot for non-residential buildings, and 155 pounds per square foot for demolition of non-residential structures (Franklin Associates 1998). Statewide, construction and demolition account for 22% of the total waste stream by volume, and 11.6% by weight (California Integrated Waste Management Board 2002, 2005, CalRecycle 2009).

An estimated 60% of green buildings certified by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program divert over 75% percent of construction and demolition waste through reuse, recycling, and other methods (California Integrated Waste Management Board 2005). Consequently, for this analysis, it is assumed that under LEED certification standards for the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6, construction would generate approximately 25% of the average amount of waste. This reduced rate of waste generation is considered feasible because construction and demolition materials recycling centers readily divert 60% - 90% of materials from the waste stream (California Integrated Waste Management Board 2002, 2005). To provide a more conservative analysis, the analysis assumes that mixed-use structures with multi-family and tourist accommodation units would generate waste at the residential construction rate, and demolition of existing structures and hardscape surfaces would occur at the non-residential rate. Therefore, this analysis

assumes that under Proposed Project (Alternative 1) and Alternatives 3, 5, and 6, demolition of existing structures and facilities would generate 38.75 pounds per square foot, construction of residential and mixed-use structures (including hotels, timeshares/fractional ownership units, townhouses, condominiums, and single family homes) would generate 1.095 pounds per square foot, and construction of non-residential structures (e.g., parking structures, maintenance buildings, skier service facilities) would generate 0.9725 pound per square foot. Alternative 4 would not be constructed to LEED standards, and this analysis assumes construction and demolition waste would be generated at the national average rates listed above. For analysis purposes, it is assumed that single-family residences in Alternatives 4, 5, and 6 would average 4,000 square feet in size.

The initial step of the Project development would be to remove existing structures and ski area facilities. Structures to be removed at the North Base area includes four existing ski lifts (including beginner lifts and the base of the Madden Ski Lift) and associated pads, footings and utilities; buildings and concrete foundations; storm drain structures; asphalt parking surfaces; overhead transmission lines; and a pumphouse. At the South Base area, structures to be removed includes one existing ski lift (the beginner surface lift) and associated pads, footings and utilities; buildings and concrete footings; asphalt parking surfaces; and overhead transmission lines. At the Mid-Mountain area, existing shacks, an abandoned foundation, the white tent structure, the top station of the existing Madden Ski Lift and associated pads, footings and utilities will be removed.

The precise square footage of structures and facilities to be removed under demolition is not known. The estimated surface area and structures to be demolished under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 are based on existing land coverage and structures described in Chapter 3, Section 3.1. Existing land coverage is approximately 271,000 square feet at the North Base area and 117,000 square feet at the South Base area. The existing North Base lodge is 13,943 square feet. The South Base lodge is 7,300 square feet and the vehicle shop/maintenance facility located adjacent to the South Base area is 3,884 square feet. Therefore, the total demolition area therefore is estimated to be 413,127 square feet for the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6. At the rate of 38.75 pounds per square foot, demolition would generate an estimated 16,008,671 pounds (8,004 tons) of waste and debris for the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6. Alternative 4, which would not meet LEED standards, ,may generate up to 64,034,684 pounds (32,017 tons) of demolition debris if the North Base area is totally redeveloped.

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 would generate up to 1,107,919 pounds during construction. Table 16-4 below provides estimated construction waste generated by alternative.

LEED certification with the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 emphasizes reuse of building materials and limiting of waste disposal for previously developed sites. Accordingly, new buildings will utilize materials from existing structures dismantled on-site. Components from old chair lifts can be used when building new chair lifts on-site or at other local ski resorts. HMR is creating a “Green Guide” or sustainability plan that addresses the concerns associated with the building process. Architectural design will consider the “life-cycle” costs of the infrastructure and buildings used at HMR. Green building principles that to be implemented during redevelopment includes the reuse and recycling of materials from de-constructed buildings.

Table 16-4

Solid Waste Generated During Construction by Alternative

Alternative	North Base[1]			South Base[2]			Mid-Mountain Base[3]		Total Construction Waste (Pounds)[6]
	Residential/ Mixed Use (square feet)[4]	Non-Residential/ Parking (square feet)[5]	Construction Waste (pounds)[6]	Residential/ Mixed Use (square feet)[4]	Non-Residential/ Parking (square feet)[5]	Construction Waste (pounds)[6]	Non-Residential (square feet)	Construction Waste (pounds)	
Proposed Project (Alternative 1) and Alternative 3[7]	452,824	181,911	672,751	295,403	65,583	387,246	49,278	47,923	**1,107,919**
Alternative 4[8]	32,000	15,000	198,510	32,000		140,160	49,278	47,923	**338,670**
Alternative 5	487,780	60,000	592,469	64,000		70,080	49,278	47,923	**710,472**
Alternative 6	465,216	145,351	650,765	147,535	35,140	195,724	49,278	47,923	**894,413**

Source: HBA, 2010

Notes:

1. North Base area residential and mixed-use buildings include buildings A, B, C, D, E, P, and single-family residential (Alternative 4) with the exception of square footage of parking structures in buildings B (85,351 square feet) and P (96,560 square feet).
2. South Base area residential and mixed-use buildings include buildings A, A1, B, townhomes, and single-family residential (Alternatives 4, 5, and 6) with the exception of square footage of parking structures in buildings A/A1 (40,523 square feet) and B (25,060 square feet).
3. Mid-Mountain Base area structures consist of non-residential uses.
4. Waste from the construction of residential and mixed-use buildings (i.e., structures with tourist accommodation units, fractional ownership, lockout units, and townhomes with commercial, skier service, and other non-residential uses) is calculated at the residential building rate. For estimation purposes, it is assumed that single-family homes under Alternatives 4, 5, and 6 would be 4,000 square feet.
5. Non-residential structures include parking structures, maintenance facilities, and other uses that do not include residential or tourist accommodation units within the structure.
6. Construction of the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would meet LEED Certification Standards, and it is assumed that construction activities would result in a reduction of waste generation rates of 75% below average rates, or 1.095 pounds per square foot for residential structures and 0.9725 pound per square foot for non-residential structures.
7. Buildings and facilities under the Proposed Project (Alternative 1) and Alternative 3 have the same square footage and uses, and therefore construction waste estimates are the same.
8. Construction of Alternative 4 is assumed to not meet LEED standards, so the waste generation rates of 4.38 pounds per square foot for residential construction, 3.89 pounds per square foot for non-residential, are applied.

Up to 100,000 cubic yards of excavated materials could be generated during construction of Proposed Project (Alternative 1) and Alternatives 3, 5, and 6. There are opportunities for the on-site reuse of approximately 102,000 cubic yards of excavated materials that is generated during project construction to be used as fill, as identified in Chapter 3, Figure 3-12, and Table 3-6. If materials cannot be used on-site for construction, restoration, and revegetation, the materials would be used at nearby California Tahoe Conservancy (CTC) and Placer County project sites or exported to a TRPA designated disposal site out side of the Lake Tahoe Basin. HMR will coordinate with Placer County and the CTC on the storage and use of export material for restoration projects in the Project vicinity.

While the existing landfills are expected to have sufficient capacity to handled demolition and construction waste and debris, existing sorting and transfer facilities may not have sufficient capacity to handle a large quantity of waste on given day. Demolition of existing structures and the construction of the project are expected to occur in phases over a 10-year period. Appendix N provides a detailed estimate of the 10-year construction schedule. Due to the expected highly variable rates of generation of demolition and construction waste that would be dependent on the type and schedule of activities, demolition and construction may periodically overwhelm TTSD capacity to transport, sort, and handle solid waste. Consequently, the generation of demolition and construction waste is considered a significant impact, and mitigation is required.

Operational Solid Waste. Due to the seasonal nature of activities at HMR, solid waste generation during operation is presented for both peak days and an annual total. For planning and environmental analysis, Placer County assumes new dwelling units would be occupied by 2.6 persons, and each person generates seven pounds of trash per day. For peak daily demand, the calculations assume 2.6 persons occupy each tourist accommodation unit and dwelling unit (Placer County 2010). For annual waste generation, the calculations assume that 2.0 persons occupy each tourist accommodation unit and 2.6 persons occupy half of the residential dwelling unit. Table 16-5 presents estimates of solid waste generated by the Proposed Project and Alternatives.

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will generate between 5,988 to 291 pounds per day if fully occupied. This represents a maximum of 0.37% of the TTSD's daily capacity to manage solid waste stream, and up to 1.4% of the current waste handled by the TTSD. On an annual basis, up to 788 tons of solid waste would be generated, representing a 1.25% increase over the current quantity. The annual quantity is considered a conservative estimate by assuming tourist accommodation units are fully-occupied. Existing waste handling systems and landfills have sufficient capacity to handle and dispose of new waste generated by the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6. The quantity of waste is not expected to shorten the lifespan of existing landfills or induce the need to construct new or expand existing waste disposal facilities. Consequently, this is considered a less than significant impact on solid waste services.

Table 16-5

Peak Daily and Annual Total Solid Waste Generation by Alternative

Alternative	Daily Peak				Annual Total		
	Persons[1]	Solid Waste (pounds/ day)[2]	Percent (%) of Daily Capacity[3]	Percent (%) of Average Daily Handling[4]	Persons[5]	Solid Waste (tons/ year)[2]	Percent (%) Increase[7]
Proposed Project (Alternative 1) and Alternative 3	855	5,988	0.37%	1.4%	617	788	1.25%
4	42	291	0.02%	0.1%	39	50	0.08%
5	627	4,386	0.27%	1.0%	553	706	1.12%
6	413	2,894	0.18%	0.7%	435	556	0.88%

Notes:

1. Based on 2.6 persons per tourist accommodation unit and dwelling unit (Placer County 2010).
2. Based on seven pounds per person per day (Placer County 2010).
3. Based on percentage of existing capacity 1.6 million pounds (800 tons) per day (Placer County 2010).
4. Based on a daily average handling of approximately 210 tons per day.
5. Based on 2.0 persons per tourist accommodation unit and 2.6 persons per dwelling unit at 50% occupancy (see Chapter 7 – Population, Employment, and Housing).
6. Based on percentage of existing 63,000 tons per year currently handled (Placer County 2010)

On-site solid waste receptacles will be bear-resistant per Placer County Ordinance 8.16.266. TTSD fees for service are based on the number of waste bins used at the Project area.

Construction waste would include materials that are not recycled during demolition of existing structures. Excavated materials are proposed for offsite disposal at facilities that will accept clean fill material. It is also possible that excavated material would be used onsite as part of on mountain restoration activities or within the west shore area by restoration agencies (e.g., California Tahoe Conservancy). Construction wastes would b generated in the initial phases of construction and would not occur over long-term operation of the Project or Alternatives.

Energy (Gas and Electricity). HMR facilities will be required to comply with Title 24 of the CCR. Under Appendix F of the CEQA Guidelines, the State of California sets forth goals for energy conservation, including decreasing per capita energy consumption and reliance on fossil fuels, and increasing reliance on renewable energy sources. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 include additional energy

conservation measures as part of the LEED certification process at the North Base area, which requires a decrease in energy use by more than 50% per guest compared to standard construction and operation of similar facilities. The design will include solar energy us to augment electrical demand and water heating. The buildings will include high efficiency insulation, windows, appliances, and building materials.

Residential, commercial, and recreational electricity consumption was estimated using a variety of resources and methodologies. In 2007, Beaudin Ganze Inc. completed a natural gas and electric energy use estimates for the Proposed Project (Alternative 1) (Beaudin Ganze Inc. 2007). According to JMA Ventures, LLC, these estimates accurately represent consumption patterns for Alternatives 3, 5, and 6 given the similar land uses (Tirman pers. comm. [E]). Electricity and natural gas consumption for Alternative 4 was not provided. This data was therefore estimated from 2007 average consumptive data for residential and commercial customers in California (Dillard pers. comm; Energy Information Association 2009a, 2009b, and 2009c).

The Project would receive electricity generated by NV Energy. Electricity consumption for the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would be approximately 44,593,658 kilowatt-hours per year (Beaudin Ganze Inc. 2007), which is minor in relation to the total amount of energy supplied by NV Energy in its service area. NV Energy has a peak load of 7,152 MW. HMR currently consumes approximately 1,372,000 kilowatt-hours per year (Tirman pers. comm. [B]). The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will increase electrical demand in the Project area by up to 16 MW and annual usage by 43,374,000 kilowatt-hours (Beaudin Ganze Consulting Engineers, Inc. 2007).

Due to ski area closure, Alternative 4 is expected to result in a net decrease in energy demand. Electricity consumption for Alternative 4 is based on average demand in California in 2007. According to NV Energy, the average annual monthly electricity usage per single family home is 755 kilowatt-hours. Average monthly electricity usage per commercial customer in California is 5,772 kilowatt-hours (Energy Information Association 2009a). With 16 single family homes and one 15,000 square foot commercial/retail building, total electricity consumption for Alternative 4 is estimated to be 214,224 kilowatt-hours per year.

The Tahoe City Substation on West Lake Boulevard supplies electricity to the Project area. The Tahoe City substation is nearing its maximum load capacity, and large additional loads will require an upgrade of the facility (Hutton 2009). The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6, may hasten the need to upgrade the Tahoe City Substation. NV Energy establishes service connection and usage fees such that users pay their proportional fair share of anticipated capital improvements and expected maintenance.

Aboveground electrical transmission lines serve the Project area. The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 include a new underground distribution system with aboveground pad-mounted transformers, and eight miles of belowground lines to serve the snowmaking system. Off-site, new cables will be needed to provide electrical service to the site from existing transmission lines. The ultimate configuration would be approved by NV Energy in accordance with California Public Utilities Commission (CPUC) Decision 95-08-038 for the installation or upgrading of electric facilities. Belowground transmission lines will not result in additional physical disturbances beyond that currently anticipated for the Project.

The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 are expected to demand up to 154,000 Btus (British thermal units) per hour, with an annual demand of 1,064,000 therms (one therm equals 100,000 British thermal units) (Beaudin Ganze Consulting Engineers, Inc. 2007). Annual natural gas usage for existing conditions (No Project [Alternative 2]) was provided by JMA Ventures, LLC and estimated at 11,000 therms (Tirman pers. comm. [B]). Natural gas usage for Alternative 4 was calculated using average consumption rates for residential and commercial customers in California (Energy Information Association 2009b and 2009c). Average annual natural usage per residential household and commercial customer is 485 therms and 5,777 therms, respectively (Energy Information Association 2009c). With 16 single family homes and one 15,000 square foot commercial/retail building, total natural gas consumption for Alternative 4 would be 13,535 therms per year.

Underground gas service will be extended to serve new structures. HMR will coordinate with Southwest Gas Corporation for the extension of on-site and off-site infrastructure with the ultimate configuration to be approved by Southwest Gas Corporation. New infrastructure will be installed in utility rights-of-way on-site. Extension of these facilities will not require upgrades to the Southwest Gas Corporation transmission system that are not currently planned for, nor will additional physical disturbances result beyond that currently anticipated. As part of the Project approval process, HMR will coordinate with and meet the requirements of Southwest Gas Corporation regarding the extension and locations of on-site infrastructure. HMR is required to pay for necessary natural gas infrastructure improvements.

Electrical and gas utility improvements and new easements on site will be identified in the final Project design and are required to comply with Placer County, NV Energy, of Southwest Gas Corporation, CPUC, and California Building Code requirements, and are expected to be sufficient to serve the Project area. New line extensions and facility construction to serve the site will occur concurrently with development phases. Off-site distribution systems and supply sources are considered adequate to serve the expected increased demand of the Project. Therefore, this impact is considered less than significant.

Public Schools. The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 are anticipated to add new students to Tahoe Lake Elementary School, Tahoe Middle School, and North Lake Tahoe High School. TTUSD calculates potential students by utilizing the Student Yield Rates from its 2006 Developer Fee Justification Study (TTUSD 2006). To estimate the maximum potential number of students associated with the Project, it is assumed that residential and worker units are 100% occupied during the school year. In actuality, at least 50% of new residential units are expected to be second homes, yielding fewer students than estimated in this impact analysis. The potential maximum number of K-12 students, and potential impacts on existing school capacity is as shown in Table 16-6.

Table 16-6

Potential New School Enrollment and Residual Capacity

Alternative	Residential Units[1]	Factor[2]	Total New Students	Current Residual Capacity[3]	Residual Capacity by Alternative
1	184	0.290	54	354	300
2	184		0		354
3	246		54		300
4	16		5		349
5	363		74		280
6	207		61		293

Source: Hauge Brueck Associates 2009.

Notes

1. Total single-family, multi-family, and affordable housing/worker residential units.
2. Total K-12 Student Yield Rate per residential unit (TTUSD 2006). Anticipated number of new students calculated by multiplying number of residential units by student yield rate.
3. Residual capacity based on current enrollment for the 2009-2010 school year.

There is currently sufficient excess capacity in the TTUSD system to accommodate new students generated by the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6. Long-term enrollment patterns are difficult to predict, but the TTUSD does not anticipate demographic shifts in the district that would bring substantial new students to area schools. No new facilities will be needed and the Project is not expected to adversely affect school resources.

Projects are required to pay the State-mandated school impact fees to TTUSD for new residential and commercial construction in the district boundaries. The fees mitigate impacts of new development and can only be used for capital outlay expenses related to development (e.g., new construction, reconstruction, portable classrooms, etc.). Under SB 50, payment of the school impact fee is considered full and adequate mitigation under CEQA (Government Code §65996). Section 65996 does not provide for remediation of existing deficiencies in school services.

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 would be required to pay the school impact fee at the time of construction. The current rates for the 2009-2010 school year are $2.63 per square foot of new residential construction, and $0.42 per square foot for new commercial or industrial uses. With payment of the State-mandated school impact fees to mitigate potential adverse impacts on schools, this impact is considered less than significant.

Fire Protection Services. The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 would build new single- and multi-family residential units, hotel rooms, commercial floor space, skier service facilities, parking in surface, underground and parking structure facilities, and ancillary structures. New buildings will be equipped with sprinkler systems and fire hydrants will be installed at various locations in the Project area for fire protection. Specific hydrant locations and fire flow will be determined

during the design phase through consultation with the NTFPD. SR 89 provides primary the emergency access route to the Project area.

The NTFPD has provided a list of design conditions for the Project, some of which are encompassed in the requirements of local and State codes or ordinances, and some that are specific to NTFPD (NTFPD January 14, 2009). These conditions include emergency water supplies, adequate roadways and fire access roads, automatic fire sprinkler systems, automatic fire alarm systems, and main power disconnect systems. The NTFPD will review the tentative Project site maps before construction begins to ensure these conditions are met. At the time of final NTFPD review, the NTFPD may place additional requirements on the Project, if needed, to meet public safety service standards.

The potential for an increase in fires and accidents is inherent with an increase in resident population. The NTFPD expects that the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will cause a marked increase in fire/EMS calls for service from NTFPD. NTFPD will require measures to maintain existing service levels and response times with the increased calls for service, such as increased staffing, specialized apparatus because of new building heights, and station accommodations for additional staff.

Placer County and the NTFPD require projects to pay developer impact fees based on developed living space (including garages). It is expected that this fee will fund service capacity improvements that will offset the expected increase in calls for service to maintain existing service levels and response times in the service territory.

NTFPD review and approval of Project design plans and development impact fees will ensure that the Proposed Project (Alternative 1) and Alternatives 3, 4 and 5 will include adequate fire protection facilities, including sprinkler systems in new buildings and fire hydrants on the Project area, to meet NTFPD service standards and local and State codes. This impact is considered less than significant.

Sheriff and Police Services. The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 may add up to 855 new TAU and affordable/employee housing occupants to the Project area during periods of peak use and up to 314 occupants on average, along with additional visitor-serving commercial facilities. Police emergency response times to the Project and service area of the PCSD could increase due to increased calls for service. There is currently no developer impact fee designed to offset the costs of expanding PCSD service.

PCSD typically provides “will serve” letters to proponents of new residential projects, indicating that PCSD will serve the Project to the best of their ability. Placer County and the PCSD have a standard of providing one officer per 1,000 residents, but this ratio method is not well suited for application to the Lake Tahoe area with its large seasonal variation in the numbers of transient visitors and residents. If new single-family, multi-family, and workforce housing units are fully occupied under the Project, the Project would require up to 0.314 FTE of a PCSD sheriff deputy to offset the expected increased calls for service and to maintain existing service and response times. This impact is considered a significant impact on police services.

Telecommunications Service. The Project will expand telecommunication facilities to serve new buildings and residents. HMR will place these lines underground and will

coordinate with AT&T on the location and capacity of new lines. Commercial buildings to be directly served by AT&T require a 4-inch duct from the point of feed, and single-family residences require a 2-inch duct. Existing service lines to Homewood are considered adequate to accommodate the increased demand for service within the Project area, so no off-site construction or infrastructure improvements are expected. Payment of appropriate new service connection fees is expected to cover costs to upgrade and maintain communication systems as needed. Therefore, this impact is less than significant.

Other Government Services. The Homewood Post Office is located near the Project area at 5375 West Lake Boulevard. Street delivery service is not available in Homewood or the Project area. Indirectly, the increase in residents may result in increased vehicle trips to the Post Office and potential safety concerns (especially in snow conditions). The increase in individual vehicle trips is considered in Chapter 11 – Transportation and Circulation. However, mail pickup from the post office will not affect postal operations. Therefore, this impact is less than significant.

Library services are provided in the Homewood area by the Placer County Library Department at a branch library in Tahoe City at 740 North Lake Boulevard. Placer County does not have a developer impact fee specific to library services. The Placer County Library Department will continue to provide library services from its Tahoe City branch and no specific library service issues have been identified. The existing library facility is expected to accommodate the estimated increased demand for services, and this impact is considered less than significant.

Mitigation: **PSU-1a: Water Supply Assessment and Infrastructure.**

The Project Applicant shall prepare a final WSA as required under SB 610 to identify the quantity and source of domestic and raw water to serve the Project. The WSA shall demonstrate that Project infrastructure for water delivery volume, rate, pressure, and schedule meets the snowmaking demand of HMR. The Project may obtain water from a combination of TCPUD, MCWC, and on-site groundwater wells and surface water. HMR owns an existing right to divert 673 gallons per minute (1.5 cubic feet per second) from streams on-site. With the water supply source identified, the Project Applicant shall determine the location and designs of infrastructure necessary to meet peak demand and overall quantity in the Project area for domestic use and snowmaking. If additional onsite or offsite facilities are required for snowmaking operations (e.g., facilities not included in the proposed HMR MP), then snowmaking operations will be managed to utilize available water resources until additional studies, if necessary, are completed and approved.

The Project Applicant will be responsible for construction of infrastructure to connect to the established water system. TCPUD has established connection fees consisting of two components: 1) a Water and Sewer Connection Fee (Ordinance 259a), and 2) and User Fees and Service Fees (Ordinance 295b). These fees provide for the water system improvements necessary to accommodate additional development in the TCPUD service area. The Project will be required to pay both components of this new connection fee.

MCWC has similar requirements for connection and service fees, and the applicant will be required to construct the appropriate infrastructure to utilize MCWC water supply (Marr 2009).

During the design phase of new water supply infrastructure, the lead and responsible agencies will determine if additional environmental review will be required for the construction and operation of any offsite facilities potentially required for HMR MP Phase 2 development (e.g., South Base area fire flows).

Mitigation: **PSU-1b: Coordination of Construction Waste Disposal with ERSL**

To reduce impacts to the existing solid waste handling capacity, the Project Applicant shall coordinate with the Eastern Regional Sanitary Landfill, Inc. (ERSL) to ensure that sufficient capacity to handle demolition and construction waste is available. Coordinating waste volume with handling capacity during demolition and construction will reduce impacts to solid waste services to less than significant.

Mitigation: **PSU-1c: Payment of Development Impact Fee to Placer County Sheriff's Department.**

Based on the Alternative selected, the Project Applicant shall consult with the PCSD to develop an appropriate fair share development impact fee to offset the cost of 1.0 FTE PCSD sheriff deputy per 1,000 new residents. Payment of the impact fee is expected to go towards upgrading equipment or facilities, increasing staff, or otherwise improving response times in the Project vicinity.

After Mitigation: *Less than Significant; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

Implementation of Mitigation Measures PSU-1a, PSU-1b, and PSU-1c will reduce impacts to water supply, solid waste disposal, and police services to less than significant. The Project Applicant shall prepare a WSA as required under SB 610 to identify the quantity and source of potable and non-potable water to serve the Project. The Project Applicant shall demonstrate that water source(s) are adequate and assure that it meets State and Federal requirements for quality and quantity.

The SB 610 WSA and payment of connection and service fees approved by TCPUD and MCWC are expected to provide sufficient water to meet peak demand in the Project area with less than significant impacts on water supply in the vicinity. Coordination of demolition and construction waste disposal with the ERSL to handle and sort material will ensure sufficient capacity is available to handle solid waste. Payment of a proportional fair development impact fee is expected to maintain existing police services levels and reduce the potential impact to less than significant.

IMPACT: PSU-2. Does the Project have the potential to damage existing utility infrastructure

Analysis: *No Impact; No Project (Alternative 2)*

Alternative 2 (No Project) involves no new land uses or construction and will not damage existing infrastructure.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

Project development under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will replace existing on-site infrastructure as part of Project development. The existing utility infrastructure has potential to be damaged inadvertently during construction activity, or if the Project does not design for adequate capacity or connections. Designs for replacing, extending or upgrading existing utility infrastructure will be coordinated with and approved by the appropriate utility service provider. Each utility service provider will require that the Project meet equipment and installation standards for connection to existing service infrastructure to maintain existing service levels. Consequently, this impact is considered less than significant.

Mitigation: No mitigation is required.

IMPACT: PSU-3: Will Project construction interfere with law enforcement and fire protection services?

Analysis: *No Impact; No Project (Alternative 2)*

Alternative 2 (No Project) involves no new land uses, construction, or residents, and so is expected to have no impact on existing law enforcement and fire protection services.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 will maintain adequate access to on-site and adjacent land uses during construction such that law enforcement and fire protection services will remain unimpeded. Designs for emergency vehicle access to the construction site and temporary construction-related detours, if necessary, will be coordinated with and approved by the PCSD and NTFPD. Therefore, this impact is less than significant.

Mitigation: No mitigation is needed.

16.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

IMPACT: PSU-C1. Will the Project have significant cumulative impacts to public service and utility resources?

Analysis: *Less than Significant Impact; Project and Alternatives*

The Project and other proposed, planned, or permitted projects in the Homewood area and along the West Shore of Lake Tahoe may temporarily interrupt provision of services

and utilities during construction, and may reduce supplies or capacities to provide public services during operation. The No Project (Alternative 2) involves no new land uses, construction, or demand for services, and so will not contribute to a cumulative impact on public services and utilities. Alternative 4, closure of HMR and the construction of 16 single-family homes and a commercial building, is expected to result in a net reduction in demand for public services and utilities, and therefore would result in a less than significant contribution to cumulative impacts.

Construction and operation of the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 will result in increased demands for utilities and public services, including: water supply, treatment, and distribution; wastewater treatment and disposal; solid waste collection and disposal; electricity; natural gas; fire protection and emergency medical services, law enforcement, library, telecommunications; and postal service. The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 are not expected to result in significant impacts to these public services and utilities. The assessment of potential cumulative impacts must consider, in addition to the Project, other past, present, and reasonably foreseeable future projects (e.g., other proposed, planned, or permitted projects). For the purpose of assessing potential cumulative impacts to public utilities and service systems, a list of other past, present, and future projects that are expected to increase demand for public utilities and services, and may contribute to cumulative impacts to these resources is included in Table 20.1-1 in Chapter 20: Mandated Environmental Analysis.

The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 are not expected to contribute to a cumulatively considerable impact on public services and utilities. Public services and utilities either have sufficient excess capacity to provide service to the Project and cumulative projects, such as with wastewater and schools, or mitigation measures are provided to provide fees to expand or maintain service levels. The Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 would have a significant impact on water supply and infrastructure. Mitigation Measure PSU-1a, which requires a SB 610 WSA, would address cumulative impacts associated with increased water demand. Implementation of Mitigation Measure PSU-1a would ensure sufficient water supplies and service infrastructure is maintained for existing users, the Project, and future planned uses listed in Table 20.1-1. Mitigation Measure PSU-1c ensures adequate funding is provided to maintain existing police service levels in the Project area and vicinity.

Mitigation: No mitigation is required.

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17.0 HAZARDOUS MATERIALS AND PUBLIC SAFETY

17.1 ENVIRONMENTAL SETTING

17.1.1 Regional Setting

This chapter evaluates the potential hazardous material and public health and safety impacts from implementation of the Homewood Mountain Resort (HMR) Ski Area Master Plan (Project). The analysis presented in this chapter is based partly on review of the *Phase I Environmental Site Assessment* (*Phase I ESA*) prepared for the HMR property (Robison Engineering 2005).

The Project area consists of 20 contiguous parcels on 1,200 acres in Placer County near the west shore of Lake Tahoe in the Sierra Nevada Mountains. The property is forestland developed as a ski resort since the 1960s. Elevation of the property ranges from 6,360 to 7,880 feet above sea level. Generally, the property slopes steeply to the east toward Lake Tahoe. The community of Homewood, which consists of residences, a post office and several small businesses, is situated east of the Project area, between HMR and the west shore of Lake Tahoe. The west, north, and south sides of HMR are bordered by undeveloped forestland administered by the USDA Forest Service (USFS), Lake Tahoe Management Unit (LTBMU).

17.1.2 Existing Site Conditions

The closest schools to the project site are Tahoe Lake Elementary School, Coldstream Alternative School, North Tahoe Middle School, and North Tahoe High School, located 5 miles north in Tahoe City. The closest airports are located in South Lake Tahoe (14 miles south), Truckee (17 miles north), and Reno, Nevada (33 miles east). The Project area is not located within 0.25 mile of an existing or proposed school, an airport land use plan, or within 2 miles of a public or private airport. Consequently, issues associated with hazardous materials in proximity to these uses are not evaluated further in this EIR/EIS. The project's potential effect on emergency access routes and plans is also discussed in Chapter 11 - Transportation and Circulation.

HMR was used for logging from the 1860s to the 1890s. It was developed as a ski resort in the 1960s. Developed areas are the South Base area and North Base area accessed from SR 89. HMR includes eight ski lifts and the Mid-Mountain Pavilion in a temporary structure. At the South Base area, the South Lodge is a wooden, three-story building that contains a restaurant, offices, restrooms, and a food storage area. Immediately south of the South Lodge are two smaller two-story wood buildings used for offices, lift ticket sales, and a children's ski school. The main HMR maintenance building is located southeast of the South Lodge. Gasoline and diesel fuel are stored nearby in an above ground storage tank (AST). New and used motor oil and antifreeze, gear lubricants, and maintenance supplies are stored in the maintenance building. The building also contains a parts washing basin. A licensed hazardous waste recycler removes used fluids and lead acid batteries on a routine basis.

The North Base area contains the main ski lodge, which is a three-story wood frame building. The lodge building houses a restaurant/snack bar, ski rental area, office, restrooms and storage areas. A single story wood frame building used for equipment rentals and sales is located immediately west of the North Lodge. A small maintenance building is located northwest of the lodge. Diesel fuel is stored in a nearby

AST. Small quantities of motor oil and other maintenance supplies are stored in the maintenance building. The building also has a parts washing basin. A one-room wood frame building located west of the North Lodge houses the pumps and equipment used for making artificial snow. Another small wood frame building located southwest of the Madden lift base is used for parts storage.

The regularly occupied buildings on the HMR property are served with electricity, natural gas for heating, municipal water, and municipal sewer connections. The temporary Mid-Mountain Pavilion does not have a municipal sewer connection. A commercial disposal company removes trash from the property.

Other areas of the property that are developed with structures are at the bases and termini of the ski lifts, a temporary tent that serves as a lunch area, and an area near the terminus of the Madden ski lift that contains a communications repeater station. Ski lifts have an auxiliary diesel generator power unit. Diesel fuel is contained in small (generally 25-gallon) tanks.

A *Phase 1 ESA* was prepared to document recognized environmental conditions at HMR related to current and historical uses of the Project area and to evaluate the potential for release of hazardous materials from on-site or off-site sources that could significantly affect environmental conditions (Robison Engineering Company 2005). As part of the *Phase 1 ESA*, a search was performed of several regulatory agency databases, including those of the U.S. Environmental Protection Agency (EPA), California Department of Toxic Substances Control (DTSC), and Office of Emergency Services (OES) to identify potential pollution sources within one mile of the HMR property. The *Phase 1 ESA* also reviewed historic aerial photographs to identify past activity at or adjacent to the Project area and conducted four site reconnaissance visits (Robison Engineering Company 2005).

The record search identified underground storage tanks (USTs) that were formerly located at the South Base area and North Base area. Two USTs used for fuel have been removed and groundwater monitoring wells were installed. The California Regional Water Quality Control Board issued letters of closure for both tanks, indicating that the sources of contamination were removed. The record search identified 11 other sites with USTs or other potential sources of contamination in the Project vicinity located along or near the shore of Lake Tahoe and down-gradient from HMR (Robison Engineering Company 2005, DTSC 2010).

The site reconnaissance and records search conducted for the *Phase I ESA* found that there is a low concentration of MTBE in the groundwater near monitoring well 4 in the North Base area parking lot. MTBE was a commonly used gasoline additive. The source of the MTBE is likely from releases of gasoline from cars in the parking lot area, rather than from a chronic source such as a leaking UST. Natural attenuation has reduced MTBE concentrations to levels that are near the California water quality objective, and continued attenuation over time is expected to result in groundwater reaching the water quality objective. The *Phase I ESA* has no recommendations for additional environmental assessment of HMR beyond another round of sampling of monitoring wells 2 and 4 (Robison Engineering Company 2005). MTBE was banned from use as a gasoline additive in California on January 1, 2004, so new sources of MTBE contamination are not expected in the Project area.

Resource Conservation and Recovery Act

The EPA enforces the Resource Conservation and Recovery Act (RCRA), which address hazardous waste generation, transportation, storage, treatment, and disposal. The law requires hazardous waste manifests to track the movement and transfer of hazardous waste from its original location to its final destination for disposal. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed.

CalEPA and DTSC are responsible for implementing RCRA and the State Hazardous Waste Control Law. The DTSC regulates hazardous waste generation, transport, treatment, storage, and disposal more stringently than the EPA under 22 CCR, Division 4.5. The California Hazardous Waste Control Law and its associated regulations are similar to RCRA but regulate a larger number of chemicals because they define hazardous waste more broadly. The DTSC maintains the Hazardous Waste and Substances Site List ("Cortese List") of designated as hazardous waste properties per CCR §65962.5. There are no reported hazardous waste facilities or contaminated sites listed in the Project area or vicinity, or along major transportation routes that may be used during construction or operation of the Project (DTSC 2010).

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, commonly called the Superfund Act, created a national policy and procedures to identify and clean up sites contaminated by releases of hazardous substances. The law was amended and strengthened in 1986 by the Superfund Amendments and Reauthorization Act. One important provision of the amendments was to expand public participation in the clean up process. Funding is available to advisory groups composed of persons affected by releases from a site. There are no ongoing environmental investigations or cleanups, nor any unresolved known contamination issues, on or near the Project area.

17.1.3 Asbestos

Asbestos was formerly used in insulation and other building materials, and has potential to occur in the existing buildings at HMR that were built prior to 1980. Asbestos is designated as a hazardous substance when the fibers have potential to come in contact with air because the fibers are small enough to lodge in human lung tissue and cause health problems. Asbestos is not required as part of the *Phase I ESA*, and there is no inventory of asbestos-containing materials (ACMs) in existing buildings at HMR. ACMs pose an inhalation threat if they occur in a friable state. If the ACMs are not friable, there is no inhalation hazard because asbestos fibers remain bound in the material matrix.

17.1.4 Lead Paint

Human exposure to lead has been determined by EPA and the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) to be an adverse health risk, particularly to young children. Demolition of structures containing lead-based paint requires specific remediation activities regulated by federal, State, and local laws. The use of lead as an additive to paint was discontinued in 1978. However, many structures at HMR were built before the 1980s and may contain lead-based paints. A lead-based paint survey has not been performed on these structures by a certified Cal-EPA Inspector/Assessor (California Department of Health Services, Childhood Lead Poisoning Prevention Branch).

17.1.5 Polychlorinated Biphenyls

Prior to 1975, polychlorinated biphenyls (PCBs) were commonly used in transformers, capacitors, and fluorescent light ballasts. In 1975, when it was demonstrated that PCBs were highly toxic to the environment, the manufacture of PCBs was discontinued in the U.S. The *Phase I ESA* found no older pole-mounted electrical transformers that may contain PCBs are known to occur at or adjacent to the Project area.

17.1.6 Mosquito/Vector Control

Mosquitoes species expected to occur in the Project area have potential to transmit human diseases, such as West Nile Virus and encephalitis, and diseases affecting pets and wildlife. Mosquito larvae generally require stagnant, standing water over a period of three or more days to successfully hatch. Developed areas typically include numerous microenvironments suitable for mosquito reproduction, such as poorly drained impervious surfaces on structures, in debris, or landscaping. The climate, topography, and plant communities of the Tahoe Basin provide an abundance and variety of natural larval mosquito habitats. The restoration of stream environment zones (SEZs) has created additional habitat sources. The mosquito population in the Tahoe Basin is most active in the spring and early summer.

The Placer Mosquito and Vector Control District (District) has jurisdiction over mosquito abatement activities in the Project area and vicinity. The District employs technicians certified by the State of California Health Services in pesticide usage, and mosquito and vector identification. The District routinely conducts surveillance to locate mosquito breeding sources and to solve mosquito problems using physical, biological and chemical means, along with conducting public education outreach efforts. The District is authorized to treat problem areas on public and private property to reduce the health risks to the public.

The District uses biological larvicides, *Bacillus thuringiensis israelensis* and *B. sphaericus*, which are naturally occurring bacteria. Only mosquitoes, black flies, and certain midges are susceptible to these bacteria – other aquatic invertebrates and non-target insects are unaffected. Larvicidal oils and monomolecular films are used to drown the mosquito larvae in their later aquatic stages, when they are not feeding, by forming a thin coating on the surface of the water. The District uses pyrethrins and pyrethroids for its adult mosquito fogging program in and around populated areas. These are generally applied by truck mounted or hand held foggers in accordance with safe handling and application standards (Placer Mosquito and Vector Control District 2009).

17.1.7 Wildland Fire Hazards

Dry summers, topography, and forests with high fuel loads create an annual wildfire hazard in the Project area. The Project area is situated in a developed and wildland-urban interface (WUI), where developed areas are adjacent to areas of natural vegetation capable of carrying a wildfire. The wildfire suppression strategy in the Project area calls for suppression of all fires due to the WUI setting, heavy fuel loads, steep terrain, and proximity to homes and other structures. Land management agencies in the Lake Tahoe Basin are cooperating to reduce hazardous fuel levels in the Project vicinity through forest stand thinning, understory burning, and other strategies (USFS LTBMU 2006a, 2006b, 2006c). Paved and unpaved roadways and ski trails in the Project area provide emergency vehicle access and fuel breaks during wildfire events.

Ignition sources of wildfire include natural sources, such as lightning, and human activities. The California Department of Forestry and Fire Protection (Calfire) has established a fire hazard severity classification system, which assesses the wildland fire potential based on fuel load, climate, and topography. The classification system provides three classes of fire hazards: Moderate, High, and Very High. Calfire considers homes in High and Very High fire hazard areas to be without adequate protection from wildland or structural fires. HMR is located in a Very High fire hazard area due to steep topography and heavy fuel loads (Calfire 2008, 2007a). The Homewood community is considered to be at risk of wildfire from potential ignitions on USFS LTBMU lands (Calfire 2001).

The California Public Resources Code (PRC) requires the designation of State Responsible Areas (SRAs) where the financial responsibility of preventing and suppressing fires falls primarily on Calfire. Fire

protection outside the SRAs is the responsibility of local (LRAs) or federal (FRAs) jurisdictions. Most of the Project area is in a LRA served by the North Tahoe Fire Protection District (NTFPD). The Mid-Mountain Base area is in a SRA (Calfire 2007b, NTPFD 2009). The USFS LTBMU provides wildland fire protection on USFS lands adjacent to HMR and in SRA at HMR via a cooperative agreement with Calfire. NTFPD has the primary responsibility for structure fire protection and related emergency services at the North Base and South Base areas. An NTFPD fire station is adjacent to the Project area in Homewood.

The Placer County Fire Safe Alliance works towards improving public outreach on fire prevention and facilitating coordination among State and federal agencies for fuel load reduction, healthy forest ecosystems, and fire safe communities (Placer County Fire Safe Alliance 2009).

17.2 REGULATORY SETTING

17.2.1 Hazardous Materials Management

Resource Conservation and Recovery Act

Under RCRA, any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments of 1984, which specifically prohibits the use of certain techniques for the disposal of various hazardous substances. The federal Emergency Planning and Community Right to Know Act of 1986 impose hazardous materials planning requirements to help protect local communities in the event of accidental release.

Federal agencies that regulate hazardous materials include the EPA, OSHA, the Department of Transportation (DOT), and the National Institute of Health (NIH). The following federal laws and guidelines govern hazardous materials:

- CERCLA
- Federal Water Pollution Control
- Clean Air Act (§112 regulates asbestos fiber emissions)
- Toxic Substances Control Act
- Resource Conservation and Recovery Act
- Safe Drinking Water Act
- Occupational Safety and Health Act
- Federal Insecticide, Fungicide, and Rodenticide Act
- Comprehensive Environmental Response, Compensation, and Liability Act
- Guidelines for Carcinogens and Biohazards
- Superfund Amendments and Reauthorization Act Title III.

Worker Safety Requirements

The Occupational Safety and Health Act of 1970 assigns the responsibility for assuring worker safety in the handling and use of chemicals to the California Occupational Safety and Health Administration (Cal-OSHA) and OSHA. OSHA has adopted numerous worker safety regulations for hazardous materials handling in Code of Federal Regulations Title 29 (29 CFR). Those regulations set standards relating to hazardous materials handling. Cal-OSHA has the primary responsibility for developing and enforcing State workplace regulations. Because California has a federally approved OSHA program, the State is required to adopt regulations that are at least as stringent as those found in 29 CFR. Cal-OSHA standards are generally more stringent than federal regulations.

CCR Title 8 contains the Cal-OSHA requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation.

Cal-OSHA enforces a State-wide hazard communication program. That program regulations specify training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous waste sites. The Cal-OSHA hazard communication program requires that Material Safety Data Sheets (MSDS) be available to employees and that employee information and training programs be documented.

State Plans, Policies, Regulations, and Laws

Within Cal-EPA, DTSC has primary regulatory responsibility for the management of hazardous materials and the generation, transport, and disposal of hazardous waste. The DTSC regulates hazardous materials management. DTSC delegates authority to local jurisdictions that enter into agreements with the State. The Placer County Department of Environmental Health (PCDEH) and the NTFPD are such local administrators of hazardous materials management laws and regulations.

The DTSC implements RCRA and California's hazardous waste laws, which are known collectively as the Hazardous Waste Control Law. The California Hazardous Waste Control Law and its associated regulations are similar to RCRA but regulate a larger number of chemicals because they define hazardous waste more broadly. Applicable State hazardous waste laws include:

- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act)
- Air Toxics Hot Spots and Emissions Inventory Law
- Underground Storage of Hazardous Substances Act
- Porter-Cologne Water Quality Control Act
- Public Safety/Fire Regulations/Building Codes (regulated at local level).

The State of California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act, California Health and Safety Code, Division 20, Chapter 6.95, Article 1) requires preparation of Hazardous Materials Business Plans and disclosure of hazardous materials inventories. A business plan includes:

a) An inventory of hazardous materials handled;

b) Facility floor plans showing where hazardous materials are stored;

c) An emergency response plan, and;

d) Provisions for employee training in safety and emergency response procedures.

The State Water Resources Control Board (SWRCB) regulates the storage of hazardous materials in USTs under the California Code of Regulations (CCR). The installation and monitoring of new tanks, monitoring of existing tanks, and corrective actions for removed tanks are regulated by State standards.

Among its other responsibilities, the DTSC oversees the Voluntary Cleanup Program that provides an opportunity for owners of property with low-priority hazardous waste sites to fund and undertake site cleanup with DTSC oversight.

State Hazardous Materials Handling and Transport

The Business Plan Act requires preparation of Hazardous Materials Business Plans and disclosure of hazardous-materials inventories. A Business Plan includes an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Statewide, DTSC has primary regulatory responsibility for management of hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the State. Placer County administers these laws and regulations.

The DOT regulates transportation of hazardous materials between States. State agencies with primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the CHP and Caltrans. Together, these agencies determine container types used and license hazardous-waste haulers for transportation of hazardous waste on public roads.

Emergency Response to Hazardous Materials Incidents

California has developed an Emergency Response Plan to coordinate emergency services provided by federal, State, and local governments and private agencies. Response to hazardous-materials incidents is one part of this plan. The plan is managed by the Governor's Office of Emergency Services (OES), which coordinates the responses of other agencies including the California Environmental Protection Agency, California Highway Patrol (CHP), California Department of Fish and Game, Lahontan RWQCB, Placer County Department of Environmental Health Services, Placer County Sheriff's Department, and NTFPD.

17.2.2 Placer County General Plan

The *1994 Placer County General Plan* (Placer County 1994) includes policies regarding the safe use, manufacture, production, transportation, storage, treatment, disposal, and clean-up of hazardous materials

and wastes, as well as wildfire protection. The following *1994 Placer County General Plan* Goals and Policies related to hazardous materials, wildfire, and public health and safety apply to the Project:

GENERAL LAND USE

Goal 1.A: To promote the wise, efficient, and environmentally-sensitive use of Placer County lands to meet the present and future needs of Placer County residents and businesses.

1.A.2. The County shall permit only low-intensity forms of development in areas with sensitive environmental resources or where natural or human-caused hazards are likely to pose a significant threat to health, safety, or property.

VISUAL AND SCENIC RESOURCES

Goal 1.K: To protect the visual and scenic resources of Placer County as important quality-of-life amenities for County residents and a principal asset in the promotion of recreation and tourism.

1.K.6. The County shall require that new development on hillsides employ design, construction, and maintenance techniques that:

a. Ensure that development near or on portions of hillsides do not cause or worsen natural hazards such as erosion, sedimentation, fire, or water quality concerns;

b. Include erosion and sediment control measures including temporary vegetation sufficient to stabilize disturbed areas;

c. Minimize risk to life and property from slope failure, landslides, and flooding; and

d. Maintain the character and visual quality of the hillside.

PUBLIC FACILITIES AND SERVICES

Goal 4.I: To protect residents of and visitors to Placer County from injury and loss of life and to protect property and watershed resources from fires.

4.I.1. The County shall encourage local fire protection agencies in Placer County to maintain the following minimum fire protection standards (expressed as Insurance Service Organization (ISO) ratings):

a. ISO 4 in urban areas,

b. ISO 6 in suburban areas,

c. ISO 8 in rural areas.

4.I.2. The County shall encourage local fire protection agencies in the County to maintain the following standards (expressed as average response times to emergency calls):

a. 4 minutes in urban areas,

b. 6 minutes in suburban areas,

c. 10 minutes in rural areas.

4.I.3. The County shall require new development to develop or fund fire protection facilities, personnel, and operations and maintenance that, at a minimum, maintains the above service level standards.

4.I.4. The County shall work with local fire protection agencies to identify key fire loss problems and design appropriate fire safety education programs to reduce fire incidents and losses.

4.I.5. The County shall work with local fire protection agencies and implement ordinances to control fire losses and fire protection costs through continued use of automatic fire detection, control, and suppression systems.

4.I.6. The County shall continue to promote standardization of operations among fire protection agencies and improvement of fire service levels.

4.I.7. The County shall maintain and strengthen automatic aid agreements to maximize efficient use of available resources.

4.I.8. The County shall work with local fire protection agencies to maintain a prefire planning program with selected high-risk occupancies reviewed at least annually.

4.I.9. The County shall ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the Uniform Fire Code and other County and local ordinances.

4.I.10. The County shall work with local fire protection agencies to inventory and eliminate structurally unsafe and fire-hazardous housing units that are beyond repair or rehabilitation.

4.I.11. The County shall encourage local fire protection agencies to provide and maintain advanced levels of emergency medical services (EMS) to the public. [See also the policies/programs under Goal 8.C, Fire Hazards.]

VEGETATION

Goal 6.D: To preserve and protect the valuable vegetation resources of Placer County.

6.D.11. The County shall support the continued use of prescribed burning to mimic the effects of natural fires to reduce fuel volumes and associated fire hazard to human residents and to enhance the health of biotic communities.

AIR QUALITY--GENERAL

Goal 6.F: To protect and improve air quality in Placer County.

6.F.5. The County shall encourage project proponents to consult early in the planning process with the County regarding the applicability of Countywide indirect and area-wide source programs and transportation control measures (TCM) programs. Project review shall also address energy-efficient building and site designs and proper storage, use, and disposal of hazardous materials.

FIRE HAZARDS

Goal 8.C: To minimize the risk of loss of life, injury, and damage to property and watershed resources resulting from unwanted fires.

8.C.1. The County shall ensure that development in high-fire-hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards and meets all applicable State and County fire standards.

8.C.2. The County shall require that discretionary permits for new development in fire hazard areas be conditioned to include requirements for fire-resistant vegetation, cleared fire-breaks, or a long-term comprehensive fuel management program. Fire hazard reduction measures shall be incorporated into the design of development projects in fire hazard areas.

8.C.3. The County shall require that new development meets State, County, and local fire district standards for fire protection.

8.C.4. The County shall refer development proposals in the unincorporated County to the appropriate local fire agencies for review for compliance with fire safety standards. If dual responsibility exists, then both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall be applied.

8.C.5. The County shall ensure that existing and new buildings of public assembly incorporate adequate fire protection measures to reduce the potential loss of life and property in accordance with State and local codes and ordinances.

8.C.10. The County shall continue to implement State fire safety standards through enforcement of the applicable standards contained in the Placer County Land Development Manual.

8.C.12. The County shall support annexations and consolidations of fire districts and services to improve service delivery to the public. [See also policies/programs under Goal 4.1, Fire Protection Services.]

HAZARDOUS MATERIALS

Goal 8.G: To minimize the risk of loss of life, injury, serious illness, damage to property, and economic and social dislocations resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous materials wastes.

8.G.1. The County shall ensure that the use and disposal of hazardous materials in the County complies with local, State, and federal safety standards.

8.G.2. The County shall discourage the development of residences or schools near known hazardous waste disposal or handling facilities.

8.G.3. The County shall review all proposed development projects that manufacture, use, or transport hazardous materials for compliance with the County's Hazardous Waste Management Plan (CHWMP).

8.G.5. The County shall strictly regulate the storage of hazardous materials and wastes.

8.G.6. The County shall require secondary containment and periodic examination for all storage of toxic materials.

8.G.9. The County shall require that applications for discretionary development projects that will generate hazardous wastes or utilize hazardous materials include detailed information on hazardous waste reduction, recycling, and storage.

17.2.3 West Shore Area General Plan

The *Placer County 1998 West Shore Area General Plan* (Placer County 1998) includes a Safety Element that includes the following goal and policies related to hazards applicable to the HMR Project:

VI. Safety Element

Goal 1. To protect the lives and property of the citizens of the West Shore Area General Plan from unacceptable risks associated with seismic, flooding, or wildfire hazards.

6. Ensure that all proposed developments are reviewed for fire safety standards by all local fire agencies responsible for its protection, including providing adequate water supplies and ingress and egress.

7. Maintain strict enforcement of the Uniform Building Code and the Uniform Fire Code.

8. Inform residents and visitors of the wildfire hazard associated with occupancy in the basin. Encourage use of fire resistant materials and fire preventative techniques when constructing structures, especially in the highest fire hazard areas. Manage forest fuels to be consistent with State laws and other goals and policies of this Plan.

17.2.4 Tahoe Regional Planning Agency (TRPA)

The TRPA is a bi-State planning agency with the authority to regulate growth and development in the Lake Tahoe Basin. TRPA implements that authority through the *Regional Plan for the Lake Tahoe Basin* (*Regional Plan*). The *Regional Plan i*s composed of numerous documents, of which the following are applicable to this environmental analysis: *Environmental Threshold Carrying Capacities* (1982); *Goals and Policies* (September 1986); *Code of Ordinances* (2004); *Plan Area Statements* (August 1987 and updated); *Regional Transportation Plan and Air Quality Plan* (1992); *Water Quality Management Plan* (1988); and the *Scenic Quality Improvement Program* (1989).

Regional Plan for the Lake Tahoe Basin

The *TRPA Goals and Policies* Chapter 2, Land Use Element, Natural Hazards, Policy 3 (TRPA 1986) provides the following goals and policies related to hazards, hazardous materials, and wildfire applicable to the Project:

Natural Hazards

Goal 1 – Risk from natural hazards will be minimized.

Policy 1. Development shall be regulated in identified avalanche or mass instability hazard areas.

Policy 2. Prohibit construction, grading, and filling of lands within the 100-year flood plain.

Policy 3. Inform residents and visitors of the wildfire hazard associated with occupancy in the Basin. Encourage use of fire resistant materials and fire preventative techniques when constructing structures. Manage forest fuels to be consistent with State laws and other goals and policies of this plan.

TRPA Code of Ordinances

The *TRPA Code of Ordinances* (2004), Section IX, Chapter 75, §75.3 provides the following related to wildfire hazards applicable to the Project:

> Vegetation Management to Prevent the Spread of Wildfire: Within areas of significant fire hazard, as determined by local, State, or federal fire agencies, flammable or other combustible vegetation may be removed, thinned, or manipulated up to 30 feet from any structure to prevent the spread of wildfire. Sufficient quantities of residual vegetation should remain in this 30 foot zone to stabilize the soil and prevent erosion. Whenever possible, vegetation in this zone should be thinned, tapered, cut back, or otherwise selectively manipulated, rather than removed entirely. Re-vegetation with approved species may be required where vegetative ground cover has been eliminated or where erosion problems may occur."

17.2.5 State of California – Building Codes in Wildland-Urban Interface

The California Building Standards Commission adopted the Office of the State Fire Marshal's emergency regulations amending the CCR, Title 24, Part 2, known as the 2007 California Building Code (CBC), §701A.3.2 New Buildings Located in Any Fire Hazard Severity Zone. Calfire and the Office of the State Fire Marshal (OSFM) mapped fire hazard areas and established building standards to lessen the vulnerability of buildings to wildfire and resist the intrusion of flames and burning embers projected during a wildfire. The WUI Fire Area Building Standards establish minimum standards for materials and material assemblies and provide a reasonable level of exterior wildfire exposure protection for buildings. The new building standards went into effect in 2008.

Under PRC §4291, Calfire establishes standards for fuel and vegetation conditions in the vicinity of structures. The intent is to reduce fuel loadings in the vicinity of structures to alter the behavior of a wildfire, such as slowing the rate of spread and reducing the intensity, to allow suppression activities and structure protection activities to occur (State Board of Forestry and Fire Protection and California Department of Forestry and Fire Protection 2006).

17.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

Table 17-1 presents the evaluation criteria for Hazardous Materials and Public Safety. These criteria are drawn primarily from local plans, adapted where necessary to reflect CEQA, TRPA and NEPA requirements. For the purpose of this analysis, the stated applicable points of significance determine whether implementing the Project will result in a significant impact. These points of significance are based upon Appendix G of the State CEQA Guidelines and the TRPA Initial Environmental Checklist. A

Hazardous Materials and Public Safety impact is significant if implementation of the Project exceeds the point of significance shown in Table 17-1.

The EIR/EIS does not address certain CEQA and TRPA evaluation criteria for Hazardous Materials and Public Safety because the Project Team determined that the criteria are not applicable to the Project. Rejected evaluation criteria for Hazardous Materials and Public Safety include soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water, and impacts related to projects in the vicinity of an airport or private airstrip.

Table 17-1

Evaluation Criteria with Point of Significance - Hazardous Materials and Public Safety

Evaluation Criteria	Significance Threshold	Justification
PS-1. Will the Project expose people or structures to a significant risk or loss, injury or death involving fire hazards, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands?	Failure to implement best management practices (BMPs) for wildfire prevention	CEQA Appendix G Checklist VIII (h); California Government Code §51175-51189; PRC §4291; CBC §701A.3.2
PS-2. Will the Project result in an interference with emergency response plans or emergency evacuation plans?	a) Impediments to emergency response or evacuation routes b) Emergency response times below agency standards	CEQA Appendix G Checklist VIII (g); TRPA Initial Environmental Checklist II (10b); *TRPA Code of Ordinances* and *Regional Plan Goals and Policies*; *Placer County General Plan* Public Facilities and Services Element
PS-3. Will the Project involve the use of explosives for trenching?	Failure to implement adequate protection measures.	CEQA Appendix G Checklist VIII (a); TRPA Initial Environmental Checklist II (10a)
PS-4. Does the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, release of hazardous materials into the environment, or emit hazardous emissions within one-quarter mile of an existing or proposed school?	a) Non-compliance with State and federal standards for the transport and use of hazardous materials during construction and operation b) Location of the Project within on-quarter mile of a school.	CEQA Appendix G Checklist VIII (a, b, c); TRPA Initial Environmental Checklist II(10a); federal Hazardous Materials Transportation Act (29 CFR 172, 173, 177, and 397); California Health and Safety Code Division 20; 8 CCR and 19 CCR
PS-5. Does the Project have the potential to encounter contaminated soils or expose workers or the public to health hazards, including those from a known hazardous waste site?	a) Non-compliance with State and federal handling and disposal regulations and procedures b) Location of project within 500 feet of a known hazardous waste site c) Creation of project operation	CEQA Appendix G Checklist VIII (d); TRPA Initial Environmental Checklist II (10a and 17 a, b); PRC §21150-21154; Government Code Section 65962.5; RCRA; CERCLA; Placer Mosquito and Vector Control District

Evaluation Criteria	Significance Threshold	Justification
	facilities that allow for mosquito breeding	

Source: Hauge Brueck Associates 2009.

17.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

Impact: **PS-1. Will the Project expose people or structures to a significant risk or loss, injury or death involving fire hazards, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands?**

Analysis: *Less than Significant Impact; Alternative 2 (No Project)*

Under Alternative 2 (No Project), there would be no changes to land use or facilities at HMR, resulting in a less than significant impact on the exposure of people or structures to wildfire hazards.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

Construction and operation of new residential, commercial and recreational facilities in the Project area in a wildland-urban interface (WUI) setting would increase the exposure of people and structures to the risk of wildfires. Wildfires are a substantial threat to the HMR Project area and vicinity due to location of people and structures in a WUI setting with heavy fuel loads, steep terrain, summer dry conditions, and multiple ignition sources. Calfire classifies the Project area as a Very High Fire Hazard Area (CAL FIRE 2009a).

NTFPD serves most of the Project area located in an LRA; the Mid-Mountain Base area is in an SRA, served by the USFS through an MOU with Calfire. The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 include annexing the remaining HMR properties into the NTFPD and the adoption and implementation of a fuel reduction program. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 include upgrading the existing snowmaking system to be compatible with wildland fire suppression needs in the Project area.

Specific fuel reduction measures, building designs and materials, and snowmaking water delivery systems have not been designed. Consequently, the increase in exposure of people and structures to wildfire hazards in a WUI setting in the Project area is considered a significant impact.

Mitigation: **PS-1: NTFPD Design Approval and Annexation.**

Prior to issuing Building Permits for the Project, Placer County shall require the Project Applicant to pay appropriate fair share development impact fees for Project review and to maintain existing levels of fire protection service in the NTFPD service area. The Project

Applicant shall be required to post a bond to ensure that appropriate mitigation measures are completed and in place during construction and implemented for project operation. The NTFPD shall review and approve building materials and designs, fire protection systems in buildings, landscaping, fire flows to hydrants and the snowmaking system, emergency vehicle access routes, and vegetation treatments in the Project area. Prior to occupancy, the NTFPD shall annex the Project area (subject to a LAFCO process) to provide for an increased level of fire protection. The NTFPD shall enter into mutual aid agreements for wildfire suppression with the USFS LTBMU and Calfire, and coordinate with these agencies on developing and implementing wildland fuel reduction measures as needed in the Project area. NTFPD will have the responsibility and enhanced capability to control fire dangers and respond to emergencies over the entirety of the HMR Project area.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 4, 5, and 6*

Implementation of Mitigation Measure PS-1 will increase the level of fire protection capacity available to the Project area to a level equivalent to that in nearby urban areas. Design approvals will ensure that the Project incorporates measure to reduce the risk of exposure of people and structures to wildfires to a level of less than significant.

Impact: PS-2. Will the Project result in an interference with emergency response plans or emergency evacuation plans?

Analysis: *Less than Significant Impact; Alternative 2 (No Project)*

Under Alternative 2 (No Project), there would be no changes to land use or facilities at HMR, resulting in a less than significant impact on emergency response and evacuation plans.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 have potential to impede emergency responses on a temporary basis during construction, and permanently if adequate emergency vehicle access is not providing to and throughout the Project area.

Construction would occur in phases, depending on weather conditions, economic factors, and demand for new facilities. Site grading and utility work would occur in the earliest part of construction, followed by the residential and commercial structures. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would follow with construction of the new skier service and related recreational facilities at the North Base area. Construction activities would probably be continuous, except during winter months when some activities would cease due to weather and snow cover.

Much of the construction work would not affect emergency access to the surrounding area, because construction activities would be primarily focused within the Project area. However, construction vehicles and equipment may block and/or slow through traffic in the surrounding area, especially along SR 89. This could temporarily interfere with the ability of the PCSD or NTFPD to provide emergency services to the Project area and

vicinity. A temporary, construction-related impediment to emergency access is considered a significant impact.

The Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 require emergency vehicle access and evacuation routes to provide for adequate response times and safe evacuation. With major buildings and facilities concentrated next to SR 89, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 are expected to have adequate road access and evacuation routes, but designs will require access and circulation for emergency response vehicles to multi-story, high-occupancy buildings in the Project area. Alternative 4 includes a single road access and driveways over 1,000 feet in length. There are no alternative ingress or egress routes provided. The potential for inadequate internal circulation and access for emergency vehicles in the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6, and the lack of alternative access and evacuation routes in Alternative 4, result in significant impacts to emergency response or evacuation plans.

Mitigation: **PS-2: Ensure Emergency Access During Construction and Operation**

The Project Applicant shall prepare and submit an emergency access plan to TRPA, Placer County Engineering and Surveying Department (ESD), PCSD, and the NTFPD for review and approval before construction permits are issued. The plan shall include detailed descriptions of how emergency access would be maintained during Project construction. Emergency access measures are expected to include the following:

- Phasing construction activities to provide continual access to emergency vehicles during construction;
- Backfilling trenches and/or placing metal plates over the trenches at the end of each workday;
- Scheduling deliveries and truck trips during off-peak hours;
- Using or developing alternate access routes as needed; and
- Notifying the PCSD and the NTFPD of construction activities and providing these agencies with a copy of the emergency access plan.

Prior to issuing Building Permits for the Project, Placer County shall require the Project Applicant to pay appropriate fair share development impact fees for NTFPD review and approval of emergency vehicle access, circulation patterns, and evacuation routes. The Project shall incorporate designs, maintenance measures, and alternative emergency access routes as determined necessary by the NTFPD. The Project Applicant shall be required to post a bond to ensure that appropriate mitigation measures are completed and in place during construction and implemented for project operation.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 4, 5, and 6*

Implementation of Mitigation Measure PS-2 will ensure that emergency access to the Project area and surrounding areas will not be impeded by Project-related construction activities, and will be provided and maintained during Project operation. This will reduce the risk of interference with emergency response plans or emergency evacuation plans to less than significant.

Impact: **PS-3. Will the Project involve the use of explosives for trenching?**

Analysis: *Less than Significant Impact; Alternative 2 (No Project)*

Under Alternative 2 (No Project), there would be no changes to land use or facilities at HMR, and no new use of explosives for trenching. Any existing use of explosives to control avalanches at HMR would continue, resulting in a less than significant impact.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

Blasting may be required to excavate large rock formations in the construction of underground parking facilities, utility trenching, and preparing building sites for foundations. Blasting includes a series of small charges, detonated in sequence, that are placed in holes drilled into the rock formations. While no specific sites that require blasting are known, extensive sub-surface rock and boulders are common in the Lake Tahoe Basin, and conditions necessitating the use of explosives for removal may be encountered during construction. With the continued operation of the HMR Ski Area under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6, any existing use of explosives to control avalanches at HMR would continue unchanged.

The use of explosives for blasting during construction could result in vibration damage or risk of injury from explosion or flying debris to persons present at nearby locations, or at developed and occupied uses within or adjacent to the Project area. Therefore, the potential use of blasting during construction and ski area operation is considered a significant impact.

Mitigation: **PS-3: Implement Blast Management Techniques to Reduce Adverse Effects**

Prior to any construction blasting, the Project Applicant shall prepare and submit a blasting plan to the Placer County ESD and the NTFPD for review and approval. The Project shall incorporate blast management techniques to minimize risks to life and property in the Project area and vicinity. These measures may include, but are not limited to, the following:

1. Blasting shall be allowed only on weekdays from 10:00 AM to 4:00 PM. Exceptions are allowed if it can be shown that construction beyond these times is necessary to meet other regulatory deadlines or to alleviate safety hazards.
2. To the greatest extent feasible, blasting area shall occur prior to the occupancy of structures.
3. In areas of controlled blasting, the contractor shall:
    a) Ensure that blasting of rock shall be conducted under the guidance of a qualified blasting consultant.
    b) Give 30-day advance and 5-day advance written notices to residences, businesses and utility owners within 0.5 mile from the controlled blasting area;

c) Inspect structures within 300 feet of the blast site no more than two weeks prior to commencement of controlled blasting to document existing conditions of the structures;

d) Conduct post-blasting inspections of nearby structures and document any blasting-related impacts. If impacts occurred, develop remediation measures in consultation with ESD;

e) Use best available technology, such as blast mats, emplacing overburden, modifying shot timing, or other techniques to minimize noise generated by blasting; and,

f) Require personnel in the controlled blasting area to wear ear, eye, head, and other appropriate protection during blasting excavation activities.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 4, 5, and 6*

Implementation of Mitigation Measure PS-3 will ensure the use of explosives for blasting in the Project area will be conducted to minimize adverse impacts outside the controlled blasting area, reducing the impact to less than significant. Implementation of Mitigation Measures NOI-1a and NOI-1b (see Impact NOI-1 in Chapter 13) will also help to reduce potential adverse effects from blasting.

Impact: **PS-4. Does the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, release of hazardous materials into the environment, or emit hazardous emissions within one-quarter mile of an existing or proposed school?**

Analysis: *Less than Significant Impact; Alternative 2 (No Project)*

Under Alternative 2 (No Project), there would be no changes to land use or facilities at HMR, and no new generation, handling, transport, or use of hazardous materials near schools. Alternative 2 would result in a less than significant impact related to the routine transport, use, disposal, or release of hazardous materials within one-quarter mile of a school.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Proposed Project (Alternative 1) and Alts 3, 4, 5, and 6*

Construction would involve the storage, use, and transport of hazardous materials typical of construction and operation of ski resort, residential, and commercial land uses projects. Commonly used hazardous materials expected to be used during construction and operation of Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 include asphalt, gasoline, diesel, chlorine, lubricants, paints, and solvents. CHP and Caltrans regulate transportation of hazardous materials on area roadways, and the use of these materials is regulated by the DTSC as outlined in CCR 22.

The Project Applicant, builders, contractors, business owners, and others would be required to use, store, and transport hazardous materials in compliance with local, State,

and federal regulations during construction and operation. There are no existing or proposed schools located within 0.25 mile of the Project area. Compliance with mandatory State and federal standards for the transport and use of hazardous materials will reduce potential hazardous materials impacts to less than significant.

Under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6, the Project Applicant will be required to prepare a Hazardous Materials Business Plan and inventory of hazardous materials under the State of California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act, California Health and Safety Code, Division 20, Chapter 6.95, Article 1). The Hazardous Materials Business Plan includes:

- An inventory of hazardous materials handled;
- Facility floor plans showing where hazardous materials are stored;
- An emergency response plan, and;
- Provisions for employee training in safety and emergency response procedures.

The SWRCB regulates the storage of hazardous materials in USTs under the California CCR. The installation and monitoring of new tanks, monitoring of existing tanks, and corrective actions for removed tanks are regulated by State standards. The preparation and implementation of a Hazardous Materials Business Plan and the design, installation, and use of storage tanks to State standards are expected to result in a less than significant impacts related to the storage or use of hazardous materials in the Project area.

Mitigation: No mitigation is required.

Impact: PS-5. Does the Project have the potential to encounter contaminated soils or expose workers or the public to health hazards, including those from a known hazardous waste site?

Analysis: *Less than Significant Impact; Alternative 2 (No Project)*

Under Alternative 2 (No Project), there would be no changes to land use or facilities at HMR, and no potential to encounter contaminated soils or expose workers or the public to health hazards, including those from a known hazardous waste site. This is considered a less than significant impact.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

The *Phase I ESA* identified that the removal of older buildings at HMR may expose people to lead based paint or ACMs. Although no inventory was conducted, lead and asbestos were commonly used materials in buildings prior to the 1980s. The *Phase I ESA* searched regulatory databases and conducted a site investigation, and did not find other potential sources of hazardous materials or waste that would pose a health hazard for residents, visitors, or construction workers in the Project area (Robinson Engineering Company 2005). In the event that previously unknown lead based paint, asbestos, contaminated soils, or buried hazardous waste is encountered during construction, the contractor is required to notify appropriate regulatory agencies and implement appropriate actions to comply with regulatory agency standards to avoid hazardous waste

releases and worker exposure and provide for cleanup measures. An accredited inspector in accordance with EPA and Cal-OSHA standards under Clean Air Act §112 must remove ACMs and lead. Agency notification and compliance with applicable construction and workplace safety standards is considered sufficient to maintain potential impacts to a less than significant level, and no additional mitigation is required.

Construction of the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 may create opportunities for water ponding – such as stockpiles of soil and materials, compacted soil, graded swales, and other features – that may temporarily increase mosquito breeding habitat. Operation of the Proposed Project (Alternative 1) and Alternatives 3 and 5 include the restoration of an SEZ, which may increase breeding habitat. The potential for temporary and permanent increases in mosquito breeding habitat is considered a significant impact on public health and safety.

Mitigation: **PS-5: Construction and Design Review by the Placer Mosquito and Vector Control District.**

Prior to approval of Improvement Plans for any phase of the Project, Placer County shall require the Project Applicant to consult with the Placer Mosquito and Vector Control District to review and approve construction plans. If the District determines that the Project would create new temporary or permanent mosquito breeding habitats during construction or operation, the District shall recommend design modifications and BMPs, if needed. In addition, the Project Applicant shall provide access to District technicians to the Project area to inspect and treat breeding habitats as necessary to reduce risks to public health.

After Mitigation: *Less than Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

Implementation of Mitigation Measure PS-5 will ensure appropriate design review and approval by the Placer Mosquito and Vector Control District to reduce potential mosquito breeding habitats, and ensures appropriate access for technicians to inspect and treat as necessary habitats on-site, reducing the impact to public health and safety to less than significant.

17.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact: PS-C1: Will the Project have significant cumulative impacts to public safety?

Analysis: *Less than Significant Impact; Proposed Project (Alternative 1) and Alternatives 2, 3, 4, 5, and 6*

Other development projects in the Tahoe Basin where older structures would be demolished have a similar potential to result in health hazards related to exposure of persons to asbestos and lead-based paint. However, as with the Project, an accredited inspector in accordance with EPA and Cal-OSHA standards under Clean Air Act §112 must remove ACMs and lead, and therefore impacts would be expected to be less than significant and no cumulatively considerable contribution is expected. Other projects would have a similar less than significant impact from routine use and transport of

hazardous materials commonly used during construction and operation of ski resorts, residential, and commercial uses because they are subject to the same government regulations. These hazardous materials include chlorine, gasoline, asphalt, and diesel. Transportation of hazardous materials on area roadways is regulated by the CHP and Caltrans, and the use of these materials is regulated by the DTSC, as outlined in CCR 22. The Project is not expected to directly or indirectly induce the use of hazardous materials in the Basin. Therefore, no cumulative impact to public safety is expected.

Mitigation: No mitigation is required.

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18.0 RECREATION

18.1 ENVIRONMENTAL SETTING

18.1.1 Project Area

Homewood is an unincorporated community in Placer County, California, located on the west shore of Lake Tahoe. The ski resort, located a few miles south of Tahoe City, has approximately 1,200 acres of skiable terrain with views of Lake Tahoe. The resort experiences around 400 inches of snow precipitation a year and has about 300 days of sunny weather a year. Ellis Peak shields the resort from the high winds created by storms coming over the Sierra Crest.

The Project area is situated with TRPA Plan Area Statements (PAS) 157 – Homewood/Ski Homewood Area, 158 – McKinney Tract, and 159 – Homewood/Commercial. Recreation opportunities in the Project area are mostly associated with Homewood Mountain Resort (HMR). Beyond downhill alpine skiing, the Project area includes cross-country skiing trails, hiking and mountain bike trails for summer use, and fishing at Quail Lake. Adjacent to the Project area, recreation opportunities are available on USDA Forest Service (USFS) Lake Tahoe Basin Management Unit (LTBMU) lands and waters of Lake Tahoe.

A Class III Bike Route, a roadway with shoulder and bike route signage, owned and operated by Tahoe City Public Utility District (TCPUD) and identified by the Lake Tahoe Bicycle Coalition on their bike trails map, parallels SR 89 through the Project area. The trail serves up to 400 bicyclists and 100 pedestrians per day. User surveys north of Homewood recorded an average of 93 bicyclists per hour in July, with 66% of trips recreation-related and 33% non-recreation trips (Tahoe Metropolitan Planning Agency 2008). The trail is discontinuous between Fawn Street and Cherry Street, where users must travel on the street with motor vehicle traffic.

A Class I Bike Trail, a shared use separate paved trail with two travel lanes and shoulders for bike and pedestrian uses, extends from Tahoe Pines to the west to Tahoe City to the east, and south of Homewood towards Meeks Bay. A segment of Class I Bike Trail runs between the North Base and South Base areas at HMR. The trail runs along San Souci Terrace, Sans Souci Boulevard, and Prospect Avenue, which runs parallel to SR 89 one block to the east, between Fawn Street in the north to Tahoe Ski Bowl Way in the south (Tahoe Metropolitan Planning Agency 2006).

In the Madden Creek drainage on the north side of HMR two roads ascend in the westerly direction towards Lake Louise. One road extends from San Souci Terrace, while the other extends from the resorts North Base area. The roads join and follow a ridge to the south, west of Quail Lake, through USFS land and connect with the Rubicon Trail in the McKinney Creek drainage.

PAS 158 – McKinney Tract is adjacent to HMR and includes predominantly residential uses. Most of the shoreline of Lake Tahoe in PAS 158 is privately-owned, although Chambers Landing Beach provides public access to the shoreline and lake. Forest roads and the McKinney Rubicon Springs Road provide mountain biking and hiking opportunities.

PAS 159 – Homewood/Commercial includes two privately-owned marinas on the Lake Tahoe shoreline: the Homewood Marina (moorings and boat storage) and Obexer's Marina (moorings, slips and boat storage). Boating and beach recreation opportunities are available at the both marinas.

18.1.2 West Shore Area

In the Placer County portion of the west shore of Lake Tahoe, there are five public day use parks and overnight campgrounds. Quail Creek Park is located to the southeast of HMR near Quail Lake. The park is operated by the TCPUD and offers hiking, picnicking, and swimming. The USFS LTBMU operates William Kent Campground and Kaspian Campground and Picnic Area to the north of Homewood, and Meeks Bay to the south. California State Parks operates Ed Z-Berg Sugar Pine Point and D. L. Bliss State Parks to the south of Homewood.

Burton Creek State Park is located approximately 6 miles north of the Project area, Ed Z'berg Sugar Pine Point State Park located about 3 miles to the south of the Project area, and D. L. Bliss/Emerald Bay State Parks (two separate State parks managed as a single unit) are located about 12 miles south of the Project area. Burton Creek State Park is currently undeveloped – no dedicated parking is available and it receives relatively little recreational use. Ed Z'berg Sugar Pine Point State Park had 24,871 visitor days for day use and overnight camping in July 2009. D.L. Bliss/Emerald Bay State Parks had 25,107 visitor days for day use and overnight camping in July 2009 (Humphrey 2009). During peak summer demand periods, especially during weekends, parking remains available at Sugar Pine Point State Park, but campers are often turned away when the parks camping capacity is reached. At D.L. Bliss/Emerald Bay State Parks, campers are turned away when campground capacity is reached, and day use parking capacity, particularly at the Vikingsholm trailhead, is often exceeded (Lindemann 2009). Current trends of increased California population growth and increases in active outdoor life styles are anticipated to continue, increasing demand for existing State park facilities (California Department of Parks and Recreation 2005).

18.2 REGULATORY SETTING

18.2.1 Tahoe Regional Planning Agency

TRPA Regional Plan Recreation Thresholds and Plan Element

The Value Statement, a statement that describes the desired condition, established for the Tahoe Regional Planning Agency's (TRPA) Recreation Threshold is found in the "Study Report for the Establishment of Environmental Threshold Carrying Capacities" and states that recreation is to:

> "Maintain opportunities and facilities for the full spectrum of outdoor recreational uses to a socially acceptable level of concentration" (TRPA 1982).

In keeping with this Value Statement, the TRPA developed performance standards known as Environmental Threshold Carrying Capacities (ETCCs). For recreation resources, it is the policy of the TRPA Governing Body to:

- Preserve and enhance the high quality recreational experience including preservation of high-quality undeveloped shorezone and other natural areas;
- Consider provisions for additional access, where lawful and feasible, to the shorezone and high quality undeveloped areas for low density recreational uses; and
- Establish and ensure a fair share of the total Basin capacity for outdoor recreation is available to the general public.

In the environmental review of projects, the TRPA defines an impact based upon whether the action will degrade the quality of the recreation experience, quantity and capacity of existing

recreational opportunities, or public access to recreational areas. The Recreation Element of the *Regional Plan* (TRPA 1986) establishes specific goals and policies to support the Recreation ETCC. The goals and policies provide for the development, utilization, and management of the recreational resources. The Recreation Element has three Subelements:

1) Dispersed Recreation, such as hiking, jogging, primitive camping, nature study, fishing, cross-country skiing, rafting/kayaking, and swimming;
2) Developed Recreation, including campgrounds, visitor information centers, and boat launching facilities; and
3) Urban Recreation, including day use areas, recreation centers, and participant sports facilities. Urban recreation is normally provided in urban areas and is primarily intended to serve the needs of local residents, as oppose to tourists or other visitors to the region.

Dispersed Recreation, Developed Recreation, and Urban Recreation Subelement goals and policies intend to achieve and maintain the ETCCs by ensuring that recreational opportunities keep pace with public demand, that recreational facilities remain high on the development priority list, and that the quality of the outdoor recreational experience is maintained.

Dispersed Recreation Subelement Goals

The natural landscape of the Lake Tahoe Basin provides opportunities for dispersed forms of recreation that require little or no developed facilities. The value or quality of a particular activity depends on preserving the attractiveness and ecological integrity of the use areas and managing the resources that support the activity or experience. Dispersed Recreation Subelement Goals and Policies include:

Goal 1. Encourage opportunities for dispersed recreation when consistent with environmental values and protection of the natural resources. Dispersed recreation involves such activities as hiking, jogging, primitive camping, nature study, fishing, cross-country skiing, rafting/kayaking, and swimming. These activities require a quality resource base and some degree of solitude. Achieving this goal will require commitments to develop support facilities and provide access such as trails, trailheads, restrooms in heavily used areas, and some hardening to protect the land.

Goal 2. Provide high-quality recreational opportunities. Numerous opportunities exist in the Lake Tahoe Basin to provide varied and quality recreational experiences. High-quality recreational opportunities often depend on limiting conflicts between uses and ensuring that uses are compatible with affected resources.

Developed Recreation Subelement Goals and Policies

Developed facilities in the Lake Tahoe Basin include marina/launch facilities, ski areas, campgrounds, several group facilities, a visitor information center, and beaches. The goals of the Developed Recreation Subelement relate to making sure other developments do not result in a reduced capacity of developed recreation facilities. Developed Recreation Subelement Goals and Policies include:

Goal 1. Provide a fair share of the total Basin capacity for outdoor recreation. This goal addresses the need to reserve capacity for recreation-oriented types of development. Capacity will be reserved in terms of water supply, land coverage, and air and water quality. Public

roads and transportation systems shall be managed to provide service to outdoor recreation areas.

Policy 1. All existing reservations of services for outdoor recreation shall continue to be committed for such purposes. The purpose of this policy is to recognize existing reserve commitments for outdoor recreation, such as the reservation of sewage capacity by the LTBMU, and to ensure such commitments are not lost or diverted to interests other than recreation.

Policy 2. When reviewing projects that commit significant resources to non-outdoor recreation uses, TRPA shall be required to make written findings that sufficient resource capacity remains to obtain the recreation goals and policies of this plan. Based on estimated recreational development permitted by the *Regional Plan*, the TRPA shall specify "fair share" estimates for the Basin and local areas of critical services and resources. Non-recreational projects may not be approved that utilize reserved capacities.

Policy 3. Provisions shall be made for additional developed outdoor recreation facilities capable of accommodating 6,114 PAOT in overnight facilities and 6,761 PAOT in summer day-use facilities and 12,400 PAOT in winter day-use facilities.

Goal 2. Provide for the appropriate type, location, and rate of development of outdoor recreational uses. The appropriate type and rate of outdoor recreational development should depend on demand. The location of facilities should be responsive to both environmental concerns and site amenities.

Policy 1. Expansion of recreational facilities and opportunities should be in response to demand. This strategy provides for expansion of existing recreational facilities and opportunity for development of new facilities if they meet ETCCs. Opportunity may be expanded to respond to public need if physical resources are available and traffic mitigation measures can be implemented.

Policy 2. Bike trails shall be expanded to provide alternatives for travel in conjunction with transportation systems. This policy encourages additional bike trail systems, emphasizing expansion near urban areas to establish alternative modes of travel to reduce vehicle miles of travel (VMT).

Policy 7. Development of day-use facilities shall be encouraged in or near established urban areas, whenever practical. Day-use facilities are generally in high demand close to urban areas, where residents can use facilities with minimal travel. This policy encourages new day-use facilities near urban areas or where the particular use or service is best suited.

Policy 8. Visitor information facilities shall be located, to the extent feasible, near entry points to the Basin or close to urban areas. These facilities serve the public by exchanging information and by providing travelers with directions to major attractions. The siting of these facilities should complement objectives to reduce the VMTs in the Lake Tahoe Basin.

Policy 9. Parking along scenic corridors shall be restricted to protect roadway views and roadside vegetation. This policy would reduce roadside parking by providing off-road parking "satellites" in conjunction with roadside barriers.

Policy 10. Transit operations, including shuttle-type boat service, should serve major recreation facilities and attractions. Transit operations can reduce vehicle trips and the need for parking at recreation areas and facilities. Decreased auto use in many areas would enhance the recreational experience.

Goal 3. Protect natural resources from overuse and rectify incompatibility between uses. Overcrowding and conflicting uses can degrade recreation resources and experiences.

Policy 1. Recreation development shall be consistent with the special resources of the area. The physical and biological characteristics of the Lake Tahoe Basin create a unique variety of recreational opportunities. These qualities define the types of recreational activities that are compatible with the Basin's natural features. Avoid activities that are best served elsewhere or are incompatible with the Basin's natural qualities.

Policy 2. Regulate intensity, timing, type, and location of use to protect resources and separate incompatible uses. Regulations will be adopted and enforced dealing with the timing, types of use and PAOTs permitted for various activities to avoid conflicts with fish, wildlife, and vegetation. Incompatible activities between visitors would be separated by establishing use areas for dispersed recreation separate from developed recreation areas. This strategy would examine overall demand and planned capacity and determine site-specific areas within the Lake Tahoe Basin for the various demands to be met.

Goal 4. Provide for the efficient use of outdoor recreation resources. Some recreational areas - ski areas, beaches, campgrounds, and picnic areas - have wide fluctuations in seasonal and weekday use. This goal promotes a more balanced use of facilities and sites on a year-round and weekly basis.

Policy 1. Promote the use of underutilized recreation areas through programs that improve the public awareness of recreation opportunities and through an expanded water and inland transit system.

Policy 2. Seasonal facilities should provide opportunities for alternative uses in the off-season, wherever appropriate.

Urban Recreation Subelement Goals and Policies

Numerous outdoor recreational opportunities are conveniently located near urban areas. High-demand facilities include participant sports facilities and day-use facilities such as picnic areas, parks, and recreation centers. The demand for such public facilities must be anticipated in order to reserve sufficient capacity for future expansion or development. Urban Recreation Subelement Goals and Policies include:

Goal 1. Provide sufficient capacity for local-oriented forms of outdoor and indoor recreation in urban areas. Recreational facilities in the Lake Tahoe Basin more than accommodate the needs of residents, but these facilities are more regional in nature and cater to visitors. The specialized recreational needs of residents need to be considered apart from the more general demands of the tourist.

Policy 1. Reserve sufficient public service and facility capacity to accommodate all forms of urban recreation. Areas suitable for urban-oriented recreation facilities need to be identified,

appropriately acquired, and managed by local government or service districts. The demand for such forms of recreation must be determined by local residents and local government.

Policy 2. Urban outdoor recreational facilities located in sensitive areas should be encouraged to relocate to other suitable sites.

2006 Threshold Evaluation Report

The 2006 Threshold Evaluation Report reviews the status of the individual thresholds, including the two recreation threshold indicators: R-1 - Quality experience and additional access, and R-2 - Fair share of recreation capacity. The 2006 Threshold Evaluation Report concludes that both threshold indicators are in attainment (TRPA 2007). Several concerns are raised with regard to possible trends that could undermine threshold attainment, including a disparity between the amount of new residential development versus the amount of new recreational development measured by persons at one time (PAOT), and the loss of recreational opportunities from protection of other resource values (e.g., stream environment zones or SEZs) or from private recreational providers changing the existing use to achieve higher revenue production.

Lake Tahoe Regional Bicycle and Pedestrian Master Plan

The 2006 Lake Tahoe Regional Bicycle and Pedestrian Master Plan (BPMP) was prepared by the TRPA Tahoe Metropolitan Planning Organization (TMPO). In the State of California, TRPA is the designated Regional Transportation Planning Agency (RTPA). The core mission of the TMPO is to establish a safe, efficient and integrated transportation system that reduces reliance on the private automobile, provides for alternative modes of transportation, serves the basic transportation needs of the citizens of the Tahoe Region, supports the economic base of the region in the movement of goods and people, and minimizes adverse impacts on humans and the environment. The BPMP is blueprint for developing a regional bicycle and pedestrian system that includes facilities and programs throughout the Lake Tahoe region (TMPO 2006). The following applicable goal and policy statements express the philosophy behind the BPMP and the proposed system. The BPMP Goals and Objectives evolved from the desire to provide citizens and visitors with a bicycle and pedestrian system that can accommodate a variety of trip purposes, and user types and levels with the goal of improving safety and reducing automobile dependency. Goals and Objectives include:

GOAL 1. Provide safer and more efficient bicycle facilities in the Lake Tahoe Basin that create a positive experience for residents and visitors.

OBJECTIVE. Construct bicycle facilities identified in the BPMP and provide for the maintenance of both existing and new facilities.

GOAL 2. Include bicycle facilities in all appropriate future development or redevelopment projects to facilitate bicycling with a high degree of connectivity to the existing and proposed system.

OBJECTIVE. Maximize the number of bicycle trips in existing, new, and redevelopment areas by encouraging the construction of new facilities.

GOAL 3. Develop a bicycle and pedestrian system that enhances safety and convenience of bicycling and walking to employment, recreational, and educational centers in the Lake Tahoe Basin.

OBJECTIVE. Increase bicycle and pedestrian trips to employment, recreational and educational centers to reduce vehicle congestion and improve air quality.

GOAL 4. Educate and inform residents and visitors of the Lake Tahoe Basin about how to use bicycle and pedestrian facilities safely.

OBJECTIVE. Improve bicycling and pedestrian conditions in the Lake Tahoe Basin by reducing accidents and increasing the number of bicycle and pedestrian system users.

GOAL 7. Provide a safer, more efficient pedestrian network that improves pedestrian access and mobility throughout the Lake Tahoe Basin by removing obstacles and implementing pedestrian facilities and a model education and enforcement program.

OBJECTIVE. Create a policy framework and action program to enhance walking as a viable transportation choice, particularly in pedestrian districts and areas of high pedestrian activity for commutes and errands where travel is less than ¾ mile.

GOAL 8. Improve pedestrian safety at controlled locations.

OBJECTIVE. Provide safe, frequent crossing opportunities for pedestrians at controlled locations.

GOAL 9. Improve pedestrian safety at uncontrolled locations.

OBJECTIVE. Provide safe crossings for pedestrians at uncontrolled approaches to intersections, mid-block crossings, and trail crossings.

GOAL 10. Maximize the walkability of the pedestrian districts in the Tahoe Basin.

OBJECTIVE. Provide compact intersections, pathways, and frequent crossing opportunities that are safe, accessible, functional, and useful.

GOAL 11. All new developments should provide a safe, comfortable walking environment that promotes pedestrian activity.

OBJECTIVE. New development should be accessible to all pedestrians with wide sidewalks, compact intersections, and integrated pedestrian circulation.

Plan Area Statements

The Project area includes TRPA PAS' 157 – Homewood/Ski Homewood Area, 158 – McKinney Tract, and 159 – Homewood/Commercial. The PAS' summarize permitted or compatible recreation activities and land uses, recreation policies, and PAOT allocations.

157 – Homewood/Ski Homewood Area

Land Use Classification: Recreation.
Planning Statement: This area should continue to provide opportunities for downhill skiing within guidelines prepared through ski area master plans and scenic restoration plans.
Special Policies: Access for cross-country skiing should be improved.
Permissible Uses (Recreation):

Allowed (A): Day use areas, outdoor recreation concessions, and riding and hiking trails.
Special-use provisions required (S): Cross country skiing courses, skiing facilities, and snowmobile courses.

Additional Developed Outdoor Recreation:

Summer Day Uses: 0 PAOTs.
Winter Day Uses: 4,000 PAOTs. (4,000 is listed in error – the correct number is 1,100)
Overnight Uses: 280 PAOTs.
Other: 5.0 miles of hiking trails.

158 – McKinney Tract

Land Use Classification: Residential.
Planning Statement: This area should remain residential with a density of one single family dwelling per parcel.
Permissible Uses (Recreation):
Allowed (A): Riding and hiking trails, day use areas, and beach recreation.
Special-use provisions required (S): Participant sports facilities.
Tolerance District 7 (Shorezone):
Primary Uses: Beach recreation (intensive) (A), and salvage (A).
Accessory Structures: Mooring buoys (A), piers (A), fences (S), boat ramps (S), breakwaters or jetties (S), shoreline protective structures (A), floating platforms (A), and water intake lines (S).
Additional Developed Outdoor Recreation:
Summer Day Uses: 0 PAOT.
Winter Day Uses: 0 PAOT.
Overnight Uses: 0 PAOT.

159 – Homewood/Commercial Tract

Land Use Classification: Tourist.
Planning Statement: This area should continue to be a tourist commercial area. However, there is a need for rehabilitation while maintaining the scale and character of the west shore.
Permissible Uses (Recreation):
Allowed (A): Day use areas, participant sports facilities, beach recreation, outdoor recreation concessions, and marinas.
Special-use provisions required (S): Recreation center, boat launching facilities, cross-country skiing courses, riding and hiking trails, skiing facilities, snow mobile courses, and visitor information center.
Tolerance District 7 (Shorezone):
Primary Uses: Water oriented outdoor recreation concessions (A), beach recreation (intensive) (A), and waterborne transit (A), boat launching facilities (S), tour boat (A), safety and navigation devices (A), marinas (S), and salvage (S)
Accessory Structures: Mooring buoys (A), piers (A), fences (S), boat ramps (S), breakwaters or jetties (S), shoreline protective structures (A), floating platforms (A), and water intake lines (S).
Additional Developed Outdoor Recreation:
Summer Day Uses: 0 PAOT.
Winter Day Uses: 0 PAOT.
Overnight Uses: 0 PAOT.

18.2.2 State of California

The Quimby Act (California Government Code §66477) preserves open space and parkland in urbanizing areas of the State by authorizing local governments to establish ordinances requiring developers of new subdivisions to dedicate land for parks, pay an in-lieu fee, or perform a combination of the two. The Quimby Act provides two standards for the dedication of land for use as parkland. If the existing area of parkland in a community is 3 acres or more per 1,000 persons, then the community may require dedication based on a standard of 5 acres per 1,000 persons residing in the subdivision. If the existing amount of parkland in a community is less than 3 acres per 1,000 persons, then the community may

require dedication based on a standard of only 3 acres per 1,000 persons residing in the subdivision. The Quimby Act requires a city or county to adopt standards for recreational facilities in its general plan recreation element if it is to adopt a parkland dedication/fee ordinance.

The current Placer County parks fee includes a Quimby Act fee that is collected at the final map recording and an AB 1600 fee that is collected at the building permit stage. Project Applicants pay $555 per single family-zoned parcel, and $405 per multifamily unit at the time of subdivision to provide for improvements to accommodate increased demand for recreational facilities.

18.2.3 Placer County Code and General Plan

Chapter 18 of the Placer County Code is the County's Environmental Review Ordinance. Appendix A of the ordinance lists impacts that are normally considered significant for a number of topics including land use, traffic, air, and cultural resources, but does not list impacts for recreation. Section 5 of the Placer County General Plan, "Recreational and Cultural Resources," includes goals and associated policies for public recreation and parks, private recreational facilities and opportunities, and recreational trails (Placer County 1994). For the Project, relevant goals and policies include:

> **Goal 5.A: To develop and maintain a system of conveniently-located, properly-designed parks and recreational facilities to serve the needs of present and future residents, employees, and visitors.**
>
> 5.A.1. The County shall strive to achieve and maintain a standard of 5 acres of improved parkland and 5 acres of passive recreation area or open space per 1,000 population.
>
> 5.A.2. The County shall strive to achieve the following park facility standards:
>
> a. 1 tot lot per 1,000 residents,
> b. 1 playground per 3,000 residents,
> c. 1 tennis court per 6,000 residents,
> d. 1 basketball court per 6,000 residents,
> e. 1 hardball diamond per 3,000 residents,
> f. 1 softball/little league diamond per 3,000 residents,
> g. 1 mile of recreation trail per 1,000 residents,
> h. 1 youth soccer field per 2,000 residents,
> i. 1 adult field per 2,000 residents,
> j. 1 golf course per 50,000 residents.
>
> 5.A.3. The County shall require new development to provide a minimum of 5 acres of improved parkland and 5 acres of passive recreation area or open space for every 1,000 new residents of the area covered by the development. The park classification system shown in Table 5-1 should be used as a guide to the type of the facilities to be developed in achieving these standards.
>
> 5.A.4. The County shall consider the use of the following open space areas as passive parks to be applied to the requirement for 5 acres of passive park area for every 1,000 residents.
>
> a. Floodways,
> b. Protected riparian corridors and stream environment zones,
> c. Protected wildlife corridors,
> d. Greenways with the potential for trail development,
> e. Open water (e.g., ponds, lakes, and reservoirs),
> f. Protected woodland areas,
> g. Protected sensitive habitat areas providing that interpretive displays are provided (e.g., wetlands and habitat for rare, threatened or endangered species).
>
> Buffer areas are not considered as passive park areas if such areas are delineated by setbacks within private property. Where such areas are delineated by public easements or are held as common areas with

homeowner/property owner access or public access, they will be considered as passive park areas provided that there are opportunities for passive recreational use.

5.A.5. The County shall require the dedication of land and/or payment of fees, in accordance with state law (Quimby Act) to ensure funding for the acquisition and development of public recreation facilities. The fees are to be set and adjusted as necessary to provide for a level of funding that meets the actual cost to provide for all of the public parkland and park development needs generated by new development.

5.A.8. The County shall strive to maintain a well-balanced distribution of local parks, considering the character and intensity of present and planned development and future recreation needs.

5.A.11. Regional and local recreation facilities should reflect the character of the area and the existing and anticipated demand for such facilities.

5.A.12. The County shall encourage recreational development that complements the natural features of the area, including the topography, waterways, vegetation, and soil characteristics.

5.A.13. The County shall ensure that recreational activity is distributed and managed according to an area's carrying capacity, with special emphasis on controlling adverse environmental impacts, conflict between uses, and trespass. At the same time, the regional importance of each area's recreation resources shall be recognized.

5.A.19. The County shall encourage the development of parks near public facilities such as schools, community halls, libraries, museums, prehistoric or historic sites, and open space areas and shall encourage joint-use agreements whenever possible.

5.A.22. The County shall encourage compatible recreational use of riparian areas along streams and creeks where public access can be balanced with environmental values and private property rights.

5.A.23. The County shall require that park and recreation facilities required in conjunction with new development be developed in a timely manner so that such facilities are available concurrently with new development.

5.A.24. The County shall encourage public and private park and recreation agencies to acknowledge the natural resource values present at park sites during the design of a new facility.

Goal 5.B: To encourage development of private recreational facilities.

5.B.1. The County shall encourage development of private recreation facilities to reduce demands on public agencies.

Goal 5.C: To develop a system of interconnected hiking, riding, and bicycling trails and paths suitable for active recreation and transportation and circulation.

5.C.1. The County shall support development of a Countywide trail system designed to achieve the following objectives:

a. Provide safe, pleasant, and convenient travel by foot, horse, or bicycle;
b. Link residential areas, schools, community buildings, parks, and other community facilities within residential developments. Whenever possible, trails should connect to the Countywide trail system, regional trails, and the trail or bikeways plans of cities;
c. Provide access to recreation areas, major waterways, and vista points;
d. Provide for multiple uses (i.e., pedestrian, equestrian, bicycle);
e. Use public utility corridors such as power transmission line easements, railroad rights-of-way, irrigation district easements, and roadways;

f. Whenever feasible, be designed to separate equestrian trails from cycling paths, and to separate trails from the roadway by the use of curbs, fences, landscape buffering, and/or spatial distance;
g. Connect commercial areas, major employment centers, institutional uses, public facilities, and recreational areas with residential areas; and
h. Protect sensitive open space and natural resources.

5.C.3. The County shall work with other public agencies to coordinate the development of equestrian, pedestrian, and bicycle trails.

5.C.5. The County shall encourage the preservation of linear open space along rail corridors and other public easements for future use as trails. [See also policies/programs under Goal 3.D., Non-Motorized Transportation.]

18.2.4 Placer County Zoning Ordinance

As stated in Placer County Zoning Ordinance §17.54.100(D)(1), residential planned development projects are required to provide in-tract neighborhood recreational facilities to residents of the Planned Development in excess of the 5 acres per 1,000 residents are required by County Code §16.08.100 and Recreational Facilities Fee Ordinance (Chapter 15, Placer County Code). The total recreation facilities required for a planned development project cannot be less than that needed to accommodate the total demand for such facilities created by residents of the project, as determined by the Planning Commission in consultation with the Placer County Department of Facilities Services, Parks and Grounds Division.

Under Placer Code, project applicants have multiple ways to provide adequate recreational resources:

- Develop and dedicate to Placer County, or an appropriate recreation district serving the area of the project, a public park, consistent with the park needs of the community;
- Create commonly owned, on-site park and recreational improvements and/or as a credit toward fees, as deemed appropriate by the Planning Commission;
- Pay a fee equivalent to the value of the park and recreation improved land and park improvements to provide public parks and recreation facilities in the vicinity of the planned development. (Note: this fee correlates to parks and recreation demand created by the project and is a separate issue from that related to campground capacity issues raised by closure of the campground).

18.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

Table 18-1 presents the evaluation criteria for recreation. These criteria are drawn primarily from local plans, adapted where necessary to reflect CEQA and TRPA requirements. For the purpose of this analysis, the stated applicable points of significance determine whether implementing the Project will result in a significant impact. These points of significance are based upon Appendix G of the State CEQA Guidelines and the TRPA Initial Environmental Checklist. A recreation impact is significant if implementation of the Project exceeds the point of significance shown in Table 18-1.

Table 18-1

Evaluation Criteria with Point of Significance - Recreation

Evaluation Criteria	Significance Threshold	Justification
REC-1. Will the Project result in a decrease or loss of public access to any lake, waterway, or public lands or decrease in the quality of a recreational experience?	a) Project-induced elimination of an access route or entry point to lakes, waterways, or public lands; b) Project-induced degradation of a high quality recreational experience.	TRPA Initial Environmental Checklist II (19 d); TRPA Threshold Carrying Capacities (Resolution # 82-11); TRPA Regional Plan, Goals and Policies, Chapter V, Recreation Element.
REC-2. Will the Project create conflicts between recreation uses, either existing or proposed?	a) Elimination of or significant reduction to an existing recreation use; b) Creation of new recreation use restrictions or limits in due to the Project.	TRPA Initial Environmental Checklist II (19 c,); TRPA Threshold Carrying Capacities (Resolution # 82-11); TRPA Regional Plan, Goals and Policies, Chapter V, Recreation Element.
REC-3. Will the Project result in the need to construct new recreational facilities or expansion of existing facilities?	Exceedance of capacity at existing local recreation facilities.	CEQA Appendix G Checklist XV (a, b); TRPA Initial Environmental Checklist II (19 a); TRPA Plan Area Statements; TRPA Threshold Carrying Capacities (Resolution # 82-11); TRPA Code of Ordinances, Chapters 21 and 33; TRPA Regional Plan Recreation Element.
REC-4. Will the Project create additional recreational capacity?	Exceedance of TRPA PAOT allocations.	TRPA Initial Environmental Checklist II (19 b).

Source: Hauge Brueck Associates 2009

18.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

Impact: **REC-1. Will the Project result in a decrease or loss of public access to any lake, waterway, or public lands or decrease in the quality of a recreational experience?**

Analysis: *Less than Significant Impact; No Project (Alternative 2)*

Under the No Project (Alternative 2), there would be no changes to existing land uses or facilities in the Project area. Consequently, access to existing public recreation areas and the quality of the recreation experience are not expected to change. The No Project (Alternative 2) is therefore expected to have a less than significant impact on access to recreation and the quality of the recreation experience.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternatives 1, 3, 5, and 6*

The Project area is located west of SR 89 and consists of an existing winter sports area and related recreational and support uses. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would not affect land uses or facilities on or with direct access to Lake Tahoe. Summer uses include informal hiking and mountain bike trail use. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would enhance recreation facilities and access to the Project area by designating 5 miles of publicly accessible hiking trails on the mountain, providing a community swimming pool at the Mid-Mountain Base area, an ice skating rink at the North Base area, an amphitheater for the Lake Tahoe Music Festival and other events, a link to the West Shore Bike Trail, and a miniature golf course. Hiking trails established at HMR would provide enhanced access to USFS LTBMU lands in the Project vicinity.

There are no public or private access points to Lake Tahoe or any other lake or waterway that would be removed by the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6, including the existing trail access to the TCPUD Trail Creek Park and Quail Lake south of the resort. HMR recently acquired the West Shore Café and Inn located just west of the project area. The site includes a dedicated parking lot, restaurant and inn structure and outdoor seating area/pier located on the shoreline of Lake Tahoe. While this property is in the ownership of HMR, it will be available for Lake access by residents and guests of the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6. With the maintenance of access to public lands within the vicinity of the project area and the provision of dedicated Lake access for HMR residents and guest, impacts on the availability of public access to recreational resources would be less than significant.

However, there are also public access points along the west shore of Lake Tahoe including points immediately across SR 89 from the proposed residential development areas of the Project. According to Placer County Department of Facility Services/Parks, these beach access points are currently lightly used and do not require substantial maintenance efforts due to low activity in the Homewood vicinity. Many public access points in the vicinity of the Project do not currently receive routine maintenance due to low use. With the addition of new full time residents and additional visitors to the Project area, the use of these beach access points would increase and current maintenance funding would not be adequate to address increased use. A new influx of Project generated use would create the need for a new maintenance operation that is currently not included in the funding structure of local public management agencies. Consequently, development under the Proposed Project (Alternative 1) or Alternatives 3, 5, and 6 would have a significant impact on the quality of the existing recreational experience at nearby beach access points along the west shore of Lake Tahoe.

Mitigation: **REC-1a. Beach Access Maintenance Funding**

The Project Applicant shall work with Placer County to develop a Zone of Benefit, which is a geographic area formed under Placer County Service Area law to provide extended services not already being provided, or a similar mechanism to fund maintenance as a result of the Project. Funding shall cover the cost of staff time maintaining the access points, maintenance materials, and, if a Zone of Benefit is established, administration fees. The fee shall be established through an engineer's report prepared by the applicant

at the applicant's expense and approved by the County or as otherwise prescribed by law. The Zone of Benefit shall include cost of living adjustments.

After Mitigation: *Less than Significant Impact; Alternatives 1, 3, 5, and 6*

Implementation of Mitigation Measure REC-1a will maintain the quality of public beach access points and therefore reduce the impact to less than significant.

Analysis: *Significant Impact; Alternative 4*

Alternative 4 will discontinue current recreational uses in the Project area by decommissioning the ski resort and creating 16 private residential parcels for the development of single-family homes. The recreational capacities (1,704 winter day use PAOTs) currently provided by the ski area for downhill and cross-country skiing in the winter, and informal hiking and mountain biking in the summer, would be eliminated. Access to LTBMU lands and other public lands through the Project area would be removed. The TRPA thresholds for recreation are to, "Preserve and enhance the high quality recreational experience including preservation of high-quality undeveloped shorezone and other natural areas" and, "Establish and ensure a fair share of the total Basin capacity for outdoor recreation is available to the general public". Alternative 4 would not preserve existing recreational opportunities and would reduce public access to recreational uses. The removal of public access and recreational facilities in the Project area would result in a significant impact on access to recreation opportunities and the quality of the recreation experience.

Mitigation: **REC-1b. Maintain or Enhance Public Access to Public Lands.**

The Project Applicant shall consult with the TRPA and public land managers in the Project vicinity, including the LTBMU and TCPUD, to select one or more corridors for a public access easement and recreational trail (pedestrian and/or mountain bike accessible) through the HMR area to adjacent public lands. Such easements shall be permanent and recorded along with the subdivision map, and be located at appropriate site(s) to enable safe and efficient ingress and egress from the public lands while minimizing potential for conflict with private property owners.

In lieu of an easement through HMR subdivision lands, the Project Applicant may consult with the TRPA, TCPUD, and LTBMU to identify an alternative site to enhance public access to recreation opportunities on public lands. The access point shall be in the vicinity of Homewood, and provide a similar or greater level of access to recreation opportunities on public lands as existing trails in the Project area. Access enhancements may include, but are not limited to, actions such as easement acquisition, trail development, road or trail improvements, and development of trailhead facilities (e.g., parking, drinking water, restrooms, signage).

After Mitigation: *Significant and Unavoidable Impact; Alternative 4*

Implementation of Mitigation Measure REC-1b will maintain or enhance existing levels of public access to recreation opportunities on adjacent public lands. However, implementation of Alternative 4 would cause a significant and unavoidable impact based

on the loss of the winter ski resort use and the currently assigned PAOTs for HMR. There are currently no closed ski areas in the Basin that could be re-opened to replace recreational uses at HMR, and the development of a new ski area is not considered feasible based on land ownership, environmental constraints, and land management regulations in the Basin. Consequently, no feasible mitigation measure is identified to reduce the significant impact of Alternative 4 on recreational access.

Impact: **REC-2. Will the Project create conflicts between recreation uses, either existing or proposed?**

Analysis: *Less than Significant Impact; No Project (Alternative 2)*

Under the No Project (Alternative 2), current recreational uses will continue and no new recreational uses would occur. Alternative 2 is not expected to result in any new recreation use conflicts. Therefore, implementation of Alternative 2 is expected to result in a less than significant impact on conflicts between recreational uses.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternatives 1, 3, 5, and 6*

The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 will renovate and enhance existing ski area facilities and biking and hiking trails, and provide new recreation facilities such as a West Shore Bike Trail linkage, ice skating rink, swimming pool, amphitheater, and miniature golf course. As required by Placer County and the Quimby Act, development under the Proposed Project (Alternative 1) or Alternatives 3, 5, and 6 will include enhancements in park lands and/or in lieu payments to improve local recreational facilities, improving service to existing populations and providing adequate service to meet the increased resident and guest demands. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 are expected to increase the range of recreation facilities and opportunities in the Project area, and add facilities that are compatible with existing recreation opportunities and land uses at HMR and in the Project vicinity. Therefore, implementation of the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 will have less than significant impacts related to conflicts between existing or proposed recreational uses.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternative 4*

Alternative 4 would remove recreation opportunities in the Project area by decommissioning HMR and subdividing the land into private residential parcels for single-family home development. This would remove recreational use at HMR and access through HMR to public lands. HMR currently has a PAOT capacity of 1,704 for winter day-use activities. As documented in REC-3 below, local park enhancements or payment of in lieu fees under Placer County ordinances would be required under Alternative 4 to offset the impacts of population growth on recreation, but the discontinuation of existing recreation use at HMR will conflict with TRPA recreation thresholds to increase the amount and quality of recreational opportunities. Therefore, this impact is considered significant.

Mitigation: No mitigation is available.

After Mitigation: *Significant and Unavoidable Impact; Alternative 4*

Implementation of Alternative 4 would cause a significant and unavoidable impact based on the loss of existing winter day use recreation facilities in the Lake Tahoe Basin. There are currently no vacant ski areas in the Basin that could be re-opened to replace uses at HMR, and the development of a new ski area is not considered feasible based on land ownership, environmental constraints, and land management regulations in the Basin. Consequently, no feasible mitigation measure is identified to reduce the significant impact of Alternative 4 on recreation use conflicts.

Impact: REC-3. Will the Project result in the need to construct new recreational facilities or expansion of existing facilities?

Analysis: *Less than Significant Impact; No Project (Alternatives 2)*

The No Project (Alternative 2) will not change existing recreational uses, land uses, or facilities, and would not increase demand for recreation. Consequently, Alternative 2 would have a less than significant impact on the need for new recreational facilities.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternatives 1, 3, 4, 5, and 6*

Development of the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 is expected to increase the population of the Project area and increase demand for recreation facilities. The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 will include new recreational facilities for visitors to the lodge and the public, such as a swimming pool, miniature golf course, West Shore Bike Trail linkage, amphitheater, and 5 miles of hiking/mountain biking trails.

Under Placer County General Plan Policy 5.A.3 and Zoning Ordinance §17.54.100(D)(1), new residential developments are required to provide a minimum of 5 acres of improved parks and 5 acres of passive parklands or open space per 1,000 new residents to offset increased demand for recreation services and opportunities (Placer County 2008). Based on the number of whole or partial ownership residential units proposed by Alternative, the following are estimates of the number of new residents that may be generated at Project buildout, and the required amount of new park land under the General Plan. The calculations assume 1.85 persons per whole or partial-ownership multi-family residential unit and 2.54 persons per single-family residential unit based on the analysis included in the Placer County Park and Recreation Facilities Impact Fee Study, Hausrath Economics Group, September 2003 (page 12).

- Alternative 1: 254 multi-family residential units equals 470 new residents, and 2.35 acres of improved parks and 2.35 acres of open space;
- Alternative 3: 254 multi-family residential units equals 470 new residents, and 2.35 acres of passive use parklands 2.35 acres of open space;
- Alternative 4: 16 single-family residential units equals 41 new residents, and 0.2 acre of improved parks and 0.2 acre of open space; and

- Alternative 5: 237 multi-family residential units and 16 single-family residential units equals 479 new residents, and 2.40 acres of improved parks and 2.40 acres of open space.
- Alternative 6: 232 multi-family residential units and 14 single-family residential units equals 465 new residents, and 2.33 acres of improved parks and 2.33 acres of open space.

If Alternatives 1, 3, 4, 5, and 6 do not provide adequate on-site recreation facilities, Placer County would require payment of park fees commensurate with the percentage of the shortfall. Payment of in lieu park fees to Placer County Department of Facility Services would be in addition to the standard Placer County park fees identified below, and would be established through a development agreement.

Under Placer County Code §16.08.100 and Recreational Facilities Fee Ordinance (Chapter 15, Placer County Code), recreation facilities cannot be less than that needed to accommodate the new demand for such facilities created by the Project, as determined by the Planning Commission in consultation with the Placer County Department of Facilities Services, Parks and Grounds Division. In addition, in-tract recreational facilities must be provided in accordance with Placer County Code Section 17.54.100(D) or the payment of an in-lieu fee thereof.

New residents and visitors in the Project area will increase visitation at other Basin recreational sites, increasing demand on the existing recreational facilities, especially during the peak summer months. New residents and visitors to the Project area are expected to increase usage of nearby Burton Creek, Ed Z'berg Sugar Pine Point, and D.L. Bliss/Emerald Bay State Parks. New residents and visitors will likely use local parks and recreational facilities in the vicinity such as Quail Creek Park, Chambers Landing Beach, and other access points to Lake Tahoe near the Project area. Without new facilities, the increased use will contribute to routine wear and tear on existing turf areas, recreational equipment, trails, picnic tables, and parking capacity. It is difficult to determine the extent of the wear and tear that would be attributed directly to the Proposed Project (Alternative 1) or Alternatives 3, 4, 5 or 6, because most local parks and recreational facilities are used by a combination of local residents and visitors to the region.

It should be noted that HMR recently purchased the West Shore Café, which is located across SR 89 from the resort and is outside of the Project area. The West Shore Café includes lake access and a pier, which can accommodate a water taxi and some summer recreation demand.

Placer County's per-unit assessment of park fees (including affordable housing units and tourist accommodation units or TAUs) funds improvements to existing park facilities and the construction of new park facilities (Placer County 2008). These park fees are assessed at the time of final map recordation and issuance of building permits, and are required for the development of residential units and TAU units to offset the impact of new development on community recreation. The Project fees would be earmarked for improvement of park facilities in the vicinity. Placer County, who collects and distributes these fees, would use these funds for projects at nearby recreational facilities.

The Project is also subject to the Measure C parcel tax, which provides maintenance funds for the TCPUD. This is a parcel tax that adjusts annually and is applicable to

parcels within the TCPUD district boundaries. The annual fee is determined based on the square footage of the residential units.

Because the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 or 6 do not include the addition of new and/or improved park facilities, parks or open space to meet the increased demand for improved parks and open space, this is considered a significant impact.

Mitigation: **REC-3. Provide On-site Recreational Facilities and Park Fees to Placer County; Operate Shuttle Service to State Parks.**

To mitigate for the increased demand on recreation facilities, the Project shall develop and dedicate to the TCPUD a public park consistent with the park needs of the community (e.g., 5 acres of improved park and 5 acres of open space per 1,000 new residents). Details of recreation facilities and timing of delivery shall be established through a development agreement with Placer County. For any public recreation facilities provided in conjunction with this project, including parks and trails, maintenance funding shall be provided through the creation of a Zone of benefit (or similar mechanism). The fee shall be established through an engineer's report prepared by the applicant at the applicant's expense and approved by the County or as otherwise prescribed by law. The Zone of Benefit shall include cost of living adjustments.

The Project may provide for new or enhanced recreation facilities with an alternative method as provided under Placer County Code. Recreational alternatives may include, but are not limited to the following as approved by the County:

- Create commonly owned, on-site park and recreational improvements and/or as a credit toward a portion of the recreation fees, as deemed appropriate by the Planning Commission;
- Pay a fee equivalent to the value of the park and recreation improved land and park improvements to provide public parks and recreation facilities in the vicinity of the planned development. If the County wishes to collect such fees, the fee agreement shall be established through a development agreement between HMR and Placer County.
- Provision of public beach front property, access rights, and/or developed public beach access facilities conveyed to an appropriate public entity.
- The forgoing may be provided in whole or combination in order to fully mitigate recreational impacts in accordance with Placer County Code Sections 15.34.010, 16.08.100, and 17.54.100(D).

To reduce impacts on parking facilities at nearby State Parks while enhancing public access to the State Park system, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 shall institute an on-call van service available to HMR residents, guests and the general public from Memorial Day Weekend through Labor Day to provide alternative transit service to Ed Z'berg Sugar Pine Point and D.L. Bliss/Emerald Bay State Parks. The HMR on-call van service will supplement existing public transit systems and reduce the reliance of private automobile usage for HMR residents, guests, and other nearby residents. HMR may charge a nominal fee to use the shuttle van service and may advertise the service to local residents and visitors of other developments. The use of the HMR on-call van service will reduce the number of private automobiles used to access

the State Parks during peak summer months, thereby maintaining access to these parks for other visitors to the Lake Tahoe Basin.

After Mitigation: *Less than Significant Impact; Alternatives 1, 3, 4, 5, and 6*

Implementation of mitigation measure REC-3 will reduce the potential impact to less than significant by providing or funding adequate new developed recreation facilities and open space, and by maintaining accessibility to heavily-used State Parks in the Project vicinity.

Impact: REC-4. Will the Project create additional recreational capacity?

Analysis: *Less than Significant Impact; No Project (Alternative 2)*

Alternative 2 does not involve changes to existing recreation uses of facilities, and therefore will have a less than significant impact on recreational capacity.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternatives 1, 3, 5 and 6*

The Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 will increase recreation opportunities, but winter day-use PAOTs assigned to HMR will remain unchanged. Development under Alternatives 1, 3, 5, and 6 will improve HMR ski area facilities and enhance other recreation opportunities in the Project area. Other new facilities include a West Shore Bike Trail connection, miniature golf, ice skating rink, swimming pool, amphitheater, and 5 miles of hiking/mountain bike trails.

New winter sports facilities will replace existing facilities and enhance the ski experience with high speed, higher capacity lifts and other improvements, but the overall PAOT capacity of the ski area will not increase under Alternatives 1, 3, 5, and 6. Proposed improvements include the replacement of the Madden Ski triple-chair lift with an eight-passenger high-speed gondola, which would increase lift capacity from 1,800 to 2,400 persons per hour. A new learn-to-ski (beginner) lift would be constructed at the Mid-Mountain area for beginner use. The existing South Happy Platter, North Happy Platter, and Alpine Platter lifts would be removed. The Tailings T-Bar, South T-Bar, and Spring Chair lift have already been removed and would not be replaced. The verified capacity of these removed lifts is available for use on other lift replacements or upgrades. Table 18-2 summarizes the proposed changes to the HMR ski lift capacity.

While improvements to the ski lifts are expected to increase the current operating capacity of the system from 8,646 persons per hour to 9,797 persons per hour, overall operations are expected to remain below the verified capacity of 10,653 persons per hour. Homewood's verified capacity is used to define the existing PAOT capacity assigned to HMR (1,704) by TRPA. At present, HMR does not expect to increase uphill lift capacity such that it would exceed its existing banked verified PAOT capacity of 1,704. Therefore, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 are not expected to exceed the existing TRPA PAOT capacity for HMR or result in an adverse impact on additional recreational capacity. This is considered a less than significant impact.

Table 18-2

Existing and Proposed Ski Lift Capacity – Alternatives 1, 3, 5, and 6

Lift Name	Verified Capacity (pph)	Current Operating Capacity (pph)	Proposed Capacity (pph)
Madden Chair	1,800	1,800	2,400
Ellis Chair	1,500	1,500	2,400
Quad Chair	2,028	1,800	1,800
Quail Chair	818	1,637	1,637
South Happy Platter	630	630	0
North Happy Platter	500	500	0
Alpine Platter	419	419	0
Tailings T-Bar	750	0	0
South T-Bar	875	0	0
Magic Carpet	360	360	360
Spring Chair	973	0	0
Beginner @ Mid-Mountain	0	0	1,200
TOTALS	10,653	8,646	9,797

Source: HMR Needs Assessment, September 14, 2009

Notes:
pph = persons per hour
Verified lift capacity is the hourly capacity assigned to the lift by TRPA when it was constructed.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternative 4*

Implementation of Alternative 4 would result in the closure of winter sports facilities at HMR, and redevelopment of HMR into private homes and commercial uses (see Impact REC-1). Alternative 4 would not create additional recreational capacity and therefore, this impact would be less than significant.

Mitigation: No mitigation is required.

18.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact: REC-C1: Will the Project have significant cumulative impacts to recreation?

Analysis: *Less than Significant Impact; Alternatives 1, 3, 5, and 6*

Development of enhanced winter sports recreation facilities and new tourist and residential and commercial development in the Project area, and associated increases in population associated with the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 will result in a cumulative increase in the demand for recreational facilities and would likely increase the use of existing local parks and recreational facilities in the community.

Placer County regulations require that new planned development projects contribute to Placer County park fees and incorporate on-site recreation facilities commensurate with the number of potential residents. Any shortage of the required on-site recreation facilities will require payment of park fees commensurate with the shortfall of the required on-site recreation facilities as determined by the Placer County Department of Facility Services (these fees would be in addition to the standard Placer County park fees). These requirements are implemented to offset and mitigate any imbalance that may result from new development on community recreational opportunities. Implementation of Mitigation Measures REC-1a and REC-3 and the mitigation action required for other projects in the Lake Tahoe Basin eliminates substantial contributions to cumulative impacts on recreational capacity. Therefore, the Project's contribution is not cumulatively considerable.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Alternative 4*

Alternative 4 would result in the decommissioning of the resort and the introduction of a single-family residential development. HMR closure would cause the loss of the existing 1,704 PAOT recreational capacity in the Basin for skiing and winter sports activity. The demand for ski recreation served by the HMR facilities would be displaced to other ski resorts in the Basin, potentially impacting their ability to serve the increase under their existing PAOT allocations. This loss of recreational capacity would displace demand to other facilities, which may not be able to accommodate it. Demand for recreation opportunities and facilities in the Lake Tahoe Basin are growing based on threshold evaluations prepared by TRPA. Therefore, the loss of the existing HMR PAOT capacity is considered a cumulatively considerable impact to the recreational thresholds.

Mitigation: No mitigation is available.

After Mitigation: *Significant and Unavoidable Impact; Alternative 4*

Implementation of Alternative 4 would cause a significant cumulative impact on other winter day use facilities based on the loss of the winter recreational use and PAOTs associated with the closure of the HMR.

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19 CLIMATE CHANGE

19.1 ENVIRONMENTAL SETTING

This chapter provides the necessary context to determine the potential impacts of the Homewood Mountain Resort (HMR) Ski Area Master Plan (Project) greenhouse gas (GHG) emissions. It first summarizes relevant information on global climate change and then describes the characteristics, sources, and units used to quantify the six GHGs: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). The chapter analyzes Project-related GHGs in relation to State, national, and global GHG emissions inventories. Conventional air pollutants (e.g. ozone precursors (ROG and NO_x), carbon monoxide, and particulate matter) are addressed in Chapter 12 – Air Quality.

19.1.1 Global Climate Change

Global climate change is caused in large part by anthropogenic (human caused) emissions of GHGs released into the atmosphere through the combustion of fossil fuels and by other activities that affect the global GHG budget, such as deforestation and land use change. According to the California Energy Commission (CEC), GHG emissions in California are attributable to human activities associated with industrial/manufacturing, utilities, transportation, residential, and agricultural sectors as well as natural processes (California Energy Commission 2006a).

GHGs play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which could have otherwise escaped to space. Prominent GHGs contributing to this process include water vapor, CO_2, N_2O, CH_4, ozone (O_3), certain HFCs and PFCs, and SF_6. This phenomenon, known as the "greenhouse effect," keeps the Earth's atmosphere near the surface warmer than it would otherwise be and allows for successful habitation by humans and other forms of life. The combustion of fossil fuels and removal of vegetation releases carbon that has been stored underground or in biomass into the active carbon cycle, thus increasing concentrations of GHGs in the atmosphere. Emissions of GHGs in excess of natural ambient concentrations are thought to be responsible for the enhancement of the greenhouse effect and to contribute to what is termed "global warming," a trend of unnatural warming of the Earth's natural climate.

GHG emissions have long atmospheric lifetimes, which mean they tend to persist in the atmosphere and can accumulate at much greater concentrations than criteria pollutants, such as ozone. Moreover, GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors) and toxic air contaminants (TACs), which are primarily pollutants of regional and local concern. Given this, emission reduction strategies can be undertaken on a global scale whereby the mitigation of local GHG emissions can be offset by distant GHG reduction activities.

The Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and United Nations Environment Programme in 1989 to assess scientific, technical, and socioeconomic information relevant for the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The IPCC predicts substantial increases in global temperatures between 1.1 and 6.4° Celsius (depending on scenario) by the year 2100 (Intergovernmental Panel on Climate Change 2007a).

Climate change could potentially impact the natural environment in California and the world in the following ways:

- Rising sea levels along the California coastline, particularly in San Francisco and the Sacramento–San Joaquin River Delta (Delta) due to ocean thermal expansion and melting of glacial ice, could cause flooding and saltwater intrusion in low-lying areas;
- Changing extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- Increasing wildfire frequency and intensity;
- Increasing heat-related human deaths, infectious diseases, and increasing risk of respiratory problems caused by deteriorating air quality;
- Decreasing snow pack and stream flow in the Sierra Nevada mountains, decreasing winter recreation opportunities and summer water supplies;
- Increasing severity of winter storms, causing higher peak stream flows and increased flooding;
- Changing growing season conditions that could affect California agriculture, causing variations in crop quality and yield; and
- Changing distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

These changes in California's climate and ecosystems are occurring at a time when California's population is expected to increase from 34 million to 59 million by the year 2040 (California Energy Commission 2005). As such, the number of people potentially affected by climate change as well as the amount of anthropogenic GHG emissions expected under a "business as usual" (BAU) scenario is expected to increase. In this chapter, the term BAU will refer to GHG emissions that would occur without implementing emission reduction measures.

As a consequence of worldwide GHG emissions altering the global climate, the Project area may be subject to increased vulnerability to the following impacts:

- Reduced water supply;
- Increased risk of heat-related human deaths;
- Increased spread of infectious diseases and non-native invasive species;
- Increased risk of respiratory problems associated with deteriorating air quality; and
- Increased vulnerability to catastrophic wildfire and decreased snow pack.

19.1.2 Greenhouse Gases

The characteristics, sources, and units used to quantify the six GHGs listed in California Assembly Bill (AB) 32 (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) are documented in this section, in order of abundance in the atmosphere. Note that water vapor, although the most abundant GHG is not included in AB 32 because natural concentrations and fluctuations far outweigh anthropogenic influences. AB 32 is described below in Section 19.2 - Regulatory Setting.

In order to simplify reporting and analysis, methods have been set forth to describe emissions of GHGs in terms of a single gas. The most commonly accepted method to compare GHG emissions is the "global warming potential" (GWP) methodology defined in the IPCC reference documents (Intergovernmental Panel on Climate Change 1996 and 2001). The IPCC defines the GWP of various GHG emissions in

terms of CO_2 equivalents (CO_2e), which compares the GHG in question to that of the same mass of CO_2 (by definition, CO_2 has a GWP of 1.0). The GWP potential is dependent on the atmospheric lifetime and the absorption potential of the gas. GHGs can persist in the atmosphere for long periods. This lifetime is different for each gas and must be reflected in the GWP calculation. In addition, a GHG has the most warming effect if it absorbs radiation at wavelengths where the atmosphere is relatively transparent. Thus, a high GWP represents a long atmospheric lifetime and large absorption potential, which in turn correlates to a powerful GHG.

Table 19-1 lists the GWP, lifetime, and abundance of GHGs in the atmosphere in parts per trillion (ppt).[1] Per international reporting standards established under the United Nations Framework Convention on Climate Change (UNFCCC), GWPs quantified by the IPCC's Second Assessment Report (SAR) are used in this analysis (UNFCCC 2003). Collectively, HFCs, PFCs, and SF_6 are referred to as high global warming potential gases (HGWPG) Generally, GHG emissions are quantified in terms of metric tons of CO_2e emitted per year, whereby the total GHG emissions for each gas are multiplied by their respective GWP and then summed.

Carbon Dioxide

CO_2 accounts for more than 75% of anthropogenic GHG emissions). Its long atmospheric lifetime (on the order of decades to centuries) ensures that atmospheric concentrations of CO_2 will remain elevated for decades after GHG mitigation efforts to reduce GHG concentrations are implemented (Intergovernmental Panel on Climate Change 2007b). Increasing concentrations of CO_2 in the atmosphere are largely due to emissions from the burning of fossil fuels, gas flaring, cement production, and land use changes such as vegetation removal and large-scale agriculture. Fossil fuel burning accounts of 75% of anthropogenic CO_2 emissions, and land use changes account for 25% (Intergovernmental Panel on Climate Change 2007a). CO_2 emissions attributed to California activities are mainly associated with in-State fossil fuel combustion (including transportation and energy production) and out-of-State fuel use by power plants that supply California with electricity. Other activities that produce CO_2 emissions include mineral production, waste combustion, and land use changes that reduce vegetation.

Anthropogenic emissions of CO_2 have increased concentrations in the atmosphere most notably since the Industrial Revolution; the concentration of CO_2 has increased from about 280 to 379 ppm over the last 250 years (Intergovernmental Panel on Climate Change 2007a). The IPCC estimates that current atmospheric concentration of CO_2 is likely the highest of the past 20 million years (Intergovernmental Panel on Climate Change 2007a; Intergovernmental Panel on Climate Change 2001).

Methane

CH_4, the main component of natural gas, is the second largest contributor to anthropogenic GHG emissions and has a GWP of 21 (Association of Environmental Professionals 2007; Intergovernmental Panel on Climate Change 1996).

[1] Units commonly used to describe the concentration of GHGs in the atmosphere are parts per million (ppm), parts per billion (ppb) and ppt, which refer to the number of molecules of the GHG in a sampling of one million, one billion or one trillion molecules of air, respectively.

Table 19-1

Lifetimes and Global Warming Potentials of Several Significant GHGs

Gas	Global Warming Potential (100 years)	Lifetime (years)[1]	1998 Atmospheric Abundance (ppt)[2]
CO_2	1	50–200	365,000,000
CH_4	21	9–15	1,745
N_2O	310	120	314
HFC-23	11,700	264	14
HFC-134a	1,300	14.6	7.5
HFC-152a	140	1.5	0.5
CF_4	6,500	50,000	80
C_2F_6	9,200	10,000	3
SF_6	23,900	3,200	4.2

Source: Intergovernmental Panel on Climate Change 1996, 2001 (pages 388-390).

Notes:
[1]Represents the length of time by which the pollutant can persist in the atmosphere.
[2]1 ppt is a mixing ratio unit indicating the concentration of a pollutant in parts per trillion by volume.

Anthropogenic emissions of CH_4 are the result of growing rice, raising cattle, combusting natural gas, and mining coal (National Oceanic and Atmospheric Administration 2005). Atmospheric CH_4has increased from a preindustrial concentration of 715 to 1,775 parts per billion in 2005 (Intergovernmental Panel on Climate Change 2007a). Although it is unclear why, atmospheric concentrations of CH_4 have not risen as quickly as anticipated (National Oceanic and Atmospheric Administration 2005).

Nitrous Oxide

N_2O is a powerful GHG, with a GWP of 310 (Intergovernmental Panel on Climate Change 1996). Anthropogenic sources of N_2O include agricultural processes, nylon production, fuel-fired power plants, nitric acid production, and vehicle emissions. N_2O is used in rocket engines and racecars and as an aerosol spray propellant. Agricultural processes that result in anthropogenic N_2O emissions are fertilizer use and microbial processes in soil and water (Association of Environmental Professionals 2007).

N_2O concentrations in the atmosphere have increased from preindustrial levels of 270 ppb to 319 ppb in 2005 (Intergovernmental Panel on Climate Change 2007a).

Hydroflourocarbons

HFCs are human-made chemicals used in commercial, industrial, and consumer products and have high GWPs (Environmental Protection Agency 2006a). HFCs are generally used as substitutes for ozone-depleting substances (ODS) in automobile air conditioners and refrigerants. The most abundant HFCs, in order from most to least abundant, are HFC-134a (35 ppt), HFC-23 (17.5 ppt), and HFC-152a (3.9 ppt) (Table 19-1).

Concentrations of HFCs have risen from zero to current levels. Because these chemicals are human-made, they do not exist naturally in ambient conditions.

Perfluorocarbons

The most abundant PFCs include CF_4 (PFC-14) and C_2F_6 (PFC-116). These human-made chemicals are emitted largely from aluminum production and semiconductor manufacturing processes. PFCs are extremely stable compounds that are only destroyed by very high-energy ultraviolet rays, which result in the very long lifetimes of these chemicals, as shown in Table 19-1 (Environmental Protection Agency 2006a).

Sulfur Hexafluoride

SF_6, another human-made chemical, is used as an electrical insulating fluid for power distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a trace chemical for study of oceanic and atmospheric processes (Environmental Protection Agency 2006a). In 1998, atmospheric concentrations of SF_6 were 4.2 ppt and steadily increasing in the atmosphere.

SF_6 is the most powerful GHG listed in IPCC studies with a GWP of 23,900 (Intergovernmental Panel on Climate Change 1996).

19.1.3 GHG Inventories

A GHG inventory is a quantification of GHG emissions and sinks within a selected physical and/or economic boundary over a specified time. GHG inventories can be performed on a large scale (i.e., for global and national entities) or on a small scale (i.e., for a particular building or person).

Many GHG emission and sink specifications are complicated to evaluate because natural processes may dominate the carbon cycle. Though some emission sources and processes are easily characterized and well understood, some components of the GHG budget (i.e., the balance of GHG sources and sinks) are not known with accuracy. Because protocols for quantifying GHG emissions from many sources are currently under development by international, national, State, and local agencies, ad-hoc tools must be developed to quantify emissions from certain sources and sinks in the interim.

The following sections outline the global, national, and Statewide GHG inventories to contextualize the magnitude of Project-related emissions.

IPCC 2004 Global GHG Inventory

The most recent global GHG annual emission inventory analyzed emissions in 2004 and was conducted by the IPCC. According to the IPCC, global anthropogenic GHG emissions were estimated at 49 gigatons of CO_2e in 2004, which is 24% greater than 1990 emissions levels. Table 19-2 presents global GHG emissions by sector, as defined in the IPPC report. The largest GHG contributing to these emissions was CO_2, which accounted for 76.7% of the total.

Table 19-2

Annual Global GHG Emissions from the IPCC 2004 Inventory

Sector	CO_2e Emissions (gigatons)
Energy	12.69
Industry	9.50
Forestry	8.53
Agriculture	6.61
Transportation	6.41
Residential and Commercial Buildings	3.87
Waste and Wastewater	1.37
Total Emissions	49

Source: Adapted from Intergovernmental Panel on Climate Change 2007c, p. 5.

National 2007 GHG Inventories

The U.S. Environmental Protection Agency (EPA) estimates that total U.S. GHG emissions in 2007 amounted to 7,150.1 MMT of CO_2e, which is 17% greater than 1990 levels (Environmental Protection Agency 2009a). Table 19-3 summarizes the U.S. GHG emissions in 2007, based on CO_2 equivalents (Environmental Protection Agency 2009a).

Table 19-3

Annual U.S. Greenhouse Gas Emissions from the EPA 2007 Inventory

Sector	2007 CO_2e Emissions (million metric tons)
Energy	6,170.3
Industrial Processes	353.8
Solvent and Other Product Use	4.4
Agriculture	413.1
Land Use, Land-Use Change, and Forestry	42.9
Waste	165.6
Total Emissions	7,150.1

Source: U.S. Environmental Protection Agency 2009a, p. ES-11.

The Energy Information Administration (EIA) also conducted an inventory on 2007 GHG emissions. The results of their analysis were similar to those of the EPA, with total U.S. GHG emissions amounting to 7,282.4 MMT ofCO_2e. This represents a 1.4 percent increase above the

2006 total (Energy Information Administration 2008). Table 19-4 summarizes total GHG emissions by sector, as defined in the EIA report (Energy Information Administration 2008).

Table 19-4

Annual U.S. Greenhouse Gas Emissions from the 2007 EIA Inventory

Sector	CO_2e (million metric tons)
Industry	2,610
Transportation	2,036
Commercial	1,355
Residential	1,281
Total Emissions	7,281

Source: Energy Information Administration 2008.

Total emissions growth—from 2006 to 2007—was largely the result of a 75.9-MMTCO_2e-increase in CO_2 emissions. This increase resulted primarily from two factors: unfavorable weather conditions, which increased demand for heating and cooling in buildings; and a drop in hydropower availability that led to greater reliance on fossil energy sources (coal and natural gas) for electricity generation, increasing the carbon intensity of the power supply (Energy Information Administration 2008). CH_4 emissions increased in the energy, waste management, and agriculture sectors. The increase in N_2O is attributed primarily to an increase of emissions from nitrogen fertilization of agricultural soils.

Statewide 2004 and 2006 GHG Inventories

The CEC's *Inventory of Greenhouse Gas Emissions and Sinks: 1990–2004* estimates that California is the second largest emitter of GHG emissions in the United States (California Energy Commission 2006a). The commission further estimates that in 1990, California's gross GHG emissions were between 425 and 452 MMT of CO_2e, while in 2004, California's gross GHG emissions were 492 MMT of CO_2e. Similar to the global and national inventories, CO_2 represented the largest percentage of the State's GHG emissions inventory. Statewide. Table 19-5 summarizes 2004 Statewide GHG emissions by sector, as defined in the CEC report (California Energy Commission 2006a).

Table 19-5

Annual Statewide Greenhouse Gas Emissions from the 2004 CEC Inventory

Sector	CO_2e (million metric tons)
Transportation	200
Electrical Power	109
Industry	101
Agriculture and Forestry	41
Other	41
Total Emissions	492

Source: Adapted from California Energy Commission 2006a.

The California Air Resources Board (ARB) recently completed a GHG inventory of California's 2006 GHG emissions. Their report states that 1990 emissions amounted to 433.3 MMT of CO_2e, while 2006 emissions levels rose to 483.9 MMT of CO_2e (California Air Resources Board 2009a). Based on California's 2006 population of 37,114,598, this amounts to approximately 13 metric tons of CO_2e per person (State of California, Department of Finance 2008). Table 19-6 summarizes Statewide GHG emissions by sector, as defined in the ARB report.

Table 19-6

Annual Statewide Greenhouse Gas Emissions from the 2006 ARB Inventory

Sector	CO_2e (million metric tons)[1]
Transportation	188.721
Electricity Generation	106.458
Industry	101.619
Agriculture and Forestry	29.034
Residential	29.034
Commercial	14.517
Other	14.517
Total	483.9

Source: Adapted from California Air Resources Board 2009a.

Notes:
[1] Emissions inventory includes estimates for CO_2, CH_4, N_2O, SF_6, HFCs, and PFCs.

19.1.4 Existing Emissions Sources at HMR and Trends in the LTAB

The Project area is currently used as a ski resort and includes three major buildings—two base lodges and a temporary tent structure at mid-mountain. Existing GHG emissions from these facilities, as well as

smaller secondary buildings, are primarily generated by natural gas and electricity usage. Air conditioning, landscaping activities, and water usage generate small amounts of GHG emissions. In addition, fuel usage from vehicles traveling to and from the resort represent a significant source of HMR generated GHG emissions. GHG emissions from these sources were estimated using a variety of methods, which are described in section 19-3. Based on this analysis, existing GHG emissions from HMR are 1,859 metric tons CO_2e per year.

TPPA's 2008 Regional Transportation Plan identifies emissions from motor vehicles as the leading source of GHG emission in the basin. The RTP categorizes future projects in terms of their potential to increase or decrease GHG emissions from transportation. It is estimated that approximately 57% of projects included in the 2008 RTP will reduce GHG emissions. Projects that will likely increase GHG emissions account for 1% of total projects, and projects whose effect is unclear make up 42%. Although GHG impacts from a large portion of future projects are still unclear, the RTP's overall policy direction is to reduce future dependence on the automobile and GHG emissions (Tahoe Metropolitan Planning Organization 2008). Existing strategies have been successful as historic traffic volumes on SR 28 have decreased by approximately 1% to 2.3% from 1999 to 2008 (see Chapter 11 – Transportation, Parking, and Circulation, Table 11-4).

19.2 REGULATORY SETTING

Climate change has only recently been widely recognized as an imminent threat to the global climate, economy, and population. Thus, the climate change regulatory setting—nationally, Statewide, and locally—is complex and evolving. The following section identifies key legislation, executive orders, and seminal court cases relevant to the environmental assessment of project GHG emissions.

19.2.1 Federal

Currently, there is no federal legislation requiring reductions in GHG emissions. Rather, the United States Environmental Protection Agency (EPA) administers a variety of voluntary programs and partnerships with GHG emitters in which the EPA partners with industries producing and utilizing synthetic GHGs to reduce emissions of particularly potent GHGs. There are federal actions requiring increasing automobile efficiency, an endangerment finding for CO_2, and a recently finalized regulation requiring large sources of GHG emissions to report their emissions to the EPA.

Federal Action on Greenhouse Gas Emissions

In 2002, President George W. Bush set a national policy goal of reducing the GHG emission intensity (tons of GHG emissions per million dollars of gross domestic product) of the U.S. economy by 18% by 2012. No binding reductions were associated with the goal. Rather the EPA administers a variety of voluntary programs and partnerships with GHG emitters in which the EPA collaborates with industries producing and utilizing synthetic gases to reduce emissions of these particularly potent GHGs.

On September 30, 2009, the EPA proposed a new rule that would establish significance thresholds for six GHGs. The rule would define when Clean Air Act (CAA) permits under the New Source Review (NSR) and Title V operation permit programs would be required for new and existing facilities. The proposed threshold is 25,000 tons of CO_2e per year. Facilities exceeding this threshold would be required to obtain a permit that would demonstrate they are using Best Management Practices (BMPs). The EPA estimates that 14,000 large sources would need to obtain permits, the majority of which would be municipal solid waste landfills. The EPA

is currently evaluating the proposal and will issue final guidance once a ruling has been made (Environmental Protection Agency 2009b).

Massachusetts et al. vs. Environmental Protection Agency et al

In Massachusetts et al. vs. Environmental Protection Agency et al. (April 2, 2007) the U.S. Supreme Court ruled that the EPA was authorized by the Clean Air Act (CAA) to regulate CO_2 emissions from new motor vehicles. The Supreme Court did not mandate that the EPA enact regulations to reduce GHG emissions, but found that EPA could avoid taking action only if it found that GHGs do not contribute to climate change or EPA offered a "reasonable explanation" for not determining that GHGs contribute to climate change.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law, which requires an increased Corporate Average Fuel Economy (CAFE) standard of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020. EISA requires establishment of interim standards (from 2011 to 2020) that will be the "maximum feasible average fuel economy" for each fleet. EISA also includes several other provisions:

- Renewable Fuel Standard (Section 202);
- Appliance and Lighting Efficiency Standards (Section 301–325);
- Building Energy Efficiency (Sections 411–441).

Additional requirements of the EISA address energy savings in government and public institutions and promote research for alternative energy, carbon capture, international energy programs, and the creation of "green jobs."

EPA Proposed Rule—Mandatory GHG Reporting

On March 10, 2009, the EPA proposed a rule that requires mandatory reporting of emissions of GHGs from large sources within the United States. The proposed rule includes emissions of CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, nitrogen trifluoride (NF_3), hydrofluorinated ethers (HFE), and selected other fluorinated compounds. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions would be required to report annual emissions to the EPA. The rule was approved in September 2009 and will go into effect January 1, 2010. The first annual reports for the largest emitting facilities, covering calendar year 2010, will be submitted to EPA in 2011.

EPA Finding of Endangerment

On December 7, 2009, the EPA Administer found that current and projected concentrations of CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 threaten the public health and welfare of current and future generations. Additionally, the Administrator found that combined emissions of CO_2, CH_4, N_2O, and HFCs from motor vehicles contribute to the atmospheric concentrations and thus to the threat of climate change. Although the Endangerment Finding in itself does not place requirements on industry, it is an important step in the EPA's process to develop regulation of GHGs.

The EPA has prepared various documents in support of the endangerment finding including, *Summary of the Science Supporting EPA's Finding that Greenhouse Gases Threaten Public Health and Welfare* (Environmental Protection Agency 2009c). The summary notes, "[c]limate

change is expected to worsen regional ozone pollution, with associated risks in respiratory infection, aggravation of asthma, and premature death. The impact on particulate matter remains less certain."

Update on Corporate Average Fuel Economy Standards

On May 19, 2009, President Obama issued a requirement to automakers to increase fuel efficiency of cars manufactured in the United States to 35.5 mpg by 2016, four years ahead of the schedule set by the EISA of 2007. The new CAFE standards incorporate stricter fuel economy standards promulgated by the State of California (discussed below) into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25%.

19.2.2 State

A variety of legislation has been enacted in California relating to climate change, much of which sets aggressive goals for GHG reductions within the State. However, none of this legislation provides definitive direction regarding the treatment of climate change in environmental review documents.

AB 32 Chapter 488, Statutes of 2006

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires the ARB to develop and enforce regulations for the reporting and verification of Statewide GHG emissions. The ARB is directed to set a GHG emissions limit, based on 1990 levels, to be achieved by 2020. The bill sets a timeline for adopting a scoping plan for achieving reductions in a technologically and economically feasible manner.

The heart of the bill is the requirement that Statewide GHG emissions must be reduced to 1990 levels by the year 2020. California needs to reduce GHG emissions by approximately 29% BAU (based on compliance with requirements in effect under applicable federal and State law) of year 2020 GHG emissions to achieve this goal. The bill requires the ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. Key AB 32 milestones are as follows:

- June 30, 2007—Identification of discrete early action GHG emissions reduction measures. On June 21, 2007, the ARB satisfied this requirement by approving three early action measures. On October 25, 2007, the ARB expanded this list to nine.

- January 1, 2008—Identification of the 1990 baseline GHG emissions level and approval of a Statewide limit equivalent to that level. Adoption of reporting and verification requirements concerning GHG emissions. On December 6, 2007, the ARB approved a Statewide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline.

- January 1, 2009—Adoption of a scoping plan for achieving GHG emission reductions. On December 11, 2008, the ARB adopted *Climate Change Proposed Scoping Plan: A Framework for Change*. The *Scoping Plan i*s describe in detail below.

- January 1, 2010—Adoption and enforcement of regulations to implement the "discrete" actions.

- January 1, 2011—Adoption of GHG emissions limits and reduction measures by regulation.

- January 1, 2012—GHG emissions limits and reduction measures adopted in 2011 become enforceable.

AB 32 Scoping Plan

A Scoping Plan for AB 32 was developed by the ARB and released in October 2008 (California Air Resources Board 2008a). It contains the main strategies California will use to reduce GHG from BAU emissions projected for 2020 back down to 1990 levels. BAU is the projected emissions in 2020, including increases in emissions caused by growth, without GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, which include direct regulations, compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. The Scoping Plan was approved at the ARB's hearing on December 12, 2008. It now requires the ARB and other State agencies to develop and adopt regulations and other initiatives reducing GHGs to be in place by 2012.

As directed by AB 32, the ARB approved a Statewide GHG emissions limit. On December 6, 2007, ARB staff resolved an amount of 427 MMT of CO_2e as the total Statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative Statewide limit, not a sector- or facility-specific limit.

The ARB is conducting rulemaking, culminating in rule adoption by January 1, 2011, for reducing GHG emissions to achieve the emissions cap by 2020. The rules must take effect no later than 2012. In designing emission reduction measures, the ARB must aim to minimize costs, maximize benefits, improve and modernize California's energy infrastructure, maintain electric system reliability, maximize additional environmental and economic co-benefits for California, and complement the State's efforts to improve air quality.

As part of this rulemaking, the ARB adopted the following "Early Action Measures" on June 21, 2007:

- **Group 1:** Three new GHG-only regulations are proposed to meet the narrow legal definition of "discrete early action greenhouse gas reduction measures" in Section 38560.5 of the Health and Safety Code. These include the Governor's Low Carbon Fuel Standard, reduction of refrigerant losses from motor vehicle air conditioning maintenance, and increased methane capture from landfills. These actions are estimated to reduce GHG emissions between 13 and 26 MMT of CO_2e annually by 2020 relative to projected levels. If approved for listing by the Governing Board, these measures will be brought to hearing in the next 12 to 18 months and take legal effect by January 1, 2010.

- **Group 2:** The ARB is initiating work on another 23 GHG emissions reduction measures during 2007–2009, with rulemaking to occur as soon as possible where applicable. These GHG measures relate to the following sectors: agriculture, commercial, education, energy efficiency, fire suppression, forestry, oil and gas, and transportation.

- **Group 3:** ARB staff has identified 10 conventional air pollution control measures that are scheduled for rulemaking in the 2007–2009 periods. These control measures are aimed at criteria and toxic air pollutants, but will have concurrent climate co-benefits

through reductions in CO_2 or non-Kyoto pollutants (i.e., DPM, other light-absorbing compounds, and/or ozone precursors) that contribute to global warming.

In October 2007, the ARB expanded the above early actions items to include the following measures:

- **Group 1: Discrete Early Actions.** Reductions in SF_6 emissions from the non-electricity sector, consumer products; and PFC emissions from semiconductor industry; implementation of the Smartway Truck Efficiency Program (requires existing trucks and trailers to be retrofitted with devices that reduce aerodynamic drag); increased tire inflation regulations (requires tune-up and oil change technicians to ensure proper tire inflation as part of overall service); and expansion of Green ports (allows docked ships to shut off their auxiliary engines by plugging into shoreside electrical outlets or other technologies).

- **Group 2: Other Early Actions.** Refrigerant tracking; reporting and recovery programs; increased energy efficiency in California cement facilities; more blended cements; enhanced anti-idling enforcement; and expanded research on nitrogen land application efficiency.

Since October 2007, CARB has taken the following actions concerning Early Action Measures:

- **Low Carbon Fuel Standard:** The ARB approved for adoption regulations establishing a low-carbon fuel standard on April 23, 2009. The intent of the standard is to reduce the carbon intensity of transportation fuels by an average of ten percent by 2020. The ARB finalized rule-making for regulations to take effect in January 2010.

- **Landfill Methane Capture:** On June 25, 2009, the ARB approved for adoption regulations for control of methane emissions from municipal solid waste (MSW) landfills. The regulations will require the installation and proper operation of gas collection and control systems at active, inactive, and closed MSW landfills having 450,000 tons of greater of waste-in-place and that received waste after January 1, 1977. The regulations contain performance standards for the gas collection and control system, and specify monitoring requirements to ensure that that the system is being maintained and operated in a manner to minimize methane emissions. The regulations include a leak standard for gas collection and control system components, a monitoring requirement for wellheads, methane destruction efficiency requirements for most control devices, surface methane emission standards, and reporting requirements. The ARB is presently considering several modifications and clarifications to the regulations. The ARB intends to finalize rule-making for regulations to take effect by January 1, 2010.

- **Small Containers of Automotive Refrigerant:** On January 22, 2009, the ARB approved for adoption regulations associated with do-it-yourself (DIY) recharging of motor vehicle air conditioning (MVAC) systems. This regulation is intended to help reduce GHG emissions attributable to small containers of automotive refrigerant largely by establishing certification requirements that require containers to be equipped with self-sealing valves, and by establishing a small container deposit and return and refrigerant recovery program. Other components of the regulation include improved container labels and consumer educational materials to promote consumer education of proper MVAC charging practices and of the environmental consequences of releasing refrigerant to the environment. On September 1, 2009, the Office of Administrative Law (OAL) approved

the majority of the regulations, but disapproved the portion of the regulatory filing for adjustment of the refrigerant container deposit. The ARB intends to finalize rule-making for regulations to take effect by January 1, 2010.

- **Semiconductor Perfluorocarbon Emissions:** On February 26, 2009, the ARB approved for adoption regulations related to semiconductor operations. The regulation applies to an owner or operator of a semiconductor or related devices operation that uses fluorinated gases or fluorinated heat transfer fluids. The regulation includes emission standards, and reporting and recordkeeping requirements. Final rule-making has not yet been completed.

- **Sulfur Hexafluoride Reduction:** On February 26, 2009, the ARB approved for adoption regulations related to the reduction of SF_6 from non-semiconductor and non-utility applications. This regulation would achieve GHG emission reductions from SF_6 applications through a phase-out of use over the next several years in the non-semiconductor and non-utility sectors. Several modifications to the adopted regulation are currently under consideration.

- **High Global Warming Potential Gases in Certain Consumer Products:** On September 24, 2009 the ARB approved for adoption regulations concerning toxic compounds, aromatics and high GWP gases in certain consumer products.

  The amendments are designed to reduce volatile organic compound (VOC) emissions, but would prohibit compounds with high GWP in multi-purpose solvent, paint thinner, and double-phase aerosol air fresheners, which are the three categories of consumer products proposed for regulation. Final rule-making has not yet been completed.

- **Heavy-Duty Vehicle GHG Emission Reduction Regulation:** On December 11, 2008, the ARB approved for adoption regulations concerning long-haul Heavy Duty Vehicle (HDV) fuel efficiency. A more efficient HDV uses less fuel, and as a result, emits less GHG emissions. A HDV consists of a heavy-duty tractor (tractor) and a trailer. The regulation requires new and existing long-haul on-road tractors (of a certain size), which operate on California highways, to be equipped with SmartWay approved aerodynamic technologies and low-rolling resistance tires. The regulation contains a phased implementation and includes several exemptions (such as for emergency vehicles).

- **Tire Pressure:** On March 26, 2009, the ARB approved for adoption regulations to reduce GHG emissions from vehicles operating with under inflated tires. The regulation requires Automotive Service Providers perform a tire inflation service (check and inflate) on passenger vehicles that are brought into a facility for service or repair. Final rule-making has not yet been completed.

- **Shore Power:** On December 6, 2007, the ARB approved for adoption regulations to reduce emissions from diesel auxiliary engines on ocean-going vessels while at berth in California. The regulation requires operators of vessels meeting specified criteria to turn off their auxiliary engines for most of their stay in port. The ARB anticipates that such vessels would then receive their electrical power from the shore, or use an alternative, but equally effective, means of emission reductions. Although the measure is intended to reduce NO_x and particulate matter emissions, the measure will produce a co-benefit of reducing CO_2 emissions. The regulation took effect on January 2, 2009.

Executive Order S-03-05 (2005)

California Executive Order S-03-05 (June 1, 2005) mandates a reduction of GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. Although the 2020 target is the core of AB 32, and has effectively been incorporated into AB 32, the 2050 target remains the goal of the Executive Order.

Executive Order S-01-07 Low Carbon Fuel Standard

Executive Order S-01-07 (January 18, 2007) requires a 10% or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by the ARB. The ARB identified the Low Carbon Fuel Standard (LCFS) as a Discrete Early Action item under AB 32. On April 23, 2009, ARB adopted regulations implementing the LCFS.

Senate Bill 1368 (Perata), Emissions of Greenhouse Gases, Chapter 598, Statutes of 2006

Senate Bill (SB) 1368 prohibits any retail seller of electricity in California from entering into a long-term financial commitment for baseload generation if the GHG emissions are higher than those from a combined-cycle natural gas power plant. This performance standard applies to electricity generated out-of-State, in-State, and to publicly owned as well as investor-owned electric utilities.

SB 1078/SB 107—Renewable Portfolio Standard

Established in 2002 under SB 1078 and accelerated in 2006 under SB 107, California's Renewable Portfolio Standard (RPS) obligates investor-owned utilities (IOUs), energy service providers (ESPs) and community choice aggregators (CCAs) to procure an additional 1% of retail sales per year from eligible renewable sources until 20% is reached, no later than 2010. The California Public Utilities Commission (CPUC) and CEC are jointly responsible for implementing the program.

AB 1493 (Pavely), Greenhouse Gases, Chapter 200, Statutes of 2002

AB 1493 (Pavely) requires the ARB to adopt regulations by January 1, 2005, to reduce GHG emissions from noncommercial passenger vehicles and light-duty trucks of model year 2009 and thereafter. For this mandate to take effect the ARB was required to obtain a federal waiver from EPA to allow California to deviate from the national car and light duty truck standards set by EPA under the CAA. This waiver, generally referred to as the "Pavley Waiver" after the principal author of AB 1493, was initially requested in 2004; the federal government declined to regulate GHG under the CAA.

California and other States sued the federal government in an attempt to compel EPA to regulate GHG under the CAA and take action on the waiver request, which was being sought by several other States. In April 2007, the U.S. Supreme Court ruled in *Massachusetts et al. v. Environmental Protection Agency et al.* (discussed above) that EPA has authority to regulate GHG emissions as pollutants. Nevertheless, the EPA denied the Pavley Waiver request in December 2007.

In January 2008, the State Attorney General filed a new lawsuit against the EPA for denying California's request for the Pavley Waiver to regulate and limit GHG emissions from these

automobiles. On June 30, 2009, EPA granted California's waiver of CAA preemption to enforce new GHG emission standards for new motor vehicles beginning with the 2009 model year (Environmental Protection Agency 2009d).

SB 375 (Steinberg), Statutes of 2008

SB 375 (Steinberg) provides for a new planning process to coordinate land use planning and regional transportation plans and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires regional transportation plans, developed by Metropolitan Planning Organizations (MPOs), to incorporate a "sustainable communities strategy" in their regional transportation plans that will achieve GHG emission reduction targets set by the ARB. SB 375 includes provisions for streamlined CEQA review for some infill project such as transit-oriented development. SB 375 will be implemented over the next several decades.

On June 30, 2010, the ARB released draft emissions targets for MPOs around the State. These targets identify how much regions throughout California should reduce GHG emissions from passenger vehicles and light duty trucks. On September 23, 2010, the ARB approved GHG Targets for all of the 18 MPO areas. For the Tahoe Metropolitan Planning Organization (TMPO), ARB adopted a seven percent reduction in per-capita emissions by the year 2020 and a five percent reduction target for 2035. Once adopted, the MPOs around the State must prepare revised Regional Transportation Plans and a Sustainable Community Strategy (SCS) that account for their respective reduction goals.

Energy Conservation Standards (Title 24)

Energy Conservation Standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission in June 1977 and are periodically revised (Title 24, Part 6 of the CCR). Title 24 requires the design of building shells and building components to conserve energy. Title 24 measures compliance based on a time dependant valuation (TDV) methodology. TDV considers not only the type of energy that is used (electricity, natural gas, or propane), but when it is used. Energy saved during periods when California is likely to have a Statewide system peak is worth more than energy saved at times when supply exceeds demand. Therefore, calculations of TDV weights energy used at different times at different values. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. Although new building energy efficiency standards were adopted in April 2008, these standards do not go into effect until August 2010, and were not in effect at the time of adoption of the AB 32 Scoping Plan (discussed above).

The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608), dated December 2006, were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non-federally regulated appliances. While these regulations are now often seen as BAU, and compliance with these standards is part of the ARB Scoping Plan Base Year (2008), they do exceed the standards imposed by any other State and reduce GHG emissions by reducing energy demand.

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations). Part 11 establishes voluntary standards that will become mandatory in the 2010

edition of the Code, including planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.

SB 97 (Dutton)/ Office of Planning and Research 2010 CEQA Guidelines

SB 97 requires that Office of Planning and Research (ORP) prepare guidelines to submit to the California Resources Agency regarding feasible mitigation of GHG emissions or the effects of GHG emissions as required by CEQA. In response this bill, the Natural Resources Agency amended the State CEQA Guidelines on December 31, 2009 to include Section 15064.4, which requires the determination of impact significance from GHG emissions. These amendments became effective on March 18, 2010.

No significance threshold is included in the amendments, but they emphasize the necessity of having a consistent threshold available to analyze projects, and that analyses should be proofed based on the best available information. The amendments provide the following recommendations for determining the significance of GHG emissions under section CEQA Guidelines 15064.4:

> The determination of the significance of GHG emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of GHG emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:
>
> 1) Use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or
>
> 2) Rely on a qualitative analysis or performance based standards.
>
> (b) A lead agency may consider the following when assessing the significance of impacts from GHG emissions on the environment:
>
> 1) The extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting;
>
> 2) Whether a project's emissions exceed a threshold of significance that the lead agency determines applies to the project; and
>
> 3) The extent to which a project complies with regulations or requirements adopted to implement a Statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate a project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for a project.

19.2.3 Local

The Project is located within the Placer County portion of the Lake Tahoe Air Basin (LTAB). Air quality within Placer County is managed by the Placer County Air Pollution Control District (PCAPCD). The Tahoe Regional Planning Agency (TRPA) also has authority for overseeing and managing air quality within the LTAB. Currently, the PCAPCD and the TRPA do not have published guidelines for determining CEQA impacts related to GHGs and climate change.

19.3 EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

19.3.1 Significance Criteria

Neither the PCAPCD nor the TRPA have quantitative thresholds for the evaluation of GHG emissions in CEQA documents. Therefore, Appendix G of the 2010 State CEQA Guidelines and guidance provided by PCAPCD and TRPA were used to evaluate significance. A discussion of whether emissions will result in a significant project-level impact is presented in section 19.4.2. However, because GHG emissions are most appropriately evaluated on a regional and global scale, project-level emissions are concluded to be less than significant. This approach is in accordance with the 2010 CEQA Guidelines, which requires the evaluation of significance be conducted on the cumulative level. The Project was therefore considered to have a significant cumulative impact on climate change if it were to:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or

- Conflict with any applicable plan, policy, or regulation of an agency adopted for reducing GHG emissions.

Scientific studies (as best represented by the IPCC's periodic reports) demonstrate that climate change is already occurring due to past GHG emissions. Evidence concludes that global emissions must be reduced below current levels. Given the seriousness of climate change, the PCAPCD and TRPA have determined that for the purposes of this analysis, any substantial increase in HMR-generated GHG emissions relative to existing conditions would result in the Project having a "significant impact on the environment" (Finely, Chang, and Landry pers. comm.).

19.4 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION

This section describes the Project's effects on GHGs and climate change. Consistent with Section 15064.4(a) of the 2010 CEQA Guidelines, it begins with a discussion of analysis limitations.

19.4.1 Analysis Limitations

This analysis utilizes PCAPCD and ARB recommended modeling procedures for the quantification of GHG emissions. Specific limitations must be understood to apply the conclusions of this report. This section briefly identifies those limitations. Additional data gaps and limitations on a sector-by-sector basis are provided in the impact analysis.

Lack of Detailed Information: Although considerable efforts were made to obtain activity data for the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6, in some cases, this data was unavailable and estimates had to be made. For example, expected demand for natural gas and electricity was only

available for the Proposed Project (Alternative 1). Given the similar land uses, these data were assumed to accurately represent Alternatives 3, 5, and 6. In addition, some of the data obtained were based on State averages projected to the local level because Project-specific information was unknown. In each of these cases, GHG estimates were made based on accepted information and methodologies.

Data Projections: This analysis is based on Project operations at buildout, which is 2021. Because information on the Project's uses (e.g. energy, vehicle trips, water, etc.) in 2021 is not known, assumptions had to be made. These values were drawn from a number of sources, including Fehr & Peers, Beaudin and Ganze, and Snowmakers Inc. The emission estimates for 2021 were assumed to remain constant throughout the Project lifetime. This assumption was necessary based on the availability and reliability of long-term future data sets. It is important to note that estimates for 2021 will most likely not remain constant over time. For example, the number of guests may be reduced or increased by future unknown economic conditions. In addition, emissions associated with energy consumption are based on emissions factors for the most recent year in which complete data is available (2007) and are assumed to remain constant through 2021. However, it is likely emission factors will actually decrease over time as energy generators decrease their carbon content through efficiency measures and increased reliance on renewable energy sources.

Population Flux: Given the nature of the Project, population and employment at the resort will be seasonal, which would result in higher GHG emissions during the winter season and lower GHG emissions during the summer season. When possible, this seasonal flux in population was taken into account. For example, emissions from transportation were calculated using both summer and winter VMT. However, this approach could overestimate emissions associated with spring and fall conditions. In some cases, information was not available to calculate the emissions under both summer and winter conditions (e.g. water and sanitary sewer discharge). In these cases, the emissions under the peak population (i.e. winter conditions) were assumed to occur throughout the entire year. This assumption likely overestimates total annual emissions as summer conditions would result in lower emissions. In addition, implementation of the Project may result in minor increases in secondary vacation homes and associated emissions. However, it is currently unknown by what factor use of these homes will increase.

Qualitative Analyses: This report does not include a quantitative estimate of emissions from land use change, waste generation, embodied emissions, and increased use of recreational water craft and vacation homes. The following discussion provides a rational for omission of these sectors.

GHG emissions from land use change would occur with Project development. Land near the South Base area and Mid-Mountain Base area contains forested areas, which will be removed (Tirman pers. comm. (A)). According to Chapter 8 – Biological Resources, 193 trees have been identified for removal under Proposed Project (Alternative 1) (please see Table 8-6). This forest cover serves as both a source and sink of GHGs. The decomposition of organic matter releases CO_2 on an annual basis. For example, it is estimated that 50% of the total biomass of a tree is carbon, which can be released when the tree dies or is burned (Climate Action Reserve 2009). However, existing vegetation continually sequesters carbon from the atmosphere, effectively serving as a GHG sink. Estimating emissions of these sources on a Project-specific level is far more uncertain and speculative than for other classes of emissions discussed above. Consequently, emissions resulting from land use change were not included in the Project's inventory data. It should be noted, however, that any sequestration potential lost because of the Project would be relatively minor in given the large number of trees within the Project area. In addition, Mitigation Measure BIO-10 requires the preparation of a Forest Plan, which will increase the overall health of the forest.

The deposition of solid waste generated by HMR into landfills will result in the production of CH_4 and CO_2 when anaerobic bacteria degrade the material (U.S. Environmental Protection Agency 2006b). Since CO_2 is produced during the natural degradation process, it is generally not considered in waste stream

analyses. Rather, emissions of CH_4 are considered the primary result of land filling waste. An analysis of CH_4 emissions from the Project would require a detailed waste stream profile, which is beyond the scope of this document. Consequently, GHG emissions associated with waste generation were not estimated.

Embodied, or lifecycle, GHG emissions are created during the extraction, processing, transportation, construction, and disposal of building materials and during landscape disturbance or alteration of biomass (King County Department of Development and Environmental Services 2007). There is a large uncertainty involved in estimating the magnitude, sources, and signs (whether they are positive or negative; i.e., sources or sinks) of embodied emissions associated with aspects of a project. The California Air Pollution Control Officers Association (CAPCOA) recommends against including certain types of embodied emissions in GHG inventories due to the speculative nature of such analysis (California Air Pollution Control Officers Association 2008). For this reason, embodied GHG emissions were not included in the HMR GHG emissions inventory.

Implementation of the Project will increase tourism in the LTAB. While a large portion of incoming guests are expected to stay at HMR, it is likely that occupancy at local hotels and vacation homes will increase. With more tourists, use of recreational watercraft, such as boats and jet skis, may increase. While GHG emissions associated with these activities will be produced, it is not currently known by what factor use of watercraft and local hotels will increase because of the Project. A quantitative analysis of these emissions would therefore be considered speculative.

19.4.2 Impacts

The cause of global climate change is generally accepted to be increased emission of GHGs from human activities, among other factors. Estimated HMR GHG emissions are minuscule in comparison to current and estimated future global GHG emissions. Attributing any observed climate change to HMR emissions is, therefore, speculative. The following discussion describes Project-level GHG emissions, while section 19-5 discuses Project GHG emissions in a cumulative context.

Impact: **CC-1. Will the Project Result in a Significant Project-Level Impact on Climate Change?**

Analysis: *No Impact; No Project (Alternative 2)*

No Project (Alternative 2) will not include any changes to the existing HMR Project area or structures. Therefore, there will be no additional GHG emitted with No Project (Alternative 2). There would therefore be no impact. No further analysis is required.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6*

Project Construction

Construction emissions were calculated using the construction activity estimates and land use assumptions summarized in Chapter 12 - Air Quality and Appendix N. GHG emissions from construction activities are primarily the result of fuel use by construction equipment, as well as worker and vendor trips. It was assumed that construction of the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would occur in four phases beginning in May 2011 and ending in December 2020. Phases 1a and 1b/c will take approximately 5.5 years to complete and would include the construction of the North Base area and Mid-Mountain Base area. Phases 2a and 2b will take approximately 4.5 years and would include the construction of South Base area land uses. Construction of

Alternative 4 is unknown since it would involve construction by others, but is assumed to be complete between May and October 2011 (see Appendix N for more information on assumptions).

The URBEMIS2007 model (version 9.2.4) was used to calculate CO_2 emissions associated with construction. URBEMIS2007 accounts for CO_2 emissions resulting from fuel use by construction equipment and worker commutes. Emission calculations were based on activity estimates and land use assumptions summarized in Chapter 12 – Air Quality and Appendix N. Equipment inventories, load factors, and horsepower (Hp) were based on default values generated by URBEMIS2007 for the specified land uses. Appendix M summarizes the equipment assumptions used in the modeling. Complete URBEMIS2007 outputs are provided in Appendix O.

URBEMIS2007 does not quantify CH_4 and N_2O emissions, although construction equipment emits these two pollutants. CH_4 and N_2O emissions associated with construction emissions from off-road equipment were determined by scaling the construction CO_2 emissions predicted by URBEMIS2007 by the ratio of CH_4/CO_2 and N_2O/CO_2 emissions expected per gallon of diesel fuel according to the Climate Action Registry General Reporting Protocol Version 3.1 (California Climate Registry 2009). The California Climate Action Registry (CCAR) emission factor for CO_2 is 10.15 kilogram (kg) CO_2 per gallon of diesel fuel. Construction equipment using diesel fuel emits 0.58 gram CH_4 per gallon and 0.26 gram N_2O per gallon (California Climate Action Registry 2009). The ratios of CH_4 and N_2O to CO_2 per gallon of diesel fuel are 0.00006 and 0.00003, respectively. CO_2 emissions from off-road diesel sources (Appendix O) were multiplied by these ratios to estimate CH_4 and N_2O emissions from construction equipment operation. These emissions were then converted to CO_2e using the GWPs of each gas (Table 19-1).

Construction worker and vendor commutes produce GHGs. However, because employees typically commute in gasoline powered vehicles, the previous methodology for calculating CH_4 and N_2O from diesel-powered equipment is inappropriate. For on-road, gasoline powered vehicles, the EPA recommends if CH_4, N_2O, and HFC emissions account for 5% of total emissions, accounting for their GWPs (Environmental Protection Agency 2005). To quantify these GHGs, the annual CO_2 emissions from construction worker and vendor commutes (Appendix O) were therefore divided by 0.95.

Table 19-7 through Table 19-10 list the annual GHG emissions that would be generated by construction of the Proposed Project (Alternative 1). Since the Proposed Project (Alternative 1) and Alternative 3 do not differ with regards to land use assumptions, the number and types of construction equipment required would be the same. Consequently, GHG emissions generated by construction of the Proposed Project (Alternative 1) and Alternative 3 will be similar.

Table 19-7

Estimated GHG Emissions from Construction Activities for the Proposed Project (Alternative 1) and Alternative 3 (metric tons)

Year	Off-road Emissions[1]			On-Road Emissions[2]		Total Emissions (CO_2e)
	CO_2	CH_4	N_2O	CO_2	Other GHGs (CO_2e)	
2011	140	0.008	0.004	129	6.780	276.96
2012	192	0.011	0.005	332	17.460	542.88
2013	203	0.012	0.005	329	17.299	550.68
2014	108	0.006	0.003	31	1.611	141.22
2015	106	0.006	0.003	73	3.858	183.89
2016	114	0.006	0.003	74	3.893	192.51
2017	108	0.006	0.003	28	1.496	138.91
2018	114	0.007	0.003	68	3.602	187.06
2019	140	0.008	0.004	35	1.847	178.58
2020	199	0.011	0.005	86	4.512	291.49
Total	**1,424**	**0.081**	**0.036**	**1,185**	**62.357**	**2,684.00**

Source: URBEMIS2007; California Climate Action Registry 2009; Environmental Protection Agency 2005; Appendices M and N.

Notes:

[1] From construction equipment (diesel).

[2] From construction worker and vendor commutes (mix of fuels). Other GHGs include CH_4, N_2O, and HFCs, which represent 5% of total GHG emissions from on-road sources (calculated by dividing CO_2 emissions by 0.95 and multiplying the resulting number by 0.05).

Table 19-8

Estimated GHG Emissions from Construction Activities for Alternative 4 (metric tons)

Year	Off-road Emissions[1]			On-Road Emissions[2]		Total Emissions (CO_2e)
	CO_2	CH_4	N_2O	CO_2	Other GHGs (CO_2e)	
2011	112	0.006	0.003	5.082	0.267	119

Source: URBEMIS2007; California Climate Action Registry 2009; Environmental Protection Agency 2005; Appendices M and N.

Notes:

[1] From construction equipment (diesel).

[2] From construction worker and vendor commutes (mix of fuels). Other GHGs include CH_4, N_2O, and HFCs, which represent 5% of total GHG emissions from on-road sources (calculated by dividing CO_2 emissions by 0.95 and multiplying the resulting number by 0.05).

Table 19-9

Estimated GHG Emissions from Construction Activities for Alternative 5 (metric tons)

Year	Off-road Emissions[1]			On-Road Emissions[2]		Total Emissions (CO_2e)
	CO_2	CH_4	N_2O	CO_2	Other GHGs (CO_2e)	
2011	140	0.008	0.004	96	5.051	242.39
2012	192	0.011	0.005	245	12.901	451.70
2013	201	0.011	0.005	243	12.804	458.80
2014	140	0.008	0.004	114	5.981	261.26
2015	192	0.011	0.005	294	15.499	503.67
2016	203	0.012	0.005	292	15.372	512.79
2017	108	0.006	0.003	4	0.202	113.03
2018	114	0.006	0.003	4	0.199	118.57
2019	68	0.004	0.002	3	0.164	72.19
2020	0	0.000	0.000	0	0.000	0.00
Total	**1,359**	**0.078**	**0.035**	**1,295**	**68.172**	**2,734**

Source: URBEMIS2007; California Climate Action Registry 2009; Environmental Protection Agency 2005; Appendices M and N.

Notes:

1 From construction equipment (diesel).

2 From construction worker and vendor commutes (mix of fuels). Other GHGs include CH_4, N_2O, and HFCs, which represent 5% of total GHG emissions from on-road sources (calculated by dividing CO_2 emissions by 0.95 and multiplying the resulting number by 0.05).

Transportation

Traffic CO_2 emissions were estimated using URBEMIS2007 and the traffic data provided by Fehr & Peers (Harned pers. comm. (A) and (B)). Detailed traffic information is provided in Chapter 11 – Transportation, Parking, and Circulation. URBEMIS2007 estimates mobile source emissions based on the vehicular emissions typically associated with the proposed land uses. URBEMIS2007 utilizes the latest emission rate program to produce emissions estimates. The traffic data used in this analysis does not account for reductions from alternative modes of transportation. These reductions will be discussed in Section 19-5. Trip rates were adjusted to account for internal trips completed by guests already at HMR. Data for the adjustment calculations were provided by Fehr & Peers (Harned pers. comm. (A) and (B)). Appendix P contains the trip generation rates used in the modeling.

The traffic data provided by Fehr & Peers indicated that VMT would be higher during the winter ski season than summer months. Consequently, summer and winter mobile emissions were modeled separately and then combined to obtain total yearly emissions.[2]

[2] It is likely that VMT during the spring and fall seasons would be less than VMT during summer and winter. This assumption therefore provides a conservative analysis in that it may overestimate actual annual emissions from transportation.

Table 19-10

Estimated GHG Emissions from Construction Activities for Alternative 6 (metric tons)[1]

Year	Off-road Emissions[1]			On-Road Emissions[2]		Total Emissions (CO_2e)
	CO_2	CH_4	N_2O	CO_2	Other GHGs (CO_2e)	
2011	140	0.008	0.004	92	4.859	238.55
2012	192	0.011	0.005	235	12.394	441.56
2013	201	0.011	0.005	234	12.304	448.70
2014	140	0.008	0.004	74	3.912	219.89
2015	192	0.011	0.005	190	9.989	393.45
2016	201	0.012	0.005	189	9.937	401.86
2017	108	0.006	0.003	4	0.202	113.03
2018	114	0.006	0.003	4	0.199	118.57
2019	108	0.006	0.003	28	1.458	138.16
2020	113	0.006	0.003	66	3.482	183.32
Total	**1,509**	**0.086**	**0.039**	**1,116**	**58.735**	**2,697**

Source: URBEMIS2007; California Climate Action Registry 2009; Environmental Protection Agency 2005; Appendices M and N.

Notes:

1 From construction equipment (diesel).

2 From construction worker and vendor commutes (mix of fuels). Other GHGs include CH_4, N_2O, and HFCs, which represent 5% of total GHG emissions from on-road sources (calculated by dividing CO_2 emissions by 0.95 and multiplying the resulting number by 0.05).

Based on information from Fehr & Peers, summer time traffic in Tahoe goes from June through September, with peak traffic usually occurring in August. Winter time traffic goes from December through March (Harned pers. comm. (C)). Fehr & Peers developed traffic counts for each season through comprehensive evaluation of the land uses and the interaction between the Proposed Project (Alternative 1) and surrounding community (Fehr & Peers 2009). For ease of analysis, each season was assumed to be 182.5 days. Complete model outputs are provided in Appendix L.

CH_4 emissions from transportation were estimated using the EMFAC2007 model. The vehicle fleet profile and VMT generated by the URBEMIS2007 simulations were used to calculate total CH_4 emissions based on the EMFAC2007 running exhaust and starting emissions factors. Since URBEMIS2007 provides fleet data in five-year increments, the year 2020 was used in this analysis. Table 19-11 describes the fleet profile in this analysis.

Table 19-11

Fleet Profile by Vehicle Class

Vehicle Class	Percent Vehicle Type
Light Auto	32.7
Light Truck 1	24.3
Light Truck 2	19.8
Medium Truck	9.2
Light Heavy Duty Truck 1	2.5
Light Heavy Duty Truck 2	1.2
Medium Heavy Duty Truck	0.9
Heavy Duty Truck	0.8
Line Haul	0.1
Urban Bus	0.0
Motorcycle	6.4
School Bus	0.1
Motor Home	2.0
Total	**100.0**

Source: URBEMIS2007.

Emissions of N_2O were calculated using the fleet information in Table 19-11 and the EMFAC model. EMFAC produced estimates of miles traveled per gallon of fuel by vehicle type for gasoline and diesel in 2021. Annual fuel use by vehicle type was then used to determine N_2O emissions per gallon of fuel using the ARB 2006 emission factors for diesel and gasoline, which represent the most recent year of available data. The ARB emission factors for 2006 were 0.332 grams of N_2O per gallon of diesel for all vehicle types and 0.668, 0.661, 1.36 and 2.38 grams N_2O per gallon of gasoline for passenger cars, light duty trucks, heavy duty trucks, and motorcycles, respectively (California Air Resources Board 2009b-h). Emissions of N_2O per gallon of fuel used were assumed to remain constant over time to represent a worst-case emissions scenario. EMFAC outputs are attached in Appendix DD.

GHG emissions from the two (2) hybrid-diesel water taxis proposed under the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 were estimated using the ARB's OFFROAD2007 emission model. OFFROAD calculates emissions based on technology types, seasonal conditions, proposed regulations, and activity assumptions. For the purposes of this analysis, it was assumed that each water taxi would have twin 225 Hp diesel engines, and that hybrid power would reduce emissions by 70% (please refer to Air Quality Chapter 12.3 for an expanded discussion of these assumptions). Emissions were calculated using the equation presented in Air Quality Chapter 12.3. Emissions calculations are summarized in Appendix Q.

GHG emissions from transportation are presented in Table 19-12. Since the Proposed Project (Alternative 1) and Alternative 3 do not differ with regard to traffic volumes and land use patterns, they were analyzed as a single unit (Harned pers. comm. (A)). These emissions represent a conservative estimate of Project-related emissions because the

emission factors produced by EMFAC2007 do not include the reductions in mobile-source GHG emissions that would result from implementation of AB 1493 or AB 32. For these reasons, the emissions from transportation presented in this analysis are likely an overestimate.

Area Sources

URBEMIS2007 (version 9.2.4) was used to calculate operational GHG emissions. URBEMIS2007 accounts for CO_2 emissions resulting from stationary and area sources and from landscaping activities. Emission calculations were based on URBEMIS2007 defaults for the land use type and size summarized in Table 12-8. Existing sources emitting CO_2 at HMR are landscaping activities, wood hearth combustion (existing conditions only), natural gas combustion, and diesel back-up generators for the chairlifts. According to JMA Ventures, LLC, two (2) wood stoves currently operate at HMR for 120 days per year. These devices would not be included in the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 (Tirman pers. comm. (A)). Landscape emissions are based on the URBEMIS2007 default summer length of 180 days.

NV Energy will supply natural gas to HMR. To obtain a more specific estimate of GHG emissions, natural gas combustion was calculated independent of the URBEMIS2007 model using consumption rates provided by Beaudin Ganze Inc., JMA Ventures, LLC, and the EIA (Beaudin Ganze 2007; Tirman pers. comm. (B); EIA 2009b and 2009c). GHG emission factors for CO_2, CH_4, and N_2O were obtained from NV Energy and CCAR (Soyars pers. comm.; California Climate Action Registry 2009). These emissions are included in the "Electricity and Natural Gas Use" section.

GHG emissions from existing landscaping activities and wood stoves were estimated using URBEMIS2007. Emissions of CH_4 and N_2O were not estimated because URBEMIS2007 is not able to calculate these emissions and any other reliable methodology is currently unavailable. However, area source emissions of CH_4 and N_2O emissions are expected to be trivial compared to tailpipe and energy related to GHG emissions. The area source URBEMIS2007 output is provided in Appendix O.

Table 19-12

Annual (2021) Mobile Source Emissions from Transportation (metric tons)[1]

Scenario	CO_2	CH_4	N_2O	Total CO_2e
Existing (2008)				
On-Road Traffic	987	0.160	0.091	1,018
Proposed Project (Alternative 1) and Alternative 3				
On-Road Traffic	1,845	0.135	0.156	1,896
Water Taxi	7	0.003	0	7
No Project (Alternative 2)[2]				
On-Road Traffic	981	0.081	0.088	1,010
Alternative 4[2]				
On-Road Traffic	400	0.030	0.033	411
Alternative 5[3]				
On-Road Traffic	1,671	0.124	0.140	1,717
Water Taxi	7	0.003	0	7
Alternative 6				
On-Road Traffic	1,626	0.121	0.137	1,671
Water Taxi	7	0.003	0	7

Source: URBEMIS2007; EMFAC2007; California Air Resources Board 2009b-h; Harned pers. comm. (A) and (B); OFFROAD2007.

Notes:

1 Daily traffic emissions from the winter and summer seasons were multiplied by 182.5.

2 No water taxis are proposed under No Project (Alternative 2) and Alternative 4.

3 As discussed in Chapter 12, the summer VMT estimates for Alternative 5 did not include trips associated with the 12 workforce housing units (estimated to equal about 25 total daily trips). The emissions presented above will therefore be slightly higher with the inclusion of these units.

CO_2 emissions from the five back-up diesel generators for the chairlifts were estimated using URBEMIS2007 and information provided by JMA Ventures, LLC (Tirman pers. comm. (C)). The URBEMIS2007 technical appendix provides default emission factors. The CO_2 factor remains constant regardless of the engine horsepower and is 420.920 grams/break horsepower-hours (Jones and Stokes 2007). CO_2 emissions were calculated using the equation presented in section 12-3. It was assumed that the generators would operate for 48 hours per year (Tirman pers. comm. (C)). No generators were assumed to operate under Alternative 4. Emissions of CH_4 and N_2O were calculated using the ratios of CH_4 and N_2O to CO_2 per gallon of diesel fuel described above. Emissions calculations are presented in Appendix R.

Table 19-13 presents the annual area source GHG emissions during Project operation. Since the Proposed Project (Alternative 1) and Alternative 3 do not differ with regard to land use patterns, they were analyzed as a single unit.

High Global Warming Potential Gases

The CEC estimates that California emissions of HGWPGs are largely the result of refrigerants and, to a lesser extent, electric utility transmission and distribution equipment (California Energy Commission 2006a). According to the EIA, HGWPG emissions for 2007 accounted for 2.4% of total emissions (Energy Information Administration 2008). HGWPG emissions in the Project area are predominantly associated with refrigerants, air conditioning (AC), and transmission lines. Emissions of SF_6 from transmission lines resulting from electricity transmission and distribution are included in the electricity emissions analysis below.

Refrigerants and AC are sources of HFCs. HFCs are used as substitute refrigerants for chlorofluorocarbons (CFCs) that have been phased out of use under the Montreal Protocol. GHG emissions from refrigerants and AC were calculated for the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 using recent studies of HFC sources and GHG inventories of HFCs from refrigeration and AC equipment, as well as documented refrigerant types, GWPs, charge sizes, and leak rates (Intergovernmental Panel on Climate Change/Technology & Economic Assessment Panel 2005; World Bank 2007; United Nations Environment Programme 2006). Table 19-14 and Table 19-15 present the assumptions regarding HFC usage based on the Project building type.

The assumptions presented in Table 19-14 and Table 19-15 were used to determine annual emissions of HFCs from Project operation. Annual emissions by building type were calculated by multiplying the number of equipment pieces by the charge size, leak rate, and GWP of the associated HFC refrigerant installed in both refrigeration and AC units. It was assumed that residential land uses would have the same number of refrigerators. AC to these units would be supplied by centralized air, except in the 16 townhomes in the Proposed Project (Alternative 1) and Alternative 3, which would have individual AC units (Tirman pers. comm. (D)). It was assumed that the hotel would have ice and vending machines on each floor). No AC is planned in the workforce housing units (the Proposed Project [Alternative 1] and Alternatives 3, 5, and 6) or maintenance facilities (Tirman pers. comm. (D)). One general supermarket was assumed to operate at the North Base area and Mid-Mountain Base area. Estimated annual emissions are presented in Table 19-16.

Table 19-13

Annual (2021) Area Source GHG Emissions (metric tons)

Scenario/Source	CO_2	CH_4[1]	N_2O[1]	CO_2e
Proposed Project (Alternative 1) and Alternative 3[2]				
Landscape	1.38	N/A	N/A	1.38
Diesel Generator [3]	16.13	0.0009	0.0004	16.28
No Project (Alternative 2)				
Hearth[4]	9.67	N/A	N/A	9.67
Landscape	0.46	N/A	N/A	0.46
Diesel Generator[3]	16.13	0.0009	0.0004	16.28
Alternative 4[2, 5]				
Landscape	0.55	N/A	N/A	0.55
Alternative 5[2]				
Landscape	1.47	N/A	N/A	1.47
Diesel Generator[3]	16.13	0.0009	0.0004	16.28
Alternative 6[2]				
Landscape	1.23	N/A	N/A	1.23
Diesel Generator[3]	16.13	0.0009	0.0004	16.28

Source: Tirman pers. comm. (C); URBEMIS2007; Jones & Stokes 2007.

Notes:

1 Area source CH_4 and N_20 emissions for landscape and wood hearth unavailable

2 No wood hearth sources were assumed under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6.

3 Five diesel generators operating for 48 hours per year were assumed.

4 Two wood stoves operating for 120 days per year were assumed.

5 No diesel generators would operate under Alternative 4.

Table 19-14

Assumptions for Annual Project-Related Emissions of HFCs from Refrigeration (metric tons)

Building Type	Number	Equipment Type	Unit	Refrigerant	GWP	Charge Size (kg)	Leak Rate (%)	Annual Emissions per Unit (CO_2e)
Condo	1	refrigerators/freezers	unit	R-134a	1,430	0.10	0.90	0.001
Townhouse	1	refrigerators/freezers	unit	R-134a	1,430	0.10	0.90	0.001
Apartment	1	refrigerators/freezers	unit	R-134a	1,430	0.10	0.90	0.001
Supermarket	1	large parallel unit (DX)	supermarket	R-404A/R-507A	3,953.3	1,800.00	10.00	711.594
	12	stand alone units	supermarket	R-404A/R-507A	3,953.3	0.60	0.90	0.256
	35	display cases	supermarket	R-404A/ R-507A	3,953.3	0.50	0.90	0.623
	15	walk-in refrigerators	supermarket	R-404A/R-507A	3,953.3	3.00	8.00	14.232
	35	cold storage room	supermarket	R-404A/ R-507A	3,953.3	3.00	8.00	33.208
High Turnover Restaurant	6	stand alone units	restaurant	R-404A/R-507A	3,953.3	0.60	0.90	0.128
	2	cold storage room	restaurant	R-404A/ R-507A	3,953.3	3.00	8.00	8.539
	2	refrigerators/freezers	restaurant	R-134a	1,430.0	0.25	0.90	0.006
Single Family Home	1.6	refrigerators/freezers	house	R-134a	1,430	0.1	0.90	0.002
Hotel	1	small refrigerator	room[1]	R-134a	1,430.0	0.05	0.90	0.075
	9	stand alone units	hotel	R-404A/R-507A	3,953.3	0.60	0.90	0.192
	9	cold storage room	hotel	R-404A/ R-507A	3,953.3	3.00	8.00	8.539
	1	ice machine	floor [2]	R-134a	1,430.0	0.10	0.90	0.002
	4	refrigerators/freezers	hotel	R-134a	1,430.0	0.10	0.90	0.005
	1	vending machine	floor [2]	R-134a	1,430.0	0.60	0.90	0.016
Stand Alone Lodge	1	vending machine	lodge	R-134a	1,430.0	0.60	0.90	0.008
Detached Services Building [3]	–	–	–	–	–	–	–	–
General Office Building	1	refrigerators/freezers	per floor [2]	R-134a	1,430.0	0.10	0.90	0.002

Source: Chapter 3; Intergovernmental Panel on Climate Change/Technology & Economic Assessment Panel 2005; World Bank 2007; United Nations Environment Programme 2006

Notes

[1] Assumed 75 rooms under Proposed Project (Alternative 1) and Alternative 3.

[2] Assumed 2 floors.

[3] No refrigerant usage assumed in the detached skier services buildings.

Table 19-15

Assumptions for Annual Project-Related Emissions of HFCs from Air Conditioning (metric tons)

Building Type	Number	Equipment Type	Unit (per)	Refrigerant	GWP	Charge Size (kg)	Leak Rate (%)	Annual Emissions per Unit (CO_2e)
Condo/Mixed Use	1	centrifugal chiller	building	R-134a	1,430	450	1.00	6.435
Townhouse	1	commercial unitary AC	unit	R-410A	2,087.5	10	4.00	0.835
Apartment[1]	–	–	–	–	–	–	–	–
Supermarket	1	screw or scroll chiller	market	R-134a	1,430	200	1.00	2.86
High Turnover Restaurant	1	commercial unitary AC	restaurant	R-410A	2,087.5	10	4.00	0.835
Single Family Home	1	residential unitary AC	house	R-410A	2,087.5	2	4.00	0.167
Hotel	1	centrifugal chiller	hotel	R-134a	1,430	450	1.00	6.435
Stand Alone Lodge	1	centrifugal chiller	building	R-134a	1,430	450	1.00	6.435
Detached Services Building	1	commercial unitary AC	building	R-410A	2,087.5	10	4.00	0.835
General Office Building	1	centrifugal chiller	building	R-134a	1,430	450	1.00	6.435

Source: Chapter 3; Intergovernmental Panel on Climate Change/Technology & Economic Assessment Panel 2005; World Bank 2007; United Nations Environment Programme 2006.

Notes

[1] No AC planned for the workforce housing units.

Table 19-16

Annual (2021) Project-Related Emissions of HFCs from Refrigeration and Air Conditioning (metric tons)

Building Type with AC/Refrigeration	Total Annual Emissions per Building Type	Number of Each Building Type	Total Annual Emissions (CO_2e)
Proposed Project (Alternative 1) and Alternative 3			
Condo/Mixed Use	6.436	155 units[1], 7 buildings[2]	45.200
Townhouse	0.836	16 units	13.381
Apartment	0.001	13 units	0.017
Supermarket	762.772	1[3]	762.772
High Turnover Restaurant	9.509	2[4]	19.017
Hotel	15.264	1[5]	15.264
Mid-Mountain Base Area Lodge	6.443	1	6.443
Detached Services Building	0.835	0	0
Total Proposed Project (Alternative 1) and Alternative 3	**N/A**	**N/A**	**862**
No Project (Alternative 2)			
High Turnover Restaurant	9.509	2[6]	19.017
South Base Area and North Base Area Lodges	6.443	2	12.885
Detached Services Building	0.835	1	0.835
Total Alternative 2	**N/A**	**N/A**	**33**
Alternative 4			
Single Family Home	0.169	16[7]	2.705
General Office Building	6.437	1[8]	6.437
Total Alternative 4	**N/A**	**N/A**	**9**
Alternative 5			
Condo/Townhouse	6.436	225 units; 3 buildings	19.530
Supermarket	762.772	1[3]	762.772
Apartment	0.001	12 units	0.015
High Turnover Restaurant	9.509	2[4]	19.017
Single Family Home	0.169	16[7]	2.705
Hotel	15.264	1	15.264
Mid-Mountain Base Area Lodge	6.443	1	6.443
Detached Services Building	0.835	1	0.835
Total Alternative 5	**N/A**	**N/A**	**827**
Alternative 6			
Condo/Townhouse	6.436	195 units; 3 buildings	19.500

Building Type with AC/Refrigeration	Total Annual Emissions per Building Type	Number of Each Building Type	Total Annual Emissions (CO_2e)
Supermarket	762.772	12 units	0.015
Apartment	0.001	1 (1)	762.772
High Turnover Restaurant	9.509	2 (2)	19.017
Single Family Home	0.169	14 (3)	2.367
Hotel	15.264	1	15.264
Mid-Mountain Base Area Lodge	6.443	1	6.443
Detached Services Building	0.835	1	0.835
Total Alternative 6	**NA**	**NA**	**826**

Source: Chapter 3; Table 19-13 and Table 19-14.

Notes:

1 Includes 135 residential condos and 20 fractional units.

2 Includes buildings A, C, D, and E at the North Base area, and buildings A1, A, and B at the South Base area.

3 One general supermarket assumed to be included at the North Base area.

4 One restaurant/bar assumed to be included at the North Base area and Mid-Mountain Base area.

5 The 30 penthouse condos would be located in the hotel building (Building B).

6 Two restaurants assumed to be included at the North Base area and South Base area.

7 Assumed that one single family home would be constructed on each of the 16 residential lots.

Electricity and Natural Gas Usage

Residential, commercial, and recreational electricity consumption was estimated using a variety of resources and methodologies, which are described below. In 2007, Beaudin Ganze Inc. completed a natural gas and electric energy use estimates for the Proposed Project (Alternative 1) (Beaudin Ganze Inc. 2007). According to JMA Ventures, LLC, these estimates accurately represent consumption patterns for Alternatives 3, 5, and 6 given the similar land uses (refer to Table 12-8 in Chapter 10) (Tirman pers. comm. (E)). Electricity and natural gas consumption for No Project (Alternative 2) was provided by JMA Ventures, LLC (Tirman pers. comm. (B)). Electricity and natural gas consumption for Alternative 4 was not provided. This data was therefore estimated from 2007 average consumptive data for residential and commercial customers in California (Dillard pers. comm.; Energy Information Association 2009a, 2009b, and 2009c).

Buildings in the Project area result in indirect GHG emissions associated with electricity demand. The Project would receive electricity generated by NV Energy. Currently, NV Energy has third party verified emission factors for CO_2 only. According to NV Energy staff, the 2007 CO_2 emission factor for electricity delivered to customers was 1,443 pounds per megawatt-hour (Soyars pers. comm.).

State-specific emission factors for CH_4 and N_2O in 2007 were obtained from CCAR (California Climate Action Registry 2009). Since data regarding the change in the rate of emissions for CH_4 and N_2O with respect to CO_2 reduction efforts is unclear, CH_4 and N_2O emissions per kilowatt-hour of electricity generated were assumed to remain constant through 2021. It is likely that CH_4 and N_2O emission will decline as CO_2 emissions decline; however, because the direct relation is unclear, a worst-case scenario in which efficiencies of these emissions do not improve was assumed.

Electricity transmission lines release SF_6 over time. Statewide SF_6 emissions in 2007 were used to identify an emission factor per megawatt-hour by dividing total SF_6 emissions by the total electricity generation in California (California Air Resources Board 2009i; California Energy Commission 2009). Once the per-unit emission factor of 0.00032 pounds of SF_6 per megawatt-hour was obtained, it was multiplied by the estimated electricity consumption at HMR to obtain total SF_6 emissions associated with electricity delivery to the Project. The emission factor was assumed to remain constant over time to represent a worst-case scenario.

According to Beaudin Ganze Inc., total electricity consumption for the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 equates to 44,593,658 kilowatt-hours per year. Statistics provided by JMA Ventures, LLC indicate that existing conditions (No Project [Alternative 2]) at HMR consume approximately 1,372,000 kilowatt-hours per year (Tirman pers. comm. (B)). These statistics include electricity consumption from residential and commercial land uses and snowmaking. Electricity consumption for Alternative 4 is based on average demand in California in 2007. According to NV Energy, the average annual monthly electricity usage per single family home is 755 kilowatt-hours. According to the EIA, average monthly electricity usage per commercial customer in California is 5,772 kilowatt-hours (Energy Information Association 2009a). Assuming 16 single family homes and one 15,000 square foot commercial/retail building will be constructed at HMR, total electricity consumption for Alternative 4 was assumed to be 214,224 kilowatt-hours per year. Total GHG emissions resulting from electricity consumption in 2021 are listed in Table 19-17.

Annual natural gas usage for the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 was obtained from Beaudin Ganze Inc. and was assumed to be 1,064,000 therms per year (Beaudin Ganze Inc. 2007). Annual natural gas usage for existing conditions (No Project [Alternative 2]) was provided by JMA Ventures, LLC and was assumed to be 11,000 therms (Tirman pers. comm. (B)). Natural gas usage for Alternative 4 was calculated using average consumption rates for residential and commercial customers in California (Energy Information Association 2009b and 2009c). According to the EIA, average annual natural usage per residential household and commercial customer was 485 therms and 5,777 therms, respectively (Energy Information Association 2009c). Assuming 16 single family homes and one 15,000 square foot commercial/retail building will be construed at HMR, total natural gas consumption for Alternative 4 would be 13,535 therms per year.

The Project area would receive natural gas from Southwest Gas, which currently has no third party verified emission factors. Consequently, natural gas emission factors for CO_2, CH_4, and N_2O were obtained CCAR and are listed in Table 19-18. It was assumed that these factors would remain constant over time to represent a worst-case scenario.

Annual GHG emissions were calculated by multiplying the emissions factors presented above by annual natural gas usage estimates. Table 19-19 summarizes total annual GHG emissions from natural gas use.

Table 19-17

Total Emissions Associated with Annual (2021) Electricity Consumption (metric tons)

	Use (kilowatt-hour per year)[1]	CO_2[2]	CH_4[3]	N_2O[4]	SF_6[5]	CO_2e
Proposed Project (Alternative 1) and Alternatives 3, 5, & 6	44,594,000	23,120	0.611	0.164	0.006	23,338
No Project (Alternative 2)[6]	1,372,000	711	0.019	0.005	0.000	718
Alternative 4[7]	214,224	111	0.003	0.001	0.000	118

Sources: Beaudin Ganze Inc. 2007 ; Tirman pers. comm. (B); Energy Information Administration 2009a; Soyars pers. comm.; California Climate Action Registry 2009; California Air Resources Board 2009i; California Energy Commission 2009; Dillard pers. comm.

Notes:

1 Beaudin Ganze Inc. 2007; Tirman pers. comm. (B); Dillard pers. comm.; EIA 2009a

2 Based on NV Energy 2007 emission factor of 1,443 pounds per megawatt-hour (Soyars pers. comm.).

3 Based on CCAR 2007 emission factor of 0.0302 pounds per megawatt-hour (CCAR 2009).

4 Based on CCAR 2007 emission factor of 0.0081 pounds per megawatt-hour (CCAR 2009).

5 SF_6 emissions were calculated by dividing overall SF_6 emissions for the State of California in 2007 (0.99 MMT of CO_2) (California Air Resources Board 2009i, page 19) by total California electricity consumption in 2007 (281,200 million kilowatt-hours) (California Energy Commissions 2009) and multiplying the resulting emission factor of 0.00032 pounds per megawatt-hour by the estimated electricity consumption for HMR.

6 Emission factors and consumption assumed to remain constant between 2008 and 2021.

7 16 single-family homes and one 15,000 square foot commercial/retail building were assumed to operate with buildout.

Table 19-18

GHG Emission Factors for Residential and Commercial Natural Gas Combustion (metric tons)

GHG	Natural Gas Emissions Factor (kilograms per million British thermal unit)
CO_2	53.0600
CH_4	0.0050
N_2O	0.0001

Sources: California Climate Action Registry 2009 pg. 101 and 103; Energy Information Administration 2009.

Table 19-19

Total Emissions Associated with Annual (2021) Natural Gas Consumption (metric tons)

	Use (cubic feet per year)[1]	CO_2	CH_4	N_2O	CO_2e
Proposed Project (Alternative 1) and Alternatives 3, 5, and 6	103,501,946[2]	5,651	0.532	0.011	5,666
No Project (Alternative 2)[3]	1,070,039[2]	58	0.006	0.000	59
Alternative 4[4]	1,316,672	72	0.007	0.000	72

Sources: Beaudin Ganze Inc.; Tirman pers. comm. (B); EIA 2009a and 2009b; Energy Information Administration 2009; California Climate Action Registry 2009 pages 101 and 103

Notes:

1 Beaudin Ganze Inc.; Tirman pers. comm. (B); EIA 2009a and 2009

2 Usage converted from therms assuming 1 therm = 100,000 British thermal units and 1,028 British thermal units = 1,000 cubic foot of natural gas.

3 Emission factors and consumption assumed to remain constant between 2008 and 2021.

4 16 single-family homes and one 15,000 square foot commercial/retail building were assumed to operate at full build..

Water Supply and Distribution

Energy is required to treat and deliver water. Domestic water for HMR is supplied by the Madden Creek Water Company (MCWC) and Tahoe City Public Utility District (TCPUD). According to JMA Ventures, LLC, current water usage is 4.8 million gallons per year (Tirman pers. comm. (B)). This statistic includes both domestic and snowmaking water usage, but was collected over the past two seasons when the HMR owned and operated well used for snowmaking was not functioning. During normal well operation, snowmaking uses approximately 17.5 million gallons per year (Homewood Mountain Resort Snowmaking Plan 2009). Estimated annual domestic water consumption for the Proposed Project (Alternative 1) from residential, commercial, and irrigation uses was provided by Nichols Consulting Engineers and was assumed to be 62 acre feet, or 20.2 million gallons per year (Nichols Consulting Engineers 2010). Water consumption from snowmaking operations was obtained from Snowmakers Inc. (2009) and was estimated to be 70.5 million gallons per year. It was assumed that these figures would represent total water usage for the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 (Tirman pers. comm. (D)).

Water consumption for Alterative 4 was not provided. Information on the number and type of fixtures in each building, as well as the occupancy/employment rate at the commercial facility would be necessary to develop an estimate of water consumption for Alternative 4. This information is currently unavailable. Consequently, an estimate of domestic water consumption for Alternative 4 was based on average values obtained from the United States Department of Agriculture (USDA) and the United States Geological Survey (USGS) (USDA 2009; USGS 2009). Specifically, the following assumptions were made:

- **Residential Water Consumption**: According to the USDA, an average California household uses one-half to one acre-foot (0.16 – 0.33 million gallons) of water per year (USDA 2009). It was therefore assumed that each single family home would use 0.33 million gallons of water for a total demand of 5.2 million gallons per year.

- **Commercial Water Consumption**: According to the USGS, an individual uses between 80-100 gallons of water per day (USGS 2009). Assuming employees spend one-third of their day at work, 33 gallons of water per individual would be consumed at the commercial facility. Based on the daily trip rate for the commercial lot, it is estimated that 30 individuals will be employed at the facility. If employees work 250 days per year, domestic water consumption would be 0.25 million gallons per year.

Total water consumption for Alternative 4 was therefore estimated to be 5.5 million gallons per year.

The estimated water-energy proxy for water supplied by the TCPUD service district is 2,320 kilowatt-hours per million gallons (Laliotis pers. comm.). Based on Snowmakers Inc. (2009), it was assumed that an energy load of 3,145 horsepower and a pumping capacity of 3,400 gallons per minute would be required to generate adequate snow at HMR. Assuming a 0.746 kilowatt per horsepower rating, the estimated water-energy proxy for the snowmaking is 11,610 kilowatt-hours per million gallons .

Indirect GHG emissions associated with water supply were calculated by multiplying the expected domestic and snowmaking water demand by the estimated water-energy proxies. These values were then multiplied by the same emissions factors for electricity generation described in the "Electricity and Natural Gas Use" section above. It was assumed that the HMR owned and operated wells would supply water for snowmaking and that domestic water would be supplied by TCPUD

Table 19-20 details expected water demand, associated energy use, and indirect GHG emissions resulting from the supply of water to HMR. Water demand was assumed to remain constant through Project buildout.

Wastewater Treatment

Wastewater from HMR is treated by the Tahoe-Truckee Sanitation Agency (T-TSA). Wastewater can produce CH_4 and N_2O when treated anaerobically. CO_2 emissions from wastewater are considered biogenic (i.e. produced by life processes) in origin and therefore are not included in estimates of anthropogenic emissions (Intergovernmental Panel on Climate Change 2006). Wastewater will break down under anaerobic conditions in the T-TSA systems and during the wastewater treatment process, which will produce CH_4 as a byproduct. Tertiary treatment will remove some nitrogen from the reclaimed water and dried solids.

Table 19-20

Annual Water Supply Intensity and Resulting GHG Emissions (metric tons)

	Use (million gallons per year)		kilowatt -hours per year	CO_2	CH_4	N_2O	SF_6	CO_2e
Proposed Project (Alternative 1) and Alternatives 3, 5, and 6	Domestic	20.2	46,860	24.300	0.0006	0.0002	0.0000	24.530
	Snowmaking	70.4	818,543	424	0.0112	0.0030	0.0001	428.386
No Project (Alternative 2)	Domestic	4.8	11,136	5.774	0.0002	0.0000	0.0000	5.828
	Snowmaking	17.5	203,184	105	0.0028	0.0007	0.0000	106.337
Alternative 4 [(2)]	Domestic	5.46	12,667	6.567	0.0002	0.0000	0.0000	6.629

Source: Nichols Consulting Engineers 2009; Snowmakers Inc. 2009, Tirman pers. comm. (B); USDA 2009; USGS 2009; Laliotis pers. comm.

Notes:

[1] This statistic includes a minor amount of water used for snowmaking. Since the percent breakdown of domestic to snowmaking water usage could not be obtained, it was assumed the entire 4.8 million gallons was used for domestic purposes as a worst case scenario.

[2] No snowmaking would occur under Alternative 4.

Emissions from wastewater treatment were calculated using Statewide ARB emission rates for CH_4 and N_2O. The ARB estimates 2006 yearly emissions resulting from domestic wastewater treatment in the State of California were 522 g of CH_4 and 85.6 g of N_2O per person (California Air Resources Board 2009j and 2009k). According to Beaudin Ganze, sanitary sewer discharge for Alterative 1 is 70,400 gallons per day (Beaudin Ganze 2007). This estimate was assumed to represent sewer discharge from Alternatives 3, 5, and 6 (Tirman pers. comm. (D)). Sewer discharge for No Project (Alternative 2) was assumed to equal domestic water intake, which was estimated at 24% of the total water usage provided by JMA Ventures, LLC (above) (Tirman pers. comm. (B)). Sewer discharge for Alternative 4 was assumed to equal domestic water usage, or 15,280 gallons per day. The one to one ratio of domestic water to sewer discharge is based on the assumption that sewer flow will be near the daily building cold water usage (Beaudin Ganze 2007).

Use of the ARB emission rates for CH_4 and N_2O, which are recorded in grams per person, requires a detailed inventory of the population at HMR. This information is currently unavailable. Consequently, an estimate of the permanent and visitor population at HMR was calculated using the best available information.

From Chapter 7 – Population, Employment, and Housing, implementation of the Proposed Project (Alternative 1) and Alternative 3 will result in 471 permanent residents. Alternatives 4 would accommodate a population increase of 42 persons. Alternatives 5 and 6 will provide housing for 627 and 413 residents, respectively. These statistics assume 100% occupancy and represent a worst-case scenario.

Based on the most recent EPA GHG inventory, it was assumed that the average individual produces 100 gallons of wastewater per day (Environmental Protection Agency 2009e). Wastewater production from permanent residents was therefore calculated by multiplying the expected population by 100 gallons. The remaining

wastewater was assumed to be produced by employees and visitors. It was assumed that these individuals would spend one-third to one-half of their day at HMR, contributing roughly 50 gallons of wastewater per day. Total HMR population was therefore calculated using the following equations:

Visitor/ Employee Wastewater = (Total wastewater) - ((Full-time residents) X (100 gallons/day))

Visitor/Employee Population = (Visitor/Employee wastewater) / (50 gallons per day)

Total HMR Population = (Visitor/Employee population) + (Full-time residents)

Where:

Total wastewater = Statistics provided by Beaudin Ganze, JMA Ventures LLC, and USGS/USDA

Full-time residents = Estimates in Chapter 7 – Population, Employment, and Housing.

Emissions of CH_4 and N_2O from sanitary sewer discharge at HMR were calculated by multiplying the total population by the ARB emission factors for both CH_4 and N_2O. It was assumed the population would remain constant through Project buildout. The population estimates calculated using the above methodology assume each individual will produce the same amount of wastewater. In addition, it does not take into account the seasonal population flux, which would result in higher population estimates during the winter season and lower population estimates during the summer season. However, the calculations represent a good faith effort at calculating the average population at HMR based on Project-specific sanitary sewer information and average wastewater production values. Moreover, because annual wastewater emissions from the part-time population (e.g. visitors and employees) presented in Table 19-21 were multiplied by a factor of 365, this analysis likely overestimates total emissions from sanitary sewer discharge.

The total annual GHG emissions from wastewater associated with the project are presented in Table 19-21.

Summary of Project Level Emissions

Table 19-22 presents construction emissions. Because construction emissions are a one-time event, these emissions are considered short-term in comparison to ongoing GHG emissions associated with Project operations.

Table 19-23 lists existing and with Project annual GHG emissions by source. Emission factors associated with transportation and energy usage are likely to decrease over time. Therefore, emissions calculations for Project operation (2021) likely overestimate future annual emissions.

Implementation of the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would result in a net increase in local GHG emissions above existing conditions. Alternative 4 would result in a net reduction in GHGs from the Project area. GHG emissions tend to accumulate in the atmosphere because of their relatively long lifespan. As a result, their impact on the atmosphere is mostly independent of the point of emission. Therefore, GHG emissions are more appropriately evaluated on a regional, State, or even national scale than on an individual project level. Further, it is unlikely that the GHGs emitted as part of the Project would have an individually discernable effect on global climate change.

Mitigation: No mitigation is required.

Table 19-21

Population Estimates, Sanitary Sewer Discharge, and Resulting GHG Emissions (metric tons)

Scenario	Full-time Residents	Visitors and Employees[1]	Sanitary Sewer (gallons per year)[2]	CO_2[3]	CH_4	N_2O	CO_2e
Proposed Project (Alternative 1) and Alternative 3	471	466	25,696,000	0.00	179	29	12,825
No Project (Alternative 2)	0	63	1,152,000	0.00	12	0	253
Alternative 4	42	30[4]	5,577,200	0.00	14	2	985
Alternative 5	627	154	25,696,000	0.00	149	24	10,689
Alternative 6	413	582	25,696,000	0.00	190	31	13,618

Source: California Air Resources Board 2009j and 2009k; Beaudin Ganze 2007; Tirman pers. comm. (B); Environmental Protection Agency 2009e.

Notes:

[1] Chapter 7 describes employment expected at HMR with the Project. The difference between this number and the figure presented in Table 19-21 represents the estimated number of guests contributing to the sanitary sewer discharge. gallons per day by 365.

[3] CO_2 emissions considered biogenic and were not calculated.

[4] Based on calculates completed for commercial water usage (see "Water Supply and Distribution" above).

Table 19-22

Total GHG Emissions Associated with Construction of HMR (metric tons)

Scenario	CO_2e
Proposed Project (Alternative 1) and Alternative 3	2,684
No Project (Alternative 2)	0
Alternative 4	119
Alternative 5	2,734
Alternative 6	2,697

Source: Section 19.4.1 – Construction GHG Emission.

Table 19-23

Annual Operational GHG Emissions Associated with HMR (metric tons)

Scenario	Source	CO_2e
Existing (2008)	Transportation	1,018
	Area Source	26
	Refrigeration/AC	33
	Electricity Usage	718
	Natural Gas Combustion	59
	Water Supply	112
	Wastewater Treatment	253
	Total Existing Conditions	**2,220**
Proposed Project (Alternative 1) and Alternative 3	Transportation	1,903
	Area Source	18
	Refrigeration/AC	862
	Electricity Usage	23,338
	Natural Gas Combustion	5,666
	Water Supply	453
	Wastewater Treatment	12,825
	Total Proposed Project (Alternative 1) and Alternative 3	**45,064**
No Project (Alternative 2)	Transportation	1,010
	Area Source	26
	Refrigeration/AC	33
	Electricity Usage	718
	Natural Gas Combustion	59
	Water Supply	112
	Wastewater Treatment	253
	Total No Project (Alternative 2)	**2,212**
Alternative 4	Transportation	411
	Area Source	1
	Refrigeration/AC	9
	Electricity Usage	118
	Natural Gas Combustion	72
	Water Supply	7
	Wastewater Treatment	985
	Total Alternative 4	**1,602**
Alternative 5	Transportation[1]	1,724
	Area Source	18
	Refrigeration/AC	827
	Electricity Usage	23,338
	Natural Gas Combustion	5,666
	Water Supply	453

Scenario	Source	CO_2e
	Wastewater Treatment	10,689
	Total Alternative 5	**42,715**
Alternative 6	Transportation	1,678
	Area Source	18
	Refrigeration/AC	826
	Electricity Usage	23,338
	Natural Gas Combustion	5,666
	Water Supply	453
	Wastewater Treatment	13,618
	Total Alternative 6	**45,597**

Source: Section 19.4.1 – Construction GHG Emissions, Section 19.4.2, Operational GHG Emissions.

Notes

1. As discussed in Chapter 12, the summer VMT estimates for Alternative 5 did not include trips associated with the 12 workforce housing units. The emissions presented above will therefore be slightly higher with the inclusion of these units.

19.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

In accordance with the 2010 CEQA Guidelines, this section discusses Project GHG emissions within a cumulative context. Reduction strategies already committed to by the Project Applicant, as well as additional mitigation measures to further reduce GHG emissions are identified.

Impact: **CC-C1. Will the Project Generate GHG Emissions, Either Directly or Indirectly, that may Have a Significant Impact on the Environment?**

Analysis: *No Impact; No Project (Alternative 2)*

No Project (Alternative 2) will not include any changes to the existing HMR Project area or structures. Therefore, there will be no new GHG emissions. There would therefore be no impact. No further analysis is required.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternative 4*

Implementation of Alternative 4 is expected to reduce GHG emissions by 618 metric tons per year compared to existing conditions (Table 19-23). Consequently, this impact is considered a less than significant cumulative contribution of GHGs and to climate change.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5, and 6*

Unlike criteria pollutant impacts, which are local and regional in nature, climate change impacts occur at a global level. The relatively long lifespan and persistence of GHGs (Table 19-1) require that climate change be considered a cumulative and global impact. It is unlikely that that any increase in global temperature or sea level could be attributed to the emissions resulting from a single project. Rather, it is more appropriate to

conclude Project-related GHG emissions will combine with emissions across California, the U.S., and the globe to cumulatively contribute to global climate change.

To put the Project in perspective, total estimated GHG emissions were compared to the most recent global, national, and State GHG inventories. Construction emissions, which will be produced during Project development but not during Project operation, were amortized assuming a 40-year Project lifetime and included in the emissions totals. Based on the estimates presented in Table 19-24, the Project and alternatives would have a miniscule impact on State, federal, and international emissions of GHGs.

While GHG emissions from the Project may be negligible relative to total State, national, and global emissions, scientific consensus concludes that given the seriousness of climate change, small contributions of GHGs may be cumulatively considerable. When compared to existing emissions, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would result in net increases of GHGs. Based on consultation with the PCAPCD, Placer County, and the TRPA, the magnitude of these emissions would result in the Project having a significant cumulative impact on the environment (Clark, Chang, and Landry pers. comm.).

Table 19-24

Annual HMR GHG Emissions in California, U.S., and Global Context

Emissions Type	CO_2e (metric tons)		
2006 ARB Statewide GHG Emissions	483,900,000	–	–
2007 EPA National GHG Emissions	7,510,100,000	–	–
2004 IPCC Global GHG Emissions	49,000,000,000	–	–
Scenario	**HMR % of ARB Statewide**	**HMR % of EPA National**	**HMR % of IPCC Global**
Existing Annual HMR GHG Emissions	0.000407%	0.000026%	0.000004%
Proposed Project (Alternative 1) and Alternative 3 Annual HMR GHG Emissions[1]	0.009327%	0.000601%	0.000092%
No Project (Alternative 2) Annual HMR GHG Emissions	0.000457%	0.000029%	0.000005%
Alternative 4 Annual HMR GHG Emissions[1]	0.000332%	0.000021%	0.000003%
Alternative 5 Annual HMR GHG Emissions[1]	0.008841%	0.000570%	0.000087%
Alternative 6 Annual HMR GHG Emissions[1]	0.009437%	0.000608%	0.000093%

Sources: IPCC 2006c; EPA 2009a; ARB 2009a.

Notes:

[1] Construction emissions have been amortized over a 40-year period.

Project Commitments

The Project Applicant has committed to numerous GHG reduction strategies through participation in the LEED for Neighborhood Development Pilot Program (LEED-ND). Unlike traditional LEED programs, LEED-ND evaluates not just individual buildings, but the overall project design. The LEED-ND rating system is divided into three primary categories: Smart Location, Neighborhood Pattern, and Green Infrastructure. These

categories have prerequisites that are required for all projects, as well as additional credits that reward performance. The final project score is reflected in the certification level, which include "certified" (40 points), "silver" (50 points), "gold" (60 points), and "platinum" (80 points).

The North Base area will be designed under the Pilot Program and the South Base area will be constructed using the LEED criteria as a template. In addition, HMR has developed an Alternative Transportation Program (Transportation Program) to reduce reliance on the automobile. The North Base has been accepted into the program with a pre-certification estimate of 68 points ("gold level"). Table 19-25 identifies the GHG reduction strategies committed to by the Project Applicant through LEED certification and the Transportation Program.

There is limited research on the CO_2 reduction potentials of individual LEED strategies. Instead, several documents have quantified the net energy, water, and waste savings resulting from LEED certification. According to the U.S. Green Building Council (USGBC), green buildings can reduce energy use by 24%-50%, water use by 40%, and solid waste by 70% (USGBC 2009). With regards to total CO_2 emissions, recent case studies on certified green buildings revealed an average reduction of 33%-39% (GSA Public Buildings Services 2008; Kats 2003).

The Bay Area Air Quality Management District (BAAQMD), Sacramento Metropolitan Air Quality Management District (SMAQMD), and San Joaquin Valley Air Pollution Control District have published various guidance documents with pre-quantified reduction potentials for mitigation measures used in the Bay Area, Sacramento Metropolitan Area, and San Joaquin Valley (EDAW 2009; SMAQMD 2008; SJVAPCD 2009). When appropriate, Table 19-25 lists these reductions to provide an approximation of the potential CO_2 reductions that may be achieved by the identified HMR LEED-ND strategies. Note that the reduction potentials have not been scaled to Project-specific emissions or resource sectors (e.g. natural gas, electricity).[3]

[3] "Reduction potentials should be scaled proportionally to their sector of project-generated emissions. For example, if a measure would result in a 50 percent reduction in residential natural gas consumption, but only 20 percent of a project's emissions are associated with natural gas consumption, and only 10 percent of a project's emissions are from residential land uses, then the scaled reduction would equal one percent (50% * 20% * 10% = 1%) (EDAW 2009)."

Table 19-25

Greenhouse Gas Reduction Strategies and Associated Reduction Potentials

GHG Reduction Strategy	Potential Reduction[1]	Comments and Notes
Smart Location and Linkage[2]		
Preferred Location		
Reduced Automobile Dependence[3]	2%	Credit awarded based on LEED checklist application that 100% of dwelling units will be within 0.25 mile of transit stops. Note that additional reductions would be achieved from other measures included in this strategy (EDAW 2009, USGBC 2007).
Bicycle Network	1%-5%	The Center for Clean Air Policy (CCAP) guidebook attributes a 1% to 5% reduction associated with the use of bicycles, which reflects the assumption that their use is typically for shorter trips (SMAQMD 2008).
Housing and Jobs Proximity		
Steep Slope Protection		
Site Design for Habitat or Wetlands Conservation		
Restoration of Habitat or Wetlands		
Conservation Management of Habitat/Wetlands		
Neighborhood Pattern and Design[2]		
Open Community		
Compact Development	0.20%	Credit awarded based on LEED Rating System that 1 point achieves a Floor to Area Ratio (FAR) of 0.75-1. Reduction based on SMAQMD FAR with planned bus service (USGBC 2007, SJVAPCD 2009).
Diversity of Uses		Project would result in 50% of the dwelling units being located within 1/2 mile of ten mixed-uses (USGBC 2007).
Diversity of Housing Types		
Affordable Rental Housing	0-4%	Reduction applies to the mobile source sector (EDAW 2009).
Reduced Parking Footprint[4]	0-50%	Reduction applies to the mobile source sector (EDAW 2009).
Walkable Streets	0.25%-0.50%	Based on SJVAPCD credit for projects orientated toward bike and pedestrian facilities. Note that additional reductions would be achieved by other measures included in this strategy (SJVAPCD 2009).
Transit Facilities	0-15%	Reductions apply to mobile source sector (EDAW 2009).

GHG Reduction Strategy	Potential Reduction[1]	Comments and Notes
Transportation Demand Management[5]	25% of transit service reduction	Reduction credit given for free transit passes and only applies to resident/employee trips. Reductions apply to mobile source sector. Additional reductions would be achieved by the transit service provided in this strategy (EDAW 2009).
Access to Surrounding Vicinity		
Access to Public Spaces	1%	Based on SMAQMD credit for projects located within 0.25 mile of civic uses. According to the LEED Rating System, the Project will be designed so that parks and green plazas will be within 1/6 mile walk distance to 90% of planned dwelling units (SJVAPCD 2009, USGBC 2007).
Access to Active Public Spaces		Reduction included under "Access to Public Spaces."
Universal Accessibility		
Community Outreach and Involvement		
Local Food Production		
Green Construction & Technology[2]		
Construction Activity Pollution Prevention		
LEED Certified Green Buildings		
Energy Efficient in Buildings		Based on LEED Rating System, the Project will demonstrate a 20% reduction in building performance compared to baseline or comply with ENERGY STAR ratings (USGBC 2007).
Reduced Water Use		Based on LEED Rating System, this strategy may achieve an aggregate water reduction of 20% when compared to building baseline conditions (USGBC 2007).
Minimize Site Disturbance through Site Design		
Minimize Site Disturbance during Construction		
Stormwater Management		Based on the LEED Rating System and application, the Project will implement a plan that infiltrates, reuse, or evapotranspirates at least 0.75 inches of rain (USGBC 2007).
Heat Island Reduction		
On-Site Energy Generation		Based on LEED Rating System, the Project will develop on-site energy generation system(s) with peak electrical generating capacity of at least 5% of the Project's specified electrical service load (USGBC 2007).
Infrastructure Energy Efficiency		Based on LEED Rating System, the Project will achieve a 15% annual energy reduction beyond an estimated baseline energy use for infrastructure (USGBC 2007).
Recycled Content for Infrastructure		

GHG Reduction Strategy	Potential Reduction[1]	Comments and Notes
Construction Waste Management		Based on LEED Rating System, 50% of non-hazardous construction and demolition debris will be recycled and/or salvaged (USGBC 2007).
Comprehensive Waste Management		
Light Pollution Reduction		
Innovation and Design Process[2]		
LEED Accredited Professional		
Transportation Management Program[6]		
Extension of West Shore Bike Trail		Reduction of 1%-5% attributed to bicycle strategies. See "Bicycle Network."
Bicycle Share Service		Reduction of 1%-5% attributed to bicycle strategies. See "Bicycle Network."
Intercept Existing Vehicle Trips		
Transportation Information Strategies		
Regional Transportation Solutions		
Summer Boat Parking		

Source: LEED Application; Homewood Transportation Newsletter; SMAQMD 2008; SJVAPCD 2009; EDAW 2009; USGBC 2007.

Notes

[1] Potential GHG reductions represent an approximation. They have not been scaled to the individual Project or sectors.

[2] Strategies obtained from the LEED for Neighborhood Development Pilot Project Checklist, which was submitted by the project applicant during the pre-review submittal phase.

[3] Overlaps with several strategies outlined in the Transportation Program (e.g. electric/hybrid car rental and transit services).

[4] Overlaps with the Day Skier Parking Control strategy outlined in the Transportation Program.

[5] Overlaps with several of the strategies outlined in the Transportation Program. These include an employee shuttle bus, bus fares, scheduled shuttle service, North-South base area shuttle series, skier intercept shuttle, West Shore dial-a-ride, and water taxi service.

[6] Strategies obtained from the HMR Alternative Transportation Newsletter provided by LLC Ventures. Those measures that overlap with LEED strategies identified above have not been included in this list.

Based on the pre-applicant checklist completed for HMR, the project is expected to achieve gold certification. Implementation of Mitigation Measure CC-1 is required to document and verify project certification.

Mitigation: **CC-1: Document and Verify Implementation of the Project GHG Reduction Commitments**

The project applicant shall document and verify the project commitments outlined in Table 19-25 have been incorporated into the final project design. Copies of the pre-certification plan (Stage 2 in the LEED-ND process) shall be provided to PCAPCD and TRPA. Once the project is complete, the final LEED-ND certification that verifies the north base has achieved all of the prerequisites and credits required for Gold certification shall be submitted to the air districts.

CC-2: Implement Project Design Features to Further Reduce Project Contribution to Climate Change

A recent report by the California Attorney General's (AG) office, *The California Environmental Quality Act: Addressing Global Warming at the Local Agency Level*, identifies various example measures to reduce GHG emissions at the project level (State of California Department of Justice 2008). The following Project design features were compiled from the California AG's Office report and are intended to provide additional strategies that could be incorporated into HMR Master Plan, especially at the South Base, to further reduce GHG emissions. Note that majority of the AG's strategies have been removed from the list below as they overlapped with actions already committed to by the Project Applicant (Table 19-25), or are inapplicable to the Project because they address emissions from different types of projects.

The final project design shall incorporate the following applicable AG measures. A standard note indicating these requirements will be included on building plans approved in association with this project shall be included on building permits.

<u>Energy Efficiency</u>

- Use solar heating, automatic covers, and efficient pumps and motors for pools and spas.

<u>Renewable Energy</u>

- Install solar or wind power systems and solar hot water heaters. Educate consumers about existing incentives.
- Install solar panels on carports and over parking areas.

<u>Water Conservation and Efficiency</u>

- Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.
- Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.
- Restrict the use of water for cleaning outdoor surfaces and vehicles.
- Provide education about water conservation and available programs and incentives.

<u>Solid Waste Measures</u>

- Provide education and publicity about reducing waste and available recycling services.

<u>Transportation and Motor Vehicles</u>

- Limit idling time for commercial vehicles, including delivery and construction vehicles.
- Use low or zero-emission vehicles, including construction vehicles.
- Increase the cost of driving and parking private vehicles by, e.g., imposing tolls and parking fees.
- Institute a low-carbon fuel vehicle incentive program.

- Provide information on options for individuals and businesses to reduce transportation-related emissions. Provide education and information about public transportation.

After Mitigation: *Significant and Unavoidable Impact; Proposed Project (Alternative 1) and Alternatives 3 5, and 6*

While the above measures will not eliminate Project GHG emissions, their inclusion will result in lower GHG emissions levels than had they not been incorporated. For example, green buildings have the potential to reduce CO_2 emissions associated with building operations by 33%-39% (GSA Public Buildings Services 2008; Kats 2003). In addition future State actions taken pursuant to AB 32 including requirements for lower carbon-content in motor vehicle fuels, improved vehicle mileage standards (provided California is not barred due to federal action), and an increased share of renewable energy in electricity generation will serve, in time, to further reduce GHG emissions.

The majority of development at HMR will include transferred tourist accommodation units (TAUs) and residential accommodation units (RAUs). Consequently, GHG emissions generated by these structures are not new to the Lake Tahoe Basin and would be emitted regardless of the Project. The transfer of existing TAUs and RAUs to the Project site may even reduce basin-wide GHG emissions, as the existing units are older and less efficient than those being constructed. While some new TAUs and RAUs will be required as part of the Project, they will be obtained from TRPA bonus inventory, which is analyzed in the TRPA Regional Plan. Consequently, new HMR-generated GHG emissions have been accounted for in previous planning documents. Please see Chapter 7 – Population, Employment, and Housing for more information on TAUs/RAUs. The mitigation measures and reduction strategies identified above will reduce Project-related GHG emissions, and the Project is being developed through existing and bonus TAUs and RAUs. However, it is unknown the extent to which climate change will be affected by GHG emissions from HMR. The possibility exists that the Project will contribute to global GHG emissions and global climate change. Therefore, the Project's cumulative impact to climate change after mitigation is considered significant and unavoidable.

Impact: CC-C2. Will the Project Conflict with any Applicable Plan, Policy or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of GHGs?

Analysis: *No Impact; No Project (Alternative 2)*

No Project (Alternative 2) will not include any changes to the existing HMR Project area or structures. Therefore, there will be no additional GHG emitted as result of No Project (Alternative 2). It will therefore not conflict with any plans to reduction GHG emissions. There would be no impact. No further analysis is required.

Mitigation: No mitigation is required.

Analysis: *Less than Significant Impact; Alternative 4*

Implementation of Alternative 4 is expected to reduce GHG emissions by 617 metric tons per year, relative to existing conditions (Table 19-22). Consequently, Alternative 4 will compliment and assist plans in reducing regional GHG emissions. This impact is considered less than significant.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Proposed Project (Alternative 1) and Alternatives 3, 5, and 6*

The State has adopted several polices and regulations for reducing GHG emissions (as discussed in Section 19.2). The most stringent of these is AB 32, which is designated to reduce Statewide GHG emissions to 1990 levels by 2020. The TMPO has outlined a serious of goals and polices geared towards reducing VMT and GHG emission from Transportation.

As shown in Table 19-23, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 would result in substantial net increases of GHG and vehicle trips in comparison to existing conditions. Thus, Project-generated GHG emissions may conflict with the State goals listed in AB 32 and polices outlines in the 2008 RTP. This impact is considered significant.

Mitigation: **CC-1: Document and Verify Implementation of the Project GHG Reduction Commitments**

CC-2: Implement Project Design Features to Further Reduce Project Contribution to Climate Change

After Mitigation: *Significant and Unavoidable Impact; Proposed Project (Alternative 1) and Alternatives 3, 5, and 6*

Mitigation Measures CC-1 and CC-2 will result in lower GHG emissions levels than had it not been incorporated, but it is unlikely to achieve reductions consistent with the requirements of AB 32. The possibility exists that the Project will contribute to global GHG emissions and therefore conflict with existing and future actions to reduce GHG emissions. Thus, this impact is considered significant and unavoidable.

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20 MANDATORY ENVIRONMENTAL ANALYSIS

20.1 CUMULATIVE IMPACTS

TRPA Code of Ordinances Section 5.8.B(2) requires an EIS to include the significant environmental impacts of a project (TRPA 1987). Impacts are defined as direct, indirect and cumulative impacts of a project. Cumulative impacts are those that result from the incremental impact of an action when added to other past, present and reasonably foreseeable future actions. Cumulative impacts are discussed for each topic section when the project's incremental impact is "cumulatively considerable." The projects that may have a cumulative impact on the resources in the project area are often referred to as "related projects."

The California Environmental Quality Act (CEQA) requires that an EIR contain an assessment of the cumulative impacts that could be associated with the proposed project. According to CEQA Guidelines Section 15130(a), "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (as defined by Section 15130). As defined in CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. A cumulative impacts occurs from:

> *…the change in the environmental which results from the incremental impacts of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.*

Individual resource area chapters in this EIR (Chapters 6-19) include a discussion of the cumulative impacts associated with the section topic based on the list of other related projects. The list of past, present, and reasonably foreseeable future projects considered for this cumulative analysis are those projects that have occurred or are planned to occur in the vicinity of the north shore of Lake Tahoe (Table 20-1). Table 20-1 identifies related projects in the area, the parcel number, if available, a brief description of the project, and the status of the project. Agencies contacted to develop Table 20-1 include the TRPA, Placer County, USDA Forest Service LTBMU, Tahoe City Public Utility District, Caltrans, and the California Tahoe Conservancy.

Table 20-1

List of Related Projects in Placer and El Dorado Counties - Lake Tahoe Basin Area

Project Name	APN(s)	Project Description	Status
Tahoe Regional Planning Agency Community Enhancement Program			
Domus Development Kings Beach Housing	090-064-012 090-064-013 090-067-017 090-122-035 090-122-036 090-122-037 090-126-026 090-222-050	Phased affordable workforce housing (studio to 3-bedroom units), environmental improvement, and commercial (8,175 sf) development in Kings Beach: • 16 units, housing up to 80 tenants in five structures, and 32 parking spaces on 0.64 acre on three parcels along Deer Street between Golden and Rainbow. • Six units, housing up to 28 tenants, and 12 parking spaces on 0.32 acre on three parcels along Trout Street. • 12 units, housing up to 56 tenants, and 24 parking spaces on 0.43 acre along Fox Street near the intersection with Brook Street. • 40 units, housing up to 101 tenants, and 51 parking spaces on 1.5 acres on Chipmunk Street near the intersection with Highway 28. The project includes 250 sf of pedestrian/bike trail, underground utilities, 7,636 sf of impervious cover removed and treated/ revegetated, 26.018 sf of area revegetated and treated with erosion source control and runoff practices, and 2,050 sf of roadway stormwater treatment. Existing Development Rights To Be Removed: 12 ERU, 20 TAU	Approved

Table 20-1

List of Related Projects in Placer and El Dorado Counties - Lake Tahoe Basin Area

Project Name	APN(s)	Project Description	Status
Boulder Bay Project	123-042-01 123-042-02 123-052-02 123-052-03 123-052-04 123-053-02 123-053-04 123-054-01 123-071-04 123-071-34 123-071-35 123-071-36 123-071-37	Mixed-use redevelopment that consists of the following uses: • 300 tourist accommodation units (hotel); • 59 whole ownership condominiums; • 14 affordable housing units (up to 38 total bedrooms); • 20,715 square feet of commercial floor area; • 89,187 square feet of hotel and casino accessory uses (including 19,089 square foot health and wellness center; 9,860 square foot fitness center; 21,253 square foot convention and meeting space; 1,665 square foot day care center; 750 square foot convenience retail; 750 square foot bar; 3,680 square foot restaurant; and approximately 32,158 square feet of lobby area, mechanical, electrical and plumbing space, and administrative services) • 10,000 square feet of casino (reduced from 29,744 square feet of NTRPA certified gaming area); • 540 total parking spaces (530 in underground structures); and • 5.7 acres of open space with 1.87 acres designated for two public parks to be built and maintained by Boulder Bay and 1.20 acres for passive hiking trails and overlook. Existing Development Rights: 56,322 sf CFA, 3 ERU, 111 TAU	Proposed

Table 20-1

List of Related Projects in Placer and El Dorado Counties - Lake Tahoe Basin Area

Project Name	APN(s)	Project Description	Status
Kings Beach Town Center (BB LLC)	090-126-020 090-126-021 090-126-022 090-126-024 090-126-039 090-126-040 090-133-003 090-133-005 090-133-006 090-133-007 090-133-008 090-133-009 090-133-010 090-133-011 090-133-012 090-133-015 090-133-016 090-133-018	Redevelopment of the existing downtown commercial/residential site with pedestrian friendly mixed use consisting of residential, retail, office uses, and parking on 4.3 acres. The project is located between Coon and Fox Street on the north side of Highway 28. The town center would include eleven new employee/workforce housing units, 30 market-rate condominiums, and 30 fractional ownership units. Residential units would range in size from studios to three-bedroom, two-bath units. The project also includes a 22,000-sf potential Placer County Government Center building, and up to 66,000 sf of retail/commercial uses. A 397-space parking structure would be constructed on Salmon Avenue between the post office and Fox Street. The project also includes improved storm water collection and water quality treatment systems. Existing Development Rights To Be Removed: 19,000 sf CFA, 16 ERU, 10 TAU	Proposed
Pastore Ryan, Kings Beach	090-222-012	Mixed-use redevelopment project including retail, non-profit/public, educational programs, cafe, and residential units at the former Foothill Motel site at 8931 North Lake Blvd. The project would include 5,526 sf of coverage, including a community room, offices, a deli/coffee shop, nine parking spaces, and between two and five residential units. This project would result in a 263-sf reduction to site coverage, green building and BMP demonstrations, pervious concrete, stormwater collection improvements, and native landscape enhancement. Existing Development Rights: 1 ERU, 7 TAU	Proposed

Table 20-1

List of Related Projects in Placer and El Dorado Counties - Lake Tahoe Basin Area

Project Name	APN(s)	Project Description	Status
Kings Beach Lakeside Resort	7 parcels	Mixed-use redevelopment project on 2.08 acres in King's Beach. Includes 64 new tourist units consisting of 30 fractional units with kitchens and 34 studio hotel rooms with kitchens, two parking structures for 50 parking spaces, 3,850 sf of restaurant space with 1,400 sf of decking (outside seating), 8,560 sf of retail space, and an enlarged boardwalk and viewing area of the lake. Stormwater treatment would be constructed to serve a 20-year, 1-hour storm event and land coverage would be reduced by 5%, including some reductions within sensitive soils. Existing Development Rights: 19,000 sf CFA, 16 ERU, 10 TAU	Proposed
Ferrari Family Resort, Kings Beach	NA	Redevelopment of an existing mixed-use area with 44 new residential housing units, workforce housing (in cooperation with DOMUS), a resort, over 30,000 sf of enhanced and new retail opportunities, parking, and environmental improvements including transit center enhancements and improved lake access/views. Located on SR 28 between Secline and Deer Streets, the project would include a pedestrian overpass linking the 320-space parking structure to be developed on the north side of SR 28 with the resort on the lakeside of SR 28. The three-story resort would include a café, waterfront restaurant, and a view corridor of the lake. The resort will continue to provide 93 tourist accommodation units. A new 16,000-sf commercial space is proposed on the existing RiteAid site. Stormwater runoff would be controlled and treated onsite and 7,000 sf of coverage would be removed from lakefront lands. Existing Development Rights: 5,972 sf CFA, 27 ERU, 93 TAU	Proposed

Table 20-1

List of Related Projects in Placer and El Dorado Counties - Lake Tahoe Basin Area

Project Name	APN(s)	Project Description	Status
Placer County CEQA Current Projects, November 2010			
Northstar-At-Tahoe Alpine Coaster	110-050-006-000 110-050-006-000 110-050-058-000 110-050-058-000 110-050-058-000 110-081-017-000 110-081-020-000 110-081-020-000 110-081-021-000 110-081-021-000 110-400-005-000 110-400-005-000 110-400-005-000	The project proposes to construct an all-weather toboggan with 2,935 lf uphill and 4,260 lf downhill ride to enhance the year-round attraction at Village at Northstar. Located in the Martis Valley Community Plan Area.	Proposed (Applicant 1st submittal received 2/18/2010; Project on hold)

Table 20-1

List of Related Projects in Placer and El Dorado Counties - Lake Tahoe Basin Area

Project Name	APN(s)	Project Description	Status
Northstar-At-Tahoe Ski Trail Widening	080-260-013-000 091-100-022-000 110-050-015-000 110-050-015-000 110-050-017-000 110-050-038-000 110-050-038-000 110-050-040-000 110-050-041-000 110-050-041-000 110-050-047-000 110-050-047-000 110-050-047-000 110-050-047-000 110-050-050-000 110-050-053-000 110-050-053-000 110-070-008-000 110-070-009-000 110-070-010-000 110-070-014-000	The project proposes to widen the existing ski trails over 2,252 acres with associated snowmaking hydrant relocation and the Martis Camp lift access ski trail. Located in the Martis Valley Community Plan Area.	Approved (Application deemed complete 8/23/10; Mitigated Negative Declaration mailed to applicant for signature 9/30/10)
Tahoe Timeshare	117-071-015-000 117-071-044-000	Construction of 10 new timeshare duplexes, workforce housing, and related structures on the 5.19 acre parcel at the northwest corner of North Lake Boulevard and Anderson Road in Tahoe Vista.	Proposed (Comments sent 11/16/10 and applicant 5th submittal due 12/8/10)

Table 20-1

List of Related Projects in Placer and El Dorado Counties - Lake Tahoe Basin Area

Project Name	APN(s)	Project Description	Status
Denny's Trailer Park	090-124-024-000	The project proposes to reconfigure the seven existing non-conforming lots to conform to the layout of the existing manufactured homes in order to allow ownership to the rental park. No physical changes to the property are being proposed. In the North Tahoe Community Plan area.	Proposed (County comments sent 03/10/10; Applicant 4th resubmittal pending NTPUD approval)
Northstar Highlands Phase III	110-030-068-000 110-030-068-000 110-030-068-000 110-050-047-000 110-050-047-000 110-050-047-000 110-050-047-000	Northstar Mountain Properties, LLC proposes to develop up to 30 single-family lots located within the approved 342-acre Northstar Highlands Master Plan in 2005.	Proposed (Mitigated Negative Declaration public review ends 12/7/10; PC hearing scheduled for 12/9/10)
Northstar Overall Mountain Master Plan	080-260-001 080-260-002 080-260-008 080-260-010 080-260-013 080-260-015 080-260-016 080-260-017 091-100-002 091-100-022 091-100-027 110-030-018 110-030-022 110-030-050 110-030-051 110-030-069 110-030-070 110-050-006 110-050-015	Northstar-at-Tahoe proposes an Overall Mountain Master Plan for the existing ski resort area. This will involve both project-level and program-level components. The project-level will include six new lifts and associated terrain, snowmaking and associated infrastructure, additional trails and trail widening, four skier bridges, new half pipe and existing half pipe relocation, new skier service, site improvements to existing sites, cross country center relocation and campsite area, relocated ropes course and tree canopy tours, additional mountain bike park trails. Entitlements include Rezone and General Plan Amendment. The future development that will be considered at the program level will include two additional lifts and the Intercept Parking Lot Gondola and associated terrain, additional skier service sites, and the Backside campsite area. In the Martis Valley Community Plan Area.	Proposed (Notice of Preparation public review period pending)

Table 20-1

List of Related Projects in Placer and El Dorado Counties - Lake Tahoe Basin Area

Project Name	APN(s)	Project Description	Status
	110-050-017 110-050-026 110-050-029 110-050-030 110-050-034 110-050-038 110-050-039 110-050-040 110-050-041 110-050-047 110-050-061 110-070-008 110-070-009 110-070-010 110-070-014 through -017 110-081-041 114-010-001 through -017		

Table 20-1

List of Related Projects in Placer and El Dorado Counties - Lake Tahoe Basin Area

Project Name	APN(s)	Project Description	Status
Sena at Squaw Valley	096-230-052-000	The Sena at Squaw Valley project is a custom designed 240-unit condominium development comprised of 98 townhouse style condominiums, 112 time share condominiums and 30 affordable units, an approximately 25,000 square foot clubhouse and three smaller clubhouses (approx 1,260 square feet, 2,653 square feet, and 6,078 square feet respectively). The 98 townhouse-style condominiums will be three stories and will have a mixture of two, three or four bedrooms with an attached one- or two-car garage. The units will range in size from approx 1,800 square feet to 2,400 square feet. The 112 timeshare condominiums will be constructed in a 2-3 story building and will be mixed with two, three or four bedroom units. There will be an underground garage for approx 200 cars dedicated to the timeshare condominiums. The units will range in size from approx 1,350 square feet to 1,870 square feet. The 30 affordable units will be single story units and have 2-3 bedrooms of mixed square footages. The units will be built in a 2-story structure with immediately adjacent exterior parking provided. The main clubhouse will be designed to have a weight room, locker facility, spa and massage areas, a pool, tennis courts; a children's play area, and a community room and offices. The smaller clubhouses will feature a spa and small weight room with a design potential for a second pool area. The project has also been designed to provide a Squaw Valley ski bus drop off and pick up location on-site as a project amenity and to reduce traffic impacts to valley traffic..	Proposed (Scope of Work being reviewed before EIR contract can be prepared; Project inactive since August 2009)
Kings Beach Commercial Core Improvement Project	NA	The SR 28 beautification project includes modification of the roadway, pedestrian access improvements, water quality improvements, and replacement parking. Placer County approved alternative is three lanes with one-lane roundabouts at Coon and Bear Streets, sidewalks, bike lanes and seasonal on-street parking. The project would also include pedestrian markings, a single 3.6 m traffic lane in each direction, a single 3.6 m dual access center turn lane, a 2.9 m sidewalk and landscape area in each direction, a 1.5 m bike lane on both sides of the roadway, a 2.4 m parking lane in each direction with 63 on-street parking spaces for the non-peak winter period, and off-street parking on side streets and in new parking lots.	County and TRPA Approved; Not Built

Table 20-1

List of Related Projects in Placer and El Dorado Counties - Lake Tahoe Basin Area

Project Name	APN(s)	Project Description	Status
Kings Beach Town Center	090-126-020-000 090-126-021-000 090-126-022-000 090-126-024-000 090-126-039-000 090-126-040-000 090-133-003-000 090-133-005-000 090-133-006-000 090-133-007-000 090-133-008-000 090-133-009-000 090-133-010-000 090-133-011-000 090-133-012-000 090-133-015-000 090-133-016-000 090-133-018-000	The Kings Beach Town Center project proposes to redevelop an existing commercial/residential site with a pedestrian friendly mixed-use development which would include a combination of residential, commercial, medical and professional offices, public facilities (e.g. civic, governmental, quasi-governmental offices) and parking uses. The project proposes a Tentative Subdivision Map, which would merge the existing 18 parcels into seven parcels and would include both residential and commercial air space condominiums. Residential units would range from three bedroom two bath units to studio units. Commercial units would range from 500 square feet to 3,500 square feet. Additional entitlements required include: a Conditional Use Permit, as required by the Kings Beach Community Plan for residential, public facility and parking uses, Design Review and amendments to both the Kings Beach Community Plan and Tahoe Regional Planning Agency's (TRPA) Code of Ordinances. Amendments to the Community Plan and TRPA Code may be needed to address increases to building height and building setback reductions, residential and commercial lot sizes, increased residential density, increased lot coverage and a reduction to the parking requirement. The Kings Beach Town Center project site is located within the downtown commercial area of Kings Beach Community. The project encompasses a city block fronted by Highway 28 at the south, Salmon Avenue at the north, Fox Street at the east and Coon Street at the west. The project also includes six parcels located on the north side of Salmon Avenue, but does not include the existing post office and community clinic.	Proposed (Additional information required before the 1st Draft Notice of Preparation can be prepared; Project inactive since January 2009)
Tahoe City Transit Center	094-180-065 094-180-020	Transit center and parking facility.	Approved (Three-year permit extension granted November 2008)

Table 20-1

List of Related Projects in Placer and El Dorado Counties - Lake Tahoe Basin Area

Project Name	APN(s)	Project Description	Status
North Tahoe Marina Expansion	NA	An expansion of the marina is planned that could include: extending marina facilities by 800 feet in length and 350 feet in width into Lake Tahoe, expanding marina to include 200 additional slips with water and electric hookups and an offshore gasoline pumping station, construction of an open pier, floating dock and crib wall, buoy removal, accommodation of future water taxi and public boat slips, relocation of an existing transit stop to provide marina access, and expanded parking. There is no application for this project at this time; however, an application is anticipated in the future.	TRPA Application (Not on County's List)
Tahoe City Marina Expansion	NA	Marina expansion including 144 new slips, a 3-story parking garage, and BMP improvements.	Phase 1 Approved
Lake Tahoe Basin Biomass Facility	090-030-029-000 090-030-029-000 090-041-006-000	The project proposes to construct a 1-3 megawatt biomass energy facility on a 1.3-acre site and install a connection, either underground or aboveground, to NV Energy's Kings Beach Substation on the adjacent 21.8-acre parcel.	Proposed (Notice of Preparation public review ended 8/19/10; 1st Administrative Draft EIR being prepared)
El Dorado County, CA Projects			
County Service Area (CSA) Number 5 Erosion Control Project (EIP Project 10062)	NA	Erosion control for Tahoma Subdivision that drains into Lake Tahoe and Placer County watershed just north of the El Dorado County line.	Proposed for construction in 2013.
Tahoe City Public Utility District			
Lakeside Trail Phase VII	NA	Construction of the remaining phase of the Lakeside Trail, located within the California State Recreation Area next to the Lighthouse Center in Tahoe City, CA.	Proposed for construction October 2010.
Homewood Bicycle Trail Design and Permitting	NA	Design of the TCPUD Bike Trail extension in Homewood, CA located partially within the Homewood Mountain Resort North Base Area (included in HMR Master Plan).	Design and Permitting in 2011

Table 20-1

List of Related Projects in Placer and El Dorado Counties - Lake Tahoe Basin Area

Project Name	APN(s)	Project Description	Status
McKinney-Quail Water Service Area Water Treatment Plant Replacement	NA	Replace existing temporary water treatment plant with new plant sized for the District's domestic water needs and the Homewood Mountain Resort South Base area water needs.	2012
McKinney Estates/Chambers Interconnection	NA	Emergency interconnection of water systems	Summer 2011
Lower Meadow Road and Highway 89 Water Line Replacement	NA	Upsize existing water lines and 2 new fire hydrants	Summer 2011
Ellis and Quail Creek Road Water Line Replacement	NA	Upsize existing water lines and 2 new fire hydrants	Summer 2011
USDA Forest Service, LTBMU			
Sierra Pacific Power Line Upgrade	NA	Rebuild existing power lines from Truckee to Kings Beach and Kings Beach to Tahoe City. Including an upgrade in capacity from 60kV to 120kV..	Scoping to Start early 2011
Carnelian Fuels Reduction and Healthy Forest Restoration Project	NA	Mechanical, hand, and prescribed burning treatments to reduce surface fuels and conifer density within Cedar Flat, Carnelian Bay, Tahoe Vista, and Kings Beach.	Scoping Started May 2010
California Department of Transportation			
Placer 89 Environmental Improvement Project	NA	Roadway and drainage improvements for SR 89 between El Dorado County Line and SR 28 at the Tahoe City Wye.	October 2011. Awaiting Funding
El Dorado 89 Environmental Improvement Project	NA	Roadway and drainage improvements for SR 89 starting about 8.3 miles north of South Lake Tahoe from north of the Sidehill Viaducts to Meeks Creek.	October 2012
California Tahoe Conservancy			
Kings Beach Pier Expansion	NA	Expand the Kings Beach Pier to provide greater recreational opportunities.	On Hold

NA = Not Available

Source: Placer County March 2010; California Tahoe Conservancy 2008; North Tahoe Public Utility District 2009; TRPA 2006/2008; USDA Forest Service 2008

20.2 GROWTH-INDUCING EFFECTS OF THE PROPOSED ACTION AND ALTERNATIVES

CEQA and the TRPA Code of Ordinances, Chapter 5, Subsection 5.8.B (8) requires the inclusion of "the growth-inducing impact of the proposed project" in an EIS (TRPA 1987). This section discusses the potential of the alternatives to foster economic or population growth, to prompt the construction of new housing in the surrounding environment, or to remove obstacles to population growth. Growth inducement may result from direct employment, population, or housing growth; secondary or indirect growth; or provision of new infrastructure which will remove obstacles to population growth. To examine growth inducement, the Project's effect has been evaluated on the following growth factors and their relationship to the growth defined in the region's General Plans: population; employment; housing demand; and infrastructure.

Alternative 1 – Proposed Project

Plan Area Statements (PAS) are one set of guiding documents included in the TRPA Regional Plan and Placer County West Shore Area General Plan through which TRPA and Placer County implement their authority to regulate growth and development in the Lake Tahoe region. Land uses and development intensities are set forth in PAS throughout the Basin.

The Project area is located in PAS 157 – Homewood/Tahoe Ski Bowl. The primary land use classification for the project area is recreation. The list of permissible land uses includes employee housing (S), single-family dwelling (S), hotel, motels and other transient dwelling units (S), and skiing facilities (S). The PAS allows one single family dwelling units per parcel, 15 employee housing units per acre, and 20 hotel, motel or other transient units per acre. The PAS does not presently allow multi-family housing at any density. Therefore, development of the multi-family condominiums is currently inconsistent with planning direction for the Project area. As such, Alternative 1 proposes amendments to PAS boundaries to allow for multi-family residential units at the North and South Base areas at densities of 15 units per acre.

Alternative 1 (Proposed Project) would directly induce population growth in the immediate vicinity of the project site by constructing new residential units and new tourist accommodation and commercial uses. As described in Chapter 7, Population, Employment, and Housing, this increase in population would likely be, at a maximum, approximately 471 persons. However, it is likely that some of the future residential unit occupants would include people that already reside within the Tahoe Basin, and consistent with existing trends, many of the units would be purchased by second home owners. In addition, HMR is proposing to transfer existing development rights or existing residential units of use (ERUs) to the site necessary for the project per the requirements of Chapter 34, Transfer of Development, of the Code of Ordinances, subject to TRPA's approval. ERUs transferred to the site would not contribute to an increase in the overall Basin population because new residential units of use would not be created for each of the proposed ERUs. Therefore, the maximum population increase generated by the project would be substantially less than the 471 persons estimated in Chapter 7. As documented in Chapter 7, the anticipated increase in population is not considered to be a significant impact.

Neither of the development Alternatives would require the extension of new public utility service and other public services to the site, as they already serve existing land uses. However, the Alternatives would increase demand on public utility and service providers. Potential impacts to these public utilities and services are discussed in Chapter 16, Public Services and Utilities. Neither of the alternatives include the installation of utilities sized to accommodate growth beyond that which would occur on the project site.

Alternative 1 would require the extension of Tahoe Ski Bowl Way from the South Base area to the proposed Townhomes located above the North Base area. However, construction of this Roadway would not provide access to parcels currently inaccessible from other existing roadways.

Alternative 2 – No Project (Existing Conditions)

Alternative 2 will have no associated growth-inducing effects. No change to the existing land uses or facilities will occur. It will not increase population, provide new employment opportunities, provide housing, or increase the capacity of area infrastructure.

Alternative 3 – No Code Amendment for Building Height

Plan Area Statements (PAS) are one set of guiding documents included in the TRPA Regional Plan and Placer County West Shore Area General Plan through which TRPA and Placer County implement their authority to regulate growth and development in the Lake Tahoe region. Land uses and development intensities are set forth in PAS throughout the Basin.

The Project area is located in PAS 157 – Homewood/Tahoe Ski Bowl. The primary land use classification for the project area is recreation. The list of permissible land uses includes employee housing (S), single-family dwelling (S), hotel, motels and other transient dwelling units (S), and skiing facilities (S). The PAS allows one single family dwelling units per parcel, 15 employee housing units per acre, and 20 hotel, motel or other transient units per acre. The PAS does not presently allow multi-family housing at any density. Therefore, development of the multi-family condominiums is currently inconsistent with planning direction for the Project area. As such, Alternative 1 proposes amendments to PAS boundaries to allow for multi-family residential units at the North and South Base areas at densities of 15 units per acre.

Alternative 3 would directly induce population growth in the immediate vicinity of the project site by constructing new residential units and new tourist accommodation and commercial uses. As described in Chapter 7, Population, Employment, and Housing, this increase in population would likely be, at a maximum, approximately 471 persons. However, it is likely that some of the future residential unit occupants would include people that already reside within the Tahoe Basin, and consistent with existing trends, many of the units would be purchased by second home owners. In addition, HMR is proposing to transfer existing development rights or existing residential units of use (ERUs) to the site necessary for the project per the requirements of Chapter 34, Transfer of Development, of the Code of Ordinances, subject to TRPA's approval. ERUs transferred to the site would not contribute to an increase in the overall Basin population because new residential units of use would not be created for each of the proposed ERUs. Therefore, the maximum population increase generated by the project would be substantially less than the 471 persons estimated in Chapter 7. As documented in Chapter 7, the anticipated increase in population is not considered to be a significant impact.

Neither of the development Alternatives would require the extension of new public utility service and other public services to the site, as they already serve existing land uses. However, the Alternatives would increase demand on public utility and service providers. Potential impacts to these public utilities and services are discussed in Chapter 16, Public Services and Utilities. Neither of the alternatives include the installation of utilities sized to accommodate growth beyond that which would occur on the project site.

Alternative 3 would require the extension of Tahoe Ski Bowl Way from the South Base area to the proposed Townhomes located above the North Base area. However, construction of this Roadway would not provide access to parcels currently inaccessible from other existing roadways.

Alternative 4 – Close Ski Resort – Estate Lots

Alternative 4 is expected to have no associated growth-inducing effects. Alternative 4 would decommission the ski resort and replace it with 16 new single-family residences and a new 15,000 sf commercial development. Construction would temporarily generate new employment opportunities in the region, and operation of the commercial area would generate new permanent employment jobs. HMR removal is expected to result in a net loss of employment opportunities in the region under Alternative 4. The loss of employment opportunities is expected to decrease demand for housing, utilities, and public services. Consequently, Alternative 4 is not expected to have a net growth-inducing effect.

Alternative 5 – Compact Project Area

Plan Area Statements (PAS) are one set of guiding documents included in the TRPA Regional Plan and Placer County West Shore Area General Plan through which TRPA and Placer County implement their authority to regulate growth and development in the Lake Tahoe region. Land uses and development intensities are set forth in PAS throughout the Basin.

The Project area is located in PAS 157 – Homewood/Tahoe Ski Bowl. The primary land use classification for the project area is recreation. The list of permissible land uses includes employee housing (S), single-family dwelling (S), hotel, motels and other transient dwelling units (S), and skiing facilities (S). The PAS allows one single family dwelling units per parcel, 15 employee housing units per acre, and 20 hotel, motel or other transient units per acre. The PAS does not presently allow multi-family housing at any density. Therefore, development of the multi-family condominiums is currently inconsistent with planning direction for the Project area. As such, Alternative 5 proposes amendments to PAS boundaries to allow for multi-family residential units at the North Base areas. However, under Alternative 5 all multi-family residential units would be consolidated in the existing parking lots at the North Base area and would require density of 45 units per acre. As a result, Alternative 5 has been determined to be inconsistent with adjacent land uses and the Regional Plan goals and policies.

Alternative 5 would directly induce population growth in the immediate vicinity of the project site by constructing new residential units and new tourist accommodation and commercial uses. As described in Chapter 7, Population, Employment, and Housing, this increase in population would likely be, at a maximum under Alternative 6, approximately 627 persons. However, it is likely that some of the future residential unit occupants would include people that already reside within the Tahoe Basin and that consistent with existing trends, many of the units would be purchased by second home owners. In addition, HMR is proposing to transfer existing development rights or existing residential units of use (ERUs) to the site necessary for the project per the requirements of Chapter 34, Transfer of Development, of the Code of Ordinances, subject to TRPA's approval. ERUs transferred to the site would not contribute to an increase in the overall Basin population because new residential units of use would not be created for each of the ERUs transferred to the site. Therefore, the maximum population increase generated by the project would be substantially less than 627 persons estimated in Chapter 7. As documented in Chapter 7, the anticipated increase in population is not considered to be a significant impact.

Neither of the development Alternatives would require the extension of new public utility service and other public services to the site, as they already serve existing land uses. However, the Alternatives would increase demand on public utility and service providers. Potential impacts to these public utilities and services are discussed in Chapter 16, Public Services and Utilities. Neither of the alternatives include the installation of utilities sized to accommodate growth beyond that which would occur on the project site.

Alternative 6 – Reduced Project

Plan Area Statements (PAS) are one set of guiding documents included in the TRPA Regional Plan and Placer County West Shore Area General Plan through which TRPA and Placer County implement their authority to regulate growth and development in the Lake Tahoe region. Land uses and development intensities are set forth in PAS throughout the Basin.

The Project area is located in PAS 157 – Homewood/Tahoe Ski Bowl. The primary land use classification for the project area is recreation. The list of permissible land uses includes employee housing (S), single-family dwelling (S), hotel, motels and other transient dwelling units (S), and skiing facilities (S). The PAS allows one single family dwelling units per parcel, 15 employee housing units per acre, and 20 hotel, motel or other transient units per acre. The PAS does not presently allow multi-family housing at any density. Therefore, development of the multi-family condominiums is currently inconsistent with planning direction for the Project area. As such, Alternative 6 proposes amendments to PAS boundaries to allow for multi-family residential units at the North and South Base areas at densities of 15 units per acre.

Alternative 6 would directly induce population growth in the immediate vicinity of the project site by constructing new residential units and new tourist accommodation and commercial uses. As described in Chapter 7, Population, Employment, and Housing, this increase in population would likely be, at a maximum, approximately 543 persons. However, it is likely that some of the future residential unit occupants would include people that already reside within the Tahoe Basin, and consistent with existing trends, many of the units would be purchased by second home owners. In addition, HMR is proposing to transfer existing development rights or existing residential units of use (ERUs) to the site necessary for the project per the requirements of Chapter 34, Transfer of Development, of the Code of Ordinances, subject to TRPA's approval. ERUs transferred to the site would not contribute to an increase in the overall Basin population because new residential units of use would not be created for each of the proposed ERUs. Therefore, the maximum population increase generated by the project would be substantially less than the 543 persons estimated in Chapter 7. As documented in Chapter 7, the anticipated increase in population is not considered to be a significant impact.

Neither of the development Alternatives would require the extension of new public utility service and other public services to the site, as they already serve existing land uses. However, the Alternatives would increase demand on public utility and service providers. Potential impacts to these public utilities and services are discussed in Chapter 16, Public Services and Utilities. Neither of the alternatives include the installation of utilities sized to accommodate growth beyond that which would occur on the project site.

20.3 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF THE ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

TRPA Code of Ordinances, Chapter 5, Subsection 5.8.B(6) requires the inclusion of "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity" in an EIS (TRPA 1987). This analysis normally entails a balancing of social, economic, and environmental impacts over time. In some cases, a relatively short-term benefit may have adverse long-term effects, with the possibility that future generations may be burdened with unwarranted social and environmental costs. It is also possible to have long-term benefits at the expense of short-term costs. Balancing of such impacts from this project is the responsibility of the TRPA and regulatory agencies.

Table 2-2 (Summary Chapter) summarizes benefits associated the CEP Alternatives (Proposed Project Alternative 1 and Alternatives 3, 5 and 6) by applicable impact. More detailed analysis of potential benefits is included in the individual resource chapters 6-19 in this EIR. Table 2-2 illustrates how the CEP Alternatives result in a variety of environmental and community benefits that are above and beyond baseline TRPA and Placer County plan requirements.

Alternative 2 would maintain existing conditions. However, according to HMR statements, maintaining existing conditions is not sustainable and without proposed redevelopment, the existing ski resort operation would likely close. Alternative 4 would close the existing ski resort and develop the site as 16 estate home sites and a 15,000 square foot commercial development at the North Base area. These Alternatives may therefore result in the loss of winter day use recreational capacity that would likely be a long-term loss because of the lack of suitable sites for relocating the recreational capacity.

20.4 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

TRPA Code of Ordinances, Chapter 5, Subsection 5.8.B(7) requires an EIS to include an analysis of "the significant irreversible and irretrievable commitments of resources which would be involved in the proposed project should it be implemented" (TRPA 1987). CEQA §21100(b)(2)(B) requires that an EIR identify any significant irreversible changes that would result from project implementation. CEQA Guidelines §15126.2(c) provides guidance as to what sorts of changes might be considered irreversible. Such changes include use of nonrenewable resources, commitment of future generations to similar uses, and environmental accidents that could occur as a result of the project.

Construction and operation of the Project (Alternative 1) and Action Alternatives 3, 4, 5 and 6 would consume non-renewable resources. The use of building materials and energy resources, including electricity and fossil fuels, during construction will largely be irreversible and irretrievable. However, the use of these nonrenewable resources will not account for more than a small portion of the resources that are used in the Lake Tahoe Region and will not preclude the availability of these resources for other needs. The North Base area has been accepted into and will be designed under the Leadership in Energy and Environmental Design (LEED) for Neighborhood Development Pilot Program as an example of exemplary green and sustainable development. The LEED certification standards put a great emphasis on the reuse of building materials and the limiting of waste disposal for previously developed sites. The Project area has a number of existing buildings that will be taken down as part of the redevelopment process. The architecture of the new buildings will utilize the some of the existing materials from these dismantled structures.

The potential for irreversible damage to the environment resulting from project-related activities is described in Chapters 6.0 through 19.0 of this document. However, compliance with applicable state, federal, and TRPA regulatory requirements (through mitigation plans and standard permit conditions) during construction will reduce the potential for irreversible damage to a less than significant level.

20.5 SIGNIFICANT AND UNAVOIDABLE ADVERSE IMPACTS

CEQA §2100(b)(2)(A) of and TRPA Code of Ordinances, Chapter 5, Subsection 5.8.B(3) require that an EIR/EIS identify any significant environmental effects that cannot be avoided if the project were implemented (TRPA 1987). Significant unavoidable impacts, impacts that remain significant after implementation of recommended mitigation measure, for individual resources are identified in the Chapters 6-19 of this EIR/EIS. Although the Project has the potential to result in a number of significant

environmental impacts, most impacts can be mitigated through the application of standard practices and adoption of appropriate mitigation measures that will reduce net impacts to a less than significant level.

Prior to approving the Project or an alternative, TRPA must make either of the following findings for each significant adverse effect identified in the EIR/EIS:

> (1) Changes or alterations have been required in or incorporated into the project which avoid or reduce the significant adverse environmental effects to a less than significant level; or
>
> (2) Specific considerations such as economic, social or technical, make infeasible the mitigation measure or project alternatives discussed in the environmental impact statement on the project.

Significant unavoidable impacts of the project are summarized in Table 20-2. These impacts are considered to be significant even with implementation of identified mitigation measures. As shown in the table, Alternative 5 results in the highest number (10) of significant and unavoidable impacts, followed by Alternative 2 with eight and Alternatives 3 and 6, which each have seven significant and unavoidable impacts. Alternative 2 (No Project) would result in 8 significant and unavoidable impacts attributed to maintenance of existing conditions that do not meet existing regulatory standards or plan guidance.

Table 20-2

Significant and Unavoidable Impacts by Alternative

	Alternative					
Impact	**1**	**2**	**3**	**4**	**5**	**6**
Chapter 6.0 Land Use						
LU-1. Will the Project be consistent with the land use plan or zoning plan, or land use goals, policies, and provisions of the TRPA Regional Plan, including the Goals and Policies, Code of Ordinances, Plan Area Statements, or Ski Area Master Plan Guidelines, and the Placer County General Plan and West Shore Area General Plan?		X		X	X	
LU-2. Will the Project be consistent with adjacent land uses or expand/intensify existing non-conforming uses?					X	
LU-C1: Will the Project have significant cumulative impacts to land use?				X	X	
Chapter 10.0 Scenic Resources						
SCENIC-1. Will the Project be inconsistent with a County General Plan or TRPA regulations, standards, or guidelines applicable to the Project area?		X				
SCENIC-2. Will the Project be visible from or cause an adverse effect on foreground or middle ground views from a high volume travel way, recreation use area, or other public use area, including Lake Tahoe, TRPA designated bike		X				

	Alternative					
Impact	**1**	**2**	**3**	**4**	**5**	**6**
trail, or state or federal highway?						
Chapter 11.0 Transportation, Parking and Circulation						
TRANS-3. Will the Project result in a substantial impact upon the existing transportation systems, including roadways and intersections? *Summer Queuing*	X		X		X	X
TRANS-C1. Will the Project have significant cumulative impacts to transportation or circulation? *Summer Queuing*	X		X		X	X
Chapter 12.0 Air Quality						
AQ-1. Will the Project generate construction emissions in excess of applicable standards?			X		X	X
AQ-4. Will the Project conflict with or obstruct implementation of the applicable air quality plan?			X		X	X
AQ-C1. Would the Project result in a cumulative short-term impact on air quality?			X		X	X
Chapter 14.0 Soils, Geology, and Seismicity						
GEO-3. Will the Project result in compaction or covering of the soil beyond the limits allowed in the land capability system, including coverage within sensitive Class 1a and 1b lands?		X				
Chapter 15.0 Hydrology, Water Rights, Surface Water Quality and Groundwater						
HYDRO-1. Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?		X				
HYDRO-2. Will Project construction or operation alter the existing surface water drainage patterns or cause increased runoff resulting in flooding or stream bank erosion or contribute runoff in rates or volumes that will exceed the capacity of existing or planned storm water drainage systems so that a 20-yr, 1-hr storm runoff (approximately 1 inch per hour) cannot be contained on the site?		X				
HYDRO-4. Will the Project alter the course or flow of the 100-year floodwaters or expose people or structures to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches?		X				

	Alternative					
Impact	**1**	**2**	**3**	**4**	**5**	**6**
HYDRO-C1. Will the Project have significant cumulative impacts to water resources?		X				
Chapter 18.0 Recreation						
REC-2. Will the Project create conflicts between recreation uses, either existing or proposed?				X		
REC-C1. Will the Project have significant cumulative impacts to recreation?				X		
Chapter 19.0 Climate Change						
CC-C1. Will the Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?	X		X		X	X
CC-C2. Will the Project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?	X		X		X	X
Totals By Alternative	**4**	**8**	**7**	**4**	**10**	**7**

Source: Hauge Brueck Associates 2011

20.6 CEQA ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of an Environmentally Superior Alternative; an alternative to the project that has no significant effect or has the least significant effect on the environment while substantially accomplishing the objectives of the project. For reference, significance under CEQA is determined based on substantial or potentially substantial adverse changes of any of the physical environmental conditions due to the Project as compared to the existing conditions.

The Proposed Project (Alternative 1) and other CEP Alternatives would redevelop the Base Areas of the existing HMR and improve the quality of the existing winter day use recreational facility. Alternatives 1, 3, 5 and 6 are CEP Alternatives and include restoration of existing ground disturbance on the upper mountain, land coverage reduction, and stormwater treatment systems at the base areas designed for the 50 year, 1 hour storm, which would create benefits for long-term water quality, soil condition, and stream environment zones (SEZ). Alternative 4 would close the ski resort and therefore include the eventual restoration of much of the existing upper mountain disturbance, but would eliminate an existing winter day use recreational facility. Selection of the No Project Alternative 2 would avoid the adverse impacts generated by construction activity and residential and tourist growth resulting from the CEP action alternatives; however, the water quality and soil restoration benefits would not occur and according to HMR, the long-term economic viability of the ski resort would be in doubt. Consequently, the No Project Alternative is not considered to be environmentally superior or environmentally preferred. Of the CEP Action Alternatives, Alternative 6, Reduced Project, is the environmentally superior alternative because it would:

- reduce the amount of existing land coverage (approximately 23 percent) the most among viable CEP Alternatives (Alternative 5 is not viable because of proposed density and adverse impacts to scenic quality ratings), which would reduce soils, hydrologic, and stream zone impacts;

- include the greatest decrease of winter vehicle trips and VMT of the CEP Alternatives (see Table 11-17);
- include the smallest increase of summer vehicle trips and VMT of the CEP Alternatives (see Table 11-17); and
- implement the proposed environmental benefits included in the HMR Master Plan and summarized in Table 2-2 of this EIR/EIS.

20.7 TRPA ENVIRONMENTALLY PREFERABLE ALTERNATIVE

TRPA Requirements

The Tahoe Regional Planning Compact (TRPA 1980), along with other state and federal environmental legislation, establishes TRPA's mission. As directed by the Compact, TRPA adopted environmental threshold carrying capacities in 1982 for the Lake Tahoe Region (TRPA 1982). The Compact defines an "environmental threshold carrying capacity" as "an environmental standard necessary to maintain a significant scenic, recreational, educational, scientific or natural value of the region or to maintain public health and safety within the region."

The threshold standards guide TRPA's planning and operating functions. The adopted thresholds address nine components of the environment of the Lake Tahoe Basin: water quality, soil conservation, air quality, vegetation preservation, wildlife, fisheries, noise, recreation, and scenic resources.

TRPA's Code of Ordinances requires a finding for any action that the project will not cause the environmental threshold carrying capacities to be exceeded (TRPA 1987). When evaluating alternatives, TRPA identifies the alternative that will best maintain and/or achieve environmental thresholds. The Compact and the Code of Ordinances allow for the consideration of social, technical or economic impacts when selecting an alternative (TRPA 1980, 1987).

Selection of the Environmentally Preferable Alternative

Based on the analysis of impacts to individual resources in Chapters 6 – 19 of this EIR, it is recommended that Alternative 6 be selected as the Environmentally Preferable Alternative as it would result in the least amount of impact of the CEP Alternatives (e.g., land coverage, trip generation, VMT) and would include the environmental benefits included in the HMR Master Plan and summarized in Table 2-2.

21.0 MITIGATION AND MONITORING PROGRAM

21.1 MITIGATION PROGRAM APPROACH

This chapter presents the Mitigation and Monitoring Program (MMP) for the Homewood Mountain Resort (HMR) Ski Area Master Plan Project (Proposed Project). The purpose of this detailed MMP is to make clear to the reader the responsibilities of the Agencies and Project Applicant in implementing the Proposed Project or Alternatives.

Included in the MMP are measures and actions required by law or regulation, standard engineering and design practices to be adopted and implemented by the Project Applicant as part of planning, construction, operation and maintenance of the Proposed Project or Alternatives, and mitigation measures recommended by the agencies and environmental consultant team to mitigate specific impacts identified during analysis for this Environmental Impact Report (EIR) and Environmental Impact Statement (EIS). The recommended mitigation measures are identified in Chapters 6 through 19, under the subheading Environmental Impacts and Recommended Mitigation, as feasible and effective in avoiding, reducing and mitigating project-related environmental impacts to a level of less than significant.

Mitigation measures must be designed to minimize significant environmental impacts, not necessarily to eliminate them. A mitigation measure is any action that is designed to minimize, reduce, or avoid an environmental impact.

For TRPA, the legal basis for the development and implementation of a MMP lies within Chapter 5 of the TRPA Code of Ordinances. Code section 5.8.B.5 states that an EIS shall include "mitigation measures which must be implemented to assure meeting standards of the Region". Section 5.8.D states that TRPA must make:

> "Required Findings: Prior to approving the project for which an EIS was prepared, TRPA shall make either of the following findings for each significant adverse effect identified in the EIS:
>
> 1. Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less than significant level; or
>
> 2. Specific considerations such as economic, social or technical make infeasible the mitigation or project alternatives discussed in the environmental impact statement on the project."

Under CEQA, mitigation measures must be designed to minimize significant environmental impacts, not necessarily to eliminate them (Pub Res C§21100(b)(3); 14 Cal Code Regs §15126.4(a)(1)). Any action that is designed to minimize, reduce, or avoid an environmental impact or to rectify or compensate for the impact qualifies as a mitigation measure under 14 Cal Code Regs §15370. The following specific requirements for mitigation measures are set forth in 14 Cal Code Regs §15126.4:

- Mitigation measures should be identified for each significant effect described in the EIR;
- Mitigation measures are not required for impacts that are less than significant;

- If several measures are available to mitigate a significant adverse impact, the EIR should discuss each measure and identify the reason for selecting a particular measure;
- If a mitigation measure would itself create significant environmental impacts, those effects must be discussed in the EIR but in less detail than the significant effects of the proposed project;
- Although formulation of mitigation measures ordinarily should not be deferred, measures may identify performance standards for mitigation that can be accomplished in more than one way;
- When relevant, an EIR must discuss measures that could minimize inefficient and unnecessary consumption of energy;
- The description must distinguish between mitigation measures that are included in the Project as proposed and other measures that the lead agency determines could reasonably be expected to reduce significant impacts as conditions of the project approval;
- Mitigation measures must either be incorporated into the design of the project (Standard Practices) or be fully enforceable through conditions, agreements, or other means; and
- Mitigation measures imposed by the lead agency must be consistent with applicable constitutional standards limiting actions by public agencies, including “nexus” and “rough proportionality.”

The legal basis for the development and implementation of a MMP lies within CEQA. CEQA Sections 21002 and 21002.1 state that:

- Public agencies are not to approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects;
- Each public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so;
- CEQA Section 21081.6 further requires that: the public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation; and
- The monitoring program must be adopted when a public agency makes its findings under CEQA so that the program can be made a condition of project approval in order to mitigate significant effects on the environment. The program must be designed to ensure compliance with mitigation measures during project implementation to mitigate or avoid significant environmental effects.

21.2 MITIGATION PROGRAM ORGANIZATION

21.2.1 Compliance with Existing Laws, Policies and Regulations/Compliance Measures

Section 21.4 presents the applicable federal, State, regional, and county laws, policies and regulations with which the Proposed Project or Alternatives must comply and as a result are incorporated as part of the project description. Permitting of the Proposed Project or Alternatives cannot occur without compliance and thus these measures are incorporated into the project design, construction and operations. Because these measures are required, they are not considered mitigation. Compliance with these policies

and regulations will result in avoidance and/or minimization of adverse environmental impacts. Compliance measures as required by the applicable law, policy or regulation are referenced to the documents provided in the list below in Section 21.4. The resource sections in Chapters 6 through 19 describe the application of these laws, policies and regulations as they pertain to the Proposed Project or Alternatives. The mechanism in which compliance measures avoid, reduce and minimize potential impacts is explained in the appropriate impact analysis for the specific resource. When compliance measures are determined to be inadequate in reducing potential impacts to a level of less than significant, then project-level mitigation measures are recommended for adoption by the lead agencies. These standard compliance measures are included in this chapter to provide a mechanism to ensure that they are implemented and monitored, and to assist the reader in understanding the commitments required by the Proposed Project or Alternatives. The compliance measures can generally be grouped in to three categories: planning measures, construction measures and operations and maintenance measures as described below.

Planning measures must be implemented during the final planning and detailed design of components implemented under the Project. These measures require that a project be designed to accommodate particular environmental constraints. Compliance with these required practices during final planning and design of project facilities will result in avoidance, minimization or reduction of adverse environmental impacts.

Construction measures must be implemented prior to, during, and immediately following project construction. These measures generally require the Project Applicant to follow certain constraints during construction and to repair and rehabilitate impacts resulting from construction of the Project. Compliance with these standard practices during construction will result in avoiding, minimizing, or reducing adverse environmental impacts.

Operation and maintenance measures must be implemented during operation of the Project. These measures generally require monitoring of system operations over time and the modification of those operations to reduce adverse environmental impacts. Implementation of these standard practices will result in the avoidance, minimization, or reduction of adverse environmental impacts.

21.2.2 Recommended Mitigation Measures

Section 21.5 below presents the mitigation measures proposed to avoid, reduce and further mitigate significant environmental impacts identified during environmental impact analysis in the resource sections for land use, population employment and housing, biological resources, cultural resource, visual resources, transportation and circulation, air quality, noise, soils, geology and seismicity, hydrology, water rights, surface water quality and groundwater, public services and utilities, hazardous materials and public safety, recreation and climate change.

21.3 MITIGATION MEASURE FORMAT

Each mitigation measure is described in the following format:

Mitigation Number	**Mitigation Measure Title**
Description	The description of the mitigation measure.
Impact(s) Mitigated	The impact or impacts that will be mitigated by the measure.
Mitigation Level	The level to which the impact is anticipated to be mitigated.
Alternative	The project alternative(s) for which this measure is recommended.
Lead Agency	The public agency or individual which has the responsibility for insuring that the measure is carried out.
Implementing Entity	The entity or individual which has the responsibility for implementing or performing the measure.
Monitoring Agency	The public agency which has the responsibility for monitoring to insure that the mitigation measure is effective in mitigating the impact.
Timing	The appropriate point in time at which the mitigation measure is to be initiated and completed.

21.4 COMPLIANCE WITH EXISTING LAWS, POLICIES AND REGULATIONS/COMPLIANCE MEASURES

21.4.1 Required Permits and Approvals

This document must be certified by the lead agencies: Placer County (EIR) and TRPA (EIS). The Project must be consistent with the codes, regulations, policies and plans that include, but are not limited to the items in the following list:

Tahoe Regional Planning Agency

- TRPA Project Permit;
- Tahoe Regional Planning Compact (PL 96-551 94 Statute 3233);
- Regional Plan for the Lake Tahoe Basin;
    - Goals and Policies;
    - Code of Ordinances (Code);
    - Rules of Procedure;
    - Plan Area Statements;
    - Bi-State 208 Water Quality Plan; and
    - Handbook of Best Management Practices;
- Scenic Quality Improvement Program;
- Community Enhancement Program Governing Board Resolution; and
- Land Capability Verifications.

Federal

- Endangered Species Act- United States Fish and Wildlife Service;
- Clean Water Act- Environmental Protection Agency;
- Clean Air Act; and

- National Historic Preservation Act.

State of California

- Water Quality Control Plan for the Lahontan Region (Basin Plan);
- California Endangered Species Act (CESA);
- California Department of Forestry and Fire Protection;
- Caltrans Traffic Control Requirements;
- Worker Safety Rules and Standards;
- State Vehicle Emissions Controls; and
- State Historic Preservation Act.

Placer County

- Placer County General Plan;
- West Shore Area General Plan;
- Placer County Code;
- Placer County Air Pollution Control District (PCAPCD) Regulations;
- Standards and Guidelines for Signage, Parking and Design;
- Placer County Stormwater Management Manual;
- Placer County Flood Damage Prevention Ordinance;
- Health Department Regulations;
- California Building Codes (International Building Codes 2006, amended locally);
- Environmental Review Ordinance;
- Grading, Erosion, and Sediment Control Ordinance;
- Placer County Land Development Manual;
- Placer County Street Improvements Ordinance;
- Placer County Land Division Ordinance;
- Placer County Zoning Ordinance;
- Tree Ordinance;
- Placer County Site-Specific Studies;
- Acoustical analysis;
- Biological Study;
- Cultural Resources Pedestrian Survey;
- Cultural Resources Records Search;
- Visual Impact Analysis;
- Preliminary and Final Grading Plan;
- Preliminary and Final Geotechnical Reports;
- Preliminary and Final Drainage Report;
- Stormwater and Surface Water Quality BMP Plan; and
- Traffic Study.

Permits and Approvals

- California Regional Water Quality Control Board-Lahontan Region, NPDES permit;
- Occupational Safety and Health Administration (OSHA);
- California Occupational Safety and Health Administration (Cal-OSHA);
- Federal Emergency Management Agency;
- Clean Water Act §401 Certification;

- Clean Water Act §404 Nationwide or Individual Permit- United States Army Corps of Engineers (Corps);
- California Department of Fish and Game (CDFG) Lake or Stream Bed Alteration Agreement (LSAA);
- Placer County General Plan Amendment (e.g., add multi-family dwelling, increase residential density, expand Plan Area boundary);
- Placer County Encroachment Permit;
- Placer County Conditional Use Permit (e.g., alpine ski facility, employee/workforce housing, hotel, motel and other transient dwelling units, outdoor concert events, single-family dwelling/condo, timeshare development and Planned Residential Development);
- Placer County Master Plan Adoption (e.g., Development standards such as parking, setbacks, signage and Development Agreements between the County and applicant to identify requirements beyond those identified in the mitigation measures and Conditions of Approval);
- Placer County Improvement Plans for Each Project Phase and Approval;
- Placer County Facilities Services Encroachment Permit;
- Placer County Highway Easement Abandonment (Tahoe Ski Bowl Way at South Base area);
- Tentative Map Approval;
- Final Map Approval;
- Water Service District Annexation;
- California Department of Transportation Encroachment Permit;
- LAFCO Amendment to NTFPD Service Boundary;
- TRPA Regional Plan Amendment (Plan Areas, Code of Ordinances, and Goals and Policies);
- TRPA Ski Area Master Plan Adoption; and
- TRPA Construction Permit.

21.4.2 Regulatory Compliance Measures

The regulatory compliance measures are included in the description of the Proposed Project or Alternatives to minimize potentially significant environmental impacts. Regulatory compliance measures include measures such as installation of BMPs for Lahontan and the TRPA, agency permit requirements, and air quality protection measures and are considered part of the HMR Ski Area Master Plan under TRPA and CEQA processes because compliance is required to construct and operate the Proposed Project or Alternatives. The EIR/EIS identifies additional mitigation measures when compliance with codified regulation is determined to be inadequate to eliminate potential environmental impacts. Where necessary, resource impact analyses identify the required compliance measures as linked to a potential impact with a clear description of why and how the compliance measure will reduce the impact to a less than significant level. Regulatory compliance measures of the Project are discussed in the sub-sections below.

CM-1. Provide for Employee/Workforce Housing (Planning Measure)

The Project shall provide for employee/workforce housing in compliance with Placer County Housing Element Policies B-15, C-2, and other applicable policies in the Housing Element and 1998 West Shore Area General Plan, which requires the applicant to accommodate at least 50 percent of the housing demand generated by the Project. Employee housing shall be provided for in one of the following ways:

- Development of new on-site employee/workforce housing;

- Development/renovation of off-site employee/workforce housing;
- Dedication of sufficient land for needed units; and/or
- Payment of an in-lieu fee.

CM-2. Implement BMPs to Reduce Air Pollutant Emissions/Air Quality Plan (Construction Measure)

Construction is subject to Placer County Air Pollution Control District (PCAPCD) Rules, and the Project Applicant shall complete a Construction Emission/Dust Control Plan and other BMPs to comply with PCAPCD Rules. The Project Applicant shall not break ground prior to receiving PCAPCD approval of the Construction Emission/Dust Control Plan. The Dust Control Plan must address the minimum Administrative Requirements found in section 300 and 400 of APCD Rule 228, Fugitive Dust. The purpose of Rule 228 is to reduce the amount of particulate matter entrained and discharged into the air by requiring actions to prevent, reduce, or minimize fugitive dust emissions. The specifics of an approved Fugitive Dust Control Plan will be based on the final of the alternative selected. Such plans normally include use of on-site watering trucks for fugitive dust control and washing of truck wheels and undercarriages to reduce trackout onto area streets to avoid reentrainment of roadway dust. These measures typically reduce fugitive dust emissions by up to 50%. Upon approval by the Air Pollution Control Officer, the fugitive dust control actions specified in the plan will be implemented as specified. Other BMPs to be reviewed and approved by the PCAPCD include:

- Equipment Inventory - Provide a comprehensive inventory (i.e. make, model, year, emission rating) of heavy-duty off-road equipment (50 horsepower of greater) that will be used an aggregate of 40 or more hours for the construction project.
- Enforcement Plan - An Enforcement Plan shall be established to evaluate Project-related heavy-duty vehicle engine emission opacities, using standards as defined in 13 CCR §2180 - 2194.
- Compliance with Rule 202 - Construction equipment exhaust emissions shall not exceed PCAPCD Rule 202 Visible Emission limitations.
- Compliance with Rule 228 - Grading operations will be suspended if fugitive dust exceeds PCAPCD Rule 228 (Fugitive Dust) limitations. Operational water truck(s) shall be onsite to control fugitive dust and prevent offsite impacts. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked off-site.
- Pre-Construction Meeting - If required by the Department of Engineering and Surveying and/or the Department of Public Works, the Project Applicant shall have a pre-construction meeting for grading activities. The Project Applicant shall invite the PCAPCD to the pre-construction meeting to discuss the Construction Emission/Dust Control Plan with employees and/or contractors.
- Maintenance of Public Thoroughfares - The Project Applicant shall be responsible for keeping adjacent public thoroughfares clean of silt, dirt, mud, and debris, and shall “wet broom” the streets if silt, dirt, mud or debris is carried over to adjacent public thoroughfares. Dry mechanical sweeping is prohibited.
- Traffic Limits - Traffic speeds on unpaved surfaces shall be limited to 15 miles per hour or less.
- Wind Restrictions - Grading operations shall be suspended when wind speeds (including instantaneous gusts) exceed 25 miles per hour and dust is impacting adjacent properties.
- Idling Restrictions - Limit idling time to a maximum of 5 minutes for diesel-powered equipment.

- Open Burning Restrictions - No open burning of removed vegetation shall be allowed during construction. Removed vegetative material shall be either chipped on site or taken to an appropriate disposal site.
- Ultra-Low Sulfur Diesel Fuel - ARB ultra-low sulfur diesel fuel shall be used for diesel–powered equipment. Low sulfur fuel shall be utilized for stationary equipment.
- Clean Power Sources - Where available, existing power sources (e.g., power poles) or clean fuel generators shall be used rather than temporary diesel-powered generators.
- Compliance with PCAPCD Permit Regulations - On-site stationary equipment 50 hp or greater shall either obtain a State-issued portable equipment permit or a PCAPCD issued portable equipment permit. Pursuant to the PCAPCD Rule 501, General Permit Requirements, the Project Applicant may need a permit prior to construction. In general, any engine greater than 50 brake horsepower or any boiler with heat greater than 1,000,000 Btu per hour requires a PCAPCD permit.
- Compliance with NESHAPs - The demolition or remodeling of any structure may be subject to the National Emission Standard for Hazardous Air Pollutants (NESHAPs) for Asbestos. This may require that a structure to be demolished be inspected for the presence of asbestos by a certified asbestos inspector, and that asbestos materials are removed prior to demolition.
- Traffic Plans - If a Traffic Plan is required elsewhere within these conditions of approval, the PCAPCD shall also receive a copy of the plan for review. PCAPCD recommendations within the plan may include, but not be limited to use of public transportation and satellite parking areas with a shuttle service.
- Landscaping Plan - The Project Applicant shall provide a landscaping plan for review and approval by the Design/Site Review Committee. Landscaping shall include native drought-resistant species (plants, trees and bushes) to reduce demand for irrigation and gas powered landscape maintenance equipment. A maximum of 25% lawn area is allowed on site. Irrigation systems must efficiently utilize water with soil moisture-based irrigation controls, rain “shut off” valves, or other devices as reviewed and approved by the Design Site Review Committee.

CM-3. TRPA Traffic and Air Quality Mitigation Program Fees (Operation and Maintenance Measure)

The Project Applicant shall pay the appropriate air quality mitigation fee in accordance with Chapter 93—Traffic and Air Quality Mitigation Program of the TRPA Code of Ordinances. The TRPA adopted this program as a means of generating the revenue necessary to address air quality impacts associated with Vehicle Miles Traveled (VMT). By contributing to the Mitigation Program, the Project reduces air quality emissions generated by increased traffic related to Project operation. Specific regional and local VMT reduction strategies covered by the fee include, but are not limited to:

- Expansion of existing transit facilities;
- Addition of bicycle lanes;
- Transportation Systems Management measures, including, but not limited to, bicycle facilities, pedestrian facilities, and use of alternative fuels in fleet vehicles; or
- Provision of connectivity between multiuse paths for bicycles and pedestrians.

A traffic control plan will be developed in coordination with TRPA and Placer County and implemented during construction to reduce construction-related effects on roadways and

circulation patterns within the construction corridor. The traffic control plan will include, but not be limited to, the following:

- Coordination with affected jurisdictions regarding construction hours and lane closures;
- Emergency service consultation and implementation of an emergency access plan;
- Implementation of TRPA guidelines for construction-related road closures;
- Lane closure and truck hauling limits during peak commute hours to the extent possible;
- Provision of alternate bicycle and pedestrian routes;
- Provision of alternate parking;
- Location of truck haul routes;
- Traffic control devices;
- Construction signage and road closure notification in the vicinity of the construction corridor;
- Monitoring of in-place traffic control methods and devices for revision implementation;
- Driveway access maintenance;
- Business notification and coordination; and,
- Onsite circulation and staging areas.

CM-4. Time of Day Construction Restrictions (Construction Measure)

This compliance measure restricts construction activities to between the hours of 8:00 AM and 6:30 PM to minimize noise impacts to sensitive receptors. Construction is exempt from TRPA's Code of Ordinances Noise Limitations (Chapter 23, §23.8) if the activities occur between the hours 8:00 AM and 6:30 PM. Placer County's Noise Ordinance §9.36.030 exempts construction noise 6:00 AM and 8:00 PM Monday through Friday, and 8:00 AM and 8:00 PM Saturdays and Sundays. Construction activities before or after the time restriction may occur, but must be consistent with CNEL limits imposed for the applicable TRPA Plan Area and Placer County's noise ordinance. The Project area is located in TRPA Plan Areas 157, 158, and 159. The noise thresholds for these Plan Areas are 55 dB CNEL, 55 dB CNEL and 60 dB CNEL, respectively.

CM-5. Construction Equipment Muffling (Construction Measure)

This compliance measure requires shrouding or shielding of impact tools and muffling or shielding intake and exhaust ports on construction equipment.

CM-6. Emergency Vehicle Access During Construction (Construction Measure)

The Project Applicant shall coordinate with the Placer County Sheriff's Department (PCSD), North Tahoe Fire Protection District (NTFPD), utility companies, businesses, and residents within the construction corridor prior to and during construction activities to ensure affected parties are informed of the construction schedule and to develop actions to maintain access and service in the Project area.

Law Enforcement and Fire Protection (Construction Measure)

An accurate schedule outlining the location of construction, types of activities, and the location of anticipated traffic delays or hazards will be provided to the PCSD and NTFPD on a weekly basis. A point of contact within the construction team will be established for emergency actions within or near construction. Traffic control measures to be used near construction will be reviewed and approved by the PCSD and NTFPD.

Residents (Construction Measure)

Neighborhood residents will be notified so that they can prepare for delays or plan routes to avoid heavy traffic. Construction signage will be placed along the roadways during each phase of construction notifying the public of potential delays and hazards.

Businesses (Construction Measure)

Coordination will occur prior to construction with roadside businesses to identify alternative parking areas and appropriate signage and notification for business patrons. There may be hours or days when construction is optimal for these businesses (when patronage is lowest). Construction will be coordinated with these times, as feasible, to result in the least impact. Outreach efforts will include meetings with affected businesses or facilities, mailed notifications, and a construction hotline number where a construction coordinator can be reached. Coordination will include signage and traffic control measures. Signage will alert patrons of detours, alternate parking areas, alternate entrances, and any other temporary access changes. The signage will indicate the expected duration of construction and contact information for Project or construction inquiries. Signage will be inspected daily to ensure proper location and information.

CM-7. Utility Relocation and Construction Avoidance (Construction Measure)

Coordination will occur with utility providers prior to construction regarding the exact location of each underground utility line known to occur on the site. Utility service providers include the Tahoe City Public Utilities District (TCPUD), Madden Creek Water Company (MCWC), NV Energy, Southwest Gas Corporation, and AT&T. Underground and overhead lines will be shown on project construction specifications within the civil engineering plans.

The Project Applicant shall coordinate with utilities to relocate overhead or underground lines prior to construction. The Project Applicant will coordinate with NV Energy and communications companies prior to final project design to determine if existing overhead lines can be relocated underground. Undergrounding will be funded through the Project.

Construction contractors will contact Underground Service Alert (USA 811/1-800-227-2600) to ensure buried lines are properly marked and located. Utility companies will be provided with an accurate schedule noting when construction occurs near their facilities. Utility facilities will be identified on construction specifications. If grading or excavation is needed in these areas, the Project engineer will work with the utility companies to identify depth to conduit, pipeline, or other facility.

The Project Applicant shall prepare an action plan should infrastructure be damaged during construction. The action plan will identify points of contact for the contractor and the utility companies and measures, specific to each utility, to be taken to rectify damage. If service is interrupted due to damage, construction will cease in the vicinity of the incident, and work will begin immediately to repair the damage at the contractor's expense. If damage occurs to infrastructure that does not affect service levels, the infrastructure will be repaired following construction.

CM-8. Final Water Supply Assessment and Infrastructure Fees (Planning Measure)

The Project Applicant shall prepare a final WSA as required under SB 610 to identify the quantity and source of domestic and raw water to serve the Project. The WSA shall demonstrate that Project infrastructure for water delivery volume, rate, pressure, and schedule meets the snowmaking demand of HMR. The Project may obtain water from a combination of TCPUD, MCWC, and on-site groundwater wells and surface water. HMR owns an existing right to divert 673 gallons per minute (1.5 cubic feet per second) from streams on-site. With each water supply source identified, the Project Applicant shall determine the location and designs of infrastructure necessary to meet peak demand and overall quantity in the Project area for domestic use and snowmaking.

The Project Applicant will be responsible for construction of infrastructure to connect to the established water system. TCPUD has established connection fees consisting of two components: 1) a Water and Sewer Connection Fee (Ordinance 259a), and 2) and User Fees and Service Fees (Ordinance 295b). These fees provide for the water system improvements necessary to accommodate additional development in the TCPUD service area. The Project will be required to pay both components of this new connection fee.

MCWC has similar requirements for connection and service fees, and the applicant will be required to construct the appropriate infrastructure to utilize MCWC water supply (Marr 2009).

During the design phase of new water supply infrastructure, the lead and responsible agencies will determine if additional environmental review will be required for the construction and operation of the new facilities.

CM-9. Fire Suppression and Management Plan/ Fuel Load Reduction Plan (Operations and Maintenance Measure)

A fire suppression and management plan will be developed and implemented in consultation with NTFPD in Local Responsibility Areas, Calfire in State Responsibility Areas, and the US LTBMU in Federal Responsibility Areas. The plan will include fire precaution, pre-suppression, and suppression measures. Construction sites and major equipment will be outfitted with fire protection devices and spark arrestors as appropriate. The plan will include a flow chart of actions during a fire event, with points of contact and responsible persons identified. A copy of the plan will be located at the construction site and copies will be submitted to the NTFPD, Calfire, and LTBMU.

CM-10. Impact Fees and Design Approval and Annexation (Operation and Maintenance Measure)

Prior to issuing Building Permits for the Project, Placer County shall require the Project Applicant to pay appropriate fair share development impact fees for Project review and to maintain existing levels of fire protection service in the NTFPD service area. The NTFPD shall review and approve, fire protection systems in buildings, fire flows to hydrants and the snowmaking system, and emergency vehicle access routes in the HMR Project area.

The TRPA, NTFPD, and Calfire shall review building designs, building materials, landscaping, and vegetation clearance for compliance with TRPA Code of Ordinances (2004), Section IX, Chapter 75, §75.3 PRC §4291 and CCR, Title 24, Part 2, known as the 2007 California Building Code (CBC), §701A.3.2 New Buildings Located in Any Fire Hazard Severity Zone.

Prior to occupancy, the NTFPD shall annex the Project area to provide for fire protection. The NTFPD shall enter into mutual aid agreements for wildfire suppression with the LTBMU and Calfire, and coordinate with these agencies on developing and implementing wildland fuel reduction measures as needed in the Project area and vicinity.

CM-11. Recreation Plans and Fees (Planning Measure)

The Project Applicant shall be required to pay applicable Quimby Act (California Government Code §66477 and Placer County Code §16.08.100) fees at the final map recording and an AB 1600 (Placer County Code §15.34.010) fee at the building permit stage. The Placer County Department of Facilities Services, Parks and Grounds Division shall review and approve additional facilities as required under Placer County Zoning Ordinance §17.54.100(D)(1). Residential planned development projects are required to provide in-tract neighborhood recreational facilities to residents of the Planned Development in excess of the 5 acres per 1,000 residents are required by County Code §16.08.100 and Recreational Facilities Fee Ordinance (Chapter 15, Placer County Code).

CM-12. TRPA Erosion Control and Sediment Control Plan (Planning Measure)

The Project Applicant will prepare a site-specific Erosion and Sediment Control Plan that will be based on the selected alternative to further define and map temporary BMPs for the control of erosion and runoff from ground disturbing activities. BMPs will be installed in accordance with Chapter 25 of the TRPA Code of Ordinances and are considered part of the Project. An Erosion and Sediment Control Plan is required by TRPA and Placer County for project permitting. TRPA's BMP requirements are outlined in the Handbook of Best Management Practices (TRPA 1988) and for Placer County, BMPs must be designed according to the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development/Redevelopment, and/or for Industrial and Commercial, and/or other similar source.

CM-13. Stormwater Pollution Prevention Plan (Planning Measure)

Ground disturbance within the Project area will exceed one acre and is subject to the construction stormwater quality permit requirements of the NPDES program. The Project Applicant must obtain this permit from Lahontan and provide evidence of a state-issued WDID number or filing of a Notice of Intent (NOI) and fees prior to start of construction.

A SWPPP is required under Board Order No. R6T-2005-007 (General Permit No. CAG616002) for discharges of stormwater runoff associated with construction activity involving land disturbance in the Lake Tahoe hydrologic unit. The SWPPP will be designed to address the following objectives:

1. All pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled;

2. Where not otherwise required to be under a Lahontan permit, all non-storm water discharges are identified and either eliminated, controlled, or treated;

3. Site BMPs are effective and result in the reduction or elimination of pollutants in storm water discharges and authorized non-storm water discharges from construction activity to

the Best Available Technology Economically Achievable (BAT)/Best Conventional Pollutant Control Technology (BCT) standard;

4. Calculations and design details as well as BMP controls for site run-on are complete and correct, and

5. Stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

6. To demonstrate compliance with requirements of the NPDES permit, the Qualified SWPPP Developer will include information in the SWPPP that supports the conclusions, selections, use, and maintenance of BMPs.

7. The discharger will make the SWPPP available at the construction site during working hours while construction is occurring and shall be made available upon request by a State or Municipal inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, current copies of the BMPs and map/drawing will be left with the field crew and the original SWPPP shall be made available via a request by radio/telephone

CM-14. Minimize Offsite Light and Glare (Planning Measure)

The Project Design plans shall comply with TRPA Design Guidelines (TRPA 1989b) and Code Chapter 30 and Placer County West Shore Area General Plan Standards (County of Placer 1998) to minimize night lighting and glare onto adjacent parcels. Specifically, final designs shall be consistent with TRPA Code Sections 30.6 (Building Design Standards) and 30.8 (Exterior Lighting Standards) and Chapter 4 (Lighting) of the Placer County Design Standards and Guidelines for West Shore General Plan of Placer County.

CM-15. Environmental Review and Approval

The HMR Ski Area Master Plan Project EIR/EIS is prepared for the environmental review process and will lead to rejection or approval of the Proposed Project or an Alternative. Conformance with TRPA Plan Area Statements, TRPA Design Standards, and Placer County Land Development Manual Standards and Stormwater Management Manual Standards will result. Public meetings and findings will occur under the environmental review process. For TRPA and Placer County, a public meeting will be held with conditions and findings prepared prior to project approval.

21.5 RECOMMENDED MITIGATION MEASURES

This section outlines the mitigation measures recommended in response to potential significant impacts identified in Chapters 6 through 19 impact analyses for environmental resources. Compliance with these mitigation measures will result in the avoidance and/or reduction of adverse environmental impacts.

LU-2a. Purchase and Transfer of Additional ERUs

Description	Prior to permitting ERU development associated with the proposed Master Plan in excess of current entitlements, HMR shall obtain ERUs adequate for the proposed project application. At present, HMR is lacking ERUs for their proposed Phase 2 development at the South Base and the Townhouses at the North Base under Alternatives 1 and 3, and a portion of the proposed Phase 1 development under Alternative 6. These ERUs can be obtained by either converting excess TAUs that originated on low capability lands or by purchasing ERUs from other off-site locations. Prior to transfer, HMR shall demonstrate that the transfer of these additional units does not result in negative impacts to the Plan Area or Community Plan from which the purchased units came. Preferably, the units will be transferred from a nearby Plan Area or Community Plan area located in Placer County, and will be associated with the restoration of sensitive lands. If the TRPA Governing Board does not approve an increase in the number of MRBUs included in the TRPA February 2008 Governing Board resolution, then the proposed affordable housing units shall be reduced to 12 or an additional ERU may be transferred to the Project area (Alternatives 1 and 3) area to accommodate the proposed 13 affordable housing units.
Impact(s) Mitigated	LU-2. Will the Project be consistent with adjacent land uses or expand/intensify existing non-conforming uses?
Mitigation Level	Comply with TRPA Codes
Alternative	Alternatives 1, 3 and 6
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Prior to project permitting

LU-2b. CFA Reduction or Additional CFA Reservation

Description	To comply with the CFA allocation reserved by TRPA under the 2008 Resolution, the project must reduce total CFA by 1,763 square feet or obtain an additional 1,763 square feet of CFA pursuant to TRPA Code Section 33.3. If additional CFA is pursued, the additional CFA must be obtained prior to the permitting of the development phase for which it will be applied.
Impact(s) Mitigated	LU-2. Will the Project be consistent with adjacent land uses or expand/intensify existing non-conforming uses?
Mitigation Level	Comply with TRPA Codes
Alternative	Alternatives 1, 3 5 and 6
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Prior to project permitting

LU-2c. Purchase and Transfer of Additional ERUs

Description	Prior to approval of Alternative 5, HMR shall obtain up to 165 additional ERUs. Prior to transfer, HMR shall demonstrate that the transfer of these units does not result in negative impacts to the Plan Area Statement (PAS) or Community Plan from which the purchased residential units originated. Preferably, the units will be transferred from a nearby PAS or Community Plan area or will be purchased as a result of restoration of sensitive lands.
Impact(s) Mitigated	LU-2. Will the Project be consistent with adjacent land uses or expand/intensify existing non-conforming uses?
Mitigation Level	Comply with TRPA Codes
Alternative	Alternative 5
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Prior to project permitting

PEH-1. Develop Homewood Employee/Workforce Housing Plan

Description	The Project Applicant shall develop a detailed "Homewood Employee/Workforce Housing Plan" based on the alternative selected for Placer County review and approval. Provision of sufficient housing opportunities to accommodate a minimum of half of new FTEs generated by Project operation will be assured through a combination of one or more of the following: • Development of new on-site employee/workforce housing; • Development/renovation of off-site employee/workforce housing; • Dedication of sufficient land for needed units, and/or; • Payment of an in-lieu fee. The designs of applicant-provided on-site and off-site employee/workforce housing shall be reviewed and approved by the County. An approved Homewood Employee/Workforce Housing Plan shall be required prior to the issuance of building permits or recordation of final maps, whichever occurs first. The Homewood Employee/Workforce Housing Plan shall provide an accounting of the final number of net new FTEs expected to be created by the constructed alternative with identified phasing; the number, locations, and capacity of new employee/workforce housing units to be developed; location and capacity of dedicated land for new employee/workforce housing; in-lieu fees paid to the County, and implementation schedule to ensure that sufficient new housing is available for new employees as Project construction is completed and operations begin. .
Impact(s) Mitigated	PEH-1. Will the Project increase the demand for housing, thereby causing direct or indirect environmental consequences?
Mitigation Level	Comply with Placer County Policy
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR

Monitoring Agency	Placer County
Timing	Prior to project permitting

BIO-2. Active Raptor, Migratory Bird Nest Site, Wildlife Nursery/Den Site, and Bat Roost Protection Program

Description	Pre-construction surveys, conducted during the nesting/breeding season (spring) immediately prior to initial project construction (e.g., where excavation and tree removal is required), shall be conducted to identify any active raptor nest sites, migratory bird nests, mammal den sites, and bat roost sites in the proposed construction area. If no nests, den sites or roosts are found, then mitigation requirements are complete. If nests or roosts are located within the Project area during the pre-construction surveys, additional monitoring shall be required as follows. During initial construction activities (tree removal and excavation for the construction), a qualified biological monitor will be onsite to evaluate whether any raptors are occupying trees, sensitive den sites are within the Project area or bats are occupying identified roosts. The biological monitor will have the authority to stop construction near occupied trees/den sites if it appears to be having a negative impact on nesting raptors, migratory birds or their young, or bats observed in the construction zone. If construction must be stopped, the monitor must consult with TRPA and CDFG staff within 24 hours to determine appropriate actions (minimum setbacks and avoidance measures appropriate to specific species present and individual situations) to restart construction while reducing impacts to identified raptors, migratory bird nests, den sites or bats. If a potential American marten den is located, an appropriate method will be used to confirm whether American marten occupy the den. This may involve placing a tracking medium at the den entrance to determine use of the den or using motion sensing camera stations. Monitoring for den occupancy shall be conducted for a minimum of two consecutive nights. Other devices such as fiber optic scope may be utilized to determine occupancy. If no marten occupy the potential den, the entrance shall be blocked to ensure no marten occupy the area during the construction period. If the den is found to be occupied by American marten, the California Department of Fish and Game shall be notified of the observation and shall be consulted regarding approach to addressing the den site. A potential option includes providing a no-disturbance buffer around the den during the breeding season (May 1 through July 31).
Impact(s) Mitigated	BIO-2. Will the Project cause loss of raptor nests, migratory bird nests, or wildlife nursery sites? BIO-4. Will the Project cause a permanent loss of sensitive wildlife individuals or habitat, as defined by the Tahoe Regional Planning Agency, Placer County General Plan Section 6, or California Department of Fish and Game or cause a decline in population levels below a viable population level?
Mitigation Level	Protection of active bird nests, bat roost and denning sites
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, CDFG
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Prior to construction

BIO-3. Fish Passage Protection and Enhancement

Description	Removal of the culvert within Homewood Creek located in the South Base area under Alternatives 1 and 3 shall be performed in such a manner to protect fish passage during and after construction. Protection measures include installation of creek flow bypass measures to maintain flows below the project area. The Stream Environment Zone restoration plan for Homewood Creek (Appendix C) shall be modified to include fish passage measures in the design so as to not inhibit movement upstream or downstream of fish and other aquatic species. The restoration plan shall include design elements that will enhance fish habitat. Prior to finalization of the restoration plans, TRPA and Placer County staff shall review and approve the design to ensure adequate habitat improvements are included and fish passage is provided.
Impact(s) Mitigated	BIO-3. Will the Project substantially block or disrupt major fish or wildlife migration or travel corridors?
Mitigation Level	Protection of fish migration corridors and habitat
Alternative	Alternatives 1, 3
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Prior to and during construction activities.

BIO-4a. Bat Roost Relocation Program

Description	Prior to demolition of the Homewood Lodge located at the north base, the building shall be surveyed using acoustic survey methods as well as visual searches of the building to determine the presence or absence of bat species. The survey shall determine if the roost is a maternity roost (if survey is being performed in the spring), hibernacula or day roost. If a maternity roost is present, delay of the demolition may be necessary until after the roost is vacated. If bat species are detected/observed within the building, measures shall be taken to clear the bats prior to demolition activities. Measures to disturb resident bats within may include but are not limited to: disturbance to roosting individuals through introduction of light and/or noise to create an undesirable setting and to encourage the bats to vacate the roost. Upon removal of the bats, access points to the building shall be sealed to prevent reentry of bat species. Once it has been concluded that no bat species are present, demolition may commence upon final approval of TRPA. To offset the loss of the occupied bat roost, Homewood Mountain Resort shall install bat boxes in the vicinity of the North Base to provide roosting opportunities and locations for the displaced bats. Homewood Mountain Resort shall work together with Placer County and TRPA biologists to agree upon the number of bat boxes and their respective installation locations prior to removal of the bat roost/demolition activities.
Impact(s) Mitigated	BIO-4. Will the Project cause a permanent loss of sensitive wildlife individuals or habitat, as defined by the Tahoe Regional Planning Agency, Placer County General Plan Section 6, or California Department of Fish and Game or cause a decline in population levels below a viable population level?
Mitigation Level	Protection or relocation of existing bat roosts
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA

Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Prior to demolition of structures

BIO-4b. Trash Management Program

Description	Prior to finalization of construction permits for the new mid-mountain lodge, HMR shall prepare a Trash Management Program for review and approval by the TRPA and Placer County. The Trash Management Program shall include measures to prevent wildlife access to trash and refuse generated by the new lodge and associated facilities. Measures to be included at a minimum are wildlife proof trash containers in all outside areas, scheduling for removal of refuse from the lodge area on a daily basis and educational signage outlining the dangers of feeding wildlife.
Impact(s) Mitigated	BIO-4. Will the Project cause a permanent loss of sensitive wildlife individuals or habitat, as defined by the Tahoe Regional Planning Agency, Placer County General Plan Section 6, or California Department of Fish and Game or cause a decline in population levels below a viable population level?
Mitigation Level	Protection of wildlife through avoidance of contact with human refuse
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Project permitting and throughout operations

BIO-5a. Final Homewood Creek SEZ Restoration Plan

Description	The Project Applicant shall modify the Homewood Creek SEZ Restoration Plan - April 3, 2010 to include supplemental information necessary for TRPA project approval and permitting. The Revised Homewood Creek SEZ Restoration Plan shall add the following information: • List of existing constraints of the Project area; • Channel location; • Channel substrate composition; • In-channel features such as logs or rocks to act as flow separators (if necessary) to encourage braiding of the channel and sediment deposition; • A profile of the restored stream channel in conjunction with existing cross sections; • A narrative of construction techniques that describe modifications to channel geometry; • A comprehensive planting plan identifying species and planting locations of riparian and wetland plants shall be incorporated into the restoration plan, including species that are known to occur in the existing undisturbed SEZ above the proposed restoration site; • Soil stabilization and erosion control measures and other permanent BMPs; and • A long-term maintenance and monitoring plan to measure establishment of plants and to monitor the progress of restoration activities. The desired condition shall mirror historic site conditions, adjacent plant community

	composition, and habitat value. Goals shall be identified to ensure parameters such as plant density, percent plant cover, and stage of maturity of planted plant species are achieved. The revised restoration plan shall be review and approved by appropriate permitting agencies prior to implementation to ensure restoration goals and success criteria are acceptable, sufficient and attainable for the site-specific conditions.
Impact(s) Mitigated	BIO-5. Will the Project affect wetlands or waters of the U.S. and/or riparian and Stream Environment Zones (SEZ) through direct removal, filling, hydrologic interruption, encroachment, removal of streamside vegetation or other means? BIO-7. Will the Project have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or the US Fish and Wildlife Service? HYDRO-2: Will Project construction or operation alter the existing surface water drainage patterns or cause increased runoff resulting in flooding or stream bank erosion or contribute runoff in rates or volumes that will exceed the capacity of existing or planned storm water drainage systems so that a 20-year, 1-hour storm runoff (approximately one inch per hour) cannot be contained on the site?
Mitigation Level	Production of adequate restoration plan for Homewood Creek
Alternative	Alternatives 1 and 3
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to project permitting

BIO-5b. SEZ Restoration Plan for Gravel Parking Lot

Description	HMR shall develop a detailed SEZ restoration plan for the portion of the North Base area gravel parking lot that will be restored during development of the residential housing under Alternatives 5 and 6. This plan shall be in alignment with the overall adaptive management strategy for HMR. This SEZ plan shall also be consistent with TRPA guidelines, and include a monitoring plan. The monitoring program will include clear success criteria and management responses if criteria are not met thus insuring goal achievement. This plan must include site maintenance for a minimum of three years, and a geomorphic/stability, groundwater monitoring, and vegetation monitoring plan consisting of two site assessments per year for five years. The vegetation monitoring components shall include measurements of species type and density, percent survival, plant vigor/health, and survival rate. An annual report shall be prepared presenting the results of the monitoring for the previous year. The annual report shall be presented to TRPA and Lahontan.
Impact(s) Mitigated	BIO-5. Will the Project affect wetlands or waters of the U.S. and/or riparian and Stream Environment Zones (SEZ) through direct removal, filling, hydrologic interruption, encroachment, removal of streamside vegetation or other means? BIO-7. Will the Project have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or the US Fish and Wildlife Service?
Mitigation Level	Production of adequate restoration plan for Homewood Creek
Alternative	Alternatives 5 and 6
Lead Agency	TRPA, Placer County

Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to project permitting

BIO-6a. Noxious Weed Risk Assessment and Eradication

Description	HMR shall develop and implement a Noxious Weed Eradication and Control Program to protect suitable sensitive plant habitat and to protect future populations of sensitive plants from invasive terrestrial and aquatic noxious weeds. The plan shall identify a noxious weed coordinator for HMR and include abatement measures to decrease and eradicate known populations of noxious weeds and prevention measures as follows: • Known populations of terrestrial and aquatic noxious weeds shall be identified and a plan shall be implemented to control and eradicate weed populations and restore native plant cover. • Equipment used in the Project must be sanitized and free of non-native invasive species before moving into the Project area to ensure that the equipment is free of soil, seeds, vegetative material, or other debris that could contain or hold seeds of non-native invasive species. Vehicles, especially large, off-road and/or earthmoving vehicles shall be cleaned when they come into the Lake Tahoe Basin or come from a Basin area known to contain non-native invasive species. Equipment will be considered clean when visual inspection finds no soil, seeds, plant material, or other such debris. • Gravel, fill, or other materials shall be "weed-free." Use onsite sand, gravel, rock, or organic matter when possible. Otherwise, obtain "weed-free" materials from gravel pits and fill sources that have been surveyed and approved by the CDFA or Nevada Department of Agriculture or by the noxious weed coordinator. • Use "weed-free" mulches, and seed sources. Salvage topsoil from Project area for use in onsite revegetation, unless contaminated with non-native invasive species. Do not use soil or materials from areas contaminated by cheat grass. • After construction, the noxious weed coordinator shall be notified. The Project area shall be monitored for 3 years subsequent to Project implementation to ensure additional non-native invasive species do not become established in the areas affected by the Project, that native species are established on re-seeded or restored habitats, and that known non-native invasive species do not spread.
Impact(s) Mitigated	BIO-6. Will the Project, directly or indirectly (including through spread of noxious weeds), cause a loss of individuals or occupied habitat of endangered, threatened, or CNPS List 1b, 2, and 3, or TRPA listed plant species?
Mitigation Level	Approval of noxious weed eradication and control program
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Project permitting through operations

BIO-6b. Pre-Construction Rare Plant Surveys

Description	HMR shall hire an approved botanist/biologist to perform rare plant surveys in Project areas proposed for development prior to construction. The survey shall identify species observed and include locations of rare plant species identified. TRPA and Placer County staff shall be notified of the location of rare plant species present within the Project area. If rare plants are identified, measures shall be taken to avoid disturbance and impacts to the plants. Protection measures shall be developed in conjunction with TRPA, CDFG and Placer County staff as necessary and shall be specific to the species present and the potential disturbance that may result from construction activities (habitat modification, direct removal, blasting activities, noxious weed introduction, etc.). If avoidance of rare plant species is not possible, compensation measures shall be developed prior to disturbance/constructions activities. These compensation measures shall be tailored to the specific species to be disturbed and to the location in which the disturbance is to occur. If agency staff determines that compensation measures are not feasible, then the Project shall be modified to avoid the disturbance.
Impact(s) Mitigated	BIO-6. Will the Project, directly or indirectly (including through spread of noxious weeds) cause a loss of individuals or occupied habitat of endangered, threatened, or CNPS List 1b, 2, and 3, or TRPA listed plant species?
Mitigation Level	Completion of rare plant surveys
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to construction

BIO-9. Final Landscape/Revegetation Plan and Fertilizer Management Plan

Description	HMR shall prepare and implement a final landscape/revegetation plan and fertilizer management plan for the Project area in accordance with Sections 3.5.19 and 3.5.20 of this document. This plan shall comply with TRPA Code of Ordinances Section 31.7 Landscaping Standards and Section 81.7 Fertilizer Management. The landscape plan shall include replacement of trees in accordance with Placer County regulations. The plan shall be reviewed and approved by TRPA and Placer County Planning Department prior to issuance of the final Project approval. Under Alternative 4, the landscape and fertilizer management would fall upon owners of the residential and commercial parcels sold by HMR. The revegetation/landscaping plan shall require the use of native or TRPA-approved nonnative shrubs and trees in the project area, as these plants are most adapted to the conditions of the Project area and require less irrigation for establishment and upkeep Bioretention areas for stormwater treatment are proposed for use throughout the project area in-line with stormwater conveyance and retention systems. Runoff shall be directed into bioretention areas, where it can pond and infiltrate into the soil. The engineered soil mix and vegetation in the bioretention areas shall provide water quality treatment and infiltration similar to undeveloped areas. High traffic groomed turf areas are designed and located to allow for controlled irrigation and fertilization throughout the Project area. Irrigation shall be installed and managed to minimize the potential for runoff to the stormwater treatment systems.

	Fertilizer shall be managed carefully and used in dry, slow release form when applications are necessary. Special measures to avoid over spraying onto paved surfaces, which could result in wash off of nutrient rich water to the stormwater treatment systems, shall be taken. To ensure minimal escape of nutrients, fertilizer and irrigation shall be monitored closely. The Plan shall include, but shall not be limited to the following measures to minimize the potential for nutrients entering surface water or escaping the root zone and being delivered to groundwater: • Use of non-mowed or slow-growing turf grass species, locally native or adapted species with annual fertilizer requirements that do not exceed 1.5 pounds per 1,000 square feet; • Implementation of a Fertilizer Management Plan that meets the requirements of Section 81.7 of TRPA Code or Ordinances; • Determination of appropriate fertilizer rates by a soil/revegetation specialist and based on the results of soil nutrient testing; • Incorporation of fertilizer into soils prior to seed application to prevent burning and low germination rates; • Use of Biosol or other organic, slow-release fertilizers that do not contain nitrate or ammonium with careful application to avoid application on hardscape; • Prohibit fertilizer use on bioretention areas for stormwater treatment after initial establishment; and • Installation of a highly controlled spray irrigation system to avoid over irrigation and overspray onto hardscape. The Revegetation Plan shall apply to areas disturbed during construction activities, the steep slopes above the North and South Base areas and the bioretention areas for stormwater treatment. The objective of the soil and revegetation treatments is to control sediment at its source, to maximize hydrologic and biological function in the soil and to develop and support a robust vegetation community. Specific treatment outcomes shall include: • Maximize soil infiltration rates and minimize runoff; • Protect the soil surface with functional mulch cover; • Reestablish soil nutrient cycling; and • Reestablish an appropriate, self-sustaining native plant community. Bioretention areas shall receive similar treatments as disturbed areas. Bioretention areas are not expected to be wet during much of the growing season and are therefore not under the influence of a mesic or wet hydrologic regime. Soil treatments shall be the same as for the disturbed areas. Since runoff will be routed into bioretention areas for stormwater treatment, bioretention areas shall be designed such that concentrated flow will be routed through energy dissipaters using rocks or other landscape elements to eliminate scouring flows. More specific seeding and planting strategies in bioretention areas shall be developed in conjunction with the landscape architect developing the final landscaping plan, as discussed below. Slow-release, organic fertilizer shall be used and irrigation shall be applied so that water penetrates to at least eight inches below ground surface (bgs) within 24 hours of irrigation. The irrigation system shall be designed to meet this specification without displacing mulch or causing erosion. The final Plan shall include site-specific fertilizer and irrigation rates and a monitoring plan and shall be submitted to TRPA for project approval and permitting.
Impact(s) Mitigated	BIO-9. Will the Project introduce new vegetation that will require excessive fertilizer or water, or will provide a barrier to the normal replenishment of existing species? HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters

	(streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?
Mitigation Level	Approval of final revegetation/landscaping plan and fertilizer plan
Alternative	Alternative 1, 3, 4, 5 and 6
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Prior to project permitting

BIO-10. Prepare Forest Plan and Tree Protection Plan For Homewood Mountain Resort

Description	HMR shall prepare and implement a Forest Plan for the Project area that complies with TRPA Code of Ordinances Chapter 71 and incorporates the Fire Suppression and Management Plan compliance measure as described in Section 3.12.12 of this document. The Forest Plan shall be produced by a Registered Professional Forester and be submitted to TRPA for review and approval to confirm that the plan complies with Chapter 71. The forest plan shall identify and detail trees for removal and other forested areas which may require treatment (thinning) in order to increase the overall health of the forest. In addition, a Tree Protection Plan shall be prepared for the Project. Included in the Tree Protection Plan shall be tree protection measures to prevent damage to trees that are proposed to remain. The Project applicant shall hire a Certified Arborist to develop specific measures to ensure adequate protection to trees slated for retention in the vicinity of proposed development. The tree protection measures shall include the establishment of tree protection zones, and protection measures to prevent damage to the trees (bole, roots and branches). Additionally the Tree Protection Plan shall identify areas where tree roots are to be protected and proper methods for pruning, irrigation and limb removal during construction activities. The Tree Protection Plan shall include monitoring of the trees slated for retention for a period of three years. Mortality of any of the retained trees shall require the replacement of trees lost utilizing the same species and relative location. The Tree Protection Plan shall be submitted to Placer County and the TRPA for review and approval prior to removal of any trees associated with the Project.
Impact(s) Mitigated	BIO-10. Will the Project result in the removal of any native live, dead or dying trees 30 inches or greater in diameter at breast height (dbh) in TRPA's Conservation or Recreational land use classifications, remove native vegetation in excess of the area utilized for the actual development permitted by the land capability, or cause a change in the natural functioning of an old growth ecosystem? SCENIC-1. Will the Project be inconsistent with a County General Plan or TRPA thresholds, regulations, standards, or guidelines applicable to the Project area?
Mitigation Level	Approval of Forest Plan/Fuels Reduction Plan
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to project permitting

CUL-3. Identify and Protect Undiscovered Archaeological Resources.

Description	To assure that potential undiscovered resources are identified during site grading, a qualified archaeologist shall be on-site during initial ground disturbing construction excavation and grading operations. If previously undiscovered human remains, archaeological resources, exotic rock (non-native) or unusual amounts of shell or bone are discovered during construction or any subsequent activity, ground disturbing activity will cease in the vicinity of the discovery until the TRPA and Placer County Cultural Resources or Planning staff (or their qualified SOPA-certified consultants) assesses it for eligibility to the NRHP, compliance with TRPA Code Section 29, and/or (in the event of a prehistoric or ethnographic find) for Native American Heritage Commission (e.g., Washoe) values. This assessment will occur in consultation with the California SHPO, TRPA, Placer County and the Washoe Tribe, as appropriate. Cessation of applicable construction activity will continue until proper treatment can be determined and implemented by the responsible agencies. If the discovery consists of human remains, the Placer County Coroner and Native American Heritage Commission must also be contacted. Work in the area may only proceed after authorization is granted by the Placer County Planning Department. A note to this effect shall be provided on the Improvement Plans for the project. Following a review of a new find and consultation with appropriate experts, if necessary, the authority to proceed may be accompanied by the addition of development requirements which provide protection of the site and/or additional mitigation measures necessary to address the unique or sensitive nature of the site.
Impact(s) Mitigated	CUL-3: Will the Project disturb significant unknown archaeological resources? CUL-5: Will the Project disturb any human remains, including those interred outside formal cemeteries?
Mitigation Level	Protection of archaeological resources
Alternative	Alternatives 1, 2, 3, 4, 5 and 6
Lead Agency	TRPA, Washoe Tribe, California SHPO
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to construction activities

CUL-4. Identify and Protect Undiscovered Paleontological Resources.

Description	Prior to submittal of Improvement Plans, the applicant shall provide written evidence to the Planning Department that a qualified paleontologist has been retained by the applicant to observe grading activities and salvage fossils as necessary. The paleontologist shall establish procedures for paleontological resource surveillance and shall establish, in cooperation with the project developer, procedures for temporarily halting or redirecting work to permit sampling, identification, and evaluation of fossils. If major paleontological resources are discovered, which require temporary halting or redirecting of grading, the paleontologist shall report such findings to the project developer, and to the Placer County Department of Museums and Planning Department. The paleontologist shall determine appropriate actions, in cooperation with the project developer, which ensure proper exploration and/or salvage. Excavated finds shall be offered to a State-designated repository such as Museum of Paleontology, U.C.

	Berkeley, the California Academy of Sciences, or any other State-designated repository. Otherwise, the finds shall be offered to the Placer County Department of Museums for purposes of public education and interpretive displays. These actions, as well as final mitigation and disposition of the resources shall be subject to approval by the Department of Museums. The paleontologist shall submit a follow-up report to the Department of Museums and Planning Department which shall include the period of inspection, an analysis of the fossils found, and present repository of fossils.
Impact(s) Mitigated	CUL-4: Will the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
Mitigation Level	Protection of paleontological resources
Alternative	Alternatives 1, 2, 3, 4, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to construction activities

SCENIC-1a. Alternative 5 North Base Area Building Height Reductions

Description	To comply with the proposed Chapter 22 Code amendment, Alternative 5 Buildings D and E shall be redesigned to be no more than 42 feet in height due to their setback distances of 40 feet from SR 89. In addition, the buildings shall be redesigned to include an additional view corridor through the project area from SR 89. There are several feasible approaches that may reduce the height and visibility of these buildings, including removing one or more floors, decreasing roof pitch, or greater excavation of the foundation. New designs shall be submitted to TRPA for review and approval prior to the issuance of building permits for Alternative 5.
Impact(s) Mitigated	SCENIC-1. Will the Project be inconsistent with a County General Plan or TRPA thresholds, regulations, standards, or guidelines applicable to the Project area? SCENIC-2. Will the Project be visible from or cause an adverse effect on foreground or middle ground views from a high volume travel way, recreation use area, or other public use area, including Lake Tahoe, TRPA designated bike trail, or State or federal highway? SCENIC-C1: Will the Project have significant cumulative impacts to scenic resources?
Mitigation Level	Compliance with TRPA Code Chapter 22 (as amended)
Alternative	Alternative 5
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Prior to project permitting

SCENIC-1b. Alternative 6 North Base Area Building Redesign

Description	To comply with the proposed Chapter 22 Code amendment, Alternative 6 Building D shall be redesigned to include an additional view corridor through the project area from SR 89. New designs shall be submitted to TRPA for review and approval prior to the issuance of building permits for Alternative 6.
Impact(s) Mitigated	SCENIC-1. Will the Project be inconsistent with a County General Plan or TRPA thresholds, regulations, standards, or guidelines applicable to the Project area? SCENIC-C1: Will the Project have significant cumulative impacts to scenic resources?
Mitigation Level	Compliance with Chapter 22 Code amendment
Alternative	Alternative 6
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Prior project permitting

SCENIC-2a. Slope Vegetation Management

Description	To reduce the prominence of man-made features as viewed from Lake Tahoe viewpoints, HMR shall implement management actions to improve the visual quality of the existing Face ski run (located just above the North Base area) as viewed from Lake Tahoe. These measures shall include vegetation management with the goal of matching vegetation patterns of the northern (dark green) portion of the ski run (as seen in Figures 10-5 through 10-7). The Face ski run has well-established vegetation but is more visually prominent as viewed from Lake Tahoe when the vegetation is cut back on portions of the ski run and the vegetation color changes from dark green to light brown in color. During future permitting for vegetation management, HMR shall work with agency staff to develop procedures to ensure that the entirety of the Face ski run appears more uniform in color/texture when viewed from Lake Tahoe viewpoints.
Impact(s) Mitigated	SCENIC-2. Will the Project be visible from or cause an adverse effect on foreground or middle ground views from a high volume travel way, recreation use area, or other public use area, including Lake Tahoe, TRPA designated bike trail, or State or federal highway? SCENIC-C1: Will the Project have significant cumulative impacts to scenic resources?
Mitigation Level	Reduction in prominence of man-made features as viewed from Lake Tahoe viewpoints
Alternative	Alternatives 1,3 5 and 6
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Ongoing

SCENIC-2b. Mid-Mountain Lodge Redesign

Description	The Mid-Mountain Lodge design shall be finalized with a goal of reducing the reflectivity of glass panes and roofing materials, and placement of landscaping to reduce its visibility from Lake Tahoe. Building materials shall be pre-approved by TRPA and Placer County planning staff consistent with existing design review guidelines. Natural materials and dark colors that conform to Chapter 30 – Design Standards (TRPA 1987) will be used on resort structures. Placement of new trees directly downslope of the structure, as feasible among existing ski trails, will reduce its visual dominance from identified lake views.
Impact(s) Mitigated	SCENIC-2. Will the Project be visible from or cause an adverse effect on foreground or middle ground views from a high volume travel way, recreation use area, or other public use area, including Lake Tahoe, TRPA designated bike trail, or State or federal highway? SCENIC-C1: Will the Project have significant cumulative impacts to scenic resources?
Mitigation Level	Reduction in the reflectivity of glass panes and roofing materials, and placement of landscaping to reduce its visibility from Lake Tahoe
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Prior to project permitting

TRANS-1. Traffic and Air Quality Mitigation Program

Description	HMR shall pay the appropriate air quality mitigation fee in accordance with Chapter 93 – Traffic and Air Quality Mitigation Program of the TRPA Code of Ordinances. Fees generated by the air quality mitigation fee are used to support programs/improvements that reduce VMT, improve air quality, and encourage alternative mode of transportation.
Impact(s) Mitigated	TRANS-1. Will the Project result in generation of 200 or more new Daily Vehicle Trip Ends?
Mitigation Level	Reduction of air quality effects from increased VMT
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	During project permitting

TRANS-2. Provide Adequate Parking to Meet Placer County Requirements

Description	The project applicant shall implement a winter and summer Parking Management Plan to be reviewed and approved by the Development Review Committee (DRC) prior to Improvement Plan approval for any project phase. The Parking Management Plan shall address the proposed off-site peak ski day employee parking and any on-site

	parking deficiencies. This plan shall be approved by the County and the TRPA and will ensure that adequate parking and shuttle service operations are maintained in order to accommodate the proposed off-site peak ski day employee parking. The applicant shall provide an employee shuttle service between the designated employee parking location(s) and Homewood Mountain Resort (HMR). If additional environmental impacts, other than those already identified, analyzed, and mitigated (if necessary) as part of this Draft EIR/EIS are created as a result of any of the proposed on-site or off-site parking areas or shuttle service operations, the Improvement Plans shall not be approved until subsequent environmental review has been completed. The project applicant has committed to eliminating the existing day skier parking along SR 89 and along County roadways. The Parking Management Plan, to be approved by the County and the TRPA, shall outline the measures proposed to fulfill this commitment, including signage, parking enforcement, surveys of on-street parking during peak ski days, and annual reporting to Placer County by May 1 of each year that surveys are required. Surveys shall be required until two years after completion of any new development phase of the project. All costs associated with the surveys and parking management report are the responsibility of Homewood Mountain Resort. Timing / Implementation: An agreement between the County, TRPA and the applicant to implement the Parking Management Program, along with the detailed plan, shall be signed before Improvement Plans for any project phase are approved.
Impact(s) Mitigated	TRANS-2. Will the Project result in changes to existing parking facilities, or demand for new parking?
Mitigation Level	Provide a sufficient number of parking spaces at each portion of the Project area to meet the requirements of Placer County
Alternative	Alternatives 1, 3, 5, and 6
Lead Agency	Placer County, TRPA
Implementing Entity	HMR
Monitoring Agency	Placer County, TRPA
Timing	Prior to approval of improvement plans for any phase of the Project

TRANS-3. Implement Intersection Improvements

Description	<u>Alternatives 1, 3, 5, and 6 (Summer)</u> The Project shall construct the following intersection improvement at the SR 89/Granlibakken Road intersection: Add an acceleration lane or two-way left-turn lane (consistent with the Placer 89 Environmental Improvement Project, 2006) to SR 89 at Granlibakken Road. • *Delay after mitigation: 3.4 (44.2), LOS: A (E), Proposed Project and Alternative 3* • *Delay after mitigation: 3.3 (41.9), LOS: A (E), Alternative 5* • *Delay after mitigation: 3.2 (40.7), LOS: A (E), Alternative 6* <u>Alternatives 1, 3, 5 and 6 (Winter)</u> The Project shall construct the following intersection improvement at the SR 89/Granlibakken Road intersection: Add an acceleration lane or two-way left-turn lane (consistent with the Placer 89 Environmental Improvement Project, 2006) to SR 89 at Granlibakken Road. • *Delay after mitigation: 2.4 (19.3), LOS: A (C), Project and Alternative 3*

	• *Delay after mitigation: 2.5 (19.0), LOS: A (C), Alternative 5* • *Delay after mitigation: 2.5 (18.9), LOS: A (C), Alternative 6* Note: A two-way left-turn lane has been environmentally cleared through a CEQA Mitigated Negative Declaration, NEPA Finding of No Significant Impact, and TRPA Programmatic Environmental Assessment, and is scheduled for construction at this location as part of the Caltrans' *Placer 89 Environmental Improvement Project*. Figures ESL 42 and ESL 43 from the *Placer 89 Environmental Improvement Project* show the proposed roadway improvements, and are provided in Appendix L-2. If construction of the improvement is in place prior to being needed by HMR, HMR shall no longer be responsible for the improvement. The Project shall obtain an Encroachment Permit from Caltrans for any work within the State right-of-way. A copy of the permit shall be provided to the Placer County Engineering and Surveying department prior to the approval of Improvement Plans.
Impact(s) Mitigated	TRANS-3. Will the Project result in a substantial impact upon existing transportation systems, including roadways and intersections?
Mitigation Level	Improve intersection operations
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	Placer County, Caltrans
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to operation

TRANS-C1. Implement Intersection Improvements (Cumulative)

Description	<u>Alternatives 1, 3, 5 and 6 (Summer)</u> The Project shall construct the following intersection improvement at the SR 89/Granlibakken Road intersection: Add an acceleration lane or two-way left-turn lane (consistent with the Placer 89 Environmental Improvement Project, 2006) to SR 89 north of Granlibakken Road. • *Delay after mitigation: 3.7 (58.9), LOS: A (**F**), Project and Alternative 3* • *Delay after mitigation: 3.6 (55.4), LOS: A (**F**), Alternative 5* • *Delay after mitigation: 3.6 (53.7), LOS: A (**F**), Alternative 6* <u>Alternatives 1, 3, 5 and 6 (Winter)</u> The Project shall construct the following intersection improvement at SR 89/Granlibakken Road: Add an acceleration lane or two-way left-turn lane (consistent with the *Placer 89 Environmental Improvement Project*, 2006) to SR 89 at Granlibakken Road. • *Delay after mitigation: 2.8 (26.2), LOS: A (D), Project and Alternative 3* • *Delay after mitigation: 2.8 (25.7), LOS: A (D), Alternative 5* • *Delay after mitigation: 2.9 (25.5), LOS: A (D), Alternative 6* The Project shall construct the following intersection improvement at SR 89/Fawn Street: Add a left-turn pocket on Fawn Street. The pocket should have a minimum length of 100 feet.

	• *Delay after mitigation: 9.7 (41.6), LOS: A (E), Project and Alternative 3* • *Delay after mitigation: 8.2 (35.5), LOS: A (E), Alternative 5* • *Delay after mitigation: 8.6 (35.8), LOS: A (E), Alternative 6* Fawn Street Note: The analysis period represents the absolute peak hour. The LOS E condition is not expected to exceed 4 hours of the day and therefore is not considered to be a significant impact after implementation of mitigation measures. Granlibakken Note: A two-way left-turn lane has been environmentally cleared through a CEQA Mitigated Negative Declaration, NEPA Finding of No Significant Impact, and TRPA Programmatic Environmental Assessment, and is scheduled for construction at this location as part of the Caltrans' Placer 89 Environmental Improvement Project (2006). Figures ESL 42 and ESL 43 from the Placer 89 Environmental Improvement Project show the proposed roadway improvements, and are provided in Appendix L-2. If construction of the improvement is in place prior to being needed by HMR, HMR shall no longer be responsible for the improvement. The Project shall obtain an Encroachment Permit from Caltrans for any work within the State right-of-way. A copy of the permit shall be provided to the Placer County Engineering and Surveying department prior to the approval of Improvement Plans.
Impact(s) Mitigated	TRANS-C1: Will the project result in a substantial impact upon cumulative transportation systems, including roadways and intersections?
Mitigation Level	Improve intersection operations
Alternative	Alternatives 1, 3, 5 ands 6
Lead Agency	Placer County, Caltrans
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	As warranted based on traffic monitoring

TRANS-C2. Payment of Countywide Traffic Impact Fees (Cumulative)

Description	Regarding the intersection improvement at SR 89 and Granlibakken Road. This project will be subject to the payment of traffic impact fees that are in effect in this area (Tahoe Resort District), pursuant to applicable Ordinances and Resolutions. The applicant is notified that the following traffic mitigation fee(s) will be required and shall be paid to Placer County Department of Public Works prior to issuance of any Building Permits for the project: A) County Wide Traffic Limitation Zone: Article 15.28.010, Placer County Code. The fees are calculated using the information supplied by the applicant. If either the use or the square footage changes, then the fees will change. The actual fees paid will be those in effect at the time the payment occurs.
Impact(s) Mitigated	TRANS-C1: Will the project result in a substantial impact upon cumulative transportation systems, including roadways and intersections?
Mitigation Level	Improve intersection operations
Alternative	Alternatives 1, 3, 5 ands 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	As warranted based on traffic monitoring

AQ-1. Implement PCAPCD Best Management Practices (BMPs) to reduce pollutant emissions during construction

Description	The Project Applicant shall implement the following recommended mitigation measures, which were provided by the PCAPCD. These measures shall be implemented prior to and during the construction phase. In addition, construction of the Project is required to comply with PCAPCD rules and regulations (see section 12-2). • Dust Control Plan: The applicant shall submit a Construction Emission/Dust Control Plan to the PCAPCD. This plan must address the minimum Administrative Requirements found in PCAPCD Rule 228, Fugitive Dust, Sections 300 and 400. The applicant shall not break ground prior to receiving PCAPCD approval of the Construction Emission/Dust Control Plan. • Equipment Inventory: The Project Applicant shall submit a comprehensive inventory (i.e. make, model, year, emission rating) of heavy-duty off-road equipment (50 horsepower of greater) that will be used an aggregate of 40 or more hours for construction. • Enforcement Plan: An enforcement plan shall be established and submitted to the PCAPCD for review, to evaluate weekly project-related on-and-off- road heavy-duty vehicle engine emission opacities, using standards as defined in California Code of Regulations, Title 13, Sections 2180 - 2194. • Compliance with Rule 202: Construction equipment exhaust emissions shall not exceed District Rule 202, Visible Emission limitations. • Compliance with Rule 228: Grading operations shall be suspended if fugitive dust exceeds PCAPCD Rule 228 (Fugitive Dust) limitations. Water shall be applied to control dust, as required by the rule, to prevent dust impacts off-site. Operational water truck(s) shall be on-site, at all times, to control fugitive dust. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked off-site. • Pre-Construction Meeting: If required by the Department of Engineering and Surveying and/or the Department of Public Works, the contractor shall have a pre-construction meeting for grading activities. The contractor shall invite the PCAPCD to the pre-construction meeting in order to discuss the construction emission/dust control plan with employees and/or contractors. • Maintenance of Public Thoroughfares: The Project Applicant shall keep adjacent public thoroughfares clean of silt, dirt, mud, and debris, and shall "wet broom" the streets if silt, dirt, mud or debris is carried over to adjacent public thoroughfares. Dry mechanical sweeping is prohibited. • Traffic Limits: Traffic speeds on unpaved surfaces shall be limited to 15 miles per hour or less. • Wind Restrictions: Grading operations shall be suspended when wind speeds (including instantaneous gusts) exceed 25 miles per hour and dust is impacting adjacent properties. • Idling Restrictions: Idling time shall be limited to a maximum of five minutes for diesel-powered equipment. • Open Burning Restrictions: No open burning of removed vegetation shall be allowed during construction. Removed vegetative material shall be either chipped on-site or taken to an appropriate disposal site. • Ultra-Low Diesel Fuel: ARB ultra low diesel fuel shall be used for diesel–powered equipment and low sulfur fuel shall be utilized for stationary

	equipment. • Clean Power Sources: Existing power sources (e.g., power poles) or clean fuel generators shall be used rather than temporary diesel power generators. • Compliance with PCAPCD Permit Regulations: On-site stationary equipment which is classified as 50 horsepower or greater shall either obtain a State issued portable equipment permit or a PCAPCD issued portable equipment permit. Pursuant to PCAPCD Rule 501, General Permit Requirements, the Project may need a permit from the PCAPCD prior to construction. In general, any engine greater than 50 brake horsepower or any boiler with heat greater than 1,000,000 Btu per hour requires a PCAPCD permit. • Compliance with NESHAPs: The demolition or remodeling of any structure may be subject to the National Emission Standard for Hazardous Air Pollutants (NESHAPs) for Asbestos. This may require that a structure to be demolished be inspected for the presence of asbestos by a certified asbestos inspector, and that asbestos materials are removed prior to demolition. • Traffic Plans: If a Traffic Plan is required the PCAPCD shall be provided receive a copy for review. PCAPCD recommendations within the plan may include, but not be limited to: use of public transportation and satellite parking areas with a shuttle service. • Landscaping Plan: The applicant shall provide a landscaping plan for review and approval by the Design/Site Review Committee. As required by the PCAPCD, landscaping shall include native drought-resistant species (plants, trees and bushes) and no more than 25% lawn area to reduce the demand for irrigation and gas powered landscape maintenance equipment. The Project Applicant shall include irrigation systems which efficiently utilize water (e.g., prohibit systems that apply water to non-vegetated surfaces and systems which create runoff), use applicant shall install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls, rain “shut off” valves, and other devices as reviewed and approved by the Design Site Review Committee. • Limit Daily Construction Activities: Daily soil disturbance activities shall be limited to 15 acres per day.
Impact(s) Mitigated	AQ-1. Will the Project Generate Construction Emissions in Excess of Applicable Standards? AQ-4. Will the Project Conflict with or Obstruction of Implementation of the Applicable Air Quality Plan? AQ-C1. Would the Project Result in a Cumulative Short-Term Impact on Air Quality?
Mitigation Level	Comply with PCAPCD rules and regulations
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	PCAPCD
Implementing Entity	HMR
Monitoring Agency	PCAPCD
Timing	Prior to and during construction

AQ-2a. Contribute to the TRPA Traffic and Air Quality Mitigation Program

Description	The Project Applicant shall pay the appropriate air quality mitigation fee in accordance with Chapter 93—Traffic and Air Quality Mitigation Program of the TRPA Code of Ordinances. The TRPA adopted this program as a means of generating the revenue

	necessary to address air quality impacts associated with VMT. By contributing to TRPA's Mitigation Program, the Project effectively mitigates air quality emissions through VMT reductions achieved through Mitigation Program, as VMT reductions typically result in reductions of air pollutant emissions. Specific regional and local VMT reduction strategies that may benefit from the mitigation include, but are not limited to: • Expansion of existing transit facilities; • Addition of bicycle lanes; • Transportation Systems Management measures such as bicycle facilities, pedestrian facilities, and use of alternative fuels in fleet vehicles; and • Provision of connectivity between multi-use paths for bicycles and pedestrians.
Impact(s) Mitigated	AQ-2. Will the Project Generate Operational Emissions or Vehicle Miles Traveled in Excess of Applicable Standards? AQ-C2. Would the Project Result in a Cumulative Long-Term Regional Impact on Air Quality?
Mitigation Level	Comply with TRPA Codes
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	During project permitting

AQ-2b. Prohibit Installation of Wood-Burning Appliances

Description	There are no new wood-burning appliances included in the Proposed Project (Alternative 1) or Alternatives 3, 4, 5, or 6. There is potential, however, for future owners, operators, and residents to install wood-burning appliances. However, no new wood burning appliances defined in District Rule 225 Wood-Burning Appliances shall be allowed in any residential or non-residential structures within the boundaries of the project. A standard note indicating this restriction shall be included on all building plans approved in association with this project.
Impact(s) Mitigated	AQ-2. Will the Project Generate Operational Emissions or Vehicle Miles Traveled in Excess of Applicable Standards?
Mitigation Level	Comply with TRPA Codes
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	During project permitting

NOI-1a. Employ Measures to Reduce Airblast and Vibration from Blasting

Description	Contractors shall retain a qualified blasting specialist to develop a site-specific blasting program report to assess, control, and monitor airblast and ground vibration from blasting. The report shall be reviewed and approved by the County prior to issuance of

	a blasting permit. The report shall include, at minimum, the following measures: • The contractor shall use current state-of-the-art technology to keep blast-related vibration at offsite residential, other occupied structures and well sites as low as possible, consistent with blasting safety. In no instance shall blast vibration, measured on the ground adjacent to a residential, other occupied structure, or well site be allowed to exceed the frequency-dependent limits specified in the Alternative Blasting Level Criteria contained in USBM Report of Investigations 8507. • The project contractor shall use current state-of-the-art technology to keep airblast at offsite residential and other occupied structures as low as possible. In no instance shall airblast, measured at a residence or other occupied structure, be allowed to exceed the 0.013-psi (133-dB) limit recommended in USBM Report of Investigations 8485. • The project contractor shall monitor and record airblast and vibration for blasts within 1,000 feet of residences and other occupied structures to verify that measured levels are within the recommended limits at those locations. The contractor shall use blasting seismographs containing three channels that record in three mutually perpendicular axes and which have a fourth channel for recording airblast. The frequency response of the instrumentation shall be from 2 to 250 Hz, with a minimum sampling rate of 1,000 samples per second per channel. The recorded data must be such that the frequency of the vibrations can be determined readily. If blasting is found to exceed specified levels, blasting shall cease, and alternative blasting or excavation methods shall be employed that result in the specified levels not being exceeded. • Airblast and vibration monitoring shall take place at the nearest offsite residential or other occupied structure. If vibration levels are expected to be lower than those required to trigger the seismograph at that location, or if permission cannot be obtained to record at that location, recording shall be accomplished at some closer site in line with the structure. Specific locations and distances where airblast and vibration are measured shall be documented in detail along with measured airblast and vibration amplitudes.
Impact(s) Mitigated	NOI–1. Will construction (including blasting activities) of the Project expose the public to high noise levels or vibration?
Mitigation Level	Minimize noise and vibration from construction activities
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	During construction

NOI-1b. Conduct Building Inspection prior to Blasting

Description	HMR shall inspect any existing buildings located within a 500-foot radius of planned blasting activities. The inspection shall document preexisting conditions. The preinspection survey of the buildings shall be completed with the use of photographs, videotape, or visual inventory, and shall include inside and outside locations. All existing cracks in walls, floors, driveways, etc., shall be documented with sufficient detail for comparison during and upon completion of blasting activities to determine whether actual vibration damage has occurred. The results of both surveys shall be

	provided to the County for review and acceptance of conclusions. Should damage occur, construction operations shall be halted until the problem activity can be identified. Once identified, the problem activity shall be modified to eliminate the problem and protect the adjacent buildings. Any damage to nearby buildings shall be repaired back to the pre-existing condition.
Impact(s) Mitigated	NOI–1. Will construction (including blasting activities) of the Project expose the public to high noise levels or vibration?
Mitigation Level	Minimize damage from blasting activities
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	During construction

NOI-1c. Employ noise-reducing construction practices

Description	HMR shall design and implement measures to reduce noise from construction. HMR will prepare a noise control plan that will identify feasible measures that can be employed to reduce construction noise, including enclosing or shielding noise-generating equipment and locating equipment as far as practical from sensitive uses would also be effective. Implementation of such measures is anticipated to provide up to 10 dB of noise reduction. The noise control plan shall employ noise-reducing construction practices such that construction noise does not exceed: (1) 55 dBA Leq between the hours of 8:00 PM to 10:00 PM and 45 dBA between the hours of 10:00 PM to 6:00 AM on weekdays; or (2) 55 dBA between the hours of 8:00 PM and 10:00 PM and 45 dBA between the hours of 10:00 PM and 8:00 AM on weekends. The plan must be approved by the TRPA and Placer County prior to issuing a Grading Permit. The noise control plan may include, and is not limited to, the following measures: • Gasoline or diesel engine construction equipment shall have sound-control devices that are at least as effective as those originally provided by the manufacturer and that equipment be operated and maintained to minimize noise generation. • Prohibit gasoline or diesel engines from having unmuffled exhaust. • Locate noise-generating equipment as far as practical from noise-sensitive uses. • Use noise-reducing enclosures around noise-generating equipment. • Schedule substantial noise-generating activity, and blasting in particular, during daytime or early evening hours. • Place temporary barriers between noise sources and noise-sensitive land uses or taking advantage of existing barrier features (terrain, structures, edge of trench) to block sound transmission. • Cover trenches where blasting will occur. • Prohibit backup alarms and provide an alternate warning system, such as a flagman or radar-based alarm that is compliant with State regulations.
Impact(s) Mitigated	NOI–1. Will construction (including blasting activities) of the Project expose the public to high noise levels or vibration?
Mitigation Level	Minimize noise from construction activities

Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	During construction

NOI-2. Employ measures to ensure Project-related traffic noise does not increase relative to future no project conditions

Description	The Project Applicant shall design and implement measures to reduce noise from traffic related to the Proposed Project (Alternative 1). HMR will prepare a noise control plan that will identify feasible measures that can be employed to reduce traffic noise by 1.2 dB. The noise control plan shall employ noise-reducing measures such that Project-related noise does not increase relative to future no project conditions. This is in addition to the ongoing reduction in traffic volumes observed on SR 89 (see Chapter 11 – Transportation, Parking, and Circulation). The plan must be approved by the TRPA and Placer County prior to issuing a Grading Permit. The noise control plan may include, and is not limited to, the following measures: • Constructing/use of barriers, berms, and acoustical shielding (reductions of 3dB to 5dB). • Utilizing noise-reducing pavement (reductions of 2-5dB). • Lowering speed limits, if feasible and practical (reductions of 1-2dB). • Programs to pay for noise mitigation such as low cost loans to owners of noise-impacted property or establishment of developer fees (no actual noise reduction from this, reduction depends on actual measure that is implemented.). • Acoustical treatment of buildings (reductions of 3-5dB).
Impact(s) Mitigated	NOI-2. Will operation and maintenance of the Project expose the public to high noise levels (e.g., above CNEL permitted in the applicable Plan Area Statements, Community Plan or Master Plan) from transportation sources? NOI-C1: Will the Project result in a substantial impact upon the cumulative noise environment?
Mitigation Level	Minimize noise from traffic related to Project
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Ongoing

NOI-3a. Design new residences to reduce interior noise below 45 dBA, Ldn

Description	HMR shall design and construct new residences such that interior noise from snowmaking and other sources of noise (including concerts) in the area does not exceed 45 dBA, Ldn. HMR will retain a qualified acoustical consultant to design the necessary acoustical treatments. Measures that can be implemented include installing acoustically rated doors and windows, use of upgraded wall and roof materials to provide additional acoustical insulation, and sealing gaps in walls and ceilings with

	acoustical caulking. The acoustical consultant will prepare a report for the TRPA and Placer County demonstrating compliance with noise standards inside of residential units.
Impact(s) Mitigated	NOI-3. Will noise from Project concerts, snowmaking, or other resort operations effect existing or proposed noise-sensitive land uses? NOISE-C1: Will the Project result in a substantial impact upon the cumulative noise environment?
Mitigation Level	Interior noise from snowmaking and other sources of noise in the area does not exceed 45 dBA, Ldn. Exterior noise levels comply with adjacent PAS CNEL limits.
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to operation

NOI-3b. Implement design and operational measures at the amphitheater to ensure compliance with the adjacent Planning Area Statement (PAS) CNEL limit at existing residences

Description	HMR shall demonstrate that the amphitheater has been designed such that operational noise at existing residences will be in compliance with the adjacent Planning Area Statement (PAS) CNEL limit. An acoustical engineer with experience in the prediction and mitigation of outdoor theater sound levels shall be consulted prior to design and construction of the proposed amphitheater. The acoustical engineer shall identify feasible mitigation measures for reducing noise-related impacts to nearby residences. Mitigation measures may include, but are not limited to, orientation and location of the amphitheater, construction of noise barriers, limitations on speaker orientation, limitations on noise-generation levels, and hours of activity. The project applicant shall incorporate the mitigation measures into the design and operation of the amphitheater.
Impact(s) Mitigated	NOI-3. Will noise from Project concerts, snowmaking, or other resort operations effect existing or proposed noise-sensitive land uses? NOISE-C1: Will the Project result in a substantial impact upon the cumulative noise environment?
Mitigation Level	Interior noise from snowmaking and other sources of noise in the area does not exceed 45 dBA, Ldn. Exterior noise levels comply with adjacent PAS CNEL limits.
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to operation

NOI-3c. Implement measures to ensure noise levels at existing residences are reduced to meet the adjacent Plan Area Statement (PAS) CNEL limit

Description	To reduce existing and proposed snowmaking noise levels to a less than significant level, HMR must reduce noise levels to meet adjacent PAS CNEL limits. The reduction of noise to PAS CNEL levels shall be reevaluated annually to ensure that HMR is implementing all possible snowmaking measures available to work towards the attainment of the PAS CNEL noise standards for Plan Areas 157, 158, and 159 (55dB, 55dB, and 60dB, CNEL, respectively). HMR will prepare a noise control plan to design, construct/install, and operate new snowmaking equipment so that the increase in noise associated with snowmaking conditions, (see Table 13-7) is reduced to meet the appropriate PAS limit. The plan must be approved by the TRPA and Placer County prior to HMR using any new snowmaking equipment. The noise control plan may include, and is not limited to, the following measures: • Situate snowmaking equipment as far as practicable from existing noise sensitive land uses (reductions of 2-3dB). If setbacks are used to control snowmaking noise, snow could be moved from the location where it is made, and mechanically deposited in the desired location. This measure would involve the use of snow grooming equipment, which would also produce noise. In general, snow grooming equipment produces lower levels than snowmaking equipment, and the time required to move the snow would be less than the time required to make snow on a continuous basis. Thus the overall noise impacts of this alternative in a given area would be lower than for continuous snowmaking using snowmaking nozzles. • Place temporary barriers between noise sources and noise-sensitive land uses or taking advantage of existing barrier features (terrain, structures, edge of trench) to block sound transmission. Barriers would be most effective where the nozzles are close to the noise sensitive land uses. The barriers should be solid and massive, and placed close to the nozzles to block line of sight to the receivers. Thick (1/2 inch) plywood or wood, and straw bales are examples of suitable materials for such an application. Where nozzles are placed in fixed, elevated positions, barriers could consist of tower structures with plywood sides blocking line of sight to the nozzles (reductions of 3-9dB). At the South and North Base areas, the construction of proposed HMR buildings may provide permanent barriers between snowmaking operations and adjacent land uses. • Select quieter snow making equipment (reductions of 2-3dB). HMR currently uses fan gun technology for its snowmaking system, which is quieter than compressed air/water nozzles used at other resorts. However, the latest snowmaking gun technology shall be consulted when purchasing new equipment. The new and quieter equipment shall be used in locations closest to noise sensitive land uses. • Prohibit/minimize the operation of snow making activities during nighttime hours (prohibition eliminates nighttime noise that is penalized in the calculation of CNEL averages). • Reduce the number of snow making equipment operating concurrently (reduction of 2-3 dB). • Reducing the number of nozzles close to noise sensitive land uses. (In general, a 50 percent reduction in the number of nozzles in a given area will result in a reduction of 3 dB, which is considered to be a perceptible reduction in noise levels).

Impact(s) Mitigated	NOI-3. Will noise from Project concerts, snowmaking, or other resort operations effect existing or proposed noise-sensitive land uses? NOISE-C1: Will the Project result in a substantial impact upon the cumulative noise environment?
Mitigation Level	Exterior noise levels comply with adjacent PAS CNEL limits.
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Ongoing

GEO-1. Submit Final Geotechnical Report

Description	The Project Applicant shall submit to the Engineering and Surveying Department (ESD), for review and approval, a geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The report shall address and make recommendations on the following: A) Road, pavement, and parking area design B) Structural foundations, including retaining wall design (if applicable) C) Grading practices D) Erosion/winterization E) Special problems discovered on-site, (i.e., groundwater, expansive/unstable soils, etc.) F) Slope stability G) Utility trench design Once approved by the ESD, two copies of the final report shall be provided to the ESD and one copy to the Building Department for their use. If the soils report indicates the presence of critically expansive or other soils problems that, if not corrected, could lead to structural defects, a certification of completion of the requirements of the soils report shall be required for subdivisions, prior to approval of the Improvement Plans. This certification may be completed on a lot-by-lot basis or on a Tract basis. This shall be so noted in the Covenants, Conditions and Restrictions (CC&Rs) and on the Informational Sheet filed with the Final Subdivision Map(s). It is the responsibility of the developer to provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report.
Impact(s) Mitigated	GEO-1. Will the Project expose people or structures to adverse geological hazards, including risk of loss, injury, or death involving fault rupture, strong seismic ground shaking, seismic related ground failure (e.g., liquefaction), or landslides? GEO-2. Will Project facilities be located within an area of unstable soil conditions, including soils susceptible to collapse, subsidence, corrosion or expansion?
Mitigation Level	Conformance with Placer County Grading and Erosion Prevention Ordinance (Section 15.48.360)
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR

Monitoring Agency	Placer County
Timing	Prior to construction of Phase 2

GEO-3. Comply with Excess Land Coverage Mitigation Program

Description	Based on allowable base land coverage determinations in LCDs 1a and 2, the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 shall be subject to the excess coverage mitigation program described in Code Section 20.5. The excess land coverage within the Project area shall be reduced to comply with Code Section 20.5 through: 1) reduction of coverage onsite; 2) reduction of coverage offsite; 3) payment of excess coverage mitigation fee; 4) parcel consolidation or parcel line adjustment; or 5) combination of these options. Table 14-7 presents the excess land coverage mitigation fee and reductions in existing land coverage options for each of the alternatives, which are the mitigation options most applicable to the Project area. Land coverage must be permanently retired to supplement the payment of a mitigation fee. The impact from excess land coverage under the Proposed Project (Alternative 1) and Alternatives 3, 5 and 6 can be reduced to a less than significant level through completion of the excess land coverage mitigation program as outlined in TRPA Code section 20.5. The mitigation options are listed according to alternative. **Proposed Project (Alternative 1):** 1) Payment of Excess Coverage Mitigation Fee = $1,601,228; or 2) Permanent retirement of 188,380 square feet of onsite land coverage (offset of $8.50/square foot assumed) in lieu of the Excess Coverage Mitigation Fee; or 3) Permanent retirement of 176,134 square feet of onsite land coverage (offset of $8.50/square foot assumed) as required for TRPA Code of Ordinances Chapter 22.4.G Amendment for additional building height findings and for CEP Governing Board Resolution requirements and payment of an adjusted Excess Coverage Mitigation Fee equal to $104,091 (Note that the proposed Chapter 22.4.G height amendment requires a 10 percent reduction of total existing land coverage, while the TRPA CEP Resolution requires a "substantial" reduction in existing land coverage but does not quantify square footage of land coverage for permanent retirement - the 176,134 square feet identified above is equal to a 10 percent reduction in verified existing land coverage); or 4) Permanent retirement of 176,134 square feet of onsite land coverage (offset of $8.50/square foot assumed) as required for TRPA Code of Ordinances Chapter 22 for building height findings and for CEP Governing Board Resolution requirements and the permanent retirement of an additional 12,246 square feet (offset of $8.50/square foot assumed) of offsite land coverage to be identified by the Project Applicant; or 5) Combination of Options 1 and 2 for permanent retirement of on or offsite land coverage (offset of $8.50/square foot assumed) and payment of Excess Coverage Mitigation Fee that is appropriate for the amount of excess land coverage that remains (offset of $8.50/square foot assumed). According to TRPA Code Section 20.5.A, the payment of the Excess Coverage Mitigation Fee mitigates excess land coverage for the Project area to a less than significant level. Permanently retiring 188,380 square feet of onsite land coverage under the Proposed Project (Alternative 1) is considered a more beneficial option for reducing impacts from excess land coverage than only the payment of the mitigation fee. Permanent retirement of land coverage directly reduces impacts in the Project area

watersheds through the permanent removal of impervious surfaces and restoration of land capability.

Notable benefits of the Proposed Project (Alternative 1) that are over and above standard TRPA mitigation requirements include: land coverage reductions in excess of the CEP goal for "substantial" reduction, permanent retirement of a portion of land coverage removed from LCDs 5, 3 and 1a, and the relocation of land coverage from LCD 1a and 1b lands to higher capability LCD lands. Additionally, effects from proposed land coverage will be reduced through application of LID measures such as bioretention areas for stormwater treatment, cisterns to capture roof runoff, heated walkways to control the timing of runoff from walkways and pervious pavement to reduce typical runoff volumes by around 40 percent. The LID measures more closely mimic natural hydrologic patterns and alleviate pressures placed on traditional stormwater treatment systems. The Proposed Project (Alternative 1) will utilize pervious pavers and pervious pavement on approximately 850 square feet of the Project area and will install bioretention areas for stormwater treatment (approximately 117,000 square feet) across the North Base, South Base and Mid-mountain areas. Cisterns will capture a portion of roof runoff from buildings, up to 7,800 cubic feet per runoff event. These LID measures are not considered in the TRPA calculations for land coverage reductions but will provide added benefits to the Project through reductions in runoff from impervious surfaces. Table 15-8 in Chapter 15, Hydrology, Water Rights, Surface Water Quality and Groundwater, details the impact reductions specified above.

Alternative 3:

1) Payment of Excess Coverage Mitigation Fee = $1,794,027;
2) Permanent retirement of 211,062 square feet of onsite land coverage (offset of $8.50/square foot assumed) in lieu of the Excess Coverage Mitigation Fee;
3) Permanent retirement of 176,134 square feet of onsite land coverage (offset of $8.50/square foot assumed) to comply with CEP Governing Board Resolution requirements and payment of an adjusted Excess Coverage Mitigation Fee = $296,888 (Note that Alternative 3 does not require TRPA Chapter 22 findings for height. The TRPA CEP Resolution, however, requires a "substantial" reduction in existing land coverage but does not quantify square footage for permanent retirement. The 176,134 square feet stated above is based on 10 percent permanent retirement of verified existing land coverage.); or
4) Permanent retirement of 176,134 square feet of onsite land coverage (offset of $8.50/square foot assumed) as required for CEP Governing Board Resolution requirements and the permanent retirement of an additional 34,928 square feet (offset of $8.50/square foot assumed) of offsite land coverage to be identified by the Project Applicant; or
5) Combination of Options 1 and 2 for permanent retirement of on or offsite land coverage (offset of $8.50/square foot assumed) and payment of Excess Coverage Mitigation Fee that is appropriate for the amount of excess land coverage that remains (assuming an offset of $8.50/square foot).

According to TRPA Code Section 20.5.A, the payment of the Excess Coverage Mitigation Fee mitigates excess land coverage for the Project area to a less than significant level. However, permanently retiring 211,062 square feet of land coverage under Alternative 3 is considered a more beneficial option for reducing impacts from excess land coverage than only the payment of the mitigation fee. Permanent retirement of land coverage directly reduces impacts in the Project area watersheds through the permanent removal of impervious surfaces and restoration of land capability.

Notable benefits of Alternative 3 that are over and above standard TRPA mitigation

	requirements include: land coverage reductions in excess of the CEP goal for "substantial" reduction, permanent retirement of a portion of the land coverage removed from LCDs 5, 3 and 1a, and the relocation of land coverage from LCD 1a and 1b lands to higher capability LCD lands. Additionally, impacts from proposed land coverage will be reduced through application of LID measures such as bioretention areas for stormwater treatment, cisterns to capture roof runoff, heated walkways to control the timing of runoff from walkways and pervious pavement to reduce typical runoff volumes by around 40 percent. The LID measures more closely mimic natural hydrologic patterns and alleviate pressures placed on traditional stormwater treatment systems. The effects of land coverage would be reduced through application of LID measures such as cisterns, pervious pavement and pavers and bioretention areas for stormwater treatment that are described above for the Proposed Project (Alternative 1). These LID measures are not considered in the TRPA calculations for land coverage reductions but will provide added benefits to the Project through reductions in runoff from impervious surfaces. Table 15-8 in Chapter 15, Hydrology, Water Rights, Surface Water Quality and Groundwater, details the impact reductions specified above. **Alternative 5:** 1) Payment of Excess Coverage Mitigation Fee = $1,005,366; or 2) Permanent retirement of 118,279 square feet of onsite land coverage (offset of $8.50/square foot assumed) in lieu of the Excess Coverage Mitigation Fee; or 3) Permanent retirement of 176,134 square feet of onsite land coverage (offset of $8.50/square foot assumed) as required for TRPA Code of Ordinances Chapter 22 for building height findings and for CEP Governing Board Resolution requirements (Note that Chapter 22 requires a 10 percent reduction of verified existing land coverage, while the CEP Resolution requires a "substantial" reduction in existing land coverage but does not quantify square footage for permanent retirement. The 176,134 square feet stated above is based on 10 percent permanent retirement of verified existing land coverage.); or 4) Combination of Options 1 and 2 for permanent retirement of on or offsite land coverage (offset of $8.50/square foot assumed) and payment of Excess Coverage Mitigation Fee that is appropriate for the amount of excess land coverage that remains (assuming an offset of $8.50/square foot). According to TRPA Code Section 20.5.A, the payment of the Excess Coverage Mitigation Fee mitigates excess land coverage for the Project area to a level of less than significant. Identification and permanent retirement of onsite land coverage (118,279 square feet) in lieu of payment of the remaining Excess Coverage Mitigation Fee ($1,005,366) is considered more beneficial option for reducing impacts from excess land coverage in the Project area watersheds. A combination of the two mitigation options, described above under option four, is considered more beneficial than the payment of the excess coverage mitigation fee only. Option 3, however, would be required for Alternative 5 because although options one, two and four would legally mitigate excess land coverage on the project area to a level of less than significant, these mitigation options would not meet the proposed TRPA Chapter 22.4.G amendment requirements for additional height nor the CEP Governing Board Resolution for substantial land coverage reductions, assumed to be at least a 10 percent reduction in existing land coverage. Identification and permanent retirement of 176,134 square feet of onsite or offsite land coverage in lieu of payment of the remaining Excess Coverage Mitigation Fee ($1,005,372) is considered the most beneficial option (Option number 3 above) for reducing impacts from excess land coverage. Notable benefits of Alternative 5 that are over and above standard TRPA mitigation requirements would be the same as described for Alternative 3.

	Alternative 6: 1) Payment of Excess Coverage Mitigation Fee = $1,293,198; or 2) Permanent retirement of 152,141 square feet of onsite land coverage (offset of $8.50/square foot assumed) in lieu of the Excess Coverage Mitigation Fee; or 3) Permanent retirement of 176,134 square feet of onsite land coverage (offset of $8.50/square foot assumed) as required for TRPA Code of Ordinances Chapter 22 for building height findings and for CEP Governing Board Resolution requirements (Note that Chapter 22 requires a 10 percent reduction of verified existing land coverage, while the CEP Resolution requires a "substantial" reduction in existing land coverage but does not quantify square footage for permanent retirement. The 176,134 square feet stated above is based on 10 percent permanent retirement of verified existing land coverage.); or 4) Combination of Options 1 and 2 for permanent retirement of on or offsite land coverage (offset of $8.50/square foot assumed) and payment of Excess Coverage Mitigation Fee that is appropriate for the amount of excess land coverage that remains (assuming an offset of $8.50/square foot). According to TRPA Code Section 20.5.A, the payment of the Excess Coverage Mitigation Fee mitigates excess land coverage for the Project area to a level of less than significant. Identification and permanent retirement of onsite land coverage (118,279 square feet) in lieu of payment of the remaining Excess Coverage Mitigation Fee ($1,293,198) is considered more beneficial option for reducing impacts from excess land coverage in the Project area watersheds. A combination of the two mitigation options, described above under option four, is considered more beneficial than the payment of the excess coverage mitigation fee only. Option 3, however, would be required for Alternative 6 because although options one, two and four would legally mitigate excess land coverage on the project area to a level of less than significant, these mitigation options would not meet the proposed TRPA Chapter 22.4.G amendment requirements for additional height nor the CEP Governing Board Resolution for substantial land coverage reductions, assumed to be at least a 10 percent reduction in existing land coverage. Identification and permanent retirement of 176,134 square feet of onsite or offsite land coverage in lieu of payment of the remaining Excess Coverage Mitigation Fee ($1,293,198) is considered the most beneficial option (Option number 3 above) for reducing impacts from excess land coverage. Notable benefits of Alternative 6 that are over and above standard TRPA mitigation requirements would be the same as described for Alternative 3.
Impact(s) Mitigated	GEO-3. Will the Project result in compaction or covering of the soil beyond the limits allowed in the land capability system, including coverage within sensitive Class 1a and 1b lands?
Mitigation Level	Compliance with TRPA Code of Ordinance Section 20.5
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Prior to approval of Improvement Plans for any project phase

GEO-4a. Design Construction-related BMPs According to the California Stormwater Quality Association Stormwater BMP Handbooks and TRPA's Handbook of BMPs

Description	Construction-related Best Management Practices (BMPs) shall be designed according to the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development / Redevelopment, and/or for Industrial and Commercial, (and/or other similar source as approved by the Engineering and Surveying Department (ESD)). Construction (temporary) BMPs for the Project could include, but are not limited to: Fiber Rolls (SE-5), Hydroseeding (EC-4), Stabilized Construction Entrance (LDM Plate C-4), Storm Drain Inlet Protection (SE-10), Silt Fence (SE-1), revegetation techniques, dust control measures, and concrete washout areas. Storm drainage from on- and off-site impervious surfaces (including roads) shall be collected and routed through specially designed catch basins, vegetated swales, vaults, infiltration basins, water quality basins, filters, etc. for entrapment of sediment, debris and oils/greases or other identified pollutants, as approved by the ESD. BMPs shall be designed at a minimum in accordance with the Placer County Guidance Document for Volume and Flow-Based Sizing of Permanent Post-Construction Best Management Practices for Stormwater Quality Protection. Post-development (permanent) BMPs for the project include, but are not limited to: above and below ground onsite infiltration basin(s), sand/oil interceptors. No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals. All BMPs shall be maintained as required to insure effectiveness. The Project Applicant shall provide for the establishment of vegetation, where specified, by means of proper irrigation. Proof of on-going maintenance, such as contractual evidence, shall be provided to ESD upon request. Maintenance of these facilities shall be provided by the project owners/permittees unless, and until, a County Service Area is created and said facilities are accepted by the County for maintenance. Contractual evidence of a monthly parking lot sweeping and vacuuming, and catch basin cleaning program shall be provided to the ESD upon request. Failure to do so will be grounds for discretionary permit revocation. Prior to Improvement Plan or Final Map approval, easements shall be created and offered for dedication to the County for maintenance and access to these facilities in anticipation of possible County maintenance.
Impact(s) Mitigated	GEO-4. Will construction of the Project result in changes to native geologic substructures or cause erosion, loss of topsoil, or changes in topography from excavation, grading or filling? HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?
Mitigation Level	Conformance to California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development / Redevelopment, and/or for Industrial and Commercial, (and/or other similar source as approved by the Engineering and Surveying Department (ESD))
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR, Placer County
Monitoring Agency	Placer County

Timing	Prior to Improvement Plan or Final Map approval

GEO-4b. Conform to Provisions of Placer County Grading, Erosion and Sediment Control Ordinance

Description	All proposed grading, drainage improvements, vegetation and tree removal shall be shown on the Improvement Plans and all work shall conform to provisions of the County Grading Ordinance (Ref. Article 15.48, Placer County Code) and Stormwater Quality Ordinance (Ref. Article 8.28, Placer County Code) that are in effect at the time of submittal. No grading, clearing, or tree disturbance shall occur until the Improvement Plans are approved and all temporary construction fencing has been installed and inspected by a member of the DRC. All cut/fill slopes shall be at a minimum of 2:1 (horizontal:vertical) unless a soils report supports a steeper slope but fill slopes shall not exceed 1.5:1 (horizontal:vertical) and the Engineering and Surveying Department (ESD) concurs with said recommendation. The applicant shall revegetate all disturbed areas. Revegetation undertaken from April 1 to October 1 shall include regular watering to ensure adequate growth. A winterization plan shall be provided with project Improvement Plans. It is the applicant's responsibility to assure proper installation and maintenance of erosion control/winterization before, during, and after project construction. Soil stockpiling or borrow areas shall have proper erosion control measures applied for the duration of the construction activity as specified in the Improvement Plans. Provide for erosion control where roadside drainage is off of the pavement, to the satisfaction of the ESD. The applicant shall submit to the ESD a letter of credit or cash deposit in the amount of 110% of an approved engineer's estimate for winterization and permanent erosion control work prior to Improvement Plan approval to guarantee protection against erosion and improper grading practices. Upon the County's acceptance of improvements, and satisfactory completion of a one-year maintenance period, unused portions of said deposit shall be refunded to the project applicant or authorized agent. If, at any time during construction, a field review by County personnel indicates a significant deviation from the proposed grading shown on the Improvement Plans, specifically with regard to slope heights, slope ratios, erosion control, winterization, tree disturbance, and/or pad elevations and configurations, the plans shall be reviewed by the DRC/ESD for a determination of substantial conformance to the project approvals prior to any further work proceeding. Failure of the DRC/ESD to make a determination of substantial conformance may serve as grounds for the revocation/modification of the project approval by the appropriate hearing body.
Impact(s) Mitigated	GEO-4. Will construction of the Project result in changes to native geologic substructures or cause erosion, loss of topsoil, or changes in topography from excavation, grading or filling? HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?
Mitigation Level	Compliance with Placer County Grading and Erosion Control Ordiance
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County

Timing	Prior to Improvement Plan or Final Map approval

GEO-4c. Identify Stockpiling and/or Vehicle Staging Areas on Improvement Plans

Description	Stockpiling and/or vehicle staging areas shall be identified on the Improvement Plans and located as far as practical from existing dwellings and protected resources in the area.
Impact(s) Mitigated	GEO-4. Will construction of the Project result in changes to native geologic substructures or cause erosion, loss of topsoil, or changes in topography from excavation, grading or filling? HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?
Mitigation Level	Identification on Improvement Plans approved by Placer County
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to Improvement Plan or Final Map approval

GEO-4d. Comply with Placer County Blasting Requirements

Description	If blasting is required for the installation of site improvements, the Project Applicant shall comply with applicable County Ordinances related to blasting and use only State-licensed contractors to conduct these operations.
Impact(s) Mitigated	GEO-4. Will construction of the Project result in changes to native geologic substructures or cause erosion, loss of topsoil, or changes in topography from excavation, grading or filling? HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?
Mitigation Level	Conformance to Placer County requirements related to blasting
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	During Construction

GEO-4e. Obtain NPDES Permit

Description	The Project's ground disturbance exceeds one-acre and is subject to the construction stormwater quality permit requirements of the National Pollutant Discharge Elimination System (NPDES) program. The Project Applicant shall obtain such permit

	from Lahontan and shall provide to the Engineering and Surveying Department evidence of a state-issued WDID number or filing of a NOI and fees prior to start of construction.
Impact(s) Mitigated	GEO-4. Will construction of the Project result in changes to native geologic substructures or cause erosion, loss of topsoil, or changes in topography from excavation, grading or filling? HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?
Mitigation Level	Compliance with Lahontan Board Order R6T-2005-0007
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	Lahontan, Placer County
Implementing Entity	HMR
Monitoring Agency	Lahontan, Placer County
Timing	Prior to Construction

GEO-4f. Satisfy the requirements of Section II of the Land Development Manual. (LDM)

Description	The applicant shall prepare and submit Improvement Plans, specifications and cost estimates (per the requirements of Section II of the Land Development Manual [LDM] that are in effect at the time of submittal) to the ESD for review and approval. The plans shall show all conditions for the project as well as pertinent topographical features both on- and off-site. All existing and proposed utilities and easements, on-site and adjacent to the project, which may be affected by planned construction, shall be shown on the plans. All landscaping and irrigation facilities within the public right-of-way (or public easements), or landscaping within sight distance areas at intersections, shall be included in the Improvement Plans. The applicant shall pay plan check and inspection fees. (NOTE: Prior to plan approval, all applicable recording and reproduction cost shall be paid). The cost of the above-noted landscape and irrigation facilities shall be included in the estimates used to determine these fees. It is the applicant's responsibility to obtain all required agency signatures on the plans and to secure department approvals. If the Design/Site Review process and/or DRC review is required as a condition of approval for the project, said review process shall be completed prior to submittal of Improvement Plans. Record drawings shall be prepared and signed by a California Registered Civil Engineer at the applicant's expense and shall be submitted to the ESD prior to acceptance by the County of site improvements. Conceptual landscape plans submitted prior to project approval may require modification during the Improvement Plan process to resolve issues of drainage and traffic safety. Any building permits associated with this phased project shall not be issued until the Improvement Plans for that project phase are approved by the ESD.
Impact(s) Mitigated	GEO-4. Will construction of the Project result in changes to native geologic substructures or cause erosion, loss of topsoil, or changes in topography from excavation, grading or filling? HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?

Mitigation Level	Conformance with Section II of the Placer County LDM
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to Improvement Plan or Final Map approval

GEO-4g. Final Construction Dewatering Plan

Description	The redevelopment in the Project area shall involve excavation in the North and South Base areas. The Revised Soils Hydrologic Scoping and Final Report (Kleinfelder 2010) suggests that groundwater will be intercepted during construction of underground parking facilities. Because groundwater will be intercepted, which is the process of diverting and/or capturing the groundwater flows, dewatering, which is the removal and disposition of the water itself, shall be implemented onsite. The final dewatering plan shall be further developed by the construction contractor based on the final site design of the selected alternative. The construction contractor shall demonstrate that they have a reliable plan for dewatering as well as contingency in case that plan does not function as expected. The contractor shall have demonstrable experience in dewatering operations and evidence of such experience shall be provided to TRPA and the County with the dewatering plan. 1. Dewatering of groundwater shall not be discharged prior to notice to and approval from the TRPA. Once the discharge is permitted, appropriate BMPs shall be implemented to ensure the discharge complies with all permit requirements and regional and watershed specific requirements. 2. The contractor shall be responsible for the coordination of all monitoring and permit compliance for dewatering operations. 3. Interception of groundwater during excavation shall only take place under circumstances falling under TRPA's Code of Ordinances Section 64.7.A.(2) and 64.7.B. 4. Dewatered groundwater discharges shall meet discharge limits set forth in the TRPA Code of Ordinances Section 81.2. Sediment traps consistent with the Handbook of Best Management Practices shall be used to protect infiltration devices from excessive levels of siltation. 5. The contractor shall be responsible for ensuring dewatered groundwater is treated with a dewatering bag or "dirt bag", sediment basin, dewatering tank, or some other treatment method for the removal of sediments, oil and grease, and other constituents prior to discharge. 6. The contractor shall monitor, with grab samples, the dewatered groundwater and ensure that TRPA discharge limits are met prior to discharge to either surface or ground waters. Continuous monitoring shall take place throughout the dewatering process. 7. Dewatering discharges shall not create erosion at the discharge point. There are a number of methods for dewatering intercepted groundwater, from drilling wells upslope to installing sheet piling to constructing temporary or permanent concrete walls with dewatering galleries installed. These decisions shall be made in collaboration with the earthwork contractor chosen to construct the Project and the earthwork contractor shall be responsible for addressing the issue effectively.

	Interception methods are fairly well understood. Interception strategies shall be explored and implemented in parallel with the actual dewatering strategies. Typical approaches to dewatering intercepted groundwater flows during construction shall include, but shall not be limited to the following: irrigation systems, holding tanks, low mountain feed, snowmaking line feed, distribution (sprinkler system), ground infiltration system, full treatment and surface water discharge (this option would require a temporary discharge permit from Lahontan and may require treatments for the removal of sediment, such as settling or baker tanks), groundwater recharge wells, and/or sewer inflows (this option is not typically viable for ongoing dewatering because the Truckee Tahoe Sanitary District typically denies permits for dewatering inflow into their sewer system due to the stress additional inflow puts on their treatment facilities, but shall be considered for an emergency situation). A final plan shall also be submitted to Lahontan, approved and in place prior to excavation and once excavation is underway, the primary plan shall be implemented with alternative plans in queue and implementable within a short window if necessary.
Impact(s) Mitigated	GEO-4. Will construction of the Project result in changes to native geologic substructures or cause erosion, loss of topsoil, or changes in topography from excavation, grading or filling? HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?
Mitigation Level	Comply with TRPA Code Chapter 64; Compliance with Lahontan Board Order R6T-2005-0007
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA, Placer County, Lahontan
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County, Lahontan
Timing	Prior to approval of Improvement Plans for any project phase

HYDRO-1a. Design Water Quality Protection BMPs According to the California Stormwater Quality Association Stormwater BMP Handbooks and TRPA's Handbook of BMPs

Description	Water quality Best Management Practices (BMPs) shall be designed according to the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development / Redevelopment, and/or for Industrial and Commercial, (and/or other similar source as approved by the Engineering and Surveying Department (ESD)). Storm drainage from on- and off-site impervious surfaces (including roads) shall be collected and routed through specially designed catch basins, vegetated swales, vaults, infiltration basins, water quality basins, filters, etc. for entrapment of sediment, debris and oils/greases or other identified pollutants, as approved by the ESD. BMPs shall be designed at a minimum in accordance with the Placer County Guidance Document for Volume and Flow-Based Sizing of Permanent Post-Construction Best Management Practices for Stormwater Quality Protection. Post-development (permanent) BMPs for the project include, but are not limited to: underground water quality treatment vaults, infiltration galleries, sediment basins, bioretention areas and revegetation of disturbed areas. No water quality facility construction shall be permitted within any identified

	wetlands area, floodplain, or right-of-way, except as authorized by project approvals. No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals. All BMPs shall be maintained as required to insure effectiveness. The Project Applicant shall provide for the establishment of vegetation, where specified, by means of proper irrigation. Proof of on-going maintenance, such as contractual evidence, shall be provided to ESD upon request. Maintenance of these facilities shall be provided by the project owners/permittees unless, and until, a County Service Area is created and said facilities are accepted by the County for maintenance. Contractual evidence of a monthly parking lot sweeping and vacuuming, and catch basin cleaning program shall be provided to the ESD upon request. Failure to do so will be grounds for discretionary permit revocation. Prior to Improvement Plan or Final Map approval, easements shall be created and offered for dedication to the County for maintenance and access to these facilities in anticipation of possible County maintenance.
Impact(s) Mitigated	HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?
Mitigation Level	Comply with Handbook requirements
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to acceptance of site improvements

HYDRO-1b. Storm Drain Stenciling

Description	All storm drain inlets and catch basins within the Project area shall be permanently marked/embossed with prohibitive language such as “No Dumping! Flows to Creek” or other language as approved by the Engineering and Surveying Department and/or graphical icons to discourage illegal dumping. Message details, placement, and locations shall be included on the Improvement Plans. ESD-approved signs and prohibitive language and/or graphical icons, which prohibit illegal dumping, shall be posted at public access points along channels and creeks within the project area. The Homeowners’ association is responsible for maintaining the legibility of stamped messages and signs.
Impact(s) Mitigated	HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?
Mitigation Level	Comply with Placer County requirements
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to acceptance of site improvements

HYDRO-1c. Stormwater Routing for Refuse Management

Description	All stormwater runoff shall be diverted around trash storage areas to minimize contact with pollutants. Trash container areas shall be screened or walled to prevent off-site transport of trash by the forces of water or wind. Trash containers shall not be allowed to leak and must remain covered when not in use.
Impact(s) Mitigated	HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?
Mitigation Level	Comply with County requirements
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to acceptance of site improvements

HYDRO-1d. Inspection, Operations, Maintenance and Monitoring Plan for Stormwater Treatment Systems and Permanent BMPs

Description	The Project Applicant shall prepare and implement an Inspection, Operations, Maintenance and Monitoring Plan for Stormwater Treatment Systems and Permanent BMPs. This plan shall comply with TRPA Code of Ordinances Chapter 25 and Chapter 81 and Lahontan's updated WDRs. TRPA, Lahontan, and Placer County shall review the plan prior to issuance of final Project approval. Post-project monitoring shall include post-project BMP effectiveness monitoring and stormwater monitoring as detailed below. <u>Post-Project BMP Effectiveness Monitoring.</u> Revegetation/Landscaping and slope stabilizing measures shall be visually monitored annually for the first five years following construction to assess adequacy and effectiveness of BMPs. Additional BMPs shall be prescribed by the TRPA if existing treatments fail to protect the site from accelerated erosion. A qualified consultant or trained HMR staff (Note: completion of the TRPA contractor certification training is recommended) shall monitor restoration progress. Visual monitoring of the condition and effectiveness of BMPs shall occur before and after storm events, and if necessary, corrective actions shall be taken. The contractor shall be required to maintain the effectiveness of the BMPs until the disturbed areas are stabilized and erosion is no longer a substantial threat. Restoration of disturbed areas shall be in accordance with the Restoration/Landscaping Plan. <u>Post-Project Stormwater Monitoring.</u> Post-project stormwater monitoring shall be performed for comparison with pre-project monitoring results and for determination of compliance with State and TRPA discharge standards. Fine sediment shall be monitored as specified by TRPA and future Lake Tahoe TMDL research directives. Monitoring results shall address the following components: • Compliance of project area runoff with State and TRPA discharge standards; • Stormwater treatment system effectiveness;

	• Permanent BMP effectiveness; • Revegetation/Landscaping effectiveness; • Assessment of performance of strategies outlined in the Stormwater treatment cacluations; and • BMP and Stormwater treatment system maintenance regimes. <u>Miscellaneous Monitoring.</u> Performance of Bio-retention Systems and LID strategies (pervious pavement and pavers, cisterns, heated walk ways) shall be monitored in accordance with requirements and conditions outlined in the TRPA Project Permit. <u>Inspection and Maintenance Program.</u> All stormwater treatment systems and permanent BMPs shall be visually inspected monthly and maintained as necessary to assure optimal performance of systems. A long-term maintenance program shall be developed as based on monitoring results. <u>Reporting.</u> Monitoring results shall be submitted to TRPA in the Post-Project Bi-Annual Monitoring Report. Recommended reporting dates are December 1st to accommodate for winterization of the project area and stormwater quality reporting according to water year (i.e., October 1, 2010 to September 30, 2011 is Water Year 2011) and June 1st during spring runoff. The report shall summarize site conditions, maintenance activities, physical observation on water quality and the degree of sedimentation, if apparent. The report will include 6 months worth of observations and corresponding field measurements and laboratory analytical results. Surface water that is infiltrated onto groundwater shall not exceed the TRPA and State discharge to land treatment limits: • Total Nitrogen as N: 5 mg/L; • Total Phosphorus as P: 1mg/L; • Iron as Fe: 4 mg/L; • Turbidity: 200 NTU; and • Oil and Grease: 40 mg/L. Surface water runoff discharged to Homewood Creek shall not exceed the TRPA surface runoff concentrations stated in Chapter 81 of the TRPA Code of Ordinances and the water quality objectives of the State for receiving waters outlined in the WDRs.
Impact(s) Mitigated	HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?
Mitigation Level	Comply with TRPA Codes and meet discharge standards
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA, Placer County, Lahontan
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase and ongoing

HYDRO-1e. Apply Project Security Fee Towards BMP and Stormwater System Improvements and/or Restoration Projects if Discharge Limits are Not Met

Description	If post-project monitoring determines that TRPA or State discharge standards are exceeded, the TRPA Security Deposit shall be used to implement additional water quality treatment needs in Madden Creek, Quail Lake Creek and Homewood Creek watersheds and portions of Intervening Zone 7000. The Project Applicant and its contractors shall make repairs or improvements to the proposed permanent BMPs, LID areas for bioretention, and stormwater treatment systems to improve performance and effectiveness per TRPA and Lahontan requirements. If the repairs and/or improvements result in compliance with discharge standards, then no additional mitigation is required.
Impact(s) Mitigated	HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?
Mitigation Level	Comply with TRPA Codes and meet discharge standards
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA, Placer County, Lahontan
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Ongoing

HYDRO-1f. Restrict Development within Quail Lake Creek Watershed until Compliance with Project Area TOC

Description	The Project proposes no development or change in existing conditions within this watershed. Based on exceedance of the Quail Lake Creek Project Area TOC, no development within Project area portion of the Quail Lake Creek Watershed shall be permitted until annualized total sediment (T/yr) is reduced to below the Project Area TOC (147 T/yr). The Project Applicant shall identify sediment source control and land coverage removal projects within this watershed that will be completed prior to implementation of capital improvements or other actions that create soil disturbance. The Project Applicant shall monitor the effectiveness of these projects and update the HMR CWE analysis for the Quail Lake Creek watershed based on the results.
Impact(s) Mitigated	HYDRO-1: Will the construction or long-term operations of the Project violate existing waste discharge permit provisions or result in discharges into surface waters (streams, SEZs or Lake Tahoe) so that beneficial uses and water quality standards are not maintained?
Mitigation Level	Comply with CWE Thresholds of Concern
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Ongoing

HYDRO-2a. TRPA Soils Hydrological Approval Conditions

Description	The TRPA soil hydrologic review does not give approval for the BMP design, but rather, evaluates the location and depths of BMPs as currently presented on the Civil Plans. As the Project is not at 100 percent design, it is understood that the design for BMPs may be modified and could potentially require an additional soil hydrologic review at the time of the project application. It is recognized that the project area has site-specific constraints related to the depth of excavations in relationship to groundwater, interception of groundwater by subterranean garages (i.e. underground parking structures) and significant amounts of stormwater and surface water that need to be treated and infiltrated as part of the proposed development. As such, the TRPA Stormwater Management Program staff has indicated that they require the bottom of all stormwater infiltrating features to be at least two (2) feet above the seasonal high water table, which will aid in achieving 'above and beyond' mitigation measures required for this Project as a participant in the CEP. These guidelines have been met under the current proposed design in all areas except "North-1". For this area, or any stormwater infiltrating areas that may have less than two (2) feet of separation to the seasonal high water table, the stormwater being infiltrated must meet TRPA Code of Ordinances Chapter 81 in regard to surface water discharge standards and/or be redesigned to provide the required two (2) feet separation. The final BMP plan to be submitted as part of the project application will be reviewed, and approved, by TRPA Stormwater Management Program staff. The soil hydrologic review gives conceptual approval for the depth (18 inches) and location of bioretention areas as presented on the site plans. This approval is based on the concept that bioretention areas are located over open and infiltrating matrices, but does not apply to bioretenion over closed impermeable pretreatment vaults.
Impact(s) Mitigated	HYDRO-2: Will Project construction or operation alter the existing surface water drainage patterns or cause increased runoff resulting in flooding or stream bank erosion or contribute runoff in rates or volumes that will exceed the capacity of existing or planned storm water drainage systems so that a 20-year, 1-hour storm runoff (approximately one inch per hour) cannot be contained on the site?
Mitigation Level	Comply with TRPA Soils Hydrologic Approval Conditions
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	TRPA
Implementing Entity	HMR
Monitoring Agency	TRPA
Timing	Prior to and during construction

HYDRO-2b. Submit Final Drainage Report– Conformance with Section 5 of the Placer County Land Development Manual and Stormwater Management Manual

Description	The Project Applicant shall prepare and submit with the project Improvement Plans, a Final drainage report for each project phase in conformance with the requirements of Section 5 of the LDM and the Placer County Storm Water Management Manual that are in effect at the time of submittal, to the Engineering and Surveying Department for review and approval. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include: A written text addressing existing conditions, the effects of the improvements, all appropriate calculations, a watershed map, increases in

	downstream flows, proposed on- and off-site improvements and drainage easements to accommodate flows from this project. The report shall identify water quality protection features and methods to be used both during construction and for long-term post-construction water quality protection. "Best Management Practice" (BMP) measures shall be provided to reduce erosion, water quality degradation, and prevent the discharge of pollutants to stormwater to the maximum extent practicable.
Impact(s) Mitigated	HYDRO-2: Will Project construction or operation alter the existing surface water drainage patterns or cause increased runoff resulting in flooding or stream bank erosion or contribute runoff in rates or volumes that will exceed the capacity of existing or planned storm water drainage systems so that a 20-year, 1-hour storm runoff (approximately one inch per hour) cannot be contained on the site?
Mitigation Level	Conformance with Section 5 of the Placer County Land Development Manual and Stormwater Management Manual
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to approval of Improvement Plans for any project phase

HYDRO-2c. Drainage Facilities to Conform to Placer County Stormwater Management Manual

Description	Drainage facilities, for purposes of collecting runoff on individual lots, shall be designed in accordance with the requirements of the County Storm Water Management Manual that are in effect at the time of submittal, and shall be in compliance with applicable stormwater quality standards, to the satisfaction of the Engineering and Surveying Department (ESD). These facilities shall be constructed with subdivision improvements and easements provided as required by ESD. Maintenance of these facilities shall be provided by the Homeowners' Association.
Impact(s) Mitigated	HYDRO-2: Will Project construction or operation alter the existing surface water drainage patterns or cause increased runoff resulting in flooding or stream bank erosion or contribute runoff in rates or volumes that will exceed the capacity of existing or planned storm water drainage systems so that a 20-year, 1-hour storm runoff (approximately one inch per hour) cannot be contained on the site?
Mitigation Level	Conformance with Placer County Stormwater Management Manual
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to acceptance of site improvements

HYDRO-2d. Reduce Stormwater Runoff to Pre-Project Volumes

Description	The Improvement Plan submittal and Drainage Report shall provide details showing that storm water runoff shall be reduced to pre-project conditions through the

	installation of detention facilities. Detention facilities shall be designed in accordance with the requirements of the Placer County Storm Water Management Manual that are in effect at the time of submittal, and to the satisfaction of the Engineering and Surveying Department (ESD). No detention facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals.
Impact(s) Mitigated	HYDRO-2: Will Project construction or operation alter the existing surface water drainage patterns or cause increased runoff resulting in flooding or stream bank erosion or contribute runoff in rates or volumes that will exceed the capacity of existing or planned storm water drainage systems so that a 20-year, 1-hour storm runoff (approximately one inch per hour) cannot be contained on the site?
Mitigation Level	Conformance with Placer County Stormwater Management Manual
Alternative	Alternatives, 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to acceptance of site improvements

HYDRO-2e. Implement the Homewood Creek SEZ Restoration Plan

Description	Should Alternative 4, 5 or 6 be approved as the preferred project alternative, the Project Applicant shall design and submit an SEZ restoration plan to TRPA for review and approval. Because the culvert is associated with County ROW for Tahoe Ski Bowl Way, it is possible that Placer County would participate in a restoration plan. Alternative 4, 5 or 6 shall comply with TRPA (Code of Ordinance Chapter 37) and Placer County setback requirements (General Plan Section 6). The plan shall be based on the final configuration of the South Base area and provide for protection of Homewood Creek within and downstream of the Project area.
Impact(s) Mitigated	HYDRO-2: Will Project construction or operation alter the existing surface water drainage patterns or cause increased runoff resulting in flooding or stream bank erosion or contribute runoff in rates or volumes that will exceed the capacity of existing or planned storm water drainage systems so that a 20-year, 1-hour storm runoff (approximately one inch per hour) cannot be contained on the site?
Mitigation Level	Eliminate degradation of Creek channel from roadway culvert
Alternative	Alternatives 4, 5 and 6
Lead Agency	Placer County, TRPA
Implementing Entity	HMR
Monitoring Agency	Placer County, TRPA
Timing	Prior to acceptance of site improvements

HYDRO-3a. Implement Operation Dewatering Plan/ Implement Engineered Groundwater Mitigations

Description	The operational mitigation measures for groundwater interception for the underground

	parking foundations shall include foundation drains conveying intercepted groundwater to underground galleries for reinjection back into groundwater flows towards Lake Tahoe. Each groundwater reinjection gallery shall be designed to serve a specific area of each underground parking structure that could intercept groundwater and shall be sized to adequately infiltrate no less than 208.5 cubic feet/hour (North-5 and North -6), 48.1 cubic feet/hour (South-3) and 14 cubic feet/hour (South-4). Intercepted groundwater shall be conveyed away from the foundation via stormdrain pipe to the corresponding underground reinjection gallery serving that area of the building. Figure 15-13 illustrates the mitigation approach. The reinjection galleries for intercepted groundwater shall be separate entities from the stormwater treatment infiltration galleries and the distance between the groundwater and stormwater infiltration galleries shall be maximized to minimize potential for mixing.
Impact(s) Mitigated	HYDRO-3. Will Project construction activities or long-term operations result in a substantial degradation of groundwater or result in a substantial change in the quality, quantity, elevation, infiltration, or movement of groundwater?
Mitigation Level	Comply with TRPA Code Chapter 64
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA, Placer County, Lahontan
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase and ongoing

HYDRO-3b. Inspection, Maintenance and Monitoring Plan Groundwater Infiltration Systems for Underground Parking Structures

Description	The Project Applicant shall prepare an Inspection, Operation, Maintenance and Monitoring Plan for the groundwater infiltration systems for the underground parking structures. TRPA, Lahontan, and Placer County shall review the plan prior to issuance of final Project approval. The Plan shall include, but is not limited to the following components: • Introduction; planning and design, sampling objectives and water quality objectives; • Well construction details and/or system sampling access points; • Water level data for existing and new wells; • Groundwater sampling and analysis, sample collection methods, decontamination, sampling frequency, sampling handling, field analysis, laboratory analysis; • Maintenance scheduling; and • Quarterly reporting. Sample results shall be provided to the TRPA on a quarterly basis. The report shall present site conditions, physical observations of groundwater quality and the degrees of sedimentation observed within the underground groundwater infiltration galleries, and include three months worth of observations and corresponding field measurements and laboratory analytical results. Single samples of groundwater shall not exceed the discharge to land treatment water quality objectives at the following concentrations: Total Nitrogen as N of 5 mg/L; Total Phosphorus as P of 1 mg/L; Total Iron as Fe at 4 mg/L; Turbidity at 200 ntu; and Oil and Grease at 40 mg/L.

Impact(s) Mitigated	HYDRO-3. Will Project construction activities or long-term operations result in a substantial degradation of groundwater or result in a substantial change in the quality, quantity, elevation, infiltration, or movement of groundwater?
Mitigation Level	Comply with TRPA Code Chapter 64
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA, Placer County, Lahontan
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase and ongoing

HYDRO-3c. Complete a Water Balance Analysis for the HMR-Operated Well and the TCPUD McKinney Well

Description	The Project Applicant shall prepare a hydrogeologic report for the HMR-operated wells and the TCPUD McKinney well to determine recharge, recovery and storage capacities of the aquifers. The report shall: • Characterize the cone of depression that will result based on maximum proposed consumption, determine if this will result in a gross adjustment of the near static deep groundwater level for this aquifer, • Characterize the zone of influence and determine if the proposed extractions will negatively other source waters; • Identify or characterize the hydrogeologic conditions that impose constraints on Time and Drawdown; • Identify the well efficiency and the expected lifetime; • Determine and disclose what water rights could be potentially influenced; and • Determine the potential impacts towards the Truckee River Operating Agreement (TROA) allocations to the State of California. Lahontan may require the characterization of the subsurface water chemistry to meet the general requirement for drinking water wells even though the water will be used for snowmaking. Should a decline in groundwater levels occur that exceeds seasonal fluctuations and that is attributable to the Project, pumping from the groundwater source shall cease and other supplies of water shall be utilized until groundwater levels return to historic levels.
Impact(s) Mitigated	HYDRO-3. Will Project construction activities or long-term operations result in a substantial degradation of groundwater or result in a substantial change in the quality, quantity, elevation, infiltration, or movement of groundwater? HYDRO-5. Will the Project change the amount of surface water in any water body, substantially reduce the amount of water otherwise available for public water supplies, or be located within 600 feet of a drinking water source?
Mitigation Level	Protect groundwater resources
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA, Placer County, Lahontan
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase and ongoing

HYDRO-4a. Emergency Response and Evacuation Plan

Description	The Project Applicant shall prepare and submit an emergency response and evacuation plan to TRPA, Placer County ESD and the North Tahoe Fire Protection District (NTFPD) for review and approval before construction permits are issued. The plan shall include detailed descriptions of how emergency response and evacuation will occur in the case of a large earthquake and potential seiche or the 100-yr event. Emergency response and evacuation measures shall address the requirement of Placer County Local Hazard Mitigation Plan and at a minimum identifies steps that help avoid, reduce, alleviate, and mitigate disaster damages and potential loss of life.
Impact(s) Mitigated	HYDRO-4. Will the Project alter the course or flow of the 100-year floodwaters or expose people or structures to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches?
Mitigation Level	Comply with Placer County Local Hazard Plan requirements
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County, NTFPD
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase and ongoing

HYDRO-4b. Comply with Placer County Stormwater Management Manual Section VI

Description	The Project Applicant shall show the limits of the future, unmitigated, fully developed, 100-year flood plain (after grading) for Homewood (Ellis) Creek on the Improvement Plans and Informational Sheet(s) filed with the Final Map and designate same as a building setback line unless greater setbacks are required by other project conditions.
Impact(s) Mitigated	HYDRO-4. Will the Project alter the course or flow of the 100-year floodwaters or expose people or structures to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches?
Mitigation Level	Compliance with Placer County Stormwater Management Manual Section VI
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to acceptance of site improvements

HYDRO-4c. Comply with Placer County Flood Damage Prevention Ordinance

Description	To comply with Placer County Flood Damage Prevention Ordinance, Article 15.52, specifically 15.52.170 C.1 Elevation and Floodproofing, the Project Applicant shall show finished structure pad elevations 2 feet above the 100-year flood plain line for South Base buildings A and B on the Improvement Plans and Informational Sheet filed with the Final Map. Pad elevations shall be certified by a California registered civil engineer or licensed land surveyor and submitted to the Engineering and Surveying Department. This certification shall be completed prior to construction of the

	foundation or at the completion of final grading, whichever comes first. No construction is allowed until this certification has been received by the ESD and approved by the Flood Plain Manager. Benchmark elevation and location shall be shown on the Improvement Plans and Informational Sheet to the satisfaction of DRC.
Impact(s) Mitigated	HYDRO-4. Will the Project alter the course or flow of the 100-year floodwaters or expose people or structures to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches?
Mitigation Level	Compliance with Placer County Flood Damage Prevention Ordinance
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to acceptance of site improvements

HYDRO-5. Water Use/Water Rights Monitoring Program/Install meters at Points of Diversions and Application or Use

Description	To ensure that water from HMR's various supplies is used in appropriate quantities and locations, a Water Use/Water Rights monitoring program shall be implemented. The goal of the program shall be to measure or estimate the quantity of water supplied by each source and document the location at which the water is used or applied. Meters shall be installed to monitor the monthly pumpage from individual wells. Additionally, the monitoring shall include monthly measurements of groundwater levels in the existing and proposed wells. With the existing and proposed water supply monitoring facilities, determination of the quantity of water supplied to Homewood from each water supply source and the points of application or use of this water shall occur. By knowing the use restrictions on water from each source, the maximum water use permitted in any area shall be known, and thus water uses shall be limited to the maximum permitted. The Project Applicant shall prepare an annual report indicating the quantity of water used from each of its sources and the maximum entitlement from each of its sources. The report shall be provided to TRPA and Placer County for use in ensuring compliance with existing regulations.
Impact(s) Mitigated	HYDRO-5. Will the Project change the amount of surface water in any water body, substantially reduce the amount of water otherwise available for public water supplies, or be located within 600 feet of a drinking water source?
Mitigation Level	Comply with Water Right allocations
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase and ongoing

PSU-1a. Final Water Supply Assessment and Infrastructure

Description	The Project Applicant shall prepare a final WSA as required under SB 610 to identify the quantity and source of domestic and raw water to serve the Project. The WSA shall demonstrate that Project infrastructure for water delivery volume, rate, pressure, and schedule meets the snowmaking demand of HMR. The Project may obtain water from a combination of TCPUD, MCWC, and on-site groundwater wells and surface water. HMR owns an existing right to divert 673 gallons per minute (1.5 cubic feet per second) from streams on-site. With the water supply source identified, the Project Applicant shall determine the location and designs of infrastructure necessary to meet peak demand and overall quantity in the Project area for domestic use and snowmaking. The Project Applicant will be responsible for construction of infrastructure to connect to the established water system. TCPUD has established connection fees consisting of two components: 1) a Water and Sewer Connection Fee (Ordinance 259a), and 2) and User Fees and Service Fees (Ordinance 295b). These fees provide for the water system improvements necessary to accommodate additional development in the TCPUD service area. The Project will be required to pay both components of this new connection fee. MCWC has similar requirements for connection and service fees, and the applicant will be required to construct the appropriate infrastructure to utilize MCWC water supply (Marr 2009). During the design phase of new water supply infrastructure, the lead and responsible agencies will determine if additional environmental review will be required for the construction and operation of the new facilities.
Impact(s) Mitigated	HYDRO-5. Will the Project change the amount of surface water in any water body, substantially reduce the amount of water otherwise available for public water supplies, or be located within 600 feet of a drinking water source? PSU-1. Will the Project increase demand or exacerbate peak period service demand of fire, law enforcement, schools, government services, water, sewage treatment and disposal, communication systems, solid waste, gas, or electric to such a degree that service standards and objectives cannot be maintained or new facilities are needed that could cause significant environmental effects?
Mitigation Level	Comply with SB 610
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County, TCPUD, MCWC
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase

PSU-1b. Coordination of Construction Waste Disposal with ERSL

Description	To reduce impacts to the existing solid waste handling capacity, the Project Applicant shall coordinate with the Eastern Regional Sanitary Landfill, Inc. (ERSL) to ensure that sufficient capacity to handle demolition and construction waste is available. Coordinating waste volume with handling capacity during demolition and construction will reduce impacts to solid waste services to less than significant.
Impact(s) Mitigated	PSU-1. Will the Project increase demand or exacerbate peak period service demand of

	fire, law enforcement, schools, government services, water, sewage treatment and disposal, communication systems, solid waste, gas, or electric to such a degree that service standards and objectives cannot be maintained or new facilities are needed that could cause significant environmental effects?
Mitigation Level	Ensure MRF capacity is not exceeded
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to acceptance of site improvements

PSU-1c. Payment of Development Impact Fee to Placer County Sheriff's Department.

Description	Based on the Alternative selected, the Project Applicant shall consult with the PCSD to develop an appropriate fair share development impact fee to offset the cost of 1.0 FTE PCSD sheriff deputy per 1,000 new residents. Payment of the impact fee is expected to go towards upgrading equipment or facilities, increasing staff, or otherwise improving response times in the Project vicinity.
Impact(s) Mitigated	PSU-1. Will the Project increase demand or exacerbate peak period service demand of fire, law enforcement, schools, government services, water, sewage treatment and disposal, communication systems, solid waste, gas, or electric to such a degree that service standards and objectives cannot be maintained or new facilities are needed that could cause significant environmental effects?
Mitigation Level	Comply with Placer County Sheriff's Department Impact Fees
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County, PCSD
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase

PS-1. NTFPD Design Approval and Annexation

Description	Prior to issuing Building Permits for the Project, Placer County shall require the Project Applicant to pay appropriate fair share development impact fees for Project review and to maintain existing levels of fire protection service in the NTFPD service area. The Project Applicant shall be required to post a bond to ensure that appropriate mitigation measures are completed and in place during construction and implemented for project operation. The NTFPD shall review and approve building materials and designs, fire protection systems in buildings, landscaping, fire flows to hydrants and the snowmaking system, emergency vehicle access routes, and vegetation treatments in the Project area. Prior to occupancy, the NTFPD shall annex the Project area (subject to a LAFCO process) to provide for an increased level of fire protection. The NTFPD shall enter into mutual aid agreements for wildfire suppression with the USFS LTBMU and Calfire, and coordinate with these agencies on developing and implementing wildland fuel reduction measures as needed in the Project area. NTFPD will have the responsibility and enhanced capability to control fire dangers and respond to emergencies over the entirety of the HMR Project area.

Impact(s) Mitigated	PS-1. Will the Project expose people or structures to a significant risk or loss, injury or death involving fire hazards, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands?
Mitigation Level	Comply with Placer County Development Impact Fees
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County, NTFPD
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase

PS-2. Ensure Emergency Access During Construction and Operation

Description	The Project Applicant shall prepare and submit an emergency access plan to TRPA, Placer County Engineering and Surveying Department (ESD), PCSD, and the NTFPD for review and approval before construction permits are issued. The plan shall include detailed descriptions of how emergency access would be maintained during Project construction. Emergency access measures are expected to include the following: • Phasing construction activities to provide continual access to emergency vehicles during construction; • Backfilling trenches and/or placing metal plates over the trenches at the end of each workday; • Scheduling deliveries and truck trips during off-peak hours; • Using or developing alternate access routes as needed; and • Notifying the PCSD and the NTFPD of construction activities and providing these agencies with a copy of the emergency access plan. Prior to issuing Building Permits for the Project, Placer County shall require the Project Applicant to pay appropriate fair share development impact fees for NTFPD review and approval of emergency vehicle access, circulation patterns, and evacuation routes. The Project shall incorporate designs, maintenance measures, and alternative emergency access routes as determined necessary by the NTFPD. The Project Applicant shall be required to post a bond to ensure that appropriate mitigation measures are completed and in place during construction and implemented for project operation.
Impact(s) Mitigated	PS-2. Will the Project result in an interference with emergency response plans or emergency evacuation plans?
Mitigation Level	Maintain emergency access during construction
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County, NTFPD
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase

PS-3. Implement Blast Management Techniques to Reduce Adverse Effects

Description	Prior to any construction blasting, the Project Applicant shall prepare and submit a

	blasting plan to the Placer County ESD and the NTFPD for review and approval. The Project shall incorporate blast management techniques to minimize risks to life and property in the Project area and vicinity. These measures may include, but are not limited to, the following: 1. Blasting shall be allowed only on weekdays from 10:00 AM to 4:00 PM. Exceptions are allowed if it can be shown that construction beyond these times is necessary to meet other regulatory deadlines or to alleviate safety hazards. 2. To the greatest extent feasible, blasting area shall occur prior to the occupancy of structures. 3. In areas of controlled blasting, the contractor shall: • Ensure that blasting of rock shall be conducted under the guidance of a qualified blasting consultant. • Give 30-day advance and 5-day advance written notices to residences, businesses and utility owners within 0.5 mile from the controlled blasting area; • Inspect structures within 300 feet of the blast site no more than two weeks prior to commencement of controlled blasting to document existing conditions of the structures; • Conduct post-blasting inspections of nearby structures and document any blasting-related impacts. If impacts occurred, develop remediation measures in consultation with ESD; • Use best available technology, such as blast mats, emplacing overburden, modifying shot timing, or other techniques to minimize noise generated by blasting; and, • Require personnel in the controlled blasting area to wear ear, eye, head, and other appropriate protection during blasting excavation activities.
Impact(s) Mitigated	PS-3. Will the Project involve the use of explosives for trenching?
Mitigation Level	Minimize risks to persons and property
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County, NTFPD
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase

PS-5. Construction and Design Review by the Placer Mosquito and Vector Control District

Description	Prior to approval of Improvement Plans for any phase of the Project, Placer County shall require the Project Applicant to consult with the Placer Mosquito and Vector Control District to review and approve construction plans. If the District determines that the Project would create new temporary or permanent mosquito breeding habitats during construction or operation, the District shall recommend design modifications and BMPs, if needed. In addition, the Project Applicant shall provide access to District technicians to the Project area to inspect and treat breeding habitats as necessary to reduce risks to public health.
Impact(s) Mitigated	PS-5. Does the Project have the potential to encounter contaminated soils or expose workers or the public to health hazards, including those from a known hazardous waste

	site?
Mitigation Level	Maintain emergency access during construction
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	Placer County Mosquito and Vector Control District
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to acceptance of site improvements

REC-1a. Beach Access Maintenance Funding

Description	The Project Applicant shall work with Placer County to develop a Zone of Benefit, which is a geographic area formed under Placer County Service Area law to provide extended services not already being provided, or a similar mechanism to fund maintenance as a result of the Project. Funding shall cover the cost of staff time maintaining the access points, maintenance materials, and, if a Zone of Benefit is established, administration fees. The fee shall be established through an engineer's report prepared by the applicant at the applicant's expense and approved by the County or as otherwise prescribed by law. The Zone of Benefit shall include cost of living adjustments.
Impact(s) Mitigated	REC-1. Will the Project result in a decrease or loss of public access to any lake, waterway, or public lands or decrease in the quality of a recreational experience?
Mitigation Level	Maintain quality of recreational resources
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase

REC-1b. Maintain or Enhance Public Access to Public Lands

Description	The Project Applicant shall consult with the TRPA and public land managers in the Project vicinity, including the LTBMU and TCPUD, to select one or more corridors for a public access easement and recreational trail (pedestrian and/or mountain bike accessible) through the HMR area to adjacent public lands. Such easements shall be permanent and recorded along with the subdivision map, and be located at appropriate site(s) to enable safe and efficient ingress and egress from the public lands while minimizing potential for conflict with private property owners. In lieu of an easement through HMR subdivision lands, the Project Applicant may consult with the TRPA, TCPUD, and LTBMU to identify an alternative site to enhance public access to recreation opportunities on public lands. The access point shall be in the vicinity of Homewood, and provide a similar or greater level of access to recreation opportunities on public lands as existing trails in the Project area. Access enhancements may include, but are not limited to, actions such as easement acquisition, trail development, road or trail improvements, and development of trailhead facilities (e.g., parking, drinking water, restrooms, signage).
Impact(s) Mitigated	REC-1. Will the Project result in a decrease or loss of public access to any lake,

	waterway, or public lands or decrease in the quality of a recreational experience?
Mitigation Level	Maintain access to public lands
Alternative	Alternative 4
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase

REC-3. Provide On-site Recreational Facilities and Park Fees to Placer County; Operate Shuttle Service to State Parks

Description	To mitigate for the increased demand on recreation facilities, the Project shall develop and dedicate to the TCPUD a public park consistent with the park needs of the community (e.g., 5 acres of improved park and 5 acres of open space per 1,000 new residents). Details of recreation facilities and timing of delivery shall be established through a development agreement with Placer County. For any public recreation facilities provided in conjunction with this project, including parks and trails, maintenance funding shall be provided through the creation of a Zone of benefit (or similar mechanism). The fee shall be established through an engineer's report prepared by the applicant at the applicant's expense and approved by the County or as otherwise prescribed by law. The Zone of Benefit shall include cost of living adjustments. The Project may provide for new or enhanced recreation facilities with an alternative method as provided under Placer County Code. Recreational alternatives may include, but are not limited to the following as approved by the County: • Create commonly owned, on-site park and recreational improvements and/or as a credit toward a portion of the recreation fees, as deemed appropriate by the Planning Commission; • Pay a fee equivalent to the value of the park and recreation improved land and park improvements to provide public parks and recreation facilities in the vicinity of the planned development. If the County wishes to collect such fees, the fee agreement shall be established through a development agreement between HMR and Placer County. • Provision of public beach front property, access rights, and/or developed public beach access facilities conveyed to an appropriate public entity. • The forgoing may be provided in whole or combination in order to fully mitigate recreational impacts in accordance with Placer County Code Sections 15.34.010, 16.08.100, and 17.54.100(D). To reduce impacts on parking facilities at nearby State Parks while enhancing public access to the State Park system, the Proposed Project (Alternative 1) and Alternatives 3, 5, and 6 shall institute an on-call van service available to HMR residents, guests and the general public from Memorial Day Weekend through Labor Day to provide alternative transit service to Ed Z'berg Sugar Pine Point and D.L. Bliss/Emerald Bay State Parks. The HMR on-call van service will supplement existing public transit systems and reduce the reliance of private automobile usage for HMR residents, guests, and other nearby residents. HMR may charge a nominal fee to use the shuttle van service and may advertise the service to local residents and visitors of other developments. The use of the HMR on-call van service will reduce the number of private automobiles used to access the State Parks during peak summer months,

	thereby maintaining access to these parks for other visitors to the Lake Tahoe Basin.
Impact(s) Mitigated	REC-3. Will the Project result in the need to construct new recreational facilities or expansion of existing facilities?
Mitigation Level	Comply with Placer County Codes
Alternative	Alternatives 1, 3, 4, 5 and 6
Lead Agency	TRPA, Placer County
Implementing Entity	HMR
Monitoring Agency	TRPA, Placer County
Timing	Prior to approval of Improvement Plans for any project phase

CC-C1. Document and Verify Implementation of the Project GHG Reduction Commitments

Description	The project applicant shall document and verify the project commitments outlined in Table 19-25 have been incorporated into the final project design. Copies of the pre-certification plan (Stage 2 in the LEED-ND process) shall be provided to PCAPCD and TRPA. Once the project is complete, the final LEED-ND certification that verifies the north base has achieved all of the prerequisites and credits required for Gold certification shall be submitted to the air districts.
Impact(s) Mitigated	CC-C1. Will the Project Generate GHG Emissions, Either Directly or Indirectly, that may Have a Significant Impact on the Environment? CC-C2. Will the Project Conflict with any Applicable Plan, Policy or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of GHGs?
Mitigation Level	Reduce Contribution to Greenhouse Gas Emissions
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to acceptance of site improvements and ongoing

CC-C2. Implement Project Design Features to Further Reduce Project Contribution to Climate Change

Description	A recent report by the California Attorney General's (AG) office, *The California Environmental Quality Act: Addressing Global Warming at the Local Agency Level*, identifies various example measures to reduce GHG emissions at the project level (State of California Department of Justice 2008). The following Project design features were compiled from the California AG's Office report and are intended to provide additional strategies that could be incorporated into HMR Master Plan, especially at the South Base, to further reduce GHG emissions. Note that majority of the AG's strategies have been removed from the list below as they overlapped with actions already committed to by the Project Applicant (Table 19-25), or are inapplicable to the Project because they address emissions from different types of projects. The final project design shall incorporate the following applicable AG measures. A

	standard note indicating these requirements will be included on building plans approved in association with this project shall be included on building permits. Energy Efficiency • Use solar heating, automatic covers, and efficient pumps and motors for pools and spas. Renewable Energy • Install solar or wind power systems and solar hot water heaters. Educate consumers about existing incentives. • Install solar panels on carports and over parking areas. Water Conservation and Efficiency • Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls. • Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff. • Restrict the use of water for cleaning outdoor surfaces and vehicles. • Provide education about water conservation and available programs and incentives. Solid Waste Measures • Provide education and publicity about reducing waste and available recycling services. Transportation and Motor Vehicles • Limit idling time for commercial vehicles, including delivery and construction vehicles. • Use low or zero-emission vehicles, including construction vehicles. • Increase the cost of driving and parking private vehicles by, e.g., imposing tolls and parking fees. • Institute a low-carbon fuel vehicle incentive program. • Provide information on options for individuals and businesses to reduce transportation-related emissions. Provide education and information about public transportation.
Impact(s) Mitigated	CC-C1. Will the Project Generate GHG Emissions, Either Directly or Indirectly, that may Have a Significant Impact on the Environment? CC-C2. Will the Project Conflict with any Applicable Plan, Policy or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of GHGs?
Mitigation Level	Reduce Contribution to Greenhouse Gas Emissions
Alternative	Alternatives 1, 3, 5 and 6
Lead Agency	Placer County
Implementing Entity	HMR
Monitoring Agency	Placer County
Timing	Prior to acceptance of site improvements and ongoing

22.0 LEAD AGENCY CONTACTS AND PREPARERS

22.1 LEAD AGENCY CONTACTS

Tahoe Regional Planning Agency

David Landry, Project Manager, Senior Planner

Jerry Wells, Director, Special Projects

Heather Beckman, Senior Planner, Land Capability Program

Bridget Cornell, Senior Planner, Transportation

Erik Larson, Senior Environmental Specialist, Storm Water Management Program

Jeff Cowen, Community Liaison

Pat Dobbs, Associate Planner

Placer County

Mike Wells, Environmental Coordinator

Allen Breuch, Supervising Planner

Rebecca Taber, Engineering and Surveying Department

Richard Moorehead, Department of Public Works

Mohan Ganapathy, Environmental Health Services

Tom Thompson, Air Pollution Control District

Andrew Darrow, Flood Control District

Andy Fisher, Parks, Facility Services

Christina Hanson, Solid Waste, Facility Services

22.2 APPLICANT CONTACT

David Tirman, Executive VP, JMA Ventures, LLC (Homewood Village Resorts, LLC)

22.3 LIST OF PREPARERS

Hauge Brueck Associates

Rob Brueck, Project Manager	Land Use, Scenic Resources, and Recreation
Garth Alling	Biological Resources
Melanie Greene	Hydrology and Water Quality, Geology and Earth Resources
Christy Consolini	Socioeconomics, Population and Housing, and Public Services and Utilities
Trevor Burwell, Ph.D.	Public Services and Utilities and Hazards

Fehr & Peers Associates

Katy Cole, Project Manager	Transportation and Air Quality
Marissa Harned	Transportation and Air Quality

ICF International

Shannon Hatcher, Project Manager	Noise
Laura Yoon, Specialist	Air Quality and Climate Change
Lindsay Christensen	Noise

Foothill Resources

Judith Marvin, Principal	Cultural and Historic Resources
Terry Brejla	Historic Resources

Individuals

Susan Lindstrom	Cultural Resources

TAHOE REGIONAL PLANNING AGENCY
P.O. Box 5310
Stateline, Nevada 89449-5310
Phone: (775) 588-4547
www.trpa.org

COUNTY OF PLACER – Comm. Dev. Resource Agency
3091 County Center Drive, Suite 190
Auburn, CA 95603
Phone: (530) 745-3132
www.placer.ca.gov/planning

This notice is being issued jointly by the County of Placer, California (Placer County) and the Tahoe Regional Planning Agency (TRPA) and meets CEQA and TRPA noticing requirements for a Notice of Preparation.

NOTICE OF PREPARATION

To: California State Clearinghouse
Nevada State Clearinghouse
Responsible and Trustee Agencies
Interested Parties and Organizations
Affected Property Owners (within 300 feet of the proposed Homewood Mountain Resort boundaries)

Subject: Notice of Preparation of a Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) for the Homewood Mountain Resort Master Plan Project, 5154 West Lake Boulevard, Placer County, Homewood, California.

Lead Agencies:

Tahoe Regional Planning Agency
P.O. Box 5310
128 Market Street
Stateline, NV 89448
Contact: David Landry, Project Manager
Phone: (775) 588-4547, ext. 214
Fax: (775) 588-4527
Email: dlandry@trpa.org

County of Placer
Community Development Resource Agency
Environmental Coordination Services
3091 County Center Drive, Suite 190
Auburn, CA 95603
Contact: Maywan Krach, Community Development Technician
Phone: (530) 745-3132
Fax: (530) 745-3003
Email: cdraecs@placer.ca.gov

Project Title: Homewood Mountain Resort Master Plan (HMR Master Plan)

Project Applicant: Homewood Village Resorts, LLC

Public Scoping:

The County of Placer (Placer County) and the Tahoe Regional Planning Agency (TRPA) are preparing a joint EIR/EIS to inform agency decision makers about the potential environmental effects of the proposed HMR Master Plan. This joint document will serve as an EIR prepared by the County of Placer pursuant to the California Environmental Quality Act (CEQA) and an EIS prepared by TRPA pursuant to its Compact and Chapter 5 of the Code of Ordinances. This notice meets the CEQA and TRPA noticing requirements

for a Notice of Preparation (NOP). The purpose of this NOP is to inform agencies and the general public that this environmental document is being prepared for this project and to invite specific comments on its scope and content.

The views of interested persons, organizations, and agencies as to the scope and content of the information to be included and analyzed in the EIR/EIS are requested. Agencies should comment on the elements of the environmental information that are relevant to their statutory responsibilities in connection with the proposed project. The project description, location, alternatives to be evaluated in the EIR/EIS, and potential environmental effects of the proposed project and alternatives (to the extent known) are provided below and contained in Attachment A, *Initial Study and Checklist.*

In compliance with the time limits mandated by TRPA and CEQA, responses should be sent at the earliest possible date, but not later than by **October 2, 2008** to the TRPA or Placer County contact person listed above. If you represent a public agency, private firm or other entity, please indicate a contact person on your response. Duplicate responses to both lead agencies are not required.

In addition to the opportunity to submit written comments, public scoping meetings are being conducted to provide an opportunity to learn more about the proposed project and to express oral comments about the content of the EIR/EIS. The scoping meetings will be held at the following times and locations:

Wednesday, September 10, 2008
Meeting Begins at 9:30 AM
TRPA Advisory Planning Commission
TRPA Board Rooms
128 Market Street
Stateline, NV 89449

Tuesday, September 23, 2008
4:00 PM to 6:00 PM
Public Scoping Workshop
Granlibakken Resort
725 Granlibakken Road
Tahoe City, CA 96145

Signature:_____ **Date:** August 29, 2008

David Landry, Environmental Review Services, TRPA

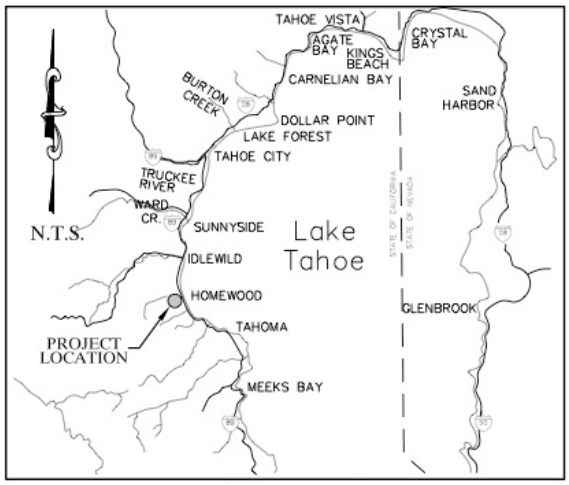
Signature:_____ **Date:** August 28, 2008

Gina Langford, Community Development Resource Agency, Environmental Coordination, Placer County

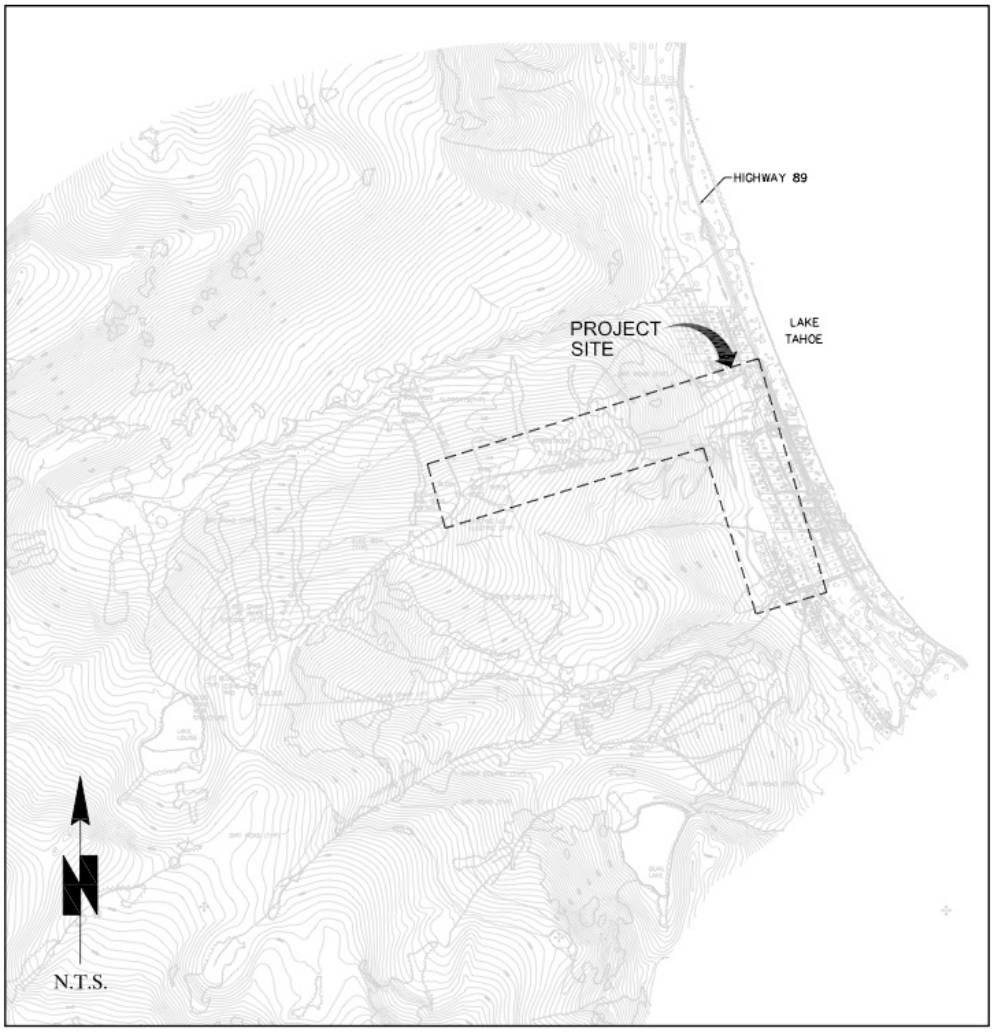
Summary: Homewood Village Resorts, LLC seeks the study and approval of the HMR Master Plan in order to develop and upgrade a mixed-use base area to the north, a residential base area to the south, and a mid-mountain lodge and support facilities. The HMR Master Plan is a mixed-use project developed under the guidelines included in TRPA Community Enhancement Program, August 2007. During the past several years, Homewood Village Resorts, LLC held a number of workshops with residents of the West Shore communities, homeowner's associations, and civil organizations with over 1,000 persons participating and providing input to the development of the HMR Master Plan concept. Additionally, Homewood Village Resorts, LLC met with TRPA and Placer County staff to discuss the concept and incorporate place-based planning and visioning input received during the preparation of TRPA's Regional Plan Update.

Project Location: The 1,200-acre HMR Master Plan area lies in the Tahoe region of the Sierra Nevada Mountains west of Lake Tahoe and is located approximately six miles south of Tahoe City within Placer County, California. The HMR Master Plan area is bound by State Route (SR) 89 and Lake Tahoe to the east, Ellis Peak to the southwest, and Blackwood Ridge to the north. The project area is typically accessed via Interstate 80 to West Lake Boulevard (SR 89). The TRPA assessor parcel numbers for the proposed project include: 097-060-024, 097-140-003, 097-140-033 and 097-130-034. Figure 1 illustrates the extent of the project location.

Project Location Map **Figure 1**



VICINITY MAP



PROJECT OBJECTIVES

The HMR Master Plan has been developed to optimize the quality of the existing winter ski experience and improve the year-round use of the site while responding to changes in technology, market trends and user preferences.

The overall density of the proposed HMR Master Plan is guided by three principles or objectives that developed as a result of extensive input from the West Shore communities. These principles include:

- Consistency with the scale and character of Homewood, California;
- Enhance the lifestyle and property values of west shore residents; and
- Generate sufficient revenues to support the proposed environmental and fire safety improvements and ensure the continued viability of the ski operations.

DETAILED PROJECT DESCRIPTION

The HMR Master Plan is a conceptual plan to redevelop a mixed-use base area to the north, a residential base area to the south, and a mid-mountain lodge and beginner ski area. The proposed project is shown on the mapping in Attachment B and includes the following:

North Base Area. The approximately 18-acre north base area will include up to 16 residential condominiums, up to 40 fractional ownership units, up to 30 penthouse condominium units (upper floors of the hotel), and up to 75 traditional hotel rooms. Additionally, up to 40 two-bedroom for sale condominium/hotel units (up to 20 of which will have one-room lock-offs), and up to 25,000 square feet of commercial floor space and up to 12 workforce housing units will be requested. An approximately 28,000 square foot base mountain facility will replace existing day skier services and will include food and beverage service, adult and children's ski school services, rental, shop, locker facilities, restrooms, first aid, and mountain administration and operations offices.

There will be approximately 810 parking spaces provided at the North Base, including approximately 300 day use parking spaces in a three-level parking structure, approximately 60 limited surface parking spaces at the retail and skier drop off area, and around 450 underground parking spaces directly below the building foot print of the hotel and skier services facility. The commercial floor space and workforce housing are designed to front the residential neighborhood and a day skier parking structure.

The up to 75 room hotel/lodge will be a high quality boutique-style hotel, coupled with high level amenities to attract guests. The boutique-style hotel rooms will be combined with up to 40 proposed two-

bedroom condominium/hotel units (up to 20 with one-room lock-offs). The condominium/hotel units will be individually owned and owners will be offered full services.

The top floor of the hotel/lodge building will include approximately 30 individually owned, penthouse condominium units. The lodge will also include a full service restaurant and a spa and fitness facility. In addition to the lodge building, another 16 residential condominiums and up to 40 fractional ownership units will be spread between 1, 2 and 3-story buildings throughout the north base. Some of these units will be located in mixed-use buildings above the village retail space.

Also proposed are 12 workforce housing apartments with two bedrooms each with the ability to sleep up to four employees in each apartment unit.

The north base proposal has been accepted into and will be designed under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) for Neighborhood Pilot Program.

South Base Area. The approximately 6-acre south base area will include up to 99 residential condominiums. The residential condominiums will be spread throughout the south base area in four buildings that will not exceed three stories. The residential units will replace the current children's facilities, ski school and day lodge buildings. Additionally, a rubber tire vehicle maintenance facility will replace the existing full vehicle shop/maintenance facility with all snow based equipment being relocated to a new mid-mountain located facility.

All existing South Base day-skier access will be relocated to the North Base to reinforce the sense of a neighborhood residential area. There will be up to 177 underground parking spaces located directly below the residential footprints, which utilizes the excavation required for the building foundations and allows for more pervious landscape surfaces around the buildings in lieu of surface parking.

The south base will be transformed into a mini village to serve existing area residents and new homeowners and although not part of the LEED pilot program will be designed using the LEED criteria as a template. During peak seasons, the area will include a restaurant in one of the residential buildings that will also be restricted to south base residents.

Between North and South Base Areas. Above Sacramento Road there is a 2.5-acre Planned Development lot where 11 single-family building envelopes will be developed by Homewood Village Resorts, LLC. The street will terminate at the single-family area and will be used by only the seven existing homes and the 11 new residents.

Mid-Mountain: The mid-mountain will include: a new approximately 15,000 square foot day-use lodge with a gondola terminal; a new learn to ski lift; a food & beverage facility with outdoor dining; small sundry outlet; and an outdoor swimming facility for use during the summer months. The new mid-mountain lodge replaces the white tent structure and the existing concrete foundation located near the mid-mountain. As part of the new development, the existing composting toilet/restroom will be removed and replaced with connection to public sewer system as required by Placer County Health and Human Services Department. The snow based vehicle shop/maintenance facility (coverage relocated from the south base area) will be relocated to the mid-mountain. Two water storage tanks will also be located at mid-mountain above the vehicle shop/maintenance facility.

Accessory buildings. Several small accessory buildings will be associated with snowmaking operations (e.g., new/updated pump houses) and micro-hydro generation. There will be retaining walls and slope stabilization associated with various buildings. All buildings are designed to minimize cut and fill slopes and overall impacts.

Roads. On-site roads that are not decommissioned and restored will be used for mountain operations during summer. The private extension of Tahoe Ski Bowl Way may be used year round. Off-site roads to be evaluated for improvements include SR89, Silver, Fawn, Sacramento, and Tahoe Ski Bowl Way. Per County standards, roadways plans shall include appropriate street improvements (e.g., existing pavement limits and proposed), existing and proposed right-of-way, and any necessary measures (e.g., drainage facilities, cut and fill slopes, street cross sections)

Utilities. Power lines (32 KV or less) will be installed underground within the project area and along the SR 89 corridor. An overhead power utility corridor currently exists, and will be utilized for future sub-surface placement of electric power, in collaboration with Sierra Pacific Power Company. HMR will participate in the funding for planning and construction of the sub-surface electric lines within the proposed development boundary.

Linkages, etc. The project will integrate a TCPUD bike path into the North Base area. A proposed 8-passenger gondola will bring guests up to the mid-mountain area. The existing TART stops will be furnished with shelters, and proposed dial-a-ride, shuttle, and water taxi services will expand alternative transportation options to reduce vehicle miles traveled (VMTs). Offsite improvements necessary to mitigate identified impacts, if any, will also be included in the environmental analysis.

People at One Time (PAOT). TRPA requires an allocation of PAOTs for expansion of ski areas that include increased uphill lift capacity. At present, HMR does not expect to increase uphill lift capacity.

However, as options for transporting skiers to and around the mountain are evaluated, it may be necessary to increase uphill capacity to improve skier flow on the mountain. Should increased lift capacity be proposed, a PAOT allocation would be required for the Master Plan.

Additional Recreation. A new outdoor amphitheater is proposed for hosting outdoor concert events and will serve as the permanent home of the Lake Tahoe Music Festival. A cross-country ski connection, which is an extension of the old Olympic course, is proposed. Other recreational opportunities include existing downhill skiing and snowboarding, fishing, and walking trails. Proposed recreation includes ice skating, a community swimming pool, biking, and an antique miniature golf course during the summer months where the ice pond is located.

Restoration and Water Quality. Water quality improvements will be coordinated with Caltrans water quality improvements and Placer County Homewood Erosion Control Project to treat runoff from SR 89, local streets, and HMR. HMR is exploring the potential for reuse of this treated water. Homewood creek, which is currently collected and piped under the north-south extension of Tahoe Ski Bowl Way will be day-lighted and riparian habitat restored. The current conceptual plan includes removal of the culvert, widening of the overall stream cross-section and increasing flow length through incorporation of additional meanders within the stream channel. A bridge will be used to cross the stream while allowing for maximum stream function. Native vegetation will be used exclusively and will mimic the species composition currently in place in the undisturbed portions of the creek.

Up to 500,000 square feet of existing coverage is planned to receive BMP retrofits and water quality improvements. State grant monies in the amount of $650,000 have been awarded to Homewood to study potential mitigation measures for reducing sediment runoff in the Homewood watersheds. The monies will be used to continue the on-mountain restoration and revegetation projects. Approximately 50,000 square feet of restoration and revegetation work is planned for the summer of 2008.

Alternative Transportation Plan. The Alternative Transportation Plan, one of a series of transportation strategies, is planned to include the year-round, winter and summer program elements. These elements are listed below.

Year-Round

- Extension of West Shore Bike Trail
- Employee Shuttle Bus
- Employee Public Bus Transit Fares
- Scheduled Shuttle Service

- North Base-South Base Shuttle Service
- Electric/Hybrid Car Rental Service
- Free "Bicycle Share" Service

Winter Program

- Winter West shore Dial-a-Ride Service
- Skier Intercept Shuttle Service

Summer Program

- Water Taxi Service
- Summer West Shore Dial-A-Ride Service

Additional transportation strategies of the HMR Master Plan include:

- Intercept Existing Vehicle Trips
- Accommodate Summer Boat Trailer Parking on Skier Lots
- Day Skier Parking Control
- Transportation Information Exchange
- Partnering to Achieve Regional Transportation Solutions

Land Coverage. Homewood Mountain has over 1,780,000 square feet of TRPA verified existing land coverage. Over 400,000 square feet of this coverage is hard coverage associated with parking and ski facilities, lodges, etc., while the balance represents roads and trails on the mountain. In 2006 and 2007, HMR restored approximately 100,000 square feet of roads and trails on the mountain and plans to continue to restore unnecessary roads and trails. A significant percentage of this restored coverage will be permanently retired. The balance will be banked for possible use on the resort, or transfer to desirable uses as permitted by the TRPA Code of Ordinances.

Reservation of Commodities. Homewood has requested that up to 25,000 square feet of commercial floor space, 50 tourist accommodation bonus units (TABU) and 12 multi-residential bonus units (MRBU) be reserved by TRPA under the Community Enhancement Program for implementation of the proposed Master Plan.

Environmental Improvement Project (EIP). EIP implementation includes, but is not limited to Project Number 632 (Homewood Ski Area Master Plan), Project Number 86 (Scenic Roadway Unit 11-Homewood), and Project number 775 (Homewood Area Pedestrian Facilities) and participation in Project Number 855 ("Y" Realignment).

Code/Plan Amendments. TRPA will require a Code of Ordinance Amendment for height and density. TRPA and Placer County will require Plan Area Amendments for plan area boundaries, allowable uses, height and density, and special policies.

POTENTIAL ALTERNATIVES

Project Scoping is conducted to develop the scope and content of the information to be included and analyzed in the EIR/EIS. TRPA Code of Ordinances Subsection 5.8.A(2) requires that an EIS study, develop and describe appropriate alternatives to recommended courses of action for any project that involves unresolved conflicts concerning alternative uses of available resources. Alternatives for evaluation in the EIR/EIS will be developed in consultation with Placer County and TRPA staff based on input received from the members of the TRPA Advisory Planning Commission and general public. Potential alternatives to the project may include, but not be limited to, the following:

- No Action**:** No redevelopment of the existing site would occur. The project site would retain existing conditions with the requirement that BMPs be installed.
- No Code or Plan Amendments for Building Height or Density: Uses consistent with existing height and density restrictions would be developed.
- Modified Mix of Uses: A mixed-use Master Plan with an alternative mix of uses or numbers of residential units, commercial, or ski resort uses.

In addition to the list of alternatives above, there is a potential that the proposed HMR Master Plan site plan above may have to be modified based on potential land capability conflicts. The results from soil borings taken in the existing gravel lot located at the north base indicate that a portion of the gravel lot may be Stream Environment Zone (SEZ). If the TRPA land capability verification process concludes that the area of concern is SEZ, the HMR Master Plan facilities located in the affected area would have to be relocated to avoid the mapped SEZ and its setbacks. A revised site plan to show the potential HMR Master Plan change for the affected area will be available online (www.trpa.org) and at the public scoping meetings listed on page 2 of this document.

LAND USES (TRPA PLAN AREAS, PLACER COUNTY ZONING, ETC.)

Currently, the project area is exclusively used for a ski operation along with its accessory food & beverage and rental/retail uses. Seasonal summer uses such as wedding receptions, concerts and farmers markets and other special uses have occurred on an annual basis. The majority of the resort is located in

TRPA Plan Area Statement (PAS) 157 "Homewood/Ski Homewood Area." A portion of the project area is located in TRPA PAS 158 "McKinney Tract". The Placer County General Plan Land Use Classification is Recreation with a Mitigation Management Strategy. The Placer County West Shore Area General Plan also addresses appropriate development within TRPA Plan Areas 157 and 158. The surrounding land uses are predominantly Residential with the remaining uses being largely Commercial/Tourist. Both of these land use designations are typically concentrated along the adjacent SR 89 corridor. Since the project area is best characterized as a "mountain," the topography has a wide-range of values, although the actual project (proposed development) areas range from reasonably flat (1 to 10%) upwards to slopes equal to or less than 30%. Special features onsite include, but are not limited to, Watersheds (Homewood Mountain contains all or a portion of 3 watersheds), Lakes (Quail Lake and more than half of Lake Louis), and Mixed-Conifer forests.

POTENTIAL ENVIRONMENTAL EFFECTS

Potential environmental effects associated with the Proposed Project are disclosed in the *Initial Study and Checklist* prepared by Placer County (Attachment A). All environmental effects and potential impacts will be explored further during project scoping and during preparation of the EIR/EIS. In addition to the environmental effects outlined in the attached Initial Study and Checklist, the EIR/EIS will also evaluate cumulative effects and attainment of the TRPA Environmental Threshold Carrying Capacities.

Cumulative Effects. The EIR/EIS will identify and describe recently approved and reasonably anticipated projects in the Homewood area and vicinity of the proposed project or alternatives (e.g., USDA Forest Service projects and other development projects located on the north shore), and region-wide planning efforts currently underway (e.g., Pathway 2007, the total maximum daily load requirements for Lake Tahoe). The EIR/EIS will evaluate the combined effects of these activities with related impacts of the project or project alternatives. This Chapter will also include a discussion of potential project impacts on global climate change.

TRPA Threshold Carrying Capacities. The EIR/EIS will include assessment of the project's compliance with and contribution to the attainment of threshold carrying capacities adopted by TRPA.

INTENDED USES OF THE EIR/EIS

Placer County and TRPA will use this EIR/EIS to disclose potential environmental effects, and mitigation measures and alternatives that may reduce the significance of potential effects, when considering the project or alternatives for approval. State responsible and trustee agencies and federal cooperating agencies may also use this EIR/EIS, as needed, for subsequent discretionary actions. Information provided in the EIR/EIS will also be used by agencies in their permitting process, including but not limited to: TRPA and Placer County construction permits, Placer County and Caltrans encroachment permits, Lahontan Regional Water Quality Control Board National Pollutant Discharge Elimination System and 401 wetland certification permits, California Department of Fish and Game Streambed Alteration Agreements, and U.S. Army Corps of Engineers wetland permits.

ATTACHMENT A PLACER COUNTY INITIAL STUDY AND CHECKLIST

COUNTY OF PLACER
Community Development Resource Agency

John Marin, Agency Director

ENVIRONMENTAL COORDINATION SERVICES

Gina Langford, Coordinator

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INITIAL STUDY & CHECKLIST

This Initial Study has been prepared to identify and assess the anticipated environmental impacts of the following described project application. The document may rely on previous environmental documents (see Section C) and site-specific studies (see Section I) prepared to address in detail the effects or impacts associated with the project.

This document has been prepared to satisfy the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.) and the State CEQA Guidelines (14 CCR 15000 et seq.) CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects.

The Initial Study is a public document used by the decision-making lead agency to determine whether a project may have a significant effect on the environment. If the lead agency finds substantial evidence that any aspect of the project, either individually or cumulatively, may have a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial, the lead agency is required to prepare an EIR, use a previously-prepared EIR and supplement that EIR, or prepare a Subsequent EIR to analyze the project at hand. If the agency finds no substantial evidence that the project or any of its aspects may cause a significant effect on the environment, a Negative Declaration shall be prepared. If in the course of analysis, the agency recognizes that the project may have a significant impact on the environment, but that by incorporating specific mitigation measures the impact will be reduced to a less than significant effect, a Mitigated Negative Declaration shall be prepared.

A. BACKGROUND:

Project Title: **Homewood Mountain Resort Master Plan**	Plus# PSUB T20070812
Entitlements: Major Subdivision, Conditional Use Permit, Design Review	
Site Area: 1,200 acres	APN: 097-060-024, 097-140-003, 097-140-033, 097-130-034
Location: The project site is located approximately six miles south of Tahoe City within Placer County and is accessed off West Lake Boulevard (State Route 89) in the West Lake Tahoe Area.	
Project Description: The applicant is requesting approval of a Minor Use Permit, Tentative Subdivision Map, Plan Amendment*, and Design Review to develop the following: A. Mixed-use base area (North), a residential base area (South), and a mid-mountain lodge 1. Up to 16 Residential Condos, up to 40 fractional ownership units, up to 30 Penthouse Condo Units (Upper Floors of Hotel), up to 75 Traditional Hotel Rooms, up to 40 two-bedroom for sale Condo-Hotel Units on the 18+ acre North Base lot (parcel 10). This lot will also be requesting up to 25,000 s.f. of CFA and 12 workforce/employee housing units, and 28,000 square foot base mountain facility (skier services) 2. Up to 99 Residential Condos on the 6+ acre South Base lot (parcel 15 & portion parcel 11) 3. 11 Single Family Building Envelopes on the 2.5 acre Planned Development lot above Sacramento Road (portion parcel 6) 4. The mid-mountain will include a new 15,000+/- s.f. day lodge with a gondola terminal, food & beverage facility, outdoor dining, small sundry outlet, and an outdoor swimming facility for use during the summer months. The new mid-mountain lodge replaces the white tent structure and the existing concrete foundation located near the mid-mountain. B. +/- 810 parking spaces provided at North Base (includes structured, limited surface, and underground	

parking), and +/- 177 parking spaces at South Base (all underground)

C. Structures included in development – refer to "A" above. There will also be a small rubber tire maintenance facility at the South Base and a full vehicle shop/maintenance facility located at the mid-mountain. Other small accessory buildings will be associated with snow-making (new/updated pump houses), micro-hydro generation, etc. There are plans for two water storage tanks above the mid-mountain maintenance facility. There will be retaining walls associated with various buildings - designed to minimize cut slopes and overall impacts

D. Project proposes to deconstruct all existing structures at base areas as well as mid-mountain (Placer County Museums has been contacted). On-site roads that are not restored will be used for mountain operations seasonally (possibly one year-round private extension of Tahoe Ski Bowl Way). Off-site roads being evaluated are SR89, Silver, Fawn, Sacramento, and Tahoe Ski Bowl Way

E. TCPUD Bike Path – will be incorporated into the North Base layout. Final location has not been determined

F. Outdoor concert events – permanent home of Lake Tahoe Music Festival at a new outdoor amphitheatre

G. Cross country ski connection – extension of old Olympic course(s) onto Homewood Mountain property

*Plan Amendments required: TRPA will require a Code of Ordinance Amendment for height and density. TRPA and Placer County will require Plan Area Amendments for plan area boundaries, allowable uses, height and density, and special policies.

Project Site:

- Currently, the property is exclusively used for a ski operation along with its accessory food & beverage and rental/retail uses. Seasonal summer uses have also been renewed (wedding receptions, concerts, farmers market). The property is zoned Plan Area Statement (PAS)-157 "Homewood/Ski Homewood Area" and the General Plan Land Use Classification is Recreation (Management Strategy = Mitigation).
- Surrounding land uses are predominantly Residential with the remaining uses being largely Commercial/Tourist. Both of these land use designations typically are concentrated along the State Route 89 corridor.
- Since the property is best characterized as a "mountain," the topography has a wide-range of values, although the actual project (proposed development) areas range from reasonably flat (1 to 10%) upwards to slopes equal to or less than 30%
- Special features onsite include, but aren't limited to, Watersheds (Homewood Mountain contains all or a portion of 3 watersheds), Lakes (Quail Lake and more than half of Lake Louis), and Mixed-Conifer forests

B. ENVIRONMENTAL SETTING:

Location	Zoning	General Plan/Community Plan	Existing Conditions & Improvements
Site	PAS 157 - Homewood (Recreation), PAS 158 – McKinney Tract (Residential), and PAS 159 - Homewood/Commercial (Tourist)	Placer County West Shore Area General Plan and TRPA Plan Area Guidance	Ski Resort, Parking Area, and Residential
North	PAS 160 – Homewood/Residential	TRPA Plan Area Guidance	Residential and Undeveloped
South	PAS 152- McKinney Lake (Conservation) and PAS 156 – Chambers Landing (Residential)	TRPA Plan Area Guidance	Maritime Museum, Residential, and Undeveloped
East	PAS 158 – McKinney Tract (Residential) and PAS 159 - Homewood/Commercial	TRPA Plan Area Guidance	Timeshares and Residential
West	PAS 157 Homewood (Recreation)	TRPA Plan Area Guidance	Undeveloped

C. PREVIOUS ENVIRONMENTAL DOCUMENT:

The County has determined that an Initial Study shall be prepared in order to determine whether the potential exists for unmitigatable impacts resulting from the proposed project. Relevant analysis from the County-wide General Plan and Community Plan Certified EIRs, and other project-specific studies and reports that have been generated to date, were used as the database for the Initial Study. The decision to prepare the Initial Study utilizing the analysis contained in the General Plan and Specific Plan Certified EIRs, and project-specific analysis summarized herein, is sustained by Sections 15168 and 15183 of the CEQA Guidelines.

Section 15168 relating to Program EIRs indicates that where subsequent activities involve site-specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and

the activity, to determine whether the environmental effects of the operation were covered in the earlier Program EIR. A Program EIR is intended to provide the basis in an Initial Study for determining whether the later activity may have any significant effects. It will also be incorporated by reference to address regional influences, secondary effects, cumulative impacts, broad alternatives, and other factors that apply to the program as a whole.

The following documents serve as Program-level EIRs from which incorporation by reference will occur:

- ➔ Placer County General Plan EIR

Section 15183 states that "projects which are consistent with the development density established by existing zoning, community plan or general plan policies for which an EIR was certified shall not require additional environmental review, except as may be necessary to examine whether there are project-specific significant effects which are peculiar to the project or site." Thus, if an impact is not peculiar to the project or site, and it has been addressed as a significant effect in the prior EIR, or will be substantially mitigated by the imposition of uniformly applied development policies or standards, then additional environmental documentation need not be prepared for the project solely on the basis of that impact.

The above stated documents are available for review Monday through Friday, 8am to 5pm, at the Placer County Community Development Resource Agency, 3091 County Center Drive, Auburn, CA 95603. For Tahoe projects, the document will also be available in our Tahoe Division office, 565 West Lake Blvd., Tahoe City, CA 96145.

D. EVALUATION OF ENVIRONMENTAL IMPACTS:

The Initial Study checklist recommended by the State of California Environmental Quality Act (CEQA) Guidelines is used to determine potential impacts of the proposed project on the physical environment. The checklist provides a list of questions concerning a comprehensive array of environmental issue areas potentially affected by the project (see CEQA Guidelines, Appendix G). Explanations to answers are provided in a discussion for each section of questions as follows:

a) A brief explanation is required for all answers including "No Impact" answers.

b) "Less Than Significant Impact" applies where the project's impacts are insubstantial and do not require any mitigation to reduce impacts.

c) "Less Than Significant with Mitigation Measures" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The County, as lead agency, must describe the mitigation measures, and briefly explain how they reduce the effect to a less-than-significant level (mitigation measures from earlier analyses may be cross-referenced).

d) "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

e) All answers must take account of the entire action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts [CEQA Guidelines, Section 15063(a)(1)].

f) Earlier analyses may be used where, pursuant to the tiering, Program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or Negative Declaration [CEQA Guidelines, Section 15063(c)(3)(D)]. A brief discussion should be attached addressing the following:

   - ➔ **Earlier analyses used** – Identify earlier analyses and state where they are available for review.
   - ➔ **Impacts adequately addressed** – Identify which effects from the above checklist were within the scope of, and adequately analyzed in, an earlier document pursuant to applicable legal standards. Also, state whether such effects were addressed by mitigation measures based on the earlier analysis.
   - ➔ **Mitigation measures** – For effects that are checked as "Less Than Significant with Mitigation Measures," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

g) References to information sources for potential impacts (i.e. General Plans/Community Plans, zoning ordinances) should be incorporated into the checklist. Reference to a previously-prepared or outside document should include a reference to the pages or chapters where the statement is substantiated. A source list should be attached and other sources used, or individuals contacted, should be cited in the discussion.

I. AESTHETICS – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Have a substantial adverse effect on a scenic vista? (PLN)	**X**			
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a state scenic highway? (PLN)	**X**			
3. Substantially degrade the existing visual character or quality of the site and its surroundings? (PLN)	**X**			
4. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area? (PLN)	**X**			

Discussion- All Items:
The applicant has provided photographic simulations of the proposed project that primarily contemplate visual impacts as viewed from Lake Tahoe. Staff is also concerned with visual impacts of the project as viewed from State Route 89 and other surrounding properties. No mitigation measures have been proposed by the applicant, with the exception of mention that a landscape plan will be presented at a later date. This project may result in an impact upon existing scenic vistas, particularly as viewed from Lake Tahoe and State Route 89. This project has the potential to adversely impact the visual character of the site depending upon the building design, locations, materials, lighting and landscaping. These impacts will be discussed and further evaluated in the EIR for this project.

II. AGRICULTURAL RESOURCE – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide or Local Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? (PLN)				**X**
2. Conflict with General Plan or other policies regarding land use buffers for agricultural operations? (PLN)				**X**
3. Conflict with existing zoning for agricultural use, or a Williamson Act contract? (PLN)				**X**
4. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland (including livestock grazing) to non-agricultural use? (PLN)				**X**

Discussion- All Items:
The proposed project is located within a zoning designation that and envisions ski resort development. To a certain extent, tree removal is expected to allow for this type of development. The project area is not designated for agricultural use, thus this project will not result in an impact upon these resources.

III. AIR QUALITY – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Conflict with or obstruct implementation of the applicable air quality plan? (APCD)	X			
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation? (APCD)	X			
3. Result in a cumulatively considerable net increase of any criteria for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (APCD)	X			
4. Expose sensitive receptors to substantial pollutant concentrations? (APCD)	X			
5. Create objectionable odors affecting a substantial number of people? (APCD)	X			

Discussion- Item III-1:
Depending on the preliminary project analysis, the air quality impacts resulting from the proposed project may result in a cumulatively considerable net increase in the region and conflict with the objectives in Placer County Air Quality Plan to attain the federal and state ambient air quality standards. This potential will be evaluated and discussed in the EIR.

Discussion- Items III-2,3:
This proposed project is located in the Lake Tahoe Air Basin portion of Placer County. This area is designated as non-attainment for the state particulate matter standard. Depending on the project analysis, the air pollution emissions generated from the proposed project will exceed the Placer County Air Pollution Control District (District's) threshold for ozone precursors and particulate matters. The exceedance may result a cumulatively considerable net increase to the Lake Tahoe air basin. The detailed air quality impacts will be evaluated and discussed in the EIR.

Discussion- Items III-4,5:
Based upon the preliminary project analysis, the project may potential expose nearby residents to substantial pollutant concentrations, or create objectionable odors. However, this potential will be mitigated to the less than significant result and will be evaluated and discussed in the EIR.

IV. BIOLOGICAL RESOURCES – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish & Game or U.S. Fish & Wildlife Service? (PLN)			X	
2. Substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number of restrict the range of an endangered, rare, or threatened species? (PLN)	X			

3. Have a substantial adverse effect on the environment by converting oak woodlands? (PLN)				X
4. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations or by the California Department of Fish & Game or U.S. Fish & Wildlife Service? (PLN)	X			
5. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? (PLN)	X			
6. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (PLN)	X			
7. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (PLN)	X			
8. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (PLN)	X			

Discussion- Item IV-1:
The project submittal includes a number of reports from Sue Fox, Principal Biologist for Wildlife Resource Consultants which were a result on surveys conducted on August 3, and 10, 2007. These reports include remote camera surveys for furbearers (e.g. pine martens), the results of a survey for spotted owls, a survey of northern goshawk (Accipiter gentilis), willow flycatcher (Epidonax traillii), osprey (Pandion haliaetus), amphibians, and bats. Also included were the results of the protocol surveys for northern goshawk, spotted owl, osprey, willow flycatcher, mountain yellow-legged frog, bats, and fur bearers such as pine martens. These results indicated the only species detected during the surveys were pine marten and osprey.

Discussion- Items IV-2,4,5,6:
The project has identified areas of Stream Environment Zone (SEZ). Due to the limitations for development in these zones imposed by the Tahoe Regional Planning Agency (TRPA), no development will be allowed to occur in these areas. The applicant is preparing to process an appeal to TRPA of the SEZ delineation for this site. The results of this may impact the development that is to occur near these SEZs.

The project has the potential to result in an increase in run off into the creeks on the site and ultimately into Lake Tahoe as a result of new impervious surfaces. The impacts of this runoff and its potential impact upon the habitat of fish and wildlife species will be further evaluated in the EIR prepared for this project. Additionally, the project description includes a proposal to daylight a creek on the site. The impacts to wildlife and fish migratory patterns will need to be evaluated in the EIR.

A study will need to be conducted that identifies any wetlands on the site, as defined by Section 404 of the Clean Water Act. Any potential impacts of this project upon the wetlands identified will need to be evaluated in the EIR.

Discussion- Item IV-3:
No oak woodlands are located in proximity to the project site and therefore it will not have an impact on their communities.

Discussion- Items IV-7,8:
The proposed project will result in a substantial amount of tree removal (approximately 452 trees) Accordingly the impacts of this removal will be better defined and addressed in the EIR that will be prepared for this project.

V. CULTURAL RESOURCES – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Substantially cause adverse change in the significance of a historical resource as defined in CEQA Guidelines, Section 15064.5? (PLN)			X	
2. Substantially cause adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines, Section 15064.5? (PLN)			X	
3. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (PLN)			X	
4. Have the potential to cause a physical change, which would affect unique ethnic cultural values? (PLN)			X	
5. Restrict existing religious or sacred uses within the potential impact area? (PLN)			X	
6. Disturb any human remains, including these interred outside of formal cemeteries? (PLN)			X	

Discussion- All Items:
The supplemental material submitted by the applicant contains a report from Susan Lindstrom, Ph.D., Archeological Consultant which indicates that there is a low likelihood to discover cultural resources on the subject property. No mitigation measures are required.

VI. GEOLOGY & SOILS – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Expose people or structures to unstable earth conditions or changes in geologic substructures? (ESD)	X			
2. Result in significant disruptions, displacements, compaction or overcrowding of the soil? (ESD)	X			
3. Result in substantial change in topography or ground surface relief features? (ESD)		X		
4. Result in the destruction, covering or modification of any unique geologic or physical features? (ESD)				X
5. Result in any significant increase in wind or water erosion of soils, either on or off the site? (ESD)		X		
6. Result in changes in deposition or erosion or changes in siltation which may modify the channel of a river, stream, or lake? (ESD)		X		
7. Result in exposure of people or property to geologic and geomorphological (i.e. Avalanches) hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards? (ESD)	X			
8. Be located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? (ESD)	X			

9. Be located on expansive soils, as defined in Table 18, 1-B of the Uniform Building Code (1994), creating substantial risks to life or property? (ESD)				**X**

Discussion- Items VI-1,2:
This project proposal will result in the disturbance of approximately 36.2-acres of the 1270-acre site for the development of the Homewood Master Resort. This includes the construction of various residential, tourist and commercial buildings totaling approximately 1,161,148 square feet. Parking lots and circulation areas will be constructed with the project.

Grading activities are associated with the installation of the buildings and parking areas, retaining walls, roadway improvements, and underground utilities. To construct the proposed improvements, potentially significant disruption of soils may occur, including excavation/compaction for roadways, building pads and various utilities. The project grading is expected to be approximately 194,700 cubic yards of cut to 51,300 cubic yards of fill. The project proposes soil cuts of up to 27' maximum at 3:1 and fills of up to approximately 20' feet maximum with all resulting finished grades to be no steeper than 2:1 at locations identified on the preliminary grading plan. According to the Geologic Hazards and Preliminary Geotechnical Evaluation by Kleinfelder, dated November 1, 2007, the maximum recommended inclination of both cut and fill slopes is 3:1 for maximum heights of 20'.

Construction of the proposed improvements may significantly disrupt the soils on the project site. The EIR for this project will include an analysis of the potential for unstable earth conditions, soil disruptions, displacements, and compaction of the soil and provide mitigation measures to reduce these potential impacts.

Discussion- Item VI-3:
The project proposes soil cuts and fills of up to approximately 27 feet maximum with retaining walls up to 16 feet in height, as identified on the preliminary grading plan. To construct the improvements proposed, substantial change in topography or ground surface relief features may occur. The proposed project's impacts associated with topography and relief features will be mitigated to a less than significant level by implementing the following mitigation measures:

Mitigation Measures- Item VI-3:
MM VI.1 The applicant shall prepare and submit Improvement Plans, specifications and cost estimates (per the requirements of Section II of the Land Development Manual [LDM] that are in effect at the time of submittal) to the Engineering and Surveying Department (ESD) for review and approval. The plans shall show all conditions for the project as well as pertinent topographical features both on- and off-site. All existing and proposed utilities and easements, on-site and adjacent to the project, which may be affected by planned construction, shall be shown on the plans. All landscaping and irrigation facilities within the public right-of-way (or public easements), or landscaping within sight distance areas at intersections, shall be included in the Improvement Plans. The applicant shall pay plan check and inspection fees. Prior to plan approval, all applicable recording and reproduction cost shall be paid. The cost of the above-noted landscape and irrigation facilities shall be included in the estimates used to determine these fees. It is the applicant's responsibility to obtain all required agency signatures on the plans and to secure department approvals. If the Design/Site Review process and/or DRC review is required as a condition of approval for the project, said review process shall be completed prior to submittal of Improvement Plans. Record drawings shall be prepared and signed by a California Registered Civil Engineer at the applicant's expense and shall be submitted to the ESD prior to acceptance by the County of site improvements.

MM VI.2 All proposed grading, drainage improvements, vegetation and tree removal shall be shown on the Improvement Plans and all work shall conform to provisions of the County Grading Ordinance (Ref. Article 15.48, Placer County Code) that are in effect at the time of submittal. No grading, clearing, or tree disturbance shall occur until the Improvement Plans are approved and all temporary construction fencing has been installed and inspected by a member of the DRC. All cut/fill slopes shall be at 2:1 (horizontal:vertical) unless a soils report supports a steeper slope and the Engineering and Surveying Department (ESD) concurs with said recommendation.

The applicant shall revegetate all disturbed areas. Revegetation undertaken from April 1 to October 1 shall include regular watering to ensure adequate growth. A winterization plan shall be provided with project Improvement Plans. It is the applicant's responsibility to assure proper installation and maintenance of erosion control/winterization during project construction. Where soil stockpiling or borrow areas are to remain for more than one construction season, proper erosion control measures shall be applied as specified in the Improvement Plans/Grading Plans. Provide for erosion control where roadside drainage is off of the pavement, to the satisfaction of the ESD.

Submit to the ESD a letter of credit or cash deposit in the amount of 110% of an approved engineer's estimate for winterization and permanent erosion control work prior to Improvement Plan approval to guarantee protection against erosion and improper grading practices. Upon the County's acceptance of improvements, and satisfactory completion of a one-year maintenance period, unused portions of said deposit shall be refunded to the project applicant or authorized agent.

If, at any time during construction, a field review by County personnel indicates a significant deviation from the proposed grading shown on the Improvement Plans, specifically with regard to slope heights, slope ratios, erosion control, winterization, tree disturbance, and/or pad elevations and configurations, the plans shall be reviewed by the DRC/ESD for a determination of substantial conformance to the project approvals prior to any further work proceeding. Failure of the DRC/ESD to make a determination of substantial conformance may serve as grounds for the revocation/modification of the project approval by the appropriate hearing body.

MM VI.3 Submit to the Engineering and Surveying Department (ESD), for review and approval, a geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The report shall address and make recommendations on the following:

A) Road, pavement, and parking area design
B) Structural foundations, including retaining wall design (if applicable)
C) Grading practices
D) Erosion/winterization
E) Special problems discovered on-site, (i.e., groundwater, expansive/unstable soils, etc.)
F) Slope stability

Once approved by the ESD, two copies of the final report shall be provided to the ESD and one copy to the Building Department for their use. If the soils report indicates the presence of critically expansive or other soils problems which, if not corrected, may lead to structural defects, a certification of completion of the requirements of the soils report will be required for subdivisions, prior to issuance of Building Permits. This certification may be completed on a Lot by Lot basis or on a Tract basis. This shall be so noted in the CC&Rs and on the Informational Sheet filed with the Final Map(s). It is the responsibility of the developer to provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report.

Discussion- Item VI-4:
There are no identified unique geologic or physical features at this site that may be destroyed, covered or modified.

Discussion- Items VI-5,6:
This resort project proposal will result in the construction of various residential, tourist and commercial buildings totaling approximately 1,161,148 square feet. The disruption of soils on this property increases the risk of erosion and creates a potential for contamination of stormwater runoff with disturbed soils or other pollutants introduced through typical grading practices. The construction phase will create significant potential for erosion as disturbed soil may come in contact with wind or precipitation that could transport sediment to the air and/or adjacent waterways. Discharge of concentrated runoff in the post-development condition may also contribute to the erosion potential impact in the long-term. Erosion potential and water quality impacts are always present and occur when protective vegetative cover is removed and soils are disturbed. It is primarily the shaping of building pads, grading for parking areas, roadways, and trenching for utilities that are responsible for accelerating erosion and degrading water quality. This disruption of soils on the site has the potential to result in significant increases in erosion of soils both on and off the site. The proposed project's impacts associated with deposition or soil erosion or changes in siltation will be mitigated to a less than significant level by implementing the following mitigation measures:

Mitigation Measures- Items VI-5,6:
Refer to text in MM VI.1
Refer to text in MM VI.2
Refer to text in MM VI.3

MM VI.4: Staging Areas: Stockpiling and/or vehicle staging areas shall be identified on the Improvement Plans and located as far as practical from existing dwellings and protected resources in the area.

MM VI.5 Water quality Best Management Practices (BMPs), shall be designed according to the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development/ Redevelopment, and/or for Industrial and Commercial, (and/or other similar source as approved by the Engineering and Surveying Department (ESD)).

Construction (temporary) BMPs for the project include, but are not limited to: Fiber Rolls, Stabilized Construction Entrance, Storm Drain Inlet Protection, Silt Fence, cutoff trenches, revegetation, soil stabilization, and straw/pine needle wattles.

Storm drainage from on- and off-site impervious surfaces (including roads) shall be collected and routed through specially designed catch basins, vegetated swales, vaults, infiltration basins, water quality basins, filters, etc. for entrapment of sediment, debris and oils/greases or other identified pollutants, as approved by the ESD. BMPs shall be designed at a minimum in accordance with the Placer County Guidance Document for Volume and Flow-Based Sizing

of Permanent Post-Construction Best Management Practices for Stormwater Quality Protection. Post-development (permanent) BMPs for the project include, but are not limited to: above and below ground onsite infiltration basin(s), sand/oil interceptors.

No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals. All BMPs shall be maintained as required to insure effectiveness. The applicant shall provide for the establishment of vegetation, where specified, by means of proper irrigation. Proof of on-going maintenance, such as contractual evidence, shall be provided to ESD upon request. Maintenance of these facilities shall be provided by the project owners/permittees unless, and until, a County Service Area is created and said facilities are accepted by the County for maintenance. Contractual evidence of a monthly parking lot sweeping and vacuuming, and catch basin cleaning program shall be provided to the ESD upon request. Failure to do so will be grounds for discretionary permit revocation. Prior to Improvement Plan or Final Map approval, easements shall be created and offered for dedication to the County for maintenance and access to these facilities in anticipation of possible County maintenance.

Discussion- Items VI-7,8:
According to the Geologic Hazards and Preliminary Geotechnical Evaluation by Kleinfelder, dated November 1, 2007, this site is located in a region traditionally characterized by moderate seismic activity. A major seismic event on faults in the vicinity may cause moderate shaking at the site. The site is located within Seismic Zone 3 of the California Building Code. If structures are constructed according to the current edition of the California Building Code, the likelihood of severe damage due to ground shaking should be minimal.

Apparent avalanche run-out chutes were observed on the west side of Lake Louise in the Kleinfelder Report. These features are not located on the subject site, but a potential exists for avalanches to occur on the subject site. Multiple areas of rock outcrop, steep slopes and soil creep were observed on the subject site. A potential for seismically-induced rock fall exists. An abandoned mine (Noonchester) and two mine shafts are located just off-site to the south of Quail Lake.

The EIR for this project will include an analysis of the impacts associated with exposure of people or property to geologic and geomorphological hazards, as well as geological units/soils that are unstable and provide mitigation measures to address any impacts of the proposed project.

Discussion- Item VI-9:
According to the Geologic Hazards and Preliminary Geotechnical Evaluation by Kleinfelder, dated November 1, 2007, it appears that expansive soils are not present at this location.

VII. HAZARDS & HAZARDOUS MATERIALS – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Create a significant hazard to the public or the environment through the routine handling, transport, use, or disposal of hazardous or acutely hazardous materials? (EHS)	X			
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (EHS)	X			
3. Emit hazardous emissions, substances, or waste within one-quarter mile of an existing or proposed school? (APCD)		X		
4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (EHS)			X	
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? (PLN)				X

6. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing in the project area? (PLN)				X
7. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? (PLN)	X			
8. Create any health hazard or potential health hazard? (EHS)		X		
9. Expose people to existing sources of potential health hazards? (EHS)			X	

Discussion- Items VII-1,2:
The project is proposing a new gondola and maintenance facility, these facilities include backup generators and above ground storage tanks for diesel fuel. There is the potential for spillage from handling hazardous waste such as diesel fuel, which creates a significant hazard to the public or the environment. Additionally, routine and repair maintenance of the ski lifts, gondola, snowmaking equipment and vehicle maintenance in the maintenance facility can create a significant hazard to the public through upset and accident conditions involving the release of hazardous materials into the environment. The project will include an outdoor swimming facility at the mid-mountain lodge facility which will use chemicals in their day to day operation. There is a potential for spillage of the chemicals and a possibility of a chemical release to the environment. The EIR prepared for the project will evaluate these potential impacts.

Discussion- Item VII-3:
Based upon the preliminary project analysis, the project may results in substantial air toxic emissions such as diesel engine exhausts. However, this impact may be reduced to less than significant level after implementation of the following mitigation measures.

Discussion- Items VII-4,9:
A Phase I Environmental Site Assessment (ESA) was prepared for the site which determined that the project site does not have any agricultural or past mining uses. However, the ESA indicated that the site has a low concentration of methyl tertiary butyl ether (MTBE) in monitoring well #4 which is located in the north parking lot. MTBE is a gasoline additive that is highly miscible, flammable, volatile and colorless liquid which was used in gasoline to enhance oxygenization and reduce “knocking” noise in automobiles. This site once had an underground storage tank (UST) which leaked fuel into the groundwater and surrounding soils. The UST site was officially closed with groundwater monitoring required by the Lahontan Regional Water Quality Control Board (LWRQCB) in 2004. Groundwater monitoring is necessary for this site as MTBE is a long lasting compound that does not easily breakdown. The low level of MTBE is still a concern for LWRQCB as this agency is tasked with the protection of the waters for the State of California. Typically, it takes between 25 to 50 years for MTBE to degrade naturally to acceptable safety levels. In this case, LWRQCB has noted that there is a downward trend in the MTBE levels. As the monitoring of MTBE is routine and under the review of LWRQCB, this impact is less than significant with no mitigation measures required.

Discussion- Items VII-5,6:
The project is not located in proximity to an airstrip or airport. The closest airport to the project site will be the Truckee Airport, approximately 16 miles northeast of the project site.

Discussion- Item VII-7:
The project is located in a heavily wooded area that contains the potential for wild fire danger. The applicant has begun a fuel load reduction program at the site to address this immediate concern. Additionally, the project description provides mention of utilizing the snow making operations at the site to assist in combating a wildfire. Regardless, the EIR prepared for the project will provide a more detailed discussion of the applicant’s proposal for their fuel load reduction plan and other methods for addressing the potential for a catastrophic wild fire.

Discussion- Item VII-8:
The project proposes to build several large residential and commercial buildings and is likely to have a stormwater detention system. Stormwater detention systems have the potential to allow for the breeding of mosquitoes and this is a potentially significant impact. The potential to allow for the breeding of mosquitoes will be mitigated to less than significant level by implementing the following mitigation measure.

Mitigation Measures- Item VII-8:
MM VII.1 In order to discourage the breeding of mosquitoes which have the potential to cause disease to humans and other hosts, the project proponent shall abide by the Placer Mosquito Abatement District (PMAD) construction guidelines for stormwater detention systems. PMAD shall review the improvement plans.

VIII. HYDROLOGY & WATER QUALITY – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Violate any potable water quality standards? (EHS)			X	
2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lessening of local groundwater supplies (i.e. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (EHS)	X			
3. Substantially alter the existing drainage pattern of the site or area? (ESD)		X		
4. Increase the rate or amount of surface runoff? (ESD)		X		
5. Create or contribute runoff water which would include substantial additional sources of polluted water? (ESD)	X			
6. Otherwise substantially degrade surface water quality?(ESD)	X			
7. Otherwise substantially degrade ground water quality? (EHS)	X			
8. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard boundary or Flood Insurance Rate Map or other flood hazard delineation map? (ESD)	X			
9. Place within a 100-year flood hazard area improvements which would impede or redirect flood flows? (ESD)	X			
10. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (ESD)	X			
11. Alter the direction or rate of flow of groundwater? (EHS)	X			
12. Impact the watershed of important surface water resources, including but not limited to Lake Tahoe, Folsom Lake, Hell Hole Reservoir, Rock Creek Reservoir, Sugar Pine Reservoir, French Meadows Reservoir, Combie Lake, and Rollins Lake? (EHS, ESD)	X			

Discussion- Item VIII-1:
The project is not likely to violate any potable water quality standards as it will be utilizing potable water from both Madden Creek Water Company and the Tahoe City Public Utility District. In the preceeding Section Hazards & Hazardous Materials, Item VII, the discussion mentioned the low-level MTBE (methyl tertiary butyl ether) which has occurred in one of the existing monitoring wells. Because the levels are low and the well is under standard monitoring by the Lahontan Regional Water Quality Control Board, this is not considered to be a significant hazard. No mitigation measures are required.

Discussion- Items VIII-2,11:
The project as proposed will increase the amount of impervious surfaces on the property which is currently undeveloped and this may interfere with groundwater recharge. Additionally, the resort maintains several wells which are used for snowmaking and other water supply purposes. The EIR for the project will discuss these issues and the potential for altering of the direction or rate of flow of groundwater, and the project's potential for depleting groundwater supplies.

Discussion- Item VIII-3:
A preliminary drainage report was prepared by Nichols Consulting Engineers, dated November 2007. Currently, the 1270-acre site generally drains to the east towards Lake Tahoe. According to the Stream Channel and Baseline Surface Water Assessment by Kleinfelder, dated November 12, 2007, there are three major watersheds within the project area. They are Madden Creek, Ellis Creek, and Quail Lake Creek. The project does propose minor changes to the drainage pattern of the site. Impacts associated with alterations to the drainage patterns of the site will be mitigated to a less than significant level by implementing the following mitigation measures:

Mitigation Measures- Item VIII-3:
Refer to text in MM VI.1
Refer to text in MM VI.2

MM VIII.2 Prepare and submit with the project Improvement Plans, a drainage report in conformance with the requirements of Section 5 of the LDM and the Placer County Storm Water Management Manual that are in effect at the time of submittal, to the Engineering and Surveying Department for review and approval. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include: A written text addressing existing conditions, the effects of the improvements, all appropriate calculations, a watershed map, increases in downstream flows, proposed on- and off-site improvements and drainage easements to accommodate flows from this project. The report shall identify water quality protection features and methods to be used both during construction and for long-term post-construction water quality protection. "Best Management Practice" (BMP) measures shall be provided to reduce erosion, water quality degradation, and prevent the discharge of pollutants to stormwater to the maximum extent practicable.

Discussion- Item VIII-4:
This project will create new impervious surfaces on portions of the property that are currently undeveloped and thus will likely increase the rate and amount of surface runoff from the site. The preliminary drainage reports prepared by Nichols Consulting Engineers, dated November 2007 shows that, with mitigation measures, the post project flows do not increase. All proposed on-site infiltration basins will be designed to accommodate the Lahontan 20-year volume or the Placer County 100-year mitigation volume, whichever is greater. Impacts associated with increases in runoff will be mitigated to a less than significant level by implementing the following mitigation measures:

Mitigation Measures- Item VIII-4:
Refer to text in MM VI.1
Refer to text in MM VI.2
Refer to text in MM VIII.1

Discussion- Items VIII-5,6:
The proposed project involves 36.2-acres of earth disturbance. The construction of the proposed improvements has the potential to degrade water quality. Stormwater runoff naturally contains numerous constituents; however, as the intensity of land use by man increases, the constituent concentrations typically increase to levels that potentially impact water quality. Pollutants associated with stormwater include (but are not limited to) suspended solids, nutrients, sediments, oils/greases, construction waste, metals, pesticides, herbicides, fertilizers, VOC's, pathogens, etc. The proposed project has the potential to result in the generation of new dry-weather runoff containing said pollutants and also has the potential to increase the concentration and/or total load of said pollutants in wet weather stormwater runoff. Erosion potential and water quality impacts are always present during construction and occur when protective vegetative cover is removed and soils are disturbed. In this case, it is primarily the grading associated with the site improvements, utilities, driveways and structure pads that may contribute to erosion and water quality degradation. The EIR for this project will include an analysis of the potential impacts associated with water quality and provide mitigation measures to address any impacts of the proposed project.

Discussion- Items VIII-7:
The project will be required to utilize stormwater best management practices (BMP) to prevent erosion, ease stormwater runoff and downstream drainage impacts. The increase in impervious surfaces has the potential to

degrade water quality by introducing oils, greases, and sediments into the stormwater runoff. The EIR should discuss and demonstrate that specific types of BMP's will provide adequate mitigation for the project's impacts to water quality both during and after construction. The EIR for this project will include an analysis of the hydrology/hydrologic and water quality impacts and provide mitigation measures to address any impacts of the proposed project.

Discussion- Items VIII-8,9,10:
Portions of the project site are within a 100-year flood hazard area as defined and mapped by the Federal Emergency Management Agency (FEMA) on panel 06061C0225F, June 8, 2007. Improvements are proposed within this 100-year flood hazard area and flood flows could be impeded or redirected. The site map shows buildings located within the flood hazard area and therefore there are potentially significant impacts due to exposing people or structures to a significant risk or loss, injury, or death, including flooding as a result or failure of a levee or dam. The EIR for this project will include an analysis of the flood hazard impacts and provide mitigation measures to address any impacts of the proposed project.

Discussion- Item VIII-12:
According to the Stream Channel and Baseline Surface Water Assessment by Kleinfelder, dated November 12, 2007, there are three major watersheds within the project area: Madden Creek, Ellis Creek, and Quail Lake Creek. All these watersheds drain to Lake Tahoe, an important surface water resource. The EIR for this project will include an analysis of the potential impacts to this important surface water resource and provide mitigation measures to address any impacts of the proposed project.

IX. LAND USE & PLANNING – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Physically divide an established community? (PLN)				X
2. Conflict with General Plan/Community Plan/Specific Plan designations or zoning, or Plan policies adopted for the purpose of avoiding or mitigating an environmental effect? (EHS, ESD, PLN)	X			
3. Conflict with any applicable habitat conservation plan or natural community conservation plan or other County policies, plans, or regulations adopted for purposes of avoiding or mitigating environmental effects? (PLN)	X			
4. Result in the development of incompatible uses and/or the creation of land use conflicts? (PLN)			X	
5. Affect agricultural and timber resources or operations (i.e. impacts to soils or farmlands and timber harvest plans, or impacts from incompatible land uses)? (PLN)			X	
6. Disrupt or divide the physical arrangement of an established community (including a low-income or minority community)? (PLN)				X
7. Result in a substantial alteration of the present or planned land use of an area? (PLN)	X			
8. Cause economic or social changes that would result in significant adverse physical changes to the environment such as urban decay or deterioration? (PLN)				X

Discussion- Items IX-1,6,8:
The proposed project is a revitalization of an existing ski resort area. There is a residential component of this project, but the ski resort area itself is not expanding in area such that it would divide an established community or its physical arrangement. There will be improvements made to update the components of the resort, similar to what many surrounding resorts have been doing in recent years.

Discussion- Items IX-2,4,5:
The proposed project will result in a change to the project site and the area where it is located. The potential impacts of this change will be further identified and discussed in the EIR that will be prepared for this project. Additionally, the deviations from the planning requirements of TRPA and Placer County (current zoning does not allow for multi-family uses) will be addressed throughout the Community Enhancement Program (CEP) that this project has applied to be part of.

Discussion- Item IX-3:
The proposed project could have an impact upon wetland areas that may be present on the site. The applicant will be required to have a wetlands delineation completed for the site and the impacts of the project (if any) will be evaluated in the discussion in the EIR prepared for the project.

Discussion- Item IX-7:
The Westshore Area General Plan does contemplate future commercial development associated with alpine skiing. Tourist Accommodation Uses, Single Family Residential, Employee Housing, and Alpine Ski Facilities are also considered uses allowed with the approval of a Minor Use Permit. The project will result in an impact to the present land use of the area in that the project description anticipates creating a bed base for this resort that will result in longer stays and more usage during the week and off season periods. The EIR to be prepared for the project will address these issues.

X. MINERAL RESOURCES – Would the project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. The loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (PLN)				**X**
2. The loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (PLN)				**X**

Discussion- All Items:
There are no known mineral resources of state significance present at this site.

XI. NOISE – Would the project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan, Community Plan or noise ordinance, or applicable standards of other agencies? (PLN)	**X**			
2. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? (PLN)	**X**			
3. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (PLN)	**X**			
4. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (PLN)				**X**

5. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? (PLN)				**X**

Discussion- Items XI-1,2,3:
The project will result in the approval of land use designations which will allow for the expansion of the existing ski resort, infrastructure to accommodate these features including a mid-mountain lodge, various commercial uses, facilities and upgrades, snowmaking, utilities, maintenance/access roadways, parking structure, etc. This project also includes a variety of new residential units as well as providing a permanent location for the Lake Tahoe Music Festival. Accordingly, the project has the potential to expose people to noise levels in excess of standards published in the Westshore Area General Plan Noise Element and the Placer County General Plan. The project has the potential to create a substantial permanent and temporary increase in ambient noise levels in the project vicinity. The Environmental Impact Report for this project should include an analysis of the noise impacts of the project to nearby sensitive receptors, any acoustical analysis should include the requirements of the Westshore Area General Plan Noise Element and provide mitigations to address any impacts of the proposed project.

Discussion- Items XI-4,5:
The project is not located in proximity to an airstrip or airport. The closest airport to the project site would be the Truckee Airport, approximately 25 miles north. Accordingly, there will be no noise impact generated by an airport or airstrip.

XII. POPULATION & HOUSING – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Induce substantial population growth in an area, either directly (i.e. by proposing new homes and businesses) or indirectly (i.e. through extension of roads or other infrastructure)? (PLN)	**X**			
2. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? (PLN)				**X**

Discussion- Item XII-1:
The proposed project will create job opportunities and new residences. The current project proposal does not identify the number of new employees that this project will generate. Accordingly, this will be addressed in the EIR that is to be prepared for this project.

Discussion- Item XII-2:
The project seeks to introduce new housing and will not result in the removal of existing housing units.

XIII. PUBLIC SERVICES – Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental services and/or facilities, the construction of which may cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services?

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Fire protection? (EHS, ESD, PLN)	**X**			
2. Sheriff protection? (EHS, ESD, PLN)	**X**			

3. Schools? (EHS, ESD, PLN)	X			
4. Maintenance of public facilities, including roads? (EHS, ESD, PLN)	X			
5. Other governmental services? (EHS, ESD, PLN)	X			

Discussion- All Items:
The probable environmental effects of the various project elements will include an increase in the demand for fire/emergency medical and law enforcement services with the construction of additional development. There will be an increase in student enrollment and an increased burden on public facilities with the construction of additional development. The EIR for this project will include an analysis of the public service impacts and provide mitigation measures to address any impacts of the proposed project.

XIV. RECREATION – Would the project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (PLN)	X			
2. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? (PLN)	X			

Discussion- All Items:
The project itself will create new and expanded recreation activities for the area. However, the project submittal does not provide discussion as to how the project will impact other surrounding public and private recreation areas. The EIR prepared for the project will address these issues.

XV. TRANSPORTATION & TRAFFIC – Would the project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. An increase in traffic which may be substantial in relation to the existing and/or planned future year traffic load and capacity of the roadway system (i.e. result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? (ESD)	X			
2. Exceeding, either individually or cumulatively, a level of service standard established by the County General Plan and/or Community Plan for roads affected by project traffic? (ESD)	X			
3. Increased impacts to vehicle safety due to roadway design features (i.e. sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (ESD)	X			
4. Inadequate emergency access or access to nearby uses? (ESD)	X			
5. Insufficient parking capacity on-site or off-site? (ESD, PLN)	X			

6. Hazards or barriers for pedestrians or bicyclists? (ESD)	X			
7. Conflicts with adopted policies supporting alternative transportation (i.e. bus turnouts, bicycle racks)? (ESD)	X			
8. Change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? (ESD)	X			

Discussion- All Items:
Development of this project will increase traffic volumes on area roadways, contributing towards a cumulative impact on the transportation system. The proposed project creates site-specific impacts on local transportation systems that are potentially significant when analyzed against the existing baseline traffic conditions and roadway segment/intersection existing LOS. Additionally, the cumulative effect of an increase in traffic has the potential to create significant impacts to the area's transportation system. The probable environmental effects of the various project elements include traffic and circulation patterns that might be temporarily affected during construction, an increase in potential hazards because of design or incompatible uses, and potential inadequate emergency access or access to nearby uses. Traffic volumes on study roadways will increase and potentially create impacts to congestion. There may be a potential for inadequate parking capacity/supply. Increased demands on roadway facilities covered by the Countywide Traffic Fee Program will occur. There is a potential to increase transit delay associated with existing and/or proposed transit services provided internal and external to the project as well as conflicts with policies supporting alternative transportation. There may be potential conflicts with pedestrian and bicycle uses, change in air traffic patterns, exceedance of established level of service standards. The EIR for this project will include an analysis of the transportation and circulation impacts and provide mitigation measures to address any impacts of the proposed project.

XVI. UTILITIES & SERVICE SYSTEMS – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? (ESD)	X			
2. Require or result in the construction of new water or wastewater delivery, collection or treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (EHS, ESD)	X			
3. Require or result in the construction of new on-site sewage systems? (EHS)				X
4. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (ESD)	X			
5. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? (EHS)	X			
6. Require sewer service that may not be available by the area's waste water treatment provider? (EHS, ESD)	X			
7. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs in compliance with all applicable laws? (EHS)	X			

Discussion- Items XVI-1,2,4,6:
The existing facilities at this site produce approximately 45,000 gpd (gross peak day) wastewater flows. This project will add 25,400 gpd of wastewater flow to the wastewater conveyance and treatment systems. This parcel is currently served by TCPUD-TTSA and proposes upgrades to the existing service connection.

An analysis of both the sewer conveyance and treatment plant capacities must be completed due to the proposed increase in density. The probable environmental effects of the various project elements include the need for new wastewater conveyance and stormwater drainage facilities and potential upgrades to the wastewater treatment plant and any existing stormwater drainage facilities.

This project will also result in the construction of new water and wastewater collection and delivery facilities. The EIR for this project will include an analysis of the water, wastewater and storm water utility system impacts and of the construction of the mid-mountain lodge facility in terms of sewer and water collection and delivery systems. and provide mitigation measures to address any impacts of the proposed project.

Discussion- Item XVI-3:
The project will not require or result in the construction of new on-site sewage disposal systems. The Tahoe Regional Planning Agency does not allow the construction of new on-site sewage disposal systems within the Tahoe basin.

Discussion- Item XVI-5:
The EIR will discuss the source of water, the quantity of water available and the potential water sources to be utilized for all aspects of the project, including snowmaking. The EIR will address the Tahoe City Public Utility District (TCPUD) and Madden Creek Water Company's ability to serve this project for potable water service.

Discussion- Item XVI-6:
The EIR will discuss TCPUD's ability and willingness to provide sewer service for this project. The EIR will also discuss the ability and willingness of the Truckee Tahoe Sanitary Agency and Truckee Sanitary District's ability to serve the proposed project at full buildout.

Discussion- Item XVI-7:
Solid waste in the project area is collected by Tahoe Truckee Sierra Disposal (TTSD) and processed at the Eastern Regional Materials Facility (MRF). The MRF is owned by Placer County and operated by TTSD under contract with the County. At the MRF, recyclables are recovered and the residual waste is disposed at Lockwood Landfill in Nevada.

The EIR will provide an estimate of the amount of solid waste generated during construction and after project completion for each sector (residential, commercial, industrial, and institutional). The analysis will also calculate the percent increase in waste received over current conditions and determine if the increase in waste will significantly affect the processing capabilities of the MRF or exceed its permit limits.

If the waste generated by the project creates a potentially significant impact, mitigation measures will be required as part of the EIR (e.g. construction waste recycling and on-site recycling programs).

E. MANDATORY FINDINGS OF SIGNIFICANCE:

Environmental Issue	Yes	No
1. Does the project have the potential to degrade the quality of the environment, substantially impact biological resources, or eliminate important examples of the major periods of California history or prehistory?	**X**	
2. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	**X**	
3. Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	**X**	

F. OTHER RESPONSIBLE AND TRUSTEE AGENCIES whose approval is required:

☒ California Department of Fish and Game	☒ Local Agency Formation Commission (LAFCO)
☒ California Department of Forestry	☐ National Marine Fisheries Service
☐ California Department of Health Services	☒ Tahoe Regional Planning Agency
☐ California Department of Toxic Substances	☒ U.S. Army Corp of Engineers
☒ California Department of Transportation	☒ U.S. Fish and Wildlife Service
☐ California Integrated Waste Management Board	☐ _____
☒ California Regional Water Quality Control Board	☐ _____

G. DETERMINATION – The Environmental Review Committee finds that:

The proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required (i.e. Project, Program, Subsequent, or Master EIR).

H. ENVIRONMENTAL REVIEW COMMITTEE (Persons/Departments consulted):

Planning Department, Steve Buelna, Chairperson
Engineering and Surveying Department, Sarah K. Gillmore
Engineering and Surveying Department, Wastewater, Ed Wydra
Department of Public Works, Transportation
Environmental Health Services, Grant Miller
Air Pollution Control District, Yu-Shuo Chang
Flood Control Districts, Andrew Darrow
Facility Services, Parks, Vance Kimbrell
Placer County Fire/CDF, Bob Eicholtz/Brad Albertazzi

Signature Gina Langford Date February 15, 2008
Gina Langford, Environmental Coordinator

I. SUPPORTING INFORMATION SOURCES: The following public documents were utilized and site-specific studies prepared to evaluate in detail the effects or impacts associated with the project. This information is available for public review, Monday through Friday, 8am to 5pm, at the Placer County Community Development Resource Agency, Environmental Coordination Services, 3091 County Center Drive, Suite 190, Auburn, CA 95603. For Tahoe projects, the document will also be available in our Tahoe Division office, 565 West Lake Blvd., Tahoe City, CA 96145.

County Documents	☒ Community Plan
	☒ Environmental Review Ordinance
	☒ General Plan
	☒ Grading Ordinance
	☒ Land Development Manual
	☐ Land Division Ordinance
	☒ Stormwater Management Manual
	☒ Tree Ordinance
	☐ _____
Trustee Agency Documents	☐ Department of Toxic Substances Control
	☐ _____
	☐ _____

Site-Specific Studies	Planning Department	☒ Acoustical Analysis
		☒ Biological Study
		☒ Cultural Resources Pedestrian Survey
		☒ Cultural Resources Records Search
		☐ Lighting & Photometric Plan
		☐ Paleontological Survey
		☐ Tree Survey & Arborist Report
		☒ Visual Impact Analysis
		☐ Wetland Delineation
		☐ _____
		☐ _____
	Engineering & Surveying Department, Flood Control District	☐ Phasing Plan
		☒ Preliminary Grading Plan
		☒ Preliminary Geotechnical Report
		☒ Preliminary Drainage Report
		☒ Stormwater & Surface Water Quality BMP Plan
		☒ Traffic Study
		☐ Sewer Pipeline Capacity Analysis
		☐ Placer County Commercial/Industrial Waste Survey (where public sewer is available)
		☐ Sewer Master Plan
		☒ Utility Plan
		☒ Tentative Map
		☐ _____
	Environmental Health Services	☐ Groundwater Contamination Report
		☐ Hydro-Geological Study
		☒ Phase I Environmental Site Assessment
		☐ Soils Screening
		☐ Preliminary Endangerment Assessment
		☐ _____
		☐ _____
	Air Pollution Control District	☐ CALINE4 Carbon Monoxide Analysis
		☐ Construction Emission & Dust Control Plan
		☐ Geotechnical Report (for naturally occurring asbestos)
		☐ Health Risk Assessment
		☐ URBEMIS Model Output
		☐ _____
		☐ _____
	Fire Department	☐ Emergency Response and/or Evacuation Plan
		☐ Traffic & Circulation Plan
		☐ _____
	Mosquito Abatement District	☐ Guidelines and Standards for Vector Prevention in Proposed Developments
		☐ _____

ATTACHMENT B PROPOSED MASTER PLAN MAPPING

EXISTING QUAIL CHAIR LIFT

EXISTING MADDEN CHAIR LIFT

EXISTING CHILDREN'S SKI SCHOOL

EXISTING SOUTH BASE LODGE

EXISTING SURFACE PARKING

TAHOE SKI BOWL WAY

EXISTING MAINTENANCE FACILITY

LAGOON ROAD

SACRAMENTO AVE

EL CAPITAN AVE

HWY 89

SACRAMENTO AVE

EXISTING PUMP HOUSE

EXISTING SURFACE PARKING

EXISTING LIFT/OPS BUILDING

SILVER ST.

FAWN ST.

EXISTING GRAVEL PARKING

EXISTING NORTH BASE LODGE

EXISTING SURFACE PARKING

LAKE TAHOE

200 0 200 400

SCALE IN FEET
1" = 200'-0"

811 Know what's below. Call before you dig.

DATE: _____

REVISIONS				
No.	Date		CHKD	APPD

DESIGNED: CKC
DRAWN: CKC
CHECKED:
JOB No: A514.02.14
SCALE: AS NOTED
DATE: 08-21-08

Nichols Consulting Engineers, Chtd.
Engineering & Environmental Services
1885 S. Arlington Ave., Suite #111
Reno, NV 89509
Ph: (775) 329-4955
Fx: (775) 329-5098

HOMEWOOD VILLAGE RESORTS, LLC

HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

EXISTING SITE PLAN

SHEET 1 OF 3

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EXISTING QUAIL CHAIR LIFT

PROPOSED GONDOLA

NEW TAHOE SKI BOWL EXTENSION (TO 11 SINGLE FAMILY UNITS)

11 SINGLE FAMILY UNITS

RESIDENTIAL

SKIER SERVICES

HOTEL/LODGE

RESIDENTIAL

TAHOE SKI BOWL WAY

SKATING POND

FRACTIONAL

SACRAMENTO AVE

PROPOSED SOUTH BASE AREA

LAGOON ROAD

SACRAMENTO AVE

PARKING/ WORKFORCE HOUSING

DROPOFF/SHORTTERM PARKING

FAWN ST.

SILVER ST.

EL CAPITAN AVE

HWY 89

RESIDENTIAL

PROPOSED NORTH BASE AREA (MIXED USE)

LAKE TAHOE

200 0 200 400

SCALE IN FEET
1" = 200'-0"

811 Know what's below. Call before you dig.

DATE: _____

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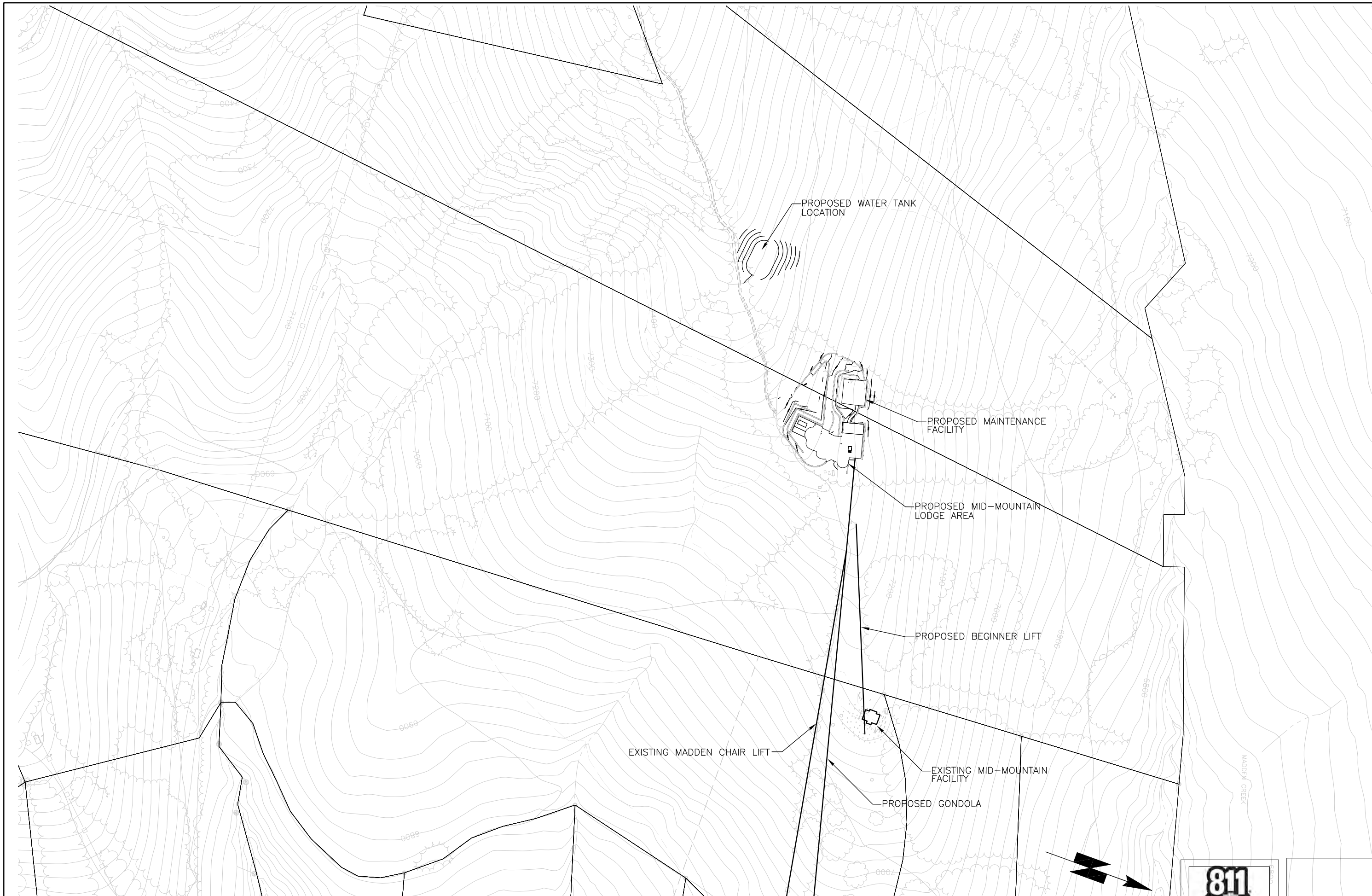
Ph: (775) 329-4955
Fx: (775) 329-5098

HOMEWOOD VILLAGE RESORTS, LLC

HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

OVERALL SITE PLAN

SHEET 2 OF 3



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DATE: _____

REVISIONS				
No.	Date		CHKD	APPD

DESIGNED: CKC
DRAWN: CKC
CHECKED:
JOB No: A514.02.14
SCALE: AS NOTED
DATE: 08-27-08

Nichols Consulting Engineers, Chtd.
Engineering & Environmental Services
1885 S. Arlington Ave., Suite #111
Reno, NV 89509
Ph: (775) 329-4955
Fx: (775) 329-5098

HOMEWOOD VILLAGE RESORTS, LLC

HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

MID-MOUNTAIN SITE PLAN

SHEET 3 OF 3

Judy Nikkel

From: Trinkie Watson [twatson@chaseinternational.com]
Sent: Sunday, October 21, 2007 4:52 PM
To: Judy Nikkel
Cc: Art Chapman
Subject: Letter to TRPA - Homewood

LAKE TAHOE
Music Festival

FROM BACH TO BLUES & BEYOND

October 20., 2007

Ms. Judy Nikkel
Tahoe Regional Planning Agency
jnikkel@trpa.org

Dear Ms. Nikkel:

It is with enthusiasm I write in support of JMA Ventures' proposed plan for Homewood Resort. For the first time in several years, we were able to return to the West Shore for our Summer Music Festival, and we were received with open arms by the community. Although the site is temporary until the improvements are built, at which time we will have a lovely venue for about 1500 attendees, the team at Homewood knocked themselves out to make sure that we had the best possible accommodation for this year's program.

Because we were very successful in increasing our donor base this year, thanks in good part to the Homewood venue, we were able to ramp up the quality of programs, which resulted in the best attendance we've had in our 25 years of existence.

As you probably know, the Lake Tahoe Music Festival started at Chambers Landing as a one week classical program with five concerts. As it grew, it was moved to what was known as Topol Pavilion across the street from the ski resort on Nate Topol's lakefront property. When that property was approved for development a few years ago, we became orphans and moved where we were able to find space to accommodate our needs. Finding space to replace our lovely lakefront setting has been a tremendous challenge, and we now have the next best thing with our move to Homewood Resort.

The star is on the rise for the Lake Tahoe Music Festival with our new home base. Our major donors love it and are supporting financially not only our music performances but also our Education Outreach Program with the schools. This has now grown to one week in the fall and one in the spring for our local students.

We love the plans we've seen so far for Homewood's renaissance and hope that you, too, agree it is a

wonderful renovation of part of Lake Tahoe's history.

Sincerely,

Trinkie Watson

Trinkie Watson, President

cc: Mr. Art Chapman

2

David Landry

From: Ray & Lois Perryman [raynlois@infostations.com]
Sent: Saturday, October 27, 2007 7:58 PM
To: David Landry
Subject: Homewood Master Plan

Brenda Hunt has referred me to you and said you are working on the Homewood Master Plan while she is working on the CEP process. She also indicated that you have been or are on vacation. I have some questions that I hope you can respond to on regarding this plan.

My property which has been in my family since 1909 is surrounded on the south, west and north by Homewood Mountain resort (HMR). I have attended three current presentations by HMR and each time there have been some modifications in what is to be proposed. In 1997, I did make numerous one day trips to Tahoe to attend just about every West Shore Master Planning Meeting; when at the last moment HMR excluded itself from this planning process! My notes of these meeting show that on the north area HMR parking area, only what would have been the first tier of 100' by 200' HMR lots on the west side of the highway previously were zoned for construction and that the second and third tier (also covered by the parking area) were zoned the same as the steep mountain. At these meeting there was ample opportunity to ask questions and provide input.

(1) I've been told that this 1997 plan was never finalized and that in fact there is not now any Master Plan for Homewood. Is there currently an approved Master Plan for Homewood? and if so, where might I see it?
(2) When will I and my long time residential neighbors who are clearly to be significantly impacted by any change in the HMR facility or operation to be allowed to know what is in fact being proposed and allowed to ask questions and provide input?
(3) Is the Master Plan for Homewood, which you are working on, a totally separate processfrom the CEP Process or are the two commingled?
(4) Have HMR & Jeff Yurosek made proposed changes in zoning and other items to be included in the Master Plan you are working on?

For your complete information, since August 07, I have gathered the e-mail address of 19 of my close neighbors and mailing address of everyone above the highway that are surrounded like me to the south, west and north by this significant HMR proposal. Each of these residential neighbors are located in the three block area that is commonly called "Downtown Homewood" or "Old Homewood". Dependent on your response, I probably will be sharing your information with these neighbors. HMR has applied for the CEP process and this appears to be on fast track; so I would appreciate a prompt response.

Ray Perryman

I just contacted them and the hours of operation of the Homewood Preview Center are 9-5 on Tuesdays and Thursdays. For appointments on other days, please call (530) 525-1537 and ask for Rick Brown or Jennifer Byerly.

I hope this is helpful information. Please contact me if you have additional questions.

Brenda Hunt
Associate II Land Use Planner
Planning and Evaluation/Pathway 2007
TRPA
PO Box 5310
128 Market St.
Stateline, NV 89449
775.588.4547 x.225
775.588.4527 Fax
bhunt@trpa.org
www.trpa.org

From: Ray & Lois Perryman [mailto:raynlois@infostations.com]
Sent: Saturday, October 20, 2007 8:21 PM
To: Brenda Hunt
Subject: Homewood Mountain Resort (HMR)

On August 13, 2007, you advised me by e-mail that HMR had not as of that date applied for or been included in the new CEP Master Plan and it appeared that Jeff Yurosek (the former owner of HMR , who retained two small parcels of relatively flat land between the north and south bases of HMR had not applied either. I am now receiving a number of communications which cast the inference that they are in the CEP and that this is on a fast tract process for approval. NTCAA, which appears to be developing opposition to this development, in fact has scheduled a planning meeting regarding HMR on 10/27/07 from 1:00 p.m. to 4:00 p.m. Unfortunately, I have other commitments for that date. My property which has been in my family since 1909 is surrounded on the south, west and north by HMR. I have attended three presentations by HMR and each time there have been some modifications in what is to be proposed. Thus some questions:
(1) Have HMR & Jeff Yurosek applied to be included or been accepted into this CEP process?
(2) I did make numerous one day trips to Tahoe in 1997 to attend just about every West Shore Master Planning Meeting; when at the last moment HMR was excluded from this planning process! At these meeting there was ample opportunity to ask questions and provide input. When will I and my long time residential neighbors who are clearly to be significantly impacted by any change in the HMR facility or operation to be allowed to know what is in fact being proposed and allowed to ask questions and provide input?

For your complete information, since August 07, I have gathered the e-mail address of 19 of my close neighbors and mailing address of everyone above the highway that are surrounded like me to the south, west and north by this proposal. Each of these residential neighbors are located in the three block area that is commonly called "Downtown Homewood" or "Old Homewood". Dependent on your response,
I probably will be sharing your information with these neighbors. Thank you for the prompt response that you previously provided.
Ray Perryman

3

North Tahoe Citizen Action Alliance

8 February 2008

Tahoe Regional Planning Agency
Governing Board
PO Box 5310
Stateline, NV 89449

Dear Governing Board,

North Tahoe Citizen Action Alliance (NTCAA) was organized to represent a citizen's voice in our North Tahoe Community. Having a significant number of Homewood community members who are either NTCAA members or those who have been contacted, NTCAA finds it essential to comment on the impact the development of Homewood Mountain Resort (HMR) as currently planned would have on the Homewood community in a number of ways.

NTCAA understands the benefits to the community that the planned improvements to the ski facility would offer. However, the real estate developments planned must be carefully scrutinized.

Protecting the environment, maintaining the scale and character of the community, not exceeding the capability of the infrastructure, and attention to the fire, evacuation and normal traffic loads, are of paramount importance. A reduced size of HMR would address all of these issues.

NTCAA feels that a reduction in size of the proposed development would have a favorable impact and should be investigated. In that spirit, NTCAA has suggested an alternate which is attached that we would request be reviewed from both community and financial impacts.

Sincerely,
North Tahoe Citizen Action Alliance

Gerald J Wotel, President
Signing for the Board of Directors

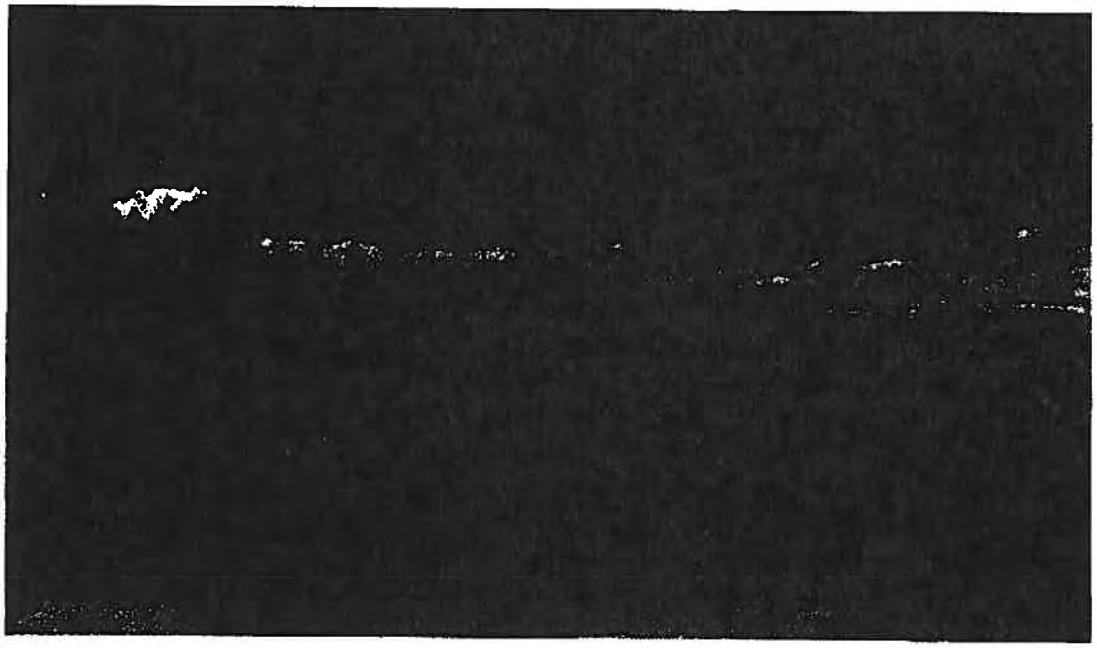
Cc: Mr. Art Chapman
TRPA APC
Placer County Supervisors

PO Box 289, Tahoe Vista, California 96148-0289

North Tahoe Citizen Action Alliance

Alternative Proposal

Homewood Mountain Resort



Prepared for

Tahoe Regional Planning Agency Governing Board

February 5, 2008

Executive Summary

There are two goals that the TRPA Community Enhancement Program (CEP) stated it would accomplish to improve developments within the Tahoe Basin. First, the CEP was to improve and enhance the Community within the "Projects" they accepted, such as Homewood Mountain Resort (HMR). Secondly, the CEP was to restore and preserve the watersheds and wetlands through the application of the Environmental Improvement Program (EIR).

Homewood Mountain Resort was to be within the scale, density/height and character of Homewood. NTCAA seeks to provide an ongoing voice for ordinary citizens in planning the future of our communities. Individuals related both verbally and in letters the possible need for some new development such as the Hotel and the commercial spaces for business but distressed that the condominiums would just bring too many people with severe traffic and parking problems[1] The proposed development would overwhelm the rural town especially in the summer when traffic is backup northbound on Hwy 89 from Sunnyside to Tahoe City. Not one more car is acceptable. The homeowners would be engulfed with tourists in Homewood with this present proposal of HMR.

There could have been substantial benefits to this proposed development with the implementation of the EIP. Presently, HMR will develop on the Hill Face, never before allowed because of Homewood's high hazard avalanche area designation[2] and the increase in erosion and sediment run-off due to steep slopes[3]. Homewood watersheds give rise to three creeks namely Madden, Homewood and Quail Creek. There is one more Stream Environmental Zone (SEZ) which is seasonal but needed restoration in 1997.[4] This SEZ is located on the north end of Tahoe Ski Bowl Way and gives reason for this road not to be extended for homes, especially when they are into the slope of the hill. Homewood Creek has been requested to be restored by TRPA.[5] In HMR at the North Base at Fawn St. and Sacramento Ave. is a reported wetlands/marsh of 1.7 acres that will become a parking garage partly underground and partly above ground.[6] On Tahoe Ski Bowl Way, the location of Homewood wetlands and SEZ will be the underground parking for the 120 proposed condominiums.[7] All of these maps are available through Placer County of both the SEZ and Wetlands in this Resort area of Homewood.

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[1] Letters from Citizens during September 2007 and December 2007, at the end of all Attachments

[2] West Shore General Plan 1998: PAS 157-Homewood/Ski on page II-32, Existing Environment. High Hazard, Attachment A

[3] A federal Visonfor the Environmental Improvement Program at Lake Tahoe, Attachment B; as well as Lake Tahoe Restoration Act Public Law 106, Nov. 13, 2000 by the 106th Congress; Attachment C

[4] Placer County Homewood Erosion Control: TRPA in the EIP page 26. Cost $208,821 repair of SEZ

[5] West Shore General Plan 1998 "Base facilities for the south side of Ski Homewood encroach upon a stream environmental zone" page II-32 (needs restoration); Attachment D

[6] Placer County map of Homewood Wetlands, Attachment E

[7] Placer County map of Homewood, stream environmental zone, Attachment F

This complete site of HMR needs to consider the Safety Elements and goals of "extreme" fire, flood, Avalanche Hazards.[8]

Therefore, due to the failure of the Community Enhancement Program to restore, enhance or preserve the TRPA Environmental Improvement Program or the Community in scale, density or character, we at North Tahoe Citizen Action Alliance (NTCAA) have submitted an alternative proposal to reduce all development on the hill face, in the stream environmental zones and wetlands. This determination followed several meetings within Homewood homeowners in multiple meetings including the North Tahoe Citizen Action Alliance (NTCAA) Community Meeting in Tahoe City. The NTCAA is not against HMR development; we are offering an alternative to decrease the size and incremental impacts of traffic and parking and impacts to the environments in this present HMR proposal in Homewood.

Understanding direct and indirect impacts of urbanization on watersheds and wetlands deepens our understanding of the cumulative impacts in the Lake Tahoe Basin.[9] Development must not be so massive as to disregard our thresholds and the Prime Fish Habitat discussed by TRPA.[10] The Tahoe basins "environmental quality has depreciated in a measurable, cumulative way"[11]. NTCAA listened and reduced the developments impacts on traffic and parking as well as the Noise, Air and Water Thresholds as recommended to us by the Homewood citizens during our review. This Alternative is recommended to develop within the scale, density and character of Homewood and within the TRPA-EIP and other Federal mandates as described and while still allowing a vibrant community center and residential community.

Sincerely,

Susan R. Gearhart

Susan R. Gearhart
NTCAA Board of Directors
PO Box 289
Tahoe Vista, CA
96148

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[8] West Shore General Plan 1998: Chapter VI Safety Element, Attachment G

[9] Center for Watershed Protection: Direct and Indirect Impacts of Urbanization on Wetlands & Wetlands for the Office of Wetlands, Oceans and Watersheds, U.S. Environmental Protection Agency 12/2000, Attachment H

[10] TRPA Shorezone, Prime Fish Habitat map – Spawning, Attachment I

[11] Lake Tahoe Watershed Assessment by USDA, USFS and Pacific Southwest Research Station, 1999

Homewood Mountain Resort (as per web site)	NTCAA Alternative	Reasoning for Change
North Base: Hotel 60 rooms, 40 two bedroom, two bath condo's hotel rooms, and 30 rooms penthouse privately owned, 3 to 4 stories- Total rooms = 130	HMR Inn delete 40 two bedrooms condo's individually-owned Height restriction of 3 stories high. Total rooms = 90	Reduction of the size of the Hotel, this will be the largest Restaurant and Inn: Sunnyside Inn 23 rooms, West Shore Café & Inn, 6 rooms plus 5 townhouses = 21 rooms
Inn-full service Restaurant, Spa, pool, fitness center and other accessories.	Same	Unchanged
Parking-three levels on the wetlands, Fawn St.	Parking removed from this site. Restore wetlands and preserve functions.	No net loss but change in the Conceptual Plan by moving parking lot.
12 On-site workforce (WF) housing apartments around parking lot.	Same	Unchanged
Commercial Floor Space (CFA), 25,000 sq. ft. Parking?	Recommend reduction in (CFA) to 20,000 sq. ft. with **additional rooms above,** limited to ten or less.	Rental of single bed rooms for workers in the CFA to assist living and working at same location.
42 two-story residential condo's spread among three separate buildings.	Delete – density too great	Traffic and parking are impacted heavily with condo's, multiple number of people.
40,000 sq. ft. Mountain facility. Food & beverage, Ski school, rental shop, lockers, administrative and operations office.	Reduce size to a more reasonable 30,000 facility or less, need to see details but this is extravagant.	Skiers are limited to 3,300. This facility should be reduced to include after skiing activities but limited.
Mid Mountain Chalet Restaurant, Gondola ride, unsure of potential development	Same – until EIR/EIS, view shed from the ridge around the Lake could be a problem, also emergency evacuation and response time.	Unchanged, actually supported by many homeowners.
Possible Ski School	Same	Unchanged, should be open for the public, there is not a lot of information

Homewood Mountain Resort	NTCAA Alternative	Reasoning for Change
South Base: "A distinctive and beautiful appointed residential area to compliment the existing neighborhood" 120 Condominiums – 3 story	Homewood Residential would be complimented best by having Single Family Residential detached, with 2-parking spaces. Limited to 30 homes-2story, one/7,000 parcel or six/one acre with cluster townhouse's	Residential surrounding the North and South Base is PAS 158 Mc Kinney Tract –SFR on one parcel. One home per 10,000 sq. ft. parcel is standard. Reducing Traffic, Parking and Noise thresholds.
Underground parking for 120 condominiums and unknown bedrooms	Detached Single Family Homes with 2-parkings spaces, delete underground parking.	Underground Parking off of Tahoe Ski Bowl Way would be into the SEZ of Homewood Creek.
11 Single family lots located on the north end of Tahoe Ski Bowl Way overlooking Lake Tahoe and North Base	Delete, incorporate into 30 Single Family Residential or six detached townhouse/acre. Tahoe Ski Bowl Way ends at an area determined as a SEZ	Cutting into the steep slopes to build homes will inc. erosion and sediment into the Lake-Prime Fish Habitat & SEZ, wetlands
Services: A winter use only dining facility and day skier access and parking to North Base	Delete dining facility and maintain skier access.	30 SFR won't need a special place to dine.
Creating a Community Center. Resort establishes a vibrant commercial and residential center.	**Same Affect:** Homewood residents expressed deep desire to delete the multiple condominiums, still maintain the residential character.	**Reduction minimal to "Village Co re"** Essentially still very viable but with decreased Traffic, Parking, and Noise Thresholds
Workforce Housing: on-site housing for those employed at Homewood.	**Increased Housing above the CFA in North Base** for workers to be available on site. 10 units potentially.	**Added potential living space** for workers and less tourist accommodation units (TAUs) to balance scale and density with Community Character
Transportation concepts: Dial-a-ride, alternative energy vehicles, water-borne taxi, incentive-based carpool. Bike & pedestrian trails.	**Traffic reduction by decreasing the size of development.** Reduced rentals/tourists in condo's TAUs in North Base = 82 and South Base = 101	**TRPA EIP-** Urbanization creates loss of watershed habitat, and ski areas will add to urban runoff. Traffic and urbanization will destroy the Character and beauty of Homewood & Lake Tahoe Basin.
Total + 355 TAUs	Total reduction = 183 TAUs	Condominiums deleted

4

David Landry

rom: Jason Hommel [bibleprophesy@yahoo.com]
Sent: Friday, August 01, 2008 5:21 PM
To: David Landry
Subject: Need for Parking in Master Plan for Homewood

David L. Landry,

I received the courtesy notice about the Master Plan for Homewood.

I'm a homeowner on Lagoon, right at the base of the left of the mountain at Homewood. Our family has had this cabin since 1977.

I have reviewed Homewood's master plan. I am encouraged by the development plan for the area, and I support the entire idea of development. I especially like the idea of being able to shop for food, ice cream, and coffee at the new resort. I hope more people will come to the resort, and that the resort will prosper, and be profitable enough to do things like eventually put in new lifts and make the resort a better vacation destination, which I love. I really love the new high speed quad!

However, I'm concerned by the lack of planning for parking.

I have emailed my concerns about the lack of parking to Homewood, but I have not heard anything from them.

Their plan appears to remove many parking spaces at the resort, and will add numerous residences on the current parking lots.

T believe they need to make sure that with any additional residences, they will need to rovide more parking than exists currently, as current parking needs are insufficient for the resort.

Their plan to try to make use of alternative methods of transportation, such as boating, is not viable nor realistic in my opinion.

The newly introduced idea to limit ticket sales when parking is full, is also not viable, and they are living in a fantasy world if they think that is a solution.

People drive to Tahoe. Those people will need to park somewhere.
Where? Building a parking lot in Tahoe City would be a ridiculous option. People need to park where they will be staying. That's life.
That's how people do things. That's not going to change.

As it is, too many people end up illegally parking along the streets in front of the houses along Sacramento street, on days when the snow is good, and the sun is out.

It is not realistic to try to turn away people who have driven four hours or more for a day trip, up from San Francisco, and further away, at such times. Since we are planning here, the plans should be to accomodate the existing traffic in any planning scenario, and to accomodate increased traffic in any expansion scenario.

Currently, the lack of attention to this issue is frightening.

There must be more parking than currently exists, even if there are no increased places to stay.

I don't know how they plan to accomodate for increased parking. Do they plan to build a parking garage?

Please acknowledge receipt of this letter simply by responding to this email with a short note, such as "thanks for the input".

Thank you.

Sincerely,

Jason Hommel
625 Lagood Road
(at Homewood)

15527 Brooks Road
Grass Valley, CA 95945

530 274 8850

--
Sincerely,

Jason Hommel
Research mining stocks ---> miningpedia.com Make money ---> silverstockreport.com Build your faith ---> bibleprophesy.org & help others do the same!
find-your-local-coin-shop.com

5

DAVID AND ADELE RIEGELS
1228 46TH STREET
SACRAMENTO, CALIFORNIA 95819

August 5, 2008

Tahoe Regional Planning Agency
Attn: David L. Landry
P.O. Box 5310
Stateline, Nevada 89449

Re: Courtesy Notice for Public Scoping
TRPA File No. CEPP097130005

Dear Mr. Landry:

This is to respond to your agency's July 23, 2008 notice regarding the August 13, 2008 scoping meeting for the Homewood Mountain Resort CEP. We own a second home at 155 Tahoe Ski Bowl Way, Homewood, and therefore we will be directly impacted by the proposed South Lodge development.

While our initial reaction to JMA Ventures' plan for the South Lodge area of Homewood was naturally N.I.M.B.Y. (Not It My Back Yard!), we have to concede that economic pressures and population growth do make it inevitable, sooner or later, that something will happen in our back yard.

Change is inevitable. From the time we purchased our cabin on Tahoe Ski Bowl Way in 1983 to the present, Homewood has lost many of the businesses that we enjoyed–its service station, its hardware store, its grocery store, Tahoe Gear, Wolfdales, the Swiss Lakewood and others. Yet, during this same period, the population of the State of California has increased by fifty percent, and, with that increase, the desire to have a first or second home in Homewood, as is manifest in the increase in our property values.

Given the development schemes of years past, such as mobile homes for rent at Quail Lake, our self-interest lies in supporting responsible development plans, as those of JMA Ventures purport to be, both to revitalize Homewood and to allow others to share in the Homewood peace and quiet that we have enjoyed over the last twenty five years.

This is not to say that we are not without reservations regarding the plan; we do have reservations–approximately 100 residential units in the South Lodge area means a very large number of people (hundreds) will be staying down the

street from us, our quiet dead end street could easily become a high speed thoroughfare serving the eleven new private home sites, and, later on, others in between, and a noisy right of way is to be constructed directly behind our cabin.

This is to say that, while it is obvious to us that our Homewood life will never be the same again, if JMA Ventures does what it says it will do, both in terms of the quality of its development and in terms of listening to the concerns of those of us as are destined to be the neighbors of its customers, then the changes will be, on the whole, more tolerable than might otherwise have be the case.

However, we do ask that the EIR/EIS assess all of the impacts of the proposed South Lodge development on our existing neighborhood, and in particular address the impacts of vehicular and pedestrian traffic circulation and noise and light pollution, including that resulting from the planned operations on the right of way behind our cabin.

We trust that JMA Ventures will be held to it representations, that the impact of the development will be minimized whenever and wherever possible, and that Homewood will continue as a unique and historic West Shore community.

Very Truly Yours

David A. Riegels

David Landry

From: bbvb11@gmail.com on behalf of Vic and Barbara Brochard [bbvb@calalum.org]
Sent: Friday, August 22, 2008 1:46 PM
To: David Landry
Subject: Homewood Mountain Resort

We are homeowners in Tahoma and have had our home in our family for over 100 years. Our family has tried to be good stewards of the land and lake. We believe that the Homewood Mountain Resort (HMR) would have a tremendously adverse affect on the West Shore of Lake Tahoe.

The size and density of the proposed development will negatively impact the following:

- Environment of the lake and the West Shore area via air pollution and water runoff carrying dirt and other pollutants to the lake.
- Traffic flow along Highway 89. A Sunday morning in August the traffic was backed up for 1.2 miles south of Tahoe City. Highway 89 will be overwhelmed by such a massive project on normal days and it could be catastrophic in an emergency situation.
- Homewood and West Shore areas. The numbers of resort guests, employees, service providers, trucks, boats and trailers will overwhelm our neighborhood.
- The scenic impact from the lake and trails. This project is much too large and dense.

The developer will reap a hefty profit, but we will reap degradation to the lake and mountain environment for the foreseeable future.

Victor and Barbara Brochard
6740 West Lake Blvd.
Tahoma

7

David Landry

From: cjgray123@comcast.net
Sent: Saturday, August 23, 2008 1:13 PM
To: jcowen@trpa.com
Cc: David Landry
Subject: Homewood Mountain Resort
Attachments: Homewood Mountain Resort

Jeff- Would you ensure that the Board Members receive this before the HMR hearing. Thanks

To: TRPA Board Members
From: Carole Gray
5040 West Lake Blvd.,
Homewood, CA 96141

305 Evergreen Drive
Kentfield, CA 94904
Date: August 23, 2008
RE: Homewood Mountain Resort

I apologize that I cannot present my position in person, but I hope my letter will have the same voice.

I am in favor of Homewood Mountain Resort. This ski resort needs revitalization.

But, I believe the 318 units proposed is too many and that this plan should be reduced 200 units for the following reasons:

1. **Traffic**. Traffic is increasing in the Tahoe Basin. Just try to get to Tahoe City from Homewood and, no doubt, you'll have run into stop and go traffic anytime after 9am to 6pm. With these added units, the congestion on the westshore, not to mention Homewood, will inevitably increase. With 318 units, it can be anticipated that between 1,400 to 1,600 vacationers will be in the Homewood area and the number of cars could increase in the Homewood area to 600 to 700. Unfortunately, these numbers do not incorporate any HMR employees either. With such a high volume of travelers, it would be naive to believe that there won't be back-up traffic issues, especially with left-hand turns, boat travelers, etc.

Although I endorse the shuttle concept, it will take a while before it is fully accepted as a viable and reliable mode of transportation. We are a commuter nation, car culture populous (remember the opening Olympic ceremonies in Atlanta?). Until this concept catches, if it will at all, the influx of traffic in Homewood will surely diminish its natural beauty, which is presumably one of the reasons why this resort is being developed.

2. **Parking**. A sub-section to my traffic concern is adequate parking. I realize a parking garage is to be constructed, but is it large enough to accommodate 1,400-1,600 vehicles, not to mention the employee parking? Although overflow parking could be utilized along Highway 89, is this the wisest choice especially in an event of an emergency? And will this parking garage and parking along Highway 89, affect the aesthetic beauty of Homewood? I argue that it wil.

3. **Size, Density and Character**. It is undeniable that the landscape of Homewood is changing. Other developments are afoot, which will, unfortunately, convert Homewood from a residential town to a resort destination. I accept this sad outcome. Even if 200 units are proposed, the effect will be the same, but at least it will not be so obvious. I think it is interesting how Homewood's character will be changed in less than decade, but I don't think this development needs to be taken to this extreme by allowing 318 units.

As far as the development itself, anything on the HMR mountain will look like an abomination because nothing is on the hill right now, but to propose a structure/development so large and numerous will dwarf the HMR hill, but also the entire town.

And similar to the traffic argument, if 1,400-1,600 vacationers are allowed in Homewood, this will, simply, overwhelm our town.

4. **Water Quality**. I realize that the lake's clarity is better this year as opposed to last year, which is a relief in light of the Angora fire, but it would be naive to believe that the Lake's clarity will always maintain its pureness. With reference to HMR, I am particularly concerned about a reference made in its application, specifically that it requests that the treatment of runoff water from the highway and area be recognized as *offsetting water quality mitigation fees*. I hope this is not a license to discharge water that would normally not pass present water standards. And, again, this is a concern that I think would be handled more conservatively with 200, not 318, units.

Like I stated above, I am in favor of this project, but I believe the number of units should be strictly scrutinized, especially considering the current and future development and within Homewood and how it will alter this town's character.

Thank you.

8

David Landry

From: Christine Carta [christinecarta@gmail.com]
Sent: Tuesday, August 26, 2008 6:05 PM
To: David Landry
Subject: Homewood Mountain Resort Master Plan

To whom it may concern,

We are homeowners in Tahoma and are concerned that the Homewood Mountain Resort (HMR) will have a negative impact on the West Shore of Lake Tahoe.

We understand that the scope of this Master Plan requires the preparation of an EIR/EIS. We would like to express our interest that this document adequately address the traffic impacts from this proposed development. The size and density of the proposed development will negatively impact traffic flow along Highway 89, not just in the Homewood area but as it approaches Tahoe City. While the developer espouses concern over traffic congestion and proposes to address it with on site worker housing and long-stay visitors, this does not address the impacts on evacuation in an emergency situation. The number of units has been reduced from previous proposals but still is too high for this area and is not in keeping with the community character.

In addition to traffic concerns, I expect the EIR/EIS to adequately address impacts to wetlands or SEZ zones and other environmental impacts.

Please add us to your notification list for information about the progress of the EIR/EIS document and other meetings related to this project.

Thank you for your time,

Christine and Dave Carta
6740 West Lake Blvd.
Tahoma

9

David Landry

From: Robert LaMar [rlamar@pobox.com]
Sent: Saturday, August 30, 2008 5:23 PM
To: David Landry
Subject: Homewood Mountain Resort

Dear TRPA:

My name is Robert La Mar. My home in Lake Tahoe is located at 5565 Lagoon Road in Homewood. I have owned this property for more than 25 years. My contact information is as follows:

Robert La Mar
757 Main Street
Half Moon Bay, CA 94019
650-560-9300
rlamar@pobox.com

I would like to express my feelings and concerns regarding the proposed development of the Homewood Resort area.

I am not a city planner, an ecological expert, a civil engineer, or a developer. I am, however, a businessman and a realist. I know that if the west shore of Lake Tahoe in general and Homewood specifically is to thrive in the future, development must come. My concern is the form in which this development takes place.

The west shore and Homewood are truly unique. Over the years they have evolved as quiet residential communities in contrast with, and I feel complimentary to, the other areas of Lake Tahoe. Areas such as south shore, Incline Village, and even the north shore that have opted for large scale development, denser population centers and a wider range of commercial ventures. I believe it has been very healthy for the Lake Tahoe region, as a whole, to be able to offer a wide range of environments for residents and visitors alike.

My main concern with the proposed Homewood development is its scale. It is my belief that if executed as currently proposed, the development would overwhelm the infrastructure and change the nature of the west shore dramatically to the detriment of the entire region. Why are we considering changing the west shore and Homewood environment so dramatically in one fell swoop and losing the unique charm and nature of this beloved and unique neighborhood? As I have said, I know that development is necessary to keep Homewood viable, but why not development in keeping with the nature, historic value, and scale of what makes the west shore and Homewood what it is? If we don't we'll be squandering a treasure that can never be recaptured.

I hope those of you who have the awesome responsibility of preserving the Lake Tahoe region for our children and their children will not put the "tax base" first, and take heed and approve a development plan for Homewood that can become a part of our beautiful and traditional landscape rather than a development so massive that it threatens to become the landscape itself.

Sincerely,

Robert La Mar

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10

David Landry

From: Carol Kaufmann [caroltahoe@sbcglobal.net]
Sent: Sunday, August 31, 2008 10:30 PM
To: David Landry
Subject: Homewood Mountain Resort Master Plan

Mr. David Landry, Project Manager
TRPA
by email

Dear Mr. Landry,

We have received your notice of the meeting regarding the potential effects of the proposed HMR Master Plan Project. My husband and I will be out of the country for the month so, unfortunately, will not be able to attend the scheduled meeting.

We do want to go on record and saying that we have made it a point to be very informed as to what is planned for the resort as well as what JMA has been proposing, and how they are progressing. We have been involved in development issues throughout the past 40 years through business as well as circumstances. In our opinions, this is one of the best thought out developments to come along. The sensitivity to the land, and yes, the neighborhood too, is way beyond what normally happens. The project can only be a positive influence on Homewood and the West Shore in general.

With that being said, we would like to go on record as recommending a Negative Declaration as we are totally in favor of the project as is. If this is not your decision, we would like to recommend that a highly focused EIR be undertaken so as not to discourage the developer from moving forward with a project that will be very valuable to the area both environmentally and economically.

Carol L. Kaufmann

L. Bill Kaufmann
255 St. Michaels Court
Homewood, CA 96141

CAROL L. KAUFMANN
BUSINESS MANAGER
LOVERDE BUILDERS, INC.

11

David Landry

From: Paul Vatistas [vatistas@yahoo.com]
Sent: Tuesday, September 02, 2008 3:16 PM
To: David Landry
Cc: Jerry Wotel; Jeff Cowen
Subject: Draft EIR/EIS for Homewood

Many thanks for informing me of the proposed meeting of the TRPA APC on September 10 to dicuss the scope of the EIR/EIS for the Homewood Mountain Resort. I am a little concerned at the reference that "the item is not time certain and may be continued to another meeting without additional notice". This is very disconcerting to those of us who are not paid to attend the meeting.

I would like to request that the APC determine a time certain to address this item. Interested west shore and north shore residents (like myself) have to take a day off work to attend the meeting and drive two hours round trip to TRPA's offices in south shore inorder to participate. Therefore it seems reasonable to ask the TRPA and the APC to commit to hearing the agenda item, and at a time certain.

Kind regards,

Paul Vatistas

12

David Landry

From: David Riegels [dave@riegelslaw.com]
Sent: Tuesday, September 02, 2008 8:22 PM
To: David Landry
Cc: Adele Riegels
Subject: Scoping for Homewood Mountain Resort Master Plan EIR/EIS
Attachments: HwoodNewsletterSept2007.pdf

Dear Mr. Landry:

After having reviewed the September 2008 Notice of Preparation, I want to take this opportunity to supplement my letter to you of August 5, 2008.

In particular, previously we were given to understand by representatives of JMA that the project will include the construction of an unpaved road that will link the South Base Area and the North Base Area. This road was described as the "Village Connection" in the attached September 2007 Newsletter.

As we understood the project, this road was to follow the line of the existing dirt road that is located to the west of Tahoe Ski Bowl Way, then at some point cross the "New Tahoe Ski Bowl Way Extension" and then connect in some way with the North Base Area.

We were given to understand that this road not only would be used by equipment traffic between the South Base Area and the North Base Area, but also would be used, both in the winter and in the summer, to convey persons between the South and North Base Area.

However, this unpaved road (the "Village Connection") does not appear to have been included in the Detailed Project Description in the September 2008 Notice of Preparation. If this road is to be constructed as part of this project, then we ask that the scope of the EIR/EIS be expanded to include the study of impacts of this road which will run directly behind our cabin; our cabin being the middle of the three cabins on the west side of Tahoe Ski Bowl Way.

Thank you for your consideration of this request.

--
David A. Riegels
Attorney at Law
4208 H Street
PO Box 19579
Sacramento, CA 95819-0579

Phone: (916) 739-0988
Fax: (916) 739-0998
Email: dave@riegelslaw.com

dry your boat before launching.

From: David Riegels [mailto:dave@riegelslaw.com]
Sent: Tuesday, September 02, 2008 8:22 PM
To: David Landry
Cc: Adele Riegels
Subject: Scoping for Homewood Mountain Resort Master Plan EIR/EIS

Dear Mr. Landry:

After having reviewed the September 2008 Notice of Preparation, I want to take this opportunity to supplement my letter to you of August 5, 2008.

In particular, previously we were given to understand by representatives of JMA that the project will include the construction of an unpaved road that will link the South Base Area and the North Base Area. This road was described as the "Village Connection" in the attached September 2007 Newsletter.

As we understood the project, this road was to follow the line of the existing dirt road that is located to the west of Tahoe Ski Bowl Way, then at some point cross the "New Tahoe Ski Bowl Way Extension" and then connect in some way with the North Base Area.

We were given to understand that this road not only would be used by equipment traffic between the South Base Area and the North Base Area, but also would be used, both in the winter and in the summer, to convey persons between the South and North Base Area.

However, this unpaved road (the "Village Connection") does not appear to have been included in the Detailed Project Description in the September 2008 Notice of Preparation. If this road is to be constructed as part of this project, then we ask that the scope of the EIR/EIS be expanded to include the study of impacts of this road which will run directly behind our cabin; our cabin being the middle of the three cabins on the west side of Tahoe Ski Bowl Way.

Thank you for your consideration of this request.

--
David A. Riegels
Attorney at Law
4208 H Street
PO Box 19579
Sacramento, CA 95819-0579

Phone: (916) 739-0988
Fax: (916) 739-0998
Email: dave@riegelslaw.com

13

Peg Rein

From: Wood2905@aol.com
Sent: Wednesday, September 03, 2008 9:56 AM
To: dlandry@trpa.org; Placer County Environmental Coordination Services
Subject: Homewood Mountain Resort Master Plan Review

I am a part-time resident and homeowner of three homes in the Homewood area, but I will not be able to attend either review hearing as scheduled due to conflicts so I wanted to express my view.

Overall, I am in favor of Art Chapman plans to upgrade the area, however I have reservations over the scope of the project as it relates to the sheer increase in the number of "beds," hence bodies, hence traffic. On a busy day in season it already takes more than twice as long as normal to get in or out of Tahoe City going to/from Homewood to other areas. We have all experienced the kind of traffic congestion around Squaw in the morning and afternoon during ski season, and I would hate to see that kind of raffic congestion in Homewood during the ski season. And I fear the the scope of this project will exacerbate an already serious peak period traffic problem in the area unless there are plans to facilitate traffic flow better than current conditions allow?

Art Chapman assures me that there will be no more parking slots than exist today and that they will limit ski passes to the same level as today, so I hope that comitment can be established and governed--can that be part of the arrangement? What would prevent the developers from changing and substantially increasing the number of skiers permitted after the project is approved?

From the review document, I could not tell precisely how many bedrooms and "beds" are contemplated as that was not specified for the condos and penthouses, but assuming they are all at least 2 bedrooms, the plans appears to allow for in excess of 550 bedrooms and perhaps substantially more than 700 beds. That seems excessive to me and feel that TRPA and the County should conduct serious traffic modeling on the impact of that many new beds in this area. You might also explore what the county might do to accomodate increased traffic with improved roadways and traffic management processes?

Personally, I would be comfortable with no more than 250 bedrooms and I'd prefer to see a greater percentage of individual unit ownership vs fractional which seem to have much higher occupancy rates, hence greater impact on traffic.

I would appreciate your feedback on the questions I've raised. Thanks in advance.

Woody Shackleton
80 Logan Lane
Atherton, CA 94027

Lake Tahoe (summer):
PO Box 628
Homewood, CA 96141

cell: 408-420-7044
home: 650-780-9152
fax: 650-780-5614

Tahoe: 530-525-0333

****

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14

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

Notice of Preparation

September 2, 2008

To: Reviewing Agencies

Re: Howewood Mountain Resort Master Plan Project (PEIR T20080052)
SCH# 2008092008

Attached for your review and comment is the Notice of Preparation (NOP) for the Howewood Mountain Resort Master Plan Project (PEIR T20080052) draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Maywan Krach
Placer County
3091 County Center Drive
Suite 190
Auburn, CA 95603

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Project Analyst, State Clearinghouse

RECEIVED
SEP 04 2008
ENVIRONMENTAL COORDINATION SERVICES

Attachments
cc: Lead Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2008092008
Project Title Howewood Mountain Resort Master Plan Project (PEIR T20080052)
Lead Agency Placer County

Type NOP Notice of Preparation

Description Homewood Mountain Resort (HMR) seeks the study and approval of the HMR Master Plan to develop and upgrade a mixed-use base area to the north, a residential base area to the south, and a mid-mountain lodge and support facilities. The proposed project would develop up to: 115 residential condos, 40 fractional ownership units, 40 two-bedroom for sale condo-hotel units, 30 penthouse condo units (top floor of the hotel), and 75 traditional hotel rooms; 25,00 square feet of commercial floor area; 28,000 square foot base mountain facility; 12 units of workforce housing; 11 single-family building envelopes; a 15,000 square foot day lodge at the mid-mountain; and approximately 987 parking spaces.

Lead Agency Contact

Name Maywan Krach
Agency Placer County
Phone (530) 745-3132 **Fax**
email
Address 3091 County Center Drive
Suite 190
City Auburn **State** CA **Zip** 95603

Project Location

County Placer
City Auburn
Region
Cross Streets State Route 89 (West Lake Boulevard) and Fawn Street
Lat / Long 39° 5' 48.4" N / 120° 10' 7.38" W
Parcel No. 097-130-05
Township 14N **Range** 16E **Section** 1 **Base** MDM

Proximity to:

Highways SR 89
Airports none
Railways none
Waterways Lake Tahoe
Schools none
Land Use

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Economics/Jobs; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Landuse; Growth Inducing; Cumulative Effects

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Reviewing Agencies Resources Agency; Cal Fire; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Native American Heritage Commission; Office of Emergency Services; Department of Fish and Game, Region 2; State Lands Commission; Tahoe Regional Planning Agency; California Highway Patrol; Caltrans, District 3; Regional Water Quality Control Bd., Region 6 (So Lake Tahoe)

Date Received 09/02/2008 **Start of Review** 09/02/2008 **End of Review** 10/02/2008

Note: Blanks in data fields result from insufficient information provided by lead agency.

NOP Distribution List

County: Placer

SCH# [illegible]

Resources Agency

- [x] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  David Johnson
- [ ] **California Coastal Commission**
  Elizabeth A. Fuchs
- [ ] **Colorado River Board**
  Gerald R. Zimmerman
- [ ] **Dept. of Conservation**
  Sharon Howell
- [ ] **California Energy Commission**
  Dale Edwards
- [x] **Cal Fire**
  Allen Robertson
- [x] **Office of Historic Preservation**
  Wayne Donaldson
- [x] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **Central Valley Flood Protection Board**
  Mark Herald
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- [x] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou
- [ ] _____
  Conservancy

ish and Game

- [ ] **Depart. of Fish & Game**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Game Region 1**
  Donald Koch
- [ ] **Fish & Game Region 1E**
  Laurie Harnsberger
- [x] **Fish & Game Region 2**
  Jeff Drongesen
- [ ] **Fish & Game Region 3**
  Robert Floerke
- [ ] **Fish & Game Region 4**
  Julie Vance
- [ ] **Fish & Game Region 5**
  Don Chadwick
  Habitat Conservation Program
- [ ] **Fish & Game Region 6**
  Gabrina Gatchel
  Habitat Conservation Program
- [ ] **Fish & Game Region 6 I/M**
  Gabrina Gatchel
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Game M**
  George Isaac
  Marine Region

Other Departments

- [ ] **Food & Agriculture**
  Steve Shaffer
  Dept. of Food and Agriculture
- [ ] **Depart. of General Services**
  Public School Construction
- [ ] **Dept. of General Services**
  Anna Garbeff
  Environmental Services Section
- [ ] **Dept. of Public Health**
  Veronica Malloy
  Dept. of Health/Drinking Water

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Debby Eddy
- [x] **Office of Emergency Services**
  Dennis Castrillo
- [ ] **Governor's Office of Planning & Research**
  State Clearinghouse
- [x] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Ken Lewis
- [ ] **Santa Monica Bay Restoration**
  Guangyu Wang
- [x] **State Lands Commission**
  Marina Brand
- [x] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Business, Trans & Housing

- [ ] **Caltrans - Division of Aeronautics**
  Sandy Hesnard
- [ ] **Caltrans - Planning**
  Terri Pencovic
- [x] **California Highway Patrol**
  Shirley Kelly
  Office of Special Projects
- [ ] **Housing & Community Development**
  CEQA Coordinator
  Housing Policy Division

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [x] **Caltrans, District 3**
  Bruce de Terra
- [ ] **Caltrans, District 4**
  Lisa Carboni
- [ ] **Caltrans, District 5**
  David Murray
- [ ] **Caltrans, District 6**
  Michael Navarro
- [ ] **Caltrans, District 7**
  Elmer Alvarez
- [ ] **Caltrans, District 8**
  Dan Kopulsky
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Jacob Armstrong
- [ ] **Caltrans, District 12**
  Ryan P. Chamberlain

Cal EPA

Air Resources Board

- [ ] Airport Projects
  Jim Lemer
  - [ ] Transportation Projects
    Ravi Ramalingam
  - [ ] Industrial Projects
    Mike Tollstrup
- [ ] **California Integrated Waste Management Board**
  Sue O'Leary
- [ ] **State Water Resources Control Board**
  Regional Programs Unit
  Division of Financial Assistance
- [ ] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Steven Herrera
  Division of Water Rights
- [ ] **Dept. of Toxic Substances Control**
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [ ] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] **RWQCB 3**
  Central Coast Region (3)
- [ ] **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- [ ] **RWQCB 5S**
  Central Valley Region (5)
  - [ ] **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - [ ] **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- [x] **RWQCB 6**
  Lahontan Region (6)
  - [ ] **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Region (7)
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** _____

Last Updated on 08/13/2008

15

Ted Peterson
6342 Avenida Cresta
La Jolla, CA 92037
tpeterson@amgmgt.com

To the attention of TRPA Representatives regarding the September 10, 2008 Homewood Mountain Resort Scoping Meeting:

I'm writing on behalf of my mother, Kathryn Peterson, owner of the cabin located at 5225 Sacramento Street, Homewood CA. located directly south of the Homewood ski hill. My parents John (deceased 6/07) and Kathryn Peterson have owned their cabin for 58 years. I personally have been coming to our cabin my entire life (52 years).

I separately have issued a letter in "OPPOSITION" to the project (please see attached). I reside in San Diego and am unable to attend this meeting.

Scoping issues that, I believe, need to be addressed regarding the Homewood Mountain Resort Project are as follows:

TRAFFIC: The traffic impact the project will have on highway 89 (both summer and winter) and the traffic impact on Fawn St and Sacramento St.

WATER: What will the source of water be for this project and what impact will it have on Westside of Lake Tahoe?

WETLANDS: The gravel area across from our cabin is wetlands. The EIR report needs to look into the long term history of this property.

NOISE: The project plans propose a 3-Story Parking Garage, Underground Parking, Amphitheater, Apartments, Custom Homes and Swimming Pool on the mountain in combination with Hotel, Condominiums and Retail Development. What will be the effects of the sound/noise transfer of the various development components?

EMPLOYEE HOUSING: Apartments for employee housing is proposed. The word "Director" is being used to identify the residences. What guidelines (i.e. restrictions) will be provided?

CUSTOM HOMES: Will they alter the natural water runoff the presently exists? What environmental impact will building on the mountain slope create? What sound studies will be done? What safety risk will be created from grading (i.e. dislodging of boulders above our cabin)?

PROJECT FAILURE: In the event the project fails, what will the chain of ownership be?

Thank you,

Ted Peterson

Ted Peterson

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SEP 04 2008
COORDINATION SERVICES

On behalf of my mother:

Kathryn Peterson
5225 Sacramento Street
Homewood, CA 96141

Ted Peterson
6342 Avenida Cresta
La Jolla, CA 92037
tpeterson@amgmgt.com

To the attention of TRPA Representatives regarding Homewood Mountain Resort Project

I'm writing on behalf of my mother, Kathryn Peterson, owner of the cabin located at 5225 Sacramento Street, Homewood CA, directly to the south of the Homewood ski hill. My parents John (deceased 6/07) and Kathryn Peterson have owned their cabin for 58 years. I personally have been coming to our cabin my entire life (52 years), as have all of my brothers and sisters.

This letter is being written in "OPPOSITION" to the proposed redevelopment project based on the following:

1. **Traffic:** Highway 89 is not able to support the added traffic this project will create.

2. **Destroying of Wetlands:** The area currently covered with gravel across from our cabin is wetlands. This wetlands must properly preserved and maintained.

3. **Parking Garage:** The proposed location for a three (3) story parking garage is directly across from our cabin and in the wetlands area. The ingress and egress point on Sacramento Street will have an overwhelming impact on this neighborhood road. A "Parking Garage" is completely out of character with Homewood/Lake Tahoe community. Please take the responsible action by preserving the integrity of Homewood/Lake Tahoe and eliminate this outrageous concept. The sounds of car alarms, horns and motors reverberating from a parking structure out into the thin mountain air is beyond imagination.

4. **Employee Housing:** In addition to the parking garage this project calls for employee housing (apartments) across from our cabin. Under the name of "Director Housing" apartments are to be built in combination with a "Parking Garage". The employees that will reside in these apartments will NOT be living with the same compatible interests as the long established surrounding mountain community. Now we will have late night parties to go along with the car alarms.

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5. **Homes on the Ski Hill:** Across from our cabin is proposed to be the "Parking Garage and Apartments" and behind us the plan calls for "Custom Homes". The construction of these homes given the slope of the hill presents numerous issues that cause great concerns. From the environmental impact to the altered natural water runoff will create direct impact on our cabin. The idea of permitting the building of homes on the mountain does NOT preserve the character of Homewood.

6. **Massive project scale:** This plan calls for a 109 ft (9 stories high) structure combined with excessive building coverage. This is in no way compatible with the surrounding community nor the entire Westside of Lake Tahoe.

The westside of Lake Tahoe and the Homewood community do not need the rezoning of a **"Build it and they will come development"** the TRAFFIC on Highway 89 will not support it. The natural beauty of Lake Tahoe needs to be preserved. A project that includes a Parking Garage, Underground Parking, Apartments, Custom Homes on the mountain, Swimming Pool on the mountain is NOT in keeping with the character of our mountain community.

For the benefit of Homewood and Lake Tahoe, please stop this project.

Thank you,

Ted Peterson

Ted Peterson

On behalf of my mother:

Kathryn Peterson
5225 Sacramento Street
Homewood, CA 96141

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David Landry

From: John Strain [bigstrains@sbcglobal.net]
Sent: Friday, September 05, 2008 6:09 PM
To: David Landry; sbueina@placer.ca.gov; Brenda Hunt; Jeff Cowen; dbunker@sierrasun.com
Cc: jmtornese@aol.com
Subject: Homewood Mountain Resort

Ladies and Gentlemen;

My name is John J Strain, along with my wife Francine, we own a five bedroom, 3,000 square foot house at 296 Snowbird Loop, in Chamberlands about 1.25 miles from the subject development.We bought our house on the West Shore in 1980 because of the peaceful and tranquil nature of the neighborhood. We did not want the garish commercial development of the North and South Shores.Right now I can drive to Tahoe City for groceries or necessities in less than a half hour.

Being a member of the Homeowners Associations at Chamberlands I do not need a Swimming Pool, Tennis Courts or other amenities planned for this project. I would like to see a major Supermarket Chain, but I know this is not feasible, since there is not enough land or critical mass population on the West Shore to justify its existence.Also you cannot get a major hardware store since it wont be supported, the former Homewood Hardware store went out of business due to lack of local support.

I think the Developer is out of his mind for the size of the project and the density he is requesting. Just because he is going to build a parking garage doesnt mean he is going to cover all of his parking requirements. In the summertime you should check all the boat trailers around the Homewood Marina, the Homewood ski area parking lot, Obexers, Sunnyside and along the surface streets near the boat launching areas.People who own or rent at Tahoe are very happy to share their properties with their guests. It is not unusual to see 4 or 5 cars around even two bedroom houses. I have a boat that I store at the Homewood Marina, and when I use my boat I have difficulty findinding a place to park my car. Most of the properties along Westlake Blvd (HWY 89) have no parking signs posted in front of their property.You are going to cause a tremendous traffic problem with this development.

You are going to destroy the little village of Homewood. All of these units require support facilities, like coffee shops, donut shops, launderettes, beauty salons, nail shops, grocery stores and restaurants. You will need to convert a lot of the adjacent residential property to commercial zoning to accomodate these needs, further eroding the neighborhood feel.

I dont know how you are going to keep Tahoe Blue with such a large scale negative environmental impact project.You shuld check Clear Lake to see what excessive development like Konocti Harbor Inn can do to the water quality of the Lake.

This development is going to make Highway 89 all but impassable. It will be the same as South Shore from the Y to the Casinos.A leisurely trip to Tahoe City will become a half day excursion. Parking is a major concern. Right now we have a shortage of water, this will be a further impact.

I worked in Real Estate for 25 years for Transamerica Realty Services. There was scarcely a project that we developed that we didnt want higher densities, but we managed to make a decent profit from the densities we received.Please rethink this project.If all the developments proposed around the Lake are approved we will have a Disneyland rather than God's Country.

Thank you John J Strain 16 Corte Almaden San Rafael CA 94903 415-492-3310

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David Landry

From: Gary Vannelli [gary@bnvlaw.com]
Sent: Friday, September 05, 2008 9:04 AM
To: David Landry
Cc: sbuelna@placer.ca.gov; cdraecse@placer.ca.gov
Subject: Homewood Resort Development

My wife and I are 44 year residents of Placer County, with a home located at 140 Tahoe Ski Bowl Way in Homewood, a mere stone's throw from the proposed South Lodge portion of the Homewood Resort proposed development.

While there are many negative aspects in the proposed development, and a few positive ones (such as elimination of the blight created in the off season by the maintenance facilities, stored equipment and such), there are several of the negative aspects I wish to draw to your collective attentions.

First, the issue of the capacity of existing roadway facilities to accommodate the increased vehicular traffic generated by the South Lodge development needs serious study. The sole entry/exit road from Highway 89 to the South Lodge area is Tahoe Ski Bowl Way (TSBW). During the summer season, this small roadway is usually occupied by boat trailers, RV vehicles and pick-up trucks that haul the trailers. Will these kinds of uses of the roadway continue after the construction of 100 or so housing units contemplated by the development? Furthermore, the existing difficulty of negotiating a left hand turn onto Highway 89 from TSBW will be exacerbated by the flow of traffic from the South Lodge area development, potentially creating a dramatic increase in traffic back-up and concommitant gridlock along the entire stretch of TSBW, past the existing residences to the end of the street.and perhaps beyond. This potential condition is not speculative when you consider that van and other vehicular parking now allowed along the east side of Highway 89 in the immediate vicinity of TSBW block the view of southbound highway traffic, thereby slowing the necessary movement of vehicles from and along TSBW onto the highway.

Second, the issues of noise and light pollution generated by the proposed South Lodge deveopment also need serious and concentrated study. The lighting needed to illuminate a development of this size and scope will certainly obliterate what we now have to view in the beautiful night skies---the dark skies studded with magnificient celestial sights. Intense ground lighting illuminates intensely and dissipates the darkness that fosters the dramatic night skies of the Tahoe region. Is this to be lost? Unchecked urbanization of our area will diminish, if not destroy, the wonders of the night skies.

The same can be asserted regarding noise pollution. We will be subjected to years of construction activity with its defeaning monotony, followed by a completed complex whose noise level may far exceed anything we can imagine at this stage. Will we lose the silence, solitude and tranquility of the area, aspects of life to be cherished rather than trashed? Again, unchecked urbanization will surely eradicate these irreplaceable treasures of our area.

These are not selfish concerns. It is understandable that others want to experience what this area offers to the enjoyment of their lives. But giving others the experience of this area will be misbegotten if, in doing so, the very wonders they seek here are also destroyed.

Thank you for taking the time to consder these issues.

Gary P. Vannelli
Helen M. Vannelli
140 Tahoe Ski Bowl Way
Homewood, CA

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Peg Rein

From: Loyd Hutchins [loyd.hutchins@gmail.com]
Sent: Friday, September 05, 2008 5:24 PM
To: dlandry@trpa.org; Placer County Environmental Coordination Services; Steve Buelna; bhunt@trpa.org; jcowen@trpa.org
Subject: Homewood Mountain Resort

Dear Mr. Landry,

As I cannot attend the environmental scoping review this September, I am writing this e-mail to you to inform you of my strong opposition to the proposed Homewood Mountain Resort project. I am very concerned by several of the projected issues that a development of this size will have on the Homewood area, namely: traffic congestion, scenic and environmental impact, size and density.

I live in neighboring Tahoma during the summers and am a fourth generation West Shore resident who has spent my entire life at Lake Tahoe. I, therefore have a strong sense of what it is about Tahoe that I love, along with many other West Shore residents. I love and want to retain the scenic, alpine beauty of the West Shore, the clear blue of water of the Lake, the pristine quality of the mountains and hiking trails: all in all, the quiet solitude that an alpine retreat provides as a refuge to the creeping urbanization of the rest of California. The proposed Homewood Project threatens all of the things that make the West Shore a special place. It is an old fashioned place, yet untarnished by the over-development that sadly threatens other parts of the Lake. Development has, in fact, diminished the appeal to residents and tourists alike in certain areas of the Basin as it has eroded the high alpine mountain atmosphere and sense that Tahoe is a place one goes for an invigorating, active vacation. I don't want this to happen to Homewood. I don't want to feel as if I am living in a suburb, sitting in bumper-to-bumper traffic, breathing in exhaust fumes that are bad for my health, and I am certain, bad for the eco-system of the Lake as well and looking out on a shoreline clogged with 1,400 new boats and buoys. This is what will happen if you let this development allowed to be built at the size that is currently being proposed.

Homewood is, at most, a hamlet, not even a village, and to allow 700-830 potential new bedrooms to be built in approximately 320 new units that will bring in 1,400 to 1,600 people at peak times, not even including employees, would overwhelm this tiny place! Where are all these people/ boats and trailers going to park? where is the road capacity (and by the way, we don't want Highway 89 enlarged)? how does one get out of the area in an emergency with clogged roads? how will this type of development impact the environmental pressures already constraining the lake and the Tahoe basin?

I am very bothered by the scenic blight that a tall, massive resort would have on views looking back at Homewood from the lake, the congestion that a huge development would have on the traffic in our entire area, but it is the environmental impact of this project that could tip the balance that would definitely contribute to an unfavorable cumulative impact on the Lake.

You need to consider the development of this project on a steep slope and how that will affect the watershed; the impact of the SEZ wetlands; air quality and noise pollution from more cars and boats on/ around the lake and Highway 89; the potential to create gridlock all along the West Shore and the resulting damage from all this pollution on the lake contributing the loss of clarity of the clear blue water that we all so cherish and admire. What about the availability of water in the future for current residents on the West Shore in the face of possible droughts that seem to plague our state? Shouldn't they have the first right of access to water rather than a big, new development that is very controversial?

What about the impact to the lake from more boats/buoys and trailers contributing to a higher likelihood of an invasive quagga or zebra mussels from additional boats on the lake? And more importantly, the impact of a future link-up with Alpine Ski Resort that would bring even more people, traffic and congestion to the West Shore. All of this needs to be studied and carefully assessed with an environmental and separate cumulative impact study to determine how all of the above can be modified and scaled down to reduce the negative impact on the West Shore and Lake Tahoe.

It is important that the TRPA protect Lake Tahoe and carefully manage the development around it. TRPA needs to listen to the community residents who live on the West Shore, who love the West Shore, who care about the future of the West Shore as one of the last old fashioned, quiet enclaves left on the lake, and not be swayed by commercial interests whose only interest is to make money exploiting this special atmosphere. This scenic enclave is prized by all - residents and tourists alike, and all of Tahoe used to be like Homewood, and unfortunately many communities around the lake are being ruined by traffic, noise, and congestion due to developments just like this one.

Thank you for your consideration of this matter. I am a very concerned resident who really cares about the future of the West Shore and would be so appreciative if you would take these issues into serious account.

Sincerely,

Loyd Hutchins

Maywan Krach

From: Bill Kraus [execdir@tahoemaritime.org]
Sent: Thursday, September 25, 2008 10:40 AM
To: Placer County Environmental Coordination Services
Subject: Comment on Notice of Preparation for proposed HMR Master Plan

While the Tahoe Maritime Museum takes no official position in regards to the validity, size or scope of the proposed HMR Master Plan, I do want to express appreciation for the environmentally-friendly efforts JMA and Homewood Mountain Resorts have made to date, such as their implementation of a fuel reduction program to reduce the risk of catastrophic fire in our community, and the re-vegetation of the mountain and mining roads to reduce runoff and sedimentation of the Lake.

I look forward to the preparation of a Draft EIR, and hope that the results of that EIR will inform the decisions of all parties so that the project is in the best long term interests of the West Shore and Lake Tahoe.

Regards,

Bill Kraus

Bill Kraus, Ph.D.
Executive Director
Tahoe Maritime Museum
www.TahoeMaritimeMuseum.org

Museum	530.525.WAKE (9253)
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Annex	530.582.9273
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michael@lozeaudrury.com

September 5, 2008

Via e-mail - Hard Copy to Follow

Tahoe Regional Planning Agency
P.O. Box 5310
128 Market Street
Stateline, Nevada 89448
Contact: David Landry, Project Manager
dlandry@trpa.org

County of Placer
Comm. Dev. Resource Agency
Environmental Coordination Services
3091 County Center Drive, Suite 190
Auburn, CA 95603
Contact: Maywan Krach, Community Development Technician
cdraecs@placer.ca.gov

Re: Preliminary Scoping Comments re: Homewood Mountain Resort Master Plan Project, APN 097-130-05/TRPA File Number CEPP097130005

Dear Mr. Landry and Ms. Krach,

Please accept these preliminary comments on behalf of Susan and James Gearhart and the North Tahoe Citizen Action Alliance ("NTCAA") regarding the scope of issues to be considered in the upcoming joint environmental impact report/environmental impact statement being prepared for the proposed Homewood Mountain Resort Master Plan Project. The Gearharts and NTCAA believe the following issues and potential areas of concern should be thoroughly vetted in the upcoming EIR/EIS:

1. A thorough review of the existing baseline for the project must be in place in order for the EIR/EIS to accurately project the impacts of the project and the potential success of any proposed mitigations;

2. The baseline should quantify the existing sediment loading to each watershed flowing through the project area, including Homewood and Madden Creeks. Such loading baseline should quantify sediment, phosphorous, nitrogen and other pollutant loadings currently attributable to the Homewood Mountain Resort, including any existing road surfaces;

3. The project's baseline should quantify the existing performance of the sewage collection system and treatment facility currently serving Homewood Mountain Resort, including reports of sewage spills within the treatment facility's service area and any other wet weather capacity issues and any noncompliance with pollution discharge requirements;

4. The project description and impacts analysis must include any impacts associated with any activities carried out in furtherance of the project to obtain or trade Tourist Accommodation Units, Land Coverage or any other project components, including but not limited to, for example, any proposed demolition activities and other impacts to the area where traded TAUs and coverage are proposed to be obtained and relative impacts

of trades from moving and/or expanding uses from one area of the Tahoe Basin to another area;

5. Scenic Impacts from various roadways, vistas, and Lake Tahoe, including in particular the proposed increases in current height limits, must be carefully evaluated;

6. Visual and scenic impacts to local residents and surrounding areas by light emissions from the project;

7. Impacts of including new land uses not currently permitted by the existing Plan Area Statement;

8. Threats of landslides and increased erosion posed by building in unstable soil areas;

9. A thorough analysis of air quality impacts associated with the project, including from additional vehicle trips both to and from Homewood as well as any satellite or intercept parking areas;

10. A careful analysis and discussion of traffic impacts relating to the project, especially the potential to exacerbate existing cumulative traffic impacts in the area;

11. Toxic emissions and other air quality impacts of any diesel powered vehicles or vessels associated with the project proposal;

12. The analysis needs to fully document potential levels of toxic diesel emissions associated with construction activities from both site construction equipment as well as trucks as they travel to and from the project site and through local communities along those routes;

13. Analysis of impacts of disposing of soil and dirt from the project's proposed grading activities, including air quality impacts and disposal impacts;

14. Any toxic exposures to people from vehicle exhaust resulting from the proposed enclosed parking structures;

15. Thorough vetting and peer review of any estimates of claimed reductions in vehicle miles travelled resulting from the project, including evidence of the effectiveness of any dial-a-ride, water shuttles, bike paths, intercept parking and other alternative transportation proposals;

16. Accurate projections and analysis of traffic impacts associated with the proposed project both in Homewood, at any intercept parking sites, and other key intersections, roads or highways to be used by visitors and service vehicles;

17. Whether credits for dismantling or improving existing roads that should not legally be discharging to Lake Tahoe or its tributaries should properly be considered as mitigation for the project;

18. Potential impacts to the Homewood Creek stream channel by day-lighting and other project proposals;

19. Any potential impacts to water quality, stream flow or aquatic life associated with micro-hydro power proposals included with project;

20. Careful assessment of soil types and presence of any current or past wetland areas that qualify as stream environmental zones or waters of the United States, including federal or state jurisdictional wetlands, and whether any project components propose to further cover, fill or excavate any such areas;

21. Whether proposed coverage will allow increased runoff compared to any coverage areas with which it is being traded;

22. Adverse water pollution effects of increased impermeable surfaces, included additional roads, parking areas, and roofs, nearer to Lake Tahoe;

23. Adverse water pollution impacts of additional cars and other vehicles travelling to Homewood or into the Tahoe Basin associated with the project;

24. The analysis should fully disclose and consider any past or current violations by Homewood Mountain Resort of any waste discharge requirements or water pollution control laws, past or ongoing enforcement actions, and any monitoring results;

25. Project should analyze current status and performance of existing sewage system into which Homewood resort discharges, any increases in sewage associated with the project, and any increase in likelihood of sewage spills to storm drains, local creeks, Lake Tahoe or other locations;

26. Sufficiency of water supply for the project and the water supply conveyance system and any associated environmental impacts from necessary upgrades to accommodate the proposed project;

27. Impacts to groundwater flow and quality from excavations proposed by project;

28. Adverse impacts of excavations and underground structures on flow of ground water in and adjacent to SEZs and other sensitive areas;

29. Water quality impacts to groundwater from proposed storm water control features;

30. The project should conduct thorough biological surveys to determine the presence of any plant or animal species listed as endangered, threatened or sensitive under state or federal law or candidates for such listings, and, if present, fully evaluate and mitigate the project's impacts on those species;

31. Project should assess impacts to native fauna resulting from project's construction and increased use of ski area;

32. Analysis needs to fully document potential noise levels associated with the project, including but not limited to noise from construction activities, truck travel along routes, and facility operations including the parking facilities, traffic noise, crowd noise from skiing operations and expanded events at the facility, and noise from any proposed alternative transportation components;

33. A full evaluation of growth-inducing impacts of the project including higher potential for the expanding ski area to link up with other nearby ski areas, additional entertainment and other events that may result from expanded facilities, and induced expansion of existing rental and commercial properties and buildings in Homewood;

34. Impacts to emergency evacuation procedures and routes resulting from increased numbers of visitors and residents;

35. Potential increases in accidents between additional vehicles, pedestrians and bicyclists resulting from the project;

36. Increased risk of invasive species' introductions resulting from increase of visitors, vehicles and boats;

37. Any discharges associated with the project of turbidity and other pollutants already impairing Lake Tahoe or its tributaries are by definition cumulative impacts and should be reduced well below current levels to avoid contributing to the Lake's existing impairment. For example, designing engineered storm water control for a 20 year 1 hour storm event will not prevent the resort or the project from contributing to Lake Tahoe's existing water quality impairments now or into the future;

38. Any releases of greenhouse gasses from the project will contribute to the existing cumulative impacts of global warming and must be carefully assessed and fully mitigated;

39. Any analysis of the project's impacts into the future must take into account global warming and the expected effects on rain and snowfall amounts;

40. Impacts associated with the project's energy consumption should be fully evaluated;

41. A thorough assessment of other potential cumulative impacts including but not limited to cumulative noise impacts, cumulative wildlife impacts, cumulative traffic impacts, cumulative air pollution impacts, cumulative visual impacts, cumulative groundwater impacts, and cumulative waste disposal and landfill capacity impacts;

42. The cumulative impact analyses should pay particular attention to the cumulative impacts of numerous foreseeable projects, including other almost simultaneous Community Enhancement Program ("CEP") projects and non-CEP projects. With regard to the numerous CEP projects, the EIR/EIS should evaluate the overall consistency with the CEP program's goals, objectives, and requirements;

43. Alternatives should include an option that proposes no net increase in the size of the existing resort as well as thorough examination of alternatives of no net increase in coverage and substantial decreases in coverage below the current baseline;

44. Alternatives should include project variants that result in a net reduction in all pollutant discharges including storm water pollutants and air emissions (including especially greenhouse gas emissions);

45. One alternative should be equivalent to the NTCAA Alternative Proposal for Homewood Mountain Resort submitted to the TRPA Governing Board on or about February 5, 2008.

Thank you for this opportunity to comment on the scope of the upcoming EIR/EIS. We look forward to participating in the process.

Sincerely,

Michael R. Lozeau
Lozeau | Drury LLP

cc: James & Susan Gearhart
Jerry Wotel

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Peg Rein

From: Scootersimmons@aol.com
Sent: Friday, September 05, 2008 4:58 PM
To: Steve Buelna; Placer County Environmental Coordination Services; dlandry@trpa.org
Subject: Homewood Mountain Resort Environmental Review

To who it may concern,

I am a homeowner in Homewood at 5450 West Lake Blvd., and we have owned this property since 1993. We chose to purchase this property in Homewood after a five-year search looking at properties on both the West and North Shore approximately 5 to 6 miles in either direction of Tahoe City. We chose our location in Homewood not only for the beautiful location, but the services and facilities in the immediate vicinity. These included restaurants, grocery store, hardware store, marinas, fire station, post office, and specifically Homewood Mountain Resort.

Over the last 15 years we've owned our property we've lost two restaurants, the hardware store, and the grocery store has basically become a sandwich shop with a few amenities. I believe these services have gone away, because there is not enough business to keep them viable. Considering what I have observed in the past few years, I am not sure the remaining three restaurants will be able to stay in business, nor Obexers Market based on the level of activity taking place in these businesses. I imagine Homewood Mountain Resort could also be in danger if it is not allowed to make improvements to attract the critical mass that it needs to survive.

I have been following the development plans of Homewood Mound Resort closely, and I am thrilled with the redevelopment plans the owners are proposing. Not only do I think these plans are well thought out, but the owners of Homewood Mountain Resort have taken the time to meet with the residents of the area and asked for their comments and suggestions of which some have been incorporated. If Homewood Mountain Resort is able to go through with their thoughtful development, this will re-energize the community with enough "critical mass" that the existing businesses and facilities should be able to survive and flourish, and hopefully we can get back some of the services we have lost.

I know there is a very vocal group outspoken against this project, so I wanted you to know there are many of us in the community that are excited about the prospect of a redeveloped Homewood Mountain Resort. Unfortunately I cannot make the meeting on September 10, but I wanted you to know that we strongly support the plans as presented by Homewood Mountain Resort.

Scooter Simmons

Psssst...Have you heard the news? There's a new fashion blog, plus the latest fall trends and hair styles at StyleList.com.

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September 7, 2008

To: David Landry, Planner of HMR - dlandry@trpa.org
Steve Buelna, Planner for Placer County - sbuelna@placer.ca.gov
Maywan Krach, Community Development Technician - cdraecs@placer.ca.gov
Brenda Hunt, Head of the CEP - bhunt@trpa.org
Jeff Cowen, Public Communications - jcowen@trpa.org

Re: Environmental Scoping Review for Homewood Mountain Resort – September 10, 2008

We are responding to the TRPA Advisory Planning Commission (APC) request for public comments regarding Homewood Mountain Resort (HMR) and the scope of a joint Environmental Impact Statement/Report with Placer County.

We have been homeowners on the West Shore of Lake Tahoe in McKinney Estates for over 40 years. In general, we are in support of smart development at Lake Tahoe, but not over-development. **We are in favor of revitalizing HMR but feel it needs to be reduced substantially in size and scope to reduce environmental impacts and be compatible with the neighborhood and the West Shore. As it is currently proposed, it will overwhelm the Homewood community and infrastructure.**

Following are some issues and concerns that should be addressed in the environmental reviews:

1. Size & Density

The new development is very massive. The building of about 320 units results in approximately 700 - 830 bedrooms, 1,400 to 1,600 people at peak times, with their cars (700 to 800) and also boats and trailers in the summer. These numbers do not include resort employees and service providers.

a. Code amendments are being requested to allow.
- permission for timeshares/fractional ownership & multi-family condos as allowed uses. This should have a separate approval and notice to the public. Why should these uses be allowed and why should so many TAUs and units be permitted in a small village?
- an increase in PAOTS (people at one time) to include people from Alpine Meadows, producing even more population density and environmental impact. This must be carefully analyzed.

b. What is the number of TAUs being transferred and where are they coming from? How does the current location and size of TAUs being transferred compare to the location and size of the TAUs proposed at the HMR location? The TAU transfer of a one bedroom motel or hotel room to a residence with any number of bedrooms, is a serious inequity in the code and must be rectified.
c. How many employees will be hired and where will they live? What are the code requirements for employee housing? Many employees may have to find affordable housing in Reno or Truckee. What transportation options would be available?
d. How will affordable housing for the general public be addressed?

In general, the impact of this population density and its environmental impact should be thoroughly reviewed.

2. Scenic Impact
The hotel height at the North base is about 55-65 feet to include 4 stories plus a roof level. We believe that this is too high and out of scale for the Homewood neighborhood.

a. HMR is requesting a code amendment for a special height district to allow height measurement to consider buildings to stair-step up the mountain slope rather than measure from the low point (the parking lot) to the highest building on the mountain slope (about 108.5 ft ?). These will be the tallest group of buildings on the West Shore. Is this special height allowance appropriate? Should it require an increased setback from the street? Regardless of how it is measured, there will still be a high total elevation of the buildings against the mountain.
b. Do proposed setback requirements from the Highway meet code requirements and are they adequate, even before consideration of any special height allowance?
c. What are the heights of all the buildings? The highest point (feet of elevation) from street level to the top of the highest building needs to be verified. This is the height that will be seen from the lake and highway.
d. How will scenic views from the lake, bike and hiking trails and Highway 89 (both pedestrian and vehicle traffic) be impacted? Is Highway 89 currently in scenic attainment? To what extent will building up the mountain slope reduce mountain views? Will the condos next to the highway and the height of the hotel eliminate mountain views for pedestrians and cars? Visual simulations should be done both from the lake and the highway.
e. How will the height of the buildings impact the neighbors?
f. How will the building heights compare with the height of surrounding trees? An inventory of tree height in the project area should be performed. Will remaining trees be high enough to shield the view of buildings?

3. Scale and Character
Homewood and its neighborhood compatibility will be negatively impacted from such a large development. The size will overwhelm the Homewood community & impact the quiet enjoyment & quaint village quality of the neighborhood. HMR would be a community in itself and would more than double the full-time residents (840 per the 2000 U.S. Census). Timeshare or fractional ownership does not improve communities because such owners are very transient with little interest in the affairs & civic activities of the broader Homewood neighborhood.

The resort will most likely have their own homeowners' assn with their own interests, separate from the current Homewood Homeowners Assn. The resort management and homeowners will end up being the dominant authority and have the most influence in the small village of Homewood. The current residents will lose some of their ability to control what happens in their community

a. Since Homewood does not have a formal Community Plan, "neighborhood compatibility" and "scale and character" will need to be evaluated for the community? How and under what standards will this be accomplished?
b. Will this development enhance the beauty of the natural environment? Is the scale and size reasonable for the surrounding natural environment or does it detract from it? How will the quiet, rural and uncrowded atmosphere of Homewood be impacted by this heavy density?
c. The compatibility of the new land use with the adjacent residential uses should be evaluated. Is there any buffering between the resort and the neighboring residential areas?
d. After the real estate is sold and the resulting financial benefit goes to the developer and the investors, what assurances are there that the ski facility will be financially able to continue long term? Who determines the future of the ski resort - the developer, the condo owners and/or the hotel operator? If the ski resort is not able to continue, then we have sacrificed the character and atmosphere of the Homewood community for a large scale resort with a dense population that has overwhelmed a small village. Somewhere along the review process, this issue should be considered.

4. Environmental Impacts

In general, how does this development improve the quality of the environment, or reduce dependency on cars, or meet any of the TRPA adopted environmental thresholds in any way?

The following should be evaluated:

a. What is the land capability for the entire project, (south & north bases and mid-mountain), particularly the SEZ wetlands area at the base? How much development can be allowed on steep slopes in watershed areas? If development is proposed on land that is not Bailey Class 4 or higher, it will be necessary to address land coverage reduction, cubic volume, character, etc.
b. What is the possibility and impact from an avalanche or landslide that could result from building on steep mountain slopes? Is the likelihood of such an event increased from extensive excavation and construction? How will water drainage from the mountain be impacted?
c. Water run-off and discharge from the roofs during a heavy storm should be evaluated, as well as snow impact, including snow making and removal.
d. What is the impact of increased population, traffic and construction on air quality and pollution. The EIS/EIR should include an analysis of Green House Gas Emissions and there should be compliance with the GHG Legal Act.
e. If Lake Tahoe is at non-attainment now for carbon monoxide (per the California State Resources Air Quality Board), then how will this project improve air quality?
f. What is the impact of the runoff of water and potential pollutants to the lake, including the use of fertilizer and other plant nutrients (concern with loss of lake water quality)?
g. What is the potential damage to the lake and its environment from extensive construction over a long period of time.
h. What will the noise levels be and the impact to the quiet enjoyment of the surrounding area, during and after construction. How many large events are expected to be held annually?
i. What will be the effect of light emissions from the development on visual and scenic impacts to local residents and the surrounding area?
j. What is the expected usage and drainage of water? What is the availability of water now and in the future (where will it come from)? Will the need for additional water resources affect the availability and cost of water to the other residents of Homewood and the West Shore? Will there be adequate water capacity to fight a major fire in the Homewood area?
k. Will the Homewood infrastructure be able to adequately handle this additional population density - use of power and utilities such as gas, electricity and phone, use of government facilities (such as the post office, police & fire protection), increases in sewage, garbage disposal, etc. Would additional police and firefighter personnel and equipment be needed? If so, how would this be paid for?
l. What is the impact to the lake environment, from more boats, trailers, buoys and the higher likelihood of an invasive quagga or zebra mussel invasion from additional boats.
m. What size and how many trees and vegetation will be removed? What is the plan to re-vegetate? What percent of trees will be removed
n. What is the effect on wildlife habitat?
o. What is the historical significance of Washoe Indian sites on the property, including McKinney Iron Springs and Indian encampments? What will be done to preserve the character of the past, such as the small red building at the base of the current resort?
p. What is the effect (more people, traffic, events, etc.) of any future link-up with Alpine Ski Resort. Would this require a CEQA analysis?

5. Recreational Impacts

a. Access to the beach at Homewood. There currently isn't any public beach access (except from street ends) so what will be the impact from people wishing to see the beach or take a walk along the public area of the beach? Can public lake and beach access be increased or improved for the additional population? How will this additional population impact the environment and the Homewood residents who use the beach access street ends, for walking or boating?

b. How will pedestrians cross Hwy 89 safely to see the lakeshore, visit the Lake Shore Café or the marina? Is more than one crossing needed? If so, how will this affect West Shore traffic in both directions? Is a stop sign or stop light needed?

c. There should be a sidewalk on Highway 89 next to the project site to facilitate pedestrian safety, separate from the bike path. Pedestrian access throughout the site and around the project should be evaluated.

d. What are the additional amenities and recreational benefits (in addition to skiing in the winter) or reductions that would occur as a result of this project? What will be the environmental impact to the biking and hiking trails from the increased population? Are the trails adequate to handle the increased capacity and will they be easily accessed by the public and free of obstruction or interference?

e. What amenities and facilities would be open or private and which would be accessible to the general public, and to West Shore or Homewood residents?

f. What are all the mixed uses proposed for this development and what amenities would be available for each use? How would these amenities interact or conflict with each other?

g. Where will the additional boats be moored? Currently, there is limited buoy availability for new boats. What will be the impact of more boats on the buoy fields and more launching activity?

h. What will be the site for the Tahoe Music Festival? Would it continue to have a view of the lake or a view of buildings from a low point at the resort?

i. Who would have access to the mid-mountain swimming pool? Would there be a charge for the pool or the gondola trip to get there?

j. What is the current skiing trend at Lake Tahoe? Are more skiers using the Lake Tahoe slopes? What is the anticipated cost of ski tickets after the resort is completed? What will be the impact of skiing at Homewood if the ski price goes up dramatically? Will West Shore residents receive a skiing discount and will they support a ski facility with much higher prices?

6. Cumulative Impacts

The cumulative impact studies should consider TRPA adopted environmental thresholds.

a. A separate cumulative impact should include other local developments in Homewood and the West Shore that may be in the pipeline.

b. The cumulative environmental impact of all 9 CEP projects around the lake should be evaluated.

7. Code Amendments

Since this is a CEP project, it is important to identify and quantify all environmental improvements that are intended to go above & beyond the normal development project built under current codes.

a. What specific concessions might be granted to HMR if this CEP development is approved? What is the net gain to the environment and the community from granting these concessions?

b. All code changes need to be identified, analyzed and reported. What is the cumulative impact of these proposed code changes, including

- density requests (POATS), as noted in Item # 1a
- allowed use of timeshares/fractional ownership and multi-family condos, as noted in Item # 1a
- special height district and deviation from the code on how heights are measured, as noted in item # 2

c. Will the project comply with all other TRPA and Placer County ordinances?

8. Traffic Congestion
West Shore traffic will increase from so many additional cars, trucks & service vehicles. The increased activity in Homewood, so close to Highway 89 and the lake, has the potential to cause traffic gridlock all along the West Shore, also affecting North Shore traffic coming into Tahoe City. Even with the proposed use of shuttle buses, it is unrealistic to assume that many people will not use their cars, especially in the summer. This will also cause air pollution and damage to the lake water clarity. Many days this summer (various days of the week), traffic to Tahoe City was backed up to Sunnyside restaurant, making this usual 3 minute trip into a 30 minute trip.

a. Traffic impacts and transportation should be reviewed by an independent traffic consultant. The traffic study should include an analysis of the Vehicle Miles Traveled (VMT) and Total Maximum Daily Load (TMDL). What is the carrying capacity of Highway 89 on the West Shore?
b. Will there be sufficient entrances/access to the resort for all planned uses and will the road grading be adequate for the slope? Will there be a separate entrance for employees, outside service and public works vehicles?
c. Will the driveway into the ski area and resort be long enough to eliminate any potential back-up of vehicles to Highway 89? Otherwise, there will be a back-up on 89 at peak times.
d. Will Fawn and Silver Streets comply with code requirements and be wide enough to handle increased and consistent traffic, especially for Fawn St.? Will the exits be wide enough to handle a public emergency, such as a fire?
e. Where will employees live and how will they travel to the work site? What mitigation measures will be proposed to provide a trip reduction program for employees?
f. Is there any guarantee that shuttle buses/boats or other transportation will continue to be provided long term/indefinitely after the hotel operator assumes responsibility for the resort operation? A performance bond for continuation of shuttle buses and other transportation services should be required prior to any project approval.

Traffic and transportation studies should also be done on a cumulative basis to include all current and probable projects on the West Shore.

9. Parking
a. What are the parking needs based on use? Will there be assigned parking based on use? What are Placer County parking requirements? Realistic parking requirements for residents, visitors, employees and service providers should be considered, realizing that people on vacation with 3 or 4 bedrooms will invite as many people as the unit will accommodate (and more).
b. How will the underground parking excavation impact the groundwater and land capability?
c. Will site parking be free to locals and to visitors not staying at the resort or condo facilities?
d. What parking will be provided on the project site for the boats and trailers, with good ingress and egress and adequate maneuverability? Where will the trailers be parked in the summer? Currently, the side shoulders of Highway 89 are already packed with boats and trailers in the summer, resulting from heavy boat usage in the Homewood area.
Where will the boats and trailers be stored in the winter? In Homewood, it is unlikely that sufficient additional boat racks would be available for the storage of boats? Where will the new unit owners store their boats? Will the additional demand for boat storage near the resort increase the cost of boat storage for current Homewood residents?

10. Fire Safety
a. Will there be sufficient water, especially during the summer, to fight a major West Shore fire in such a high-density area?
b. Will people have adequate exits/roads to get away from a fire?
c. In the event of a major fire, the evacuation of many people and their cars at such a large development could cause major catastrophic congestion & panic. Hwy 89 is only a 2 lane, narrow road and would not have the capacity to handle such traffic. People may not be able to escape in their cars and they will not want to take a shuttle bus. This issue should be thoroughly evaluated.

We are also concerned with mitigation through the payment of fees. This frequently doesn't help or eliminate the major impact to the Lake, the environmental or community compatibility after the development is built. How do you mitigate for the neighborhood atmosphere and compatibility that has been lost, by collecting fees? There is no amount of money that can bring that back to the community. Once done, it will be too late. Also, if mitigation fees are provided for traffic improvements, how would a fee improve the local traffic problems from so many vehicles? We are dubious that mitigation fees can actually help the environmental, the lake, traffic and the community when the development is so massive.

The West Shore public has the right to know what is being proposed for their community and we hope the environmental review(s) will provide full disclosure and information.

This project would be the largest development on the West Shore and has the potential to change the atmosphere of the West Shore forever. We hope that Homewood Mountain Resort and the number of units can be scaled down to reduce the negative impacts on the environment, including the community and traffic. Please consider the entire West Shore community when evaluating this project.

We will be happy to clarify any of these comments. Thank you for considering our comments.

Judi Tornese and Jerry Winters
Homeowners, McKinney Estates
West Shore, Lake Tahoe
(530) 525-6207
(415) 668-7125

23

David Landry

From: dennie1@moment.net
Sent: Monday, September 08, 2008 6:19 AM
To: sbuelna@placer.ca.gov; cdraecs@placer.ca.gov; David Landry

Dear Sirs,
Homewood Mountain Resort is simply too massive !
The scale and density is appaling. The population of Homewood village cannot sustain a public recreational amenity this large. As the plan suggests now, it sounds like there will still be inadequate parking and no limits on the sale of lift tickets when full. We would like to ask that particular evaluation be given to enviormental concerns.

24

Peg Rein

From: dennie1@moment.net
Sent: Monday, September 08, 2008 8:01 AM
To: Steve Buelna; Placer County Environmental Coordination Services; dlandry@trpa.org
Subject: Homewood Mountain Resort Development

Dear Sirs,
My name is Verna E. Bromagem. I have been a summer resident of Homewood since I was 3 months old. Thank you for letting us know in such a clear way what we, on the West Shore, may be facing. I am saddened and disappointed that the situation has gotten this far. I never thought I would live long enough to see such rampant disregard for our beautiful natural resources. You see, I am 95 years old! I am dictating this message through my assistant. Having said that, I will first try to answer your questions.
Should there be a development of this scale at Homewood ? NO What about the ambience and character of our community ? Is change good ?
Sometimes change is very good. Is this case, I must argue that the kind of change envisioned by the developer will NOT enhance any body's quality of life except VMA Ventures. 200% growth is out of the question. If the project is considering using public parcel tax dollars, I fail to see where or how that will enhance me , or my families future. We made Homewood our home because it was small, quaint, and beautiful. It was a neighborhood of strong family ties to the land. By that I mean conservation, stewardship and love of forest tranquility.
The word stewardship is blatantly missing from VMS and Art Chapman's plans!
None of this is more obvious then the disregard for motorists on Highway 89. I was in residence at Homewood this summer is Highway 89 is virtual grid lock now. We should be thinking of residents health and safety first.
There will be more accidents....more children hit by speeders....more animals maimed and more degradation of public utilities.
What will happen when the hotel and town house crowd want to go across the road to swim in the Lake? They will stake their lives on one mad dash. If arterials are installed to enable pedestrians to cross, traffic will be backed up to Emerald Bay on the south and Dollar Point on the north, or worse.
After last summers devastating fire near the "Y" at the south end of the Lake, I should think everything should be rethought. Is there enough fire protection/ is there enough water? Is there madness here? YES.
I remain optimistic that there is a solution to what I see as an intrusion into my health and wefare....and that of my family.
Yes, I am reaching the end of my life but my children and grandchildren are all in agreement with me. Please save our beautiful mountain paradise.
Scale down this massive monstrosity.
Thank you for your concern,
Verna Bromagem
5355 Sacramento Ave
Homewood, Ca.

25

Maywan Krach

From: LCress7199@aol.com

Sent: Monday, September 08, 2008 7:13 PM

To: shelly@tristatecommercial.com; abiaggi@dcnr.nv.gov; norma.santiago@edcgov.us; smerrill@benchmark.com; mikehweber@sbcglobal.net; JeromeW@innercite.com; jsinglaub@trpa.org; mcdermid@charter.net; tleslie@cwf.com; lpsevison@sbcglobal.net; rossmiller@sos.nv.gov; james-galloway@sbcglobal.net; Rjclason@aol.com; donnaruthe@todaysrealty.com; jCowen@trpa.org; Steve Buelna; Placer County Environmental Coordination Services; bhunt@trpa.org

Subject: Homewood Mountain Resort–Environmental Scoping Review Hearing

September 8, 2008

TO: TRPA Governing Board Members; Steve Buelna, Placer County Planner; Maywan Krach, Community Development Technician; Brenda Hunt, Head of CEP; Jeff Cowen, Public Communications

FROM: Lorie & Paul Cress
5250 West Lake Boulevard, Homewood, California

RE: Homewood Mountain Resort - Environmental Scoping Review Hearing

We are writing this email because we are residents of Homewood and the proposed Homewood Mountain Resort is about 3 parcels from our home. Over the past two years we have attended presentations on the project and we support the design and character of the HMR project. We believe in private property rights however the project, as proposed, is entirely out of character and scale for the West Shore and specifically the Homewood Community.

There is a saying "West Shore Best Shore". The West Shore is composed of small residential communities along Highway 89, south of Tahoe City. There are no 4 lane highways, no tacky touristy shops, no masses of people nor a "Coney Island" atmosphere. The Homewood community consists of approximately 130, primarily single family residences. Because of the small size of the community, homeowners have known one another for 60+ years. People choose to live on the West Shore because they want the peace and quiet enjoyment of their community. The majority of the homes are modest and ungated. People know their neighbors and they are interested in their community.

To introduce a transient society and increase the number of residences by 320 units (334% increase) will have a negative cascading effect on the community. Time share ownership of such a magnitude will have far reaching negative effect. Essentially the community will be changed from a community of residents to a community of renters. Such a massive increase in a transient community will impact the environmental thresholds in the following way:

1. Traffic: Highway 89 is always experiencing gridlock during peak periods. Time share owners typically use more then one car. Having rented a timeshare unit previously I know owners of timeshare do not come to their 3 bedroom units with one car.....more like 3 - 4 cars. Increased traffic from the added workforce commuters. Increased traffic from service vehicles needed to supply and support the development and the individual timeshare units. HIGHWAY 89 IS A TWO LANE ROAD.

2. Air Quality: pollution from construction, long term pollution from increased vehicles, boats, landscaping equipment, household use (natural gas combustion).

3. Noise: increased traffic noise from an increase in population in the neighborhood: major increased traffic and overall noise during the massive two year construction; increased noise from snow making equipment, increased traffic noise from vehicles that service the development.

4. Scenic: height of structures is out of character for the neighborhood and the size and height of the structures result in a loss of open space views.

5. Water Quality: underground cuts affect run off and possibly the water table of the Homewood Community. Will the increased need for water result in compromising the availability and cost of water for the current

residents? .

6. Soils Analysis: the proposed above ground parking lot will be located on a marsh. Does anyone remember Tahoe Keys?

8. Infrastructure: What does the 334% increase in units do to the infrastructure of our Community? Sewer, garbage disposal, fire protection, emergency response, gas, electricity. Will the residents of Homewood see increases in their costs to build and support such massive increases in population?

9. Water Clarity: Increase in population = increased boating. Increased boating by a transient community means boats are not moored for the season but a new boat comes with each timeshare owner/renter. Not only will there be a massive increase in boat usage, but each transient boat has the potential to carry pests (mussels) into the lake. Boats leak gas and oil into the lake. Is there a limit to boat usage?

In addition, *what is the potential impact on the social thresholds of the community*". When a small community is overtaken by a transient community how can the affects on the community be examined:
1. Retain the relaxed community setting.
2. Loss of community character—transient community is not civic minded.
3. New land use conflicts with adjacent residential uses.
4. Lack of adequate buffering between the old neighborhood vs. new development.
5. Demand for more lake access, boat storage, buoy fields will negatively impact existing residents and the overall environment of the lake.
6. Will there be a decrease in property values due to increased traffic, density and inventory?
7. Is there demand for more timeshare units when there is evidence of increased inventory in Squaw Valley and North Star developments? While HMR promises ferry boats, high end busses and limos to reduce traffic what happens if the project is not successful? What happens if, as is typical with Californians, everyone wants to drive their car anyway?

HMR always stated they needed a certain number of units in order to make the project work. As recently as this past spring a portion of the original property has been sold (Quail Lake & more) thus recouping a substantial amount of the initial investment. Since a sizeable amount of the investment has been recouped, how about a reduction in the density of the development too? However, from what we read HRM is moving forward asking TRPA and Placer County for major changes in the current codes so the development, as originally proposed, can go forward.

In addition, it is our understanding that there is a community outcry to change the rules regarding the use of TAU's. Just recently a request to Placer County by citizens of Homewood to develop a Homewood Community Plan was denied until TRPA updates their outdated Regional Plan.
With so many requests for large new developments now before TRPA & Placer County and with so many important unresolved regional issues (Regional Plan, buoys, piers, TAU's, mussels) wouldn't it make more sense to address the regional issues first rather then approving so many developments first and figuring out what impact they will have on the environment second?

TRPA and Placer County should take a step back and give pause when considering the consequence of the impacts of a development of this size & magnitude on the Homewood Community and determine the cumulative affect on Tahoe basin. Please do not let your decisions be fee based but based on the future of Lake Tahoe.

Psssst...Have you heard the news? There's a new fashion blog, plus the latest fall trends and hair styles at StyleList.com.

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David Landry

From: Antje Hackel [antje@onemain.com]
Sent: Tuesday, September 09, 2008 4:15 PM
To: David Landry
Subject: Homewoods Development

Hi David
My name , Antje Hackel 5235 Sacramento ave Homewood directly across from the gravel lot is my jear round home ! I operated and owned the motel on the corner of Fawn and hwy 89 , today the boat museum ! Homewood is a very special place for my costumers and myself !Since I live here jear around , I take the right to strongly oppose to turn a wetland into a CITY DWELLING!!!! Every spring Sacramento ave is flood et ,the gravel lot too ,is under water !!! We don't need a hardware store or another grocery store we are only 5 miles from Tahoe city and have 1 Hardware store and 2 Lumber yards that too have all the supply we need ! there are very few people that live in homewood jear around ! I would hate to see the impact of this Development to all of our neighboring businesses Tahoe city and Tahoma !!! Traffic , Noise ,Lights is not what people come to Tahoe for ! I love the Mountains and would not like to see ,CEMENT Buildings or too much BLACK TOPPING!1 Thank you Antje
Antje Hackel
antje@onemain.com
EarthLink Revolves Around You.

27

McKinney Bay Improvement Association, Inc.

Member: Tahoe Lakefront Owners' Association

Ralph Peer, II
President

T.G. Fraser
Vice-President

Alan Strachan
Secretary/Treasurer

September 9, 2008

David Landry
TRPA
P.O. Box 5310
Stateline NV 89448

Via e-mail: **dlandry@trpa.org**

Dear Mr. Landry,

Re: Impact Issues – proposed Homewood Mountain Resort development

MBIA supports a thorough examination of the environmental impact of the proposed development of the Homewood Mountain Resort. We are aware that others will bring to your attention a range of important issues.

Our focus today is to assure TRPA includes the impact of the additional traffic load on Highway 89, the only available corridor. The congestion on busy weekends is already at level F when trying to get into or out of Tahoe City, whether coming from the south or the north. Adding the number of cars and number of trips that would be generated by a 320 unit development as proposed is simply untenable. It is unlikely that easy alternatives will be efficacious in mitigating their impact.

There is need for a robust examination of the traffic impact both on the use of Highway 89 and on the general environment due to the additional pollutants brought to into the closed Tahoe Basin.

Thank you,

Ralph Peer

Ralph Peer

MBIA
3929 New Zealand Ave.
Santa Rosa CA 95407

Mr. & Mrs. Robert Bingham
6730 Westlake Blvd.
Tahoma, CA 96142

28

RECEIVED
SEP 09 2008
TAHOE REGIONAL PLANNING AGENCY

TRPA Advisory Planning Commission,

We are second home owners for fifty years. We have vacationed at the lake in all seasons for all those years. The Homewood Mountain Resort targeted for Homewood, Ca. is of personal concern to us. The size, mass and density of this mammoth project is simply too large. How will Homewood be able to handle cars (600-700) boats and trailers in the summer with single family homes and a large hotel? Also, the requested code changes for timeshares/fractional ownership and multi-family condos…it will be cheek by jowl people and cars. Parking will be impossible. Fire safety is a major concern. Does anyone realize without beautiful Lake Tahoe the developments of the past and present would be for not. Without the lake, the basin would be another little mountain town with some skiing. Has anyone given more than a passing thought of the environmental impact that Homewood Mountain Resort will have on the quality of Lake Tahoe's future?

As a homeowner, it's hard enough now to get from Tahoma to Tahoe City during peak traffic hours. It is almost unbearable now, think how truly unbearable it will be with completion of this project and only hwy 89 to facilitate this added bumper to bumper traffic and noise pollution. When we have gridlock from the exit off interstate 80 too little Homewood and beyond, it will make Los Angeles worst traffic days look good compared to Lake Tahoe.

Homewood Mountain Resort is eliminating old Tahoe and creating a little city with big city problems. I hate to the west shore added to the Sierra Sun's police blotter.

We certainly hope APC will consider our concerns and objections to the Homewood Mountain Resort. This large development in its very size and density, scenic impact, scale and character, environmental impacts, traffic congestion, parking and fire safety be scaled down to respectful proportions.

Sincerely,

Betsy and Bob Bingham
September 3, 2008

29

David Landry

From: margaret degliantoni [gmdeg@sbcglobal.net]
Sent: Wednesday, September 10, 2008 7:36 AM
To: David Landry

Hi....my husband and I just realized this meeting is being held in the morning and we are working. We are very concerned about the impact all this building will have on traffic in the Homewood area. Currently, in the summer, there are not enough places for people to park their boat trailers and access to the farmers market and special events is difficult enough. Adding more living units.....arrgh! This will only compound the issue.
In addition, we lease our house in the winter and the economy has hit people in the pocketbook.....there seems to be a glut of vacation housing already in this area. While certainly enhancing this ski resort is a great idea, just how many units are needed? What is the resort doing for the local people in terms of ski discounts, etc? How many of these units will be affordable to "not so rich" people? What will be the price range of rentals? What is the resort bringing to the people already on this side of the lake? Businesses come and go....there is talk that some places are closin g for the winter on this side of the lake. PLEASE VOTE FOR A CONSERVATIVE NUMBER OF UNITS AND A REALISTIC TRAFFIC PLAN.PLEASE VOTE FOR AFFORDABLE VACATION RENTALS.
Thanks for listening.
Margaret & George Degliantoni

30

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

September 9, 2008

RECEIVED
SEP 11 2008
ENVIRONMENTAL COORDINATION SERVICES

Maywan Krach
Placer County
3091 County Center Drive, Suite 190
Auburn, CA 95603

RE: SCH# 2008092008 Howewood Mountain Resort Master Plan Project (PEIR T20080052); Placer County.

Dear Mr. Krach:

The Native American Heritage Commission has reviewed the Notice of Preparation (NOP) regarding the above referenced project. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA guidelines 15064(b)). To adequately comply with this provision and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

- ✓ Contact the appropriate Information Center for a record search to determine:
  - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
  - If any known cultural resources have already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
  - A Sacred Lands File Check. **Sacred Lands File check completed, no sites indicated**
  - A list of appropriate Native American Contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached**
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
  - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
  - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
  - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Katy Sanchez

Katy Sanchez
Program Analyst
(916) 653-4040

CC: State Clearinghouse

Native American Contacts
Placer County
September 8, 2008

Rose Enos
15310 Bancroft Road — Maidu
Auburn , CA 95603 — Washoe
(530) 878-2378

United Auburn Indian Community of the Auburn Rancheria
Jessica Tavares, Chairperson
10720 Indian Hill Road — Maidu
Auburn , CA 95603 — Miwok
530-883-2390
530-883-2380 - Fax

Todd Valley Miwok-Maidu Cultural Foundation
Christopher Suehead, Cultural Representative
PO Box 1490 — Miwok
Foresthill , CA 95631 — Maidu
tvmmcf@foothill.net

United Auburn Indian Community of the Auburn
Tribal Preservation Committee
10720 Indian Hill Road — Maidu
Auburn , CA 95603 — Miwok
530-883-2390
530-883-2380 - Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH# 2008092008 Homewood mountain Resort Master Plan Project (PEIR T20080052); Placer County.

31

From: mary.porteous@comcast.net
To: Placer County Environmental Coordination Services;
Subject: FW: Re: JMA"s Homewood Mountains Proposed Plan
Date: Sunday, September 14, 2008 3:21:49 PM

>
>
> September 14, 2008
>
> Dear Maywan Krach
>
> Re: JMA proposal for Homewood Mountain Project
>
> It is an outrage that the TRPA would even consider such a massive
> construction/land use proposal from Homewood Mountain Project.. In light of the
> efforts our government is suppose to be exerting to protect Lake Tahoe, your
> consideration of JMA proposal certainly supports the theory that "he who has the
> most money prevails" despite the will of the public and honest government
> regulatory agencies.
>
> We have been homeowners in Homewood and Tahoma since 1984. We have snow skied
> at Homewood/Tahoe Ski Bowl since that time, bought in to and became victims of
> the Scam at Tahoe Ski Bowl when it became private, and for the past 40 years,
> have been enjoying the beauty and recreation Tahoe affords its residents and
> visitors. We and other middle class waterfront homeowners abide by the
> restrictive unbalanced regulations imposed on us by those agencies charged with
> the task of protecting Lake Tahoe, while big developers carelessly destroy those
> fragile shores in their self serving quest for more wealth. The most recent
> 180 degree about face the TRPA and Tahoe Regulatory agencies are exhibiting as
> they entertain and approve massive construction around the Lake, increase the
> numbers of buoys and piers, and intentional ignorance of the ramped sinking of
> illegal buoys around the Lake, certainly makes one wonder whose interest the
> TRPA and other Tahoe Regulatory Agencies are serving.
>

> Homewood Mountain Resort sits closer to Lake Tahoe than any other Ski Area.
> Parking and traffice during peak season use has always been a problem. Now, JMA
> is proposing to construct 300 plus units and increase the resorts usage--when
> Highway 89 cannot even handle the crowds and parking of the existing usage at
> less than 10% of what now JMVA is currently proposing? JMA claims they are
> responding to the community's requests. We are members of the community and
> were never approached by JMVA for our opinions. JMVA claims the community wants
> a pool. Edwards Resort has had a pool in Tahoma for 30 plus years that has
> rarely been used. Let JMA purchase that decaying resort, improve the facility,
> then offer that pool to the community.
>
> Homewood Marina Resorts now demolished housing was never in demand. We would
> sometimes stay there if our cabin was too full at the Holidays and we would
> frequently be the only guests there. Even then, parking and traffice was a huge
> problem--and we were the only winter guests.
>
>
> Highway 89 cannot currently handle the traffic of Lake Tahoe's "Best kept snow
> skiing secret". How would the single lanes of highway 89 with stand the traffic
> from the necessary growth JMVA would need to support its huge investment at
> Homewood Mountain? Where would the visitors park?? The 997 parking spaces
> would barely meet the needs of the new housing and employees. Where would the
> skiiers park?? What is the impact of all those cars on Highway 89 that are
> traveling within 50Feet of the fragile shores of Lake Tahoe?
>
> Furthermore, Homewood is the last resort to open for Winter Skiing, and the
> first Resort to close due to its low elevation and shortage of snowfall. Some
> years, Homewood and Tahoe Ski Bowl never opened for skiing. With Global
> Warming, what sense does it make to reconstruct a ski resort of this magnitude
> on the fragile shores of Lake Tahoe, when there will undoubtedly be winters of
> inadequate snow fall that will prevent any skiing at all at Homewood. It would
> be another of the endless examples of our government's failure to mitigate
> environmental damage while also failing to plan for future adverse changes. No

> doubt--as with every financial debacle--this too would become a burden of the
> taxpayer.
>
> We sincerely hope you will not consider JMA's proposal regarding Homewood
> Mountain Resort. It is a grievous, unnecessary attack on the fragile shores of
> Lake Tahoe.
>
> Sincerely,
>
> Dr. Lee and Mary Porteous

32

Stefanie Olivieri
Box 565
Truckee, Calif. 96160

September 21, 2008
Re: Homewood Resort

Placer County Board of Supervisors

Dear Placer County Supervisors,

I am writing to voice my strong support for the Homewood Resort Project which you will be discussing on the 23rd of September here in the Tahoe area.

The project as proposed is an asset to the West shore and the region as a whole. It will not only upgrade and breathe new life into an aging facility with its proposal to create a fist class destination ski resort and summer lodge but it also proposes to restore the environmental health of the site itself, which has suffered some degradation.

I am especially pleased by the proposal to place an amphitheater on the site allowing for summer concerts and entertainment. This will offer the community and visitors access to cultural events that can greatly benefit visitors and locals alike.
My family and I attend several of the Lake Tahoe Music Festival events at Homewood the last few summers and enjoyed the experience greatly.

I urge you to support this project and allow it to continue to move forward through the planning process as should rightfully be allowed this property owner.

Respectfully,

Stefanie Olivieri

33

Maywan Krach

From: Steve Buelna
Sent: Monday, September 22, 2008 7:53 AM
To: Maywan Krach
Subject: FW: Homewood Mountain Resort

For the file

Steve

From: Bonnie Kirk/Bill Clausen [mailto:billbon@sonic.net]
Sent: Sunday, September 21, 2008 5:39 PM
To: Steve Buelna
Subject: Homewood Mountain Resort

From:

Bill Clausen
6120 McKinney Drive
Homewood, Ca 96141

Regarding:

Homewood Mountain Resort

To:

Steve Buelna,

Please please please realize that the proposed resort would ruin the west shore and please do what you can to bring sanity into the planning process so that existing guidelines for density, height, scale, traffic, and environmental impact are maintained in order to maintain the character of the west shore. We have had a house in Homewood for 45 years and this is the first time I have felt the area is in danger of being destroyed. Please save us from this horrendous development!

Thank you for your help,

Bill Clausen

530 525-5433

34

Maywan Krach

From: Grasslandladyvrn@aol.com
Sent: Monday, September 22, 2008 7:59 PM
To: DLandry@trpa.org; Steve Buelna; Placer County Environmental Coordination Services
Subject: Scoping Comments on Homewood Mountain Resort
Attachments: Placer.County.TROA_HMR.SRG.doc1.docx

David and Steve,

The new signing of the Tahoe River Operational Agreement has caused me to go to Lahanton for water concerns. Especially after the Sierra Sun's front page article concerning how low the Lake level is presently almost to the rim! I am asking this water intensive HMR to have this as part of their water supply, where is it going to come from? Lake Tahoe? These were the State Water Resources Control Boards permits in the past. Snowmaking is specifically referred to in the Agreement and this would be prior to any strong storms, what will happen to the Truckee River?

Thank you all,
Susan R. Gearhart

Looking for simple solutions to your real-life financial challenges? Check out WalletPop for the latest news and information, tips and calculators.

HMR-Truckee River Operating Agreement

Tahoe Regional Planning Agency

David Landry, Project Manager

dlandry@trpa.org

County of Placer

Steve Buelna, Planning Department

sbuelna@placer.ca.gov

Maywan Krach cdaecs@placer.ca.gov

Re: Scoping Comments Water Supply for new water intensive developments

On Saturday, September 20, 2008:

The Sierra Sun front page news: Lake levels dropping fast, Two slow winters in a row – feeding 31 percent and 32 percent of normal runoff into Tahoe – means the lake could drop below its natural rim.

The surface of the Truckee River could go dry, and other water stores will have to be leaned on more heavily to supply the Reno/Sparks area.

"At this point it looks like we will get very close to Tahoe's natural rim," said Chad Blanchard, chief hydrologist for the U.S. District Court Water Masters Office.

Currently the lake is within 11 inches of the natural rim, down to 15 percent of the dam's total storage capacity, he said.

The Truckee River Operating Agreement (TROA) was signed this September 6th, the Public comment period begins; to comply with Pyramid Lake Paiute Tribe, U.S. Department of Justice, the States of California and Nevada and the Truckee Meadows Water Authority.

The Bureau of Reclamation within the Department of the Interior has stated:

Section 205 (a)(2) of the Truckee-Carson-Pyramid Lake Water Rights Settlement Act, title II of Public Law 101-618, November 16, 1990 (Settlement Act), directs the Secretary of the Interior to negotiate an operating agreement that must inform the:

1. Methods of reducing the likelihood Lake Tahoe will drop below its natural rim and improving the efficient use of Lake Tahoe during extreme drought situations. Obviously this is not the current situation.
2. Increase municipal and industrial water supplies to provide drought protection for the Truckee Meadows.

We are presently in this dilemma

In the past, the State Water Resources Control Board has issued permits or appropriations, namely eight to TCPUD for the use of withdrawal of water from Lake Tahoe for multiple uses. Will this continue to be a State or Federally controlled permit?

Homewood Mountain Resort (HMR) is an intense water user, increasing the size of Homewood by 100%, several restaurants and swimming pools, and then adding early annual snowmaking, this is intensive. Snowmaking occurs before the heavy rains and will drop the water level further so what will be the impact to the Settlement Act.

Will the TRPA Community Enhancement Program (CEP) be able to demand water for these multiple CEPs with these high density developments, especially in light of this two year history and Climate Change becomes a reality? Lake Tahoe shouldn't become the world's largest bath tub of water for all uses to include snowmaking in the future. A limited supply of water should control growth.

The scoping for this CEP must include the cumulative impacts of all CEPs as they pertain to water supply. Can we divert more water? Is it legal? HMR scoping must include the volume of water demand and supply. Snowmaking Water Use Component is specifically mentioned in the Settlement Act, especially the amount of water diverted for snowmaking in the California portion of the Truckee River Basin. This is covered in Section 6.C.4

Section 204 of the Act provides for an interstate allocation of waters of the Lake Tahoe and Truckee River basins between California and Nevada. Will the CEPs endanger the allocation of water to California?

Through the environmental report's scoping, we should understand how the water is used within Lake Tahoe and being managed within the present legal boundaries of this TROA. Water should not be arbitrarily provided to paying customers or for all new development. Especially since "Water is California's treasured GOLD".

Sincerely,

Susan R. Gearhart

Homewood, Homeowner

Tahoe Regional Planning Agency and Placer County EIR/EIS
Saturday, September 06, 2008

Re: Preliminary Scoping Comments re: Homewood Mountain Resort Master Plan Project, APN 097-130-05/TRPA File Number CEPP097130005

Please accept our comments as a challenge of the TRPA APC and Placer County's present plans to continue with the scoping of the Draft EIR/EIS prior to having a project to review. On May 14, 2008 Homewood Mountain Resort's (HMR) presented a Land Capability Challenge/Man-modified Determination; APN#097-130-05, 5145 West Lake Blvd., Placer County, CA. to TRPA. We will explain an alternative to this project if you deem that this process must be continued.

The HMR development on the present parking lots should be reducing the footprint and allowing more soil to be exposed is an environmental plus, part of the design of a Community Enhancement Plan (CEP). However, we are deeply concerned with the development of multiple levels of a parking lot and workforce housing on wetlands, Bailey Land scoring 1b for SEZ. There is more. The 11-15 parcels for homes on the continuation of Tahoe Ski Bowl Way to the North Ski slope is on Baileys Land Scoring of 1a, as so is the mid-mountain lodge. Almost all land to the west and uphill from HMR is category 3 then 1a in Bailey's Land capability.

This development must have Land Capability Verification or a Site Assessment that determines those parcels before this EIR/EIS should be prepared. The impacts to the development is approximately 40 acres that makes up the proposed CEP project including the north and south base areas, connecting access, parking lots and affiliated development areas. Also included is the area is the immediate vicinity of the mid-mountain lodge facility. There is an SEZ that runs through a portion of the South base that was verified by TRPA and Lahontan in conjunction with the Quail Lift replacement in 2006, the end of the County paved Tahoe Ski Bowl Way, a very active point "no name creek" which caused flooding in Homewood across Hwy 89 and after thousands of dollars to repair.

Both the Community and HMR are anxious to get the 'real' land capability resolved as soon as possible as this information is critical to the analysis of the project. The impact of their Challenge will have tremendous affects, the hydrology results reflect a .89' below surface water level on the gravel lot on Fawn St, it has never been developed. Even using the Individual Parcel Evaluation System (IPES) for man modified uses from 1985-1987 will be challenged. This development is a Planned Area Statement 157 Homewood Ski, recreational, not residential or commercially zoned in the areas within the challenge.

We believe we can only begin scoping in the environmental review process when we know what the project is. Presently much of the project is under a challenge that it may well

lose. This would affect the mid-mountain lodge, parking, developing and extension of Tahoe Ski Bowl Way and the 11-15 private parcels all of which are highly restricted areas of steep grades or SEZ.

In the 1998 General Plan for the West Shore, Homewood Ski:

1. Existing Environment-"Most of this area is classified as high hazard." pg II-32.

2. Conservation Element-"The physical properties of the soils of the West Shore, along with slope characteristics are primary determinants of what is commonly referred to as the "land capability system", which factors significantly in the land use regulations in the Tahoe basin, through both the TRPA and the Lahontan Regional Water Quality Control Board. " "A variation of the land capability system is employed under the IPES, which is used to determine the status of buildable parcels and allowed coverage for single family dwelling projects." This is not a single family dwelling project. For other projects where IPES is not employed, the Bailey land capability system largely determines the extent of development.

3. Safety Element- Homewood is classified as "extreme" Fire hazard, Seismic impacts, Flood Hazard throughout Homewood, and Avalanche Hazard. Many of the cut and fill areas are within the Hazard areas. (pg. VI-1, 2, 3, Figure 18)

For the reasons mentioned, it would seem appropriate to establish a project development being feasible before an environmental review process of the EIR/EIS is done. If this is not acceptable, then we are requesting An Alternatives for the EIR/EIS include a review without the development of the lands in question. Therefore the alternative project should not be illustrating the development on any of the presently Bailey's Land Capability of 1-3 Class and then within the % of land coverage of areas 4-7 classes.

An Alternative Proposal approved by North Tahoe Citizens Action Alliance (NTCAA) is attached with an amendment to remove the mid-mountain lodge. This lodge is also extremely large, almost 23,000 s f, multiple retaining walls, up to 20 foot high. Within the Application submitted to TRPA, it is stated "Adjacent to the Mid-mountain Lodge will be the pool intended for west shore resident's summer use. The pool is proposed as a recreational amenity for west shore residents, while the private club is envisioned as being accessory to the residential/tourist's uses as it is not open to the public". Due to profits & loss economics, the cost of this mid-mountain lodge is the reason for the high densities below, it provides a profit margin. The need for private club at the loss of our neighborhood compatibility and Community is a poor choice. Steep slopes with hazards and the impacts to wildlife's habitat year round create further questions of the value.

Thank you,

Susan R. Gearhart

NTCAA Board Member
Friends of the West Shore
Homeowner in Homewood, CA

35

David Landry

From: customerservice@llpub.com
Sent: Wednesday, September 24, 2008 2:39 PM
To: David Landry
Subject: Homewood Proposal

HI,

My name is Leann Dyer I'm a home owner in Tahoma and have lived in the Tahoe basin for 25 years. I have no great story, but what I do have are
the reasons I made Lake Tahoe my home,

*Minimum population
*Fresh Clean Air No Smog
*No Traffic
*Wild Life Bears, Raccoons, Birds and so on.
*Mother Nature
*Trees
*Clean Water

Now after choosing the west shore to live some 25 years ago, I find myself here writing this letter.
coming up with reasons why one would vote against Homewood's New Proposal.

I did attended the Homewood meeting last night, very thankful that a friend of mine thought to inform me.
I left the meeting with questions.

List of concerns:

* Homewood employees were not even informed about the meeting.

* I strongly believe that there was no real effort on Homewood or the TRPA to inform the community of the meetings and or the proposal. Everyone form Tahoe City to Rubicon should have been notified in some way even if that information was a flyer hanging up at our post offices.
This leads me to believe that either Homewood/JMA or the TRPA is hiding something, and this brings me to my next point

*Today's proposal is way greater in size than last years proposal. Why is this ???
since the plains have changed so drastically than I strongly believe the community should be given more time to get re acquainted with the new proposal. NOT 1 MONTH

*The traffic problem that will arise from such a monstrosity was not really mentioned last night at the meeting.
I'm curious how does the TRPA and Homewood/JMA plan on accommodating so many more people and vehicles traveling
on the roads? The shuttles and the dial a ride are great ideas, but not the solution because not everyone will use
these. And not everyone will be staying at Homewood, We all are already are aware of the traffic back up to Sunnyside daily during the busy
season and Holidays times, so I guess what we can look forward to is traffic will be backed up to Homewood. NO THANK YOU

* The size of this proposal just doesn't fit in the scope of things or here on the West Shore.

* I m concerned for the safety of the wild life and the pollution that will end up in our soils and in our beautiful Lake Tahoe.

˜ Employee housing, you mention in the proposal a 12 workforce housing apartments, each sleeping up to 4 people.
So this grand project on will need 48 employees. Affordable housing is a very large existing problem here in the Tahoe Basin.

I could go on and on But I would love for you to actually read this entire email, so for now I will stop.

My request is PLEASE allow all of us more time than until Oct 2nd, and Please Oh Please scale down the size of this project,
Make it fit in, please don t create an eye sore. Look forward to your reply.

Thank You.

Ruth Leann Dyer
Sept 24, 2008

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September 25, 2008

County of Placer
Community Development Resource Agency
Environmental Coordination Services
3091 County Center Drive Suite 190
Auburn, CA 95603

Attention: Maywan Krach, Community Development Technician

Re: Notice of Preparation of a Draft Environmental Impact (E.I.R) Report and Statement (E.I.S.) for the Homewood Mountain Resort Master Plan.

As owners of a home at 145 Tahoe Ski Bowl Way, which is immediately adjacent to the property mentioned, we are concerned about upcoming decisions in which we understand will be considered by your agency.

We have reviewed the Notice of Preparation of the E.I.R/E.I.S for Homewood Mountain Resort Plan. Following are our main concerns and comments:

1. Page 6 – "…street will terminate and be used only by seven existing homes and the new residences."
   Comment: Why will it be changing it to a private street?

2. Page 7 - "…private extension of Tahoe Ski Bowl Way may be used year round."
   Comment: Does this mean the "private extension" will start at the end of the current street?

3. Page 7 - "…Off site roads will be evaluated."

Comment: Why is South Street not mentioned as a possible access to the new estate homes, thus eliminating extensive paving of the area.

Representatives of the applicant have stated to us that it is their intent to ask the county to abandon the existing street and turn it over to the resort. If this is done, would we be required to join an association to fund the maintenance/ plowing and repairs of the street?

If ski tickets will not be sold to the public at the South facility, we think that should eliminate traffic and parking on Tahoe Ski Bowl Way, thereby eliminating the need for a gated/private street.

With the increased population, will there be any non-fee public recreation opportunities for the youth in the area? We feel that this could be a deterrent to curtail juvenile crime.

Thank you for the notification of the September 10 and 23 meetings. We look forward to hearing from you as to future meetings concerning the project.

Sincerely,

Hal and Dolores Flinn
4705 Stonehedge Drive
Santa Rosa, CA. 95405

(37)

California Regional Water Quality Control Board
Lahontan Region

Linda S. Adams
Secretary for Environmental Protection

2501 Lake Tahoe Boulevard, South Lake Tahoe, California 96150
(530) 542-5400 • Fax (530) 544-2271
www.waterboards.ca.gov/lahontan

Arnold Schwarzenegger
Governor

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SEP 26 2008
ENVIRONMENTAL COORDINATION SERVICES

September 25, 2008

Maywan Krach
Placer County Environmental Coordination Services
3091 County Center Dr., Suite 190
Auburn, CA 95603

RESPONSE TO NOTICE OF PREPARATION OF ENVIRONMENTAL IMPACT REPORT FOR HOMEWOOD MOUNTAIN RESORT MASTER PLAN, PLACER COUNTY

Placer County has requested comments on a Notice of Preparation (NOP) for the Homewood Mountain Resort Master Plan (project), which consists of redeveloping an existing ski resort (Facility). The proposed project involves preparing a master plan to develop and upgrade a mixed-use base area, residential area, and mid-mountain lodge and support facilities.

Our comments are submitted in compliance with California Environmental Quality Act (CEQA) Guidelines §15096, which requires responsible agencies to specify the scope and content of the environmental information germane to their statutory responsibilities, and lead agencies to include that information in their Environmental Impact Report (EIR).

The State Water Resources Control Board (State Water Board) and California Regional Water Quality Control Board, Lahontan Region (Water Board) regulate discharges to protect the quality of water of the State, broadly defined as "the chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affects its use" (California Water Code §13050). If the proposed project has any of the following discharges, the project proponent is required to obtain a permit from the State or Regional Water Boards:

Discharge Type	Types of Permits involved
• Discharge of dredge and fill materials	- Clean Water Act (CWA) §401 water quality certification for federal waters; or Waste Discharge Requirements for non-federal waters.
• Wastewater discharges	- CWA §402 National Pollutant Discharge Elimination System permit (e.g., construction storm water permit for any project element

Discharge Type	Types of Permits involved
	involving one or more acres of land disturbance).
• Other discharges	- Waste Discharge Requirements or other permits for discharges that may affect groundwater quality and other waters of the State, such as construction and operation of solid waste transfer facilities, underground parking garages, and other proposed project activities.

Scope and Level of Needed Analyses

In general we agree with the scope of analyses indicated in the Initial Study, but want to emphasize the need to fully evaluate post-construction conditions related to water quality. We strongly encourage that low impact development (LID) approaches be incorporated into the project to mitigate potential water quality impacts identified in the Initial Study. A list of selected references on LID is included as Attachment A.

The Water Board has issued Waste Discharge Requirements (WDRs - Board Order No. 6-95-86 and Amendments A1 and A2) for the current ski resort operation, which will need to be updated as part of implementing the project. The EIR/EIS needs to provide sufficient information to support revision of the WDRs, and an anti-degradation analysis in accordance with State Water Board Resolution No. 68-16 (Attachment B) if any water quality degradation is proposed or may result from the project. Information needed includes detailed analyses of current water quality and hydrologic conditions, potential impacts resulting from the project, economic considerations, the need to develop housing in the region, and mitigation measures that will maintain the existing high quality ground and surface waters in the project area. Specific issues that should be evaluated are described below.

1. The EIR/EIS should include analysis of pollutant load reductions needed to meet the objectives of the Lake Tahoe Total Maximum Daily Load (TMDL) for nitrogen, phosphorus (nutrients) and fine sediment particles, which is currently being developed by the Water Board. Therefore, the EIR/EIS should include mitigation requirements that not only minimize the increase in pollutant loads from new construction, but also reduce fine sediment and nutrient discharges from current levels associated with the entire Facility. Pre- and post-project nutrient and fine sediment loading should be quantified and presented in the CEQA document.

2. Analysis of project alternatives should include maximizing restoration of stream environment zones (SEZs) that have been previously disturbed. This may involve options that reduce existing and new hard coverage or that change the location of hard coverage in order to provide more restoration opportunities. For example, building configurations or locations may be revised such that all or part of the area

currently covered by the gravel parking area at the North Base area, which may include former SEZs, could be restored to its original condition.

3. The proposed project includes construction of underground parking areas, which has the potential to encounter groundwater. Potential impacts could result from excavation dewatering, dewatering waste disposal activities, and alteration of surface and ground water flow regimes. Therefore, the EIR/EIS should include analysis of potential effects to surface and ground water from excavation activities and post-construction changes in surface/groundwater interactions.

4. We encourage SEZ and floodplain protection and restoration actions; however, except for limited circumstances (e.g., environmental restoration), the Water Quality Control Plan for the Lahontan Region (Basin Plan) includes prohibitions on the discharge of waste, including land disturbance, to the 100-year floodplain and SEZs in the Lake Tahoe Basin[1]. The floodplain/SEZ disturbance prohibition may affect the project alternatives and should be addressed in the EIR/EIS.

5. The proposed project includes sewer connections to the mid-mountain area and relocation of the existing vehicle shop/maintenance facility for snow-grooming and other heavy equipment to this area. The EIR/EIS should include analysis of the potential impacts and mitigation measures needed to protect water quality in the event of an upset from these facilities such as sewer spills and petroleum or solvent releases. Spill contingency plans may be needed for mitigation of potentially significant impacts.

Thank you for this chance to comment. We welcome the opportunity to work with you and the project proponent to make this project an example of environmental sustainability in California. If we may clarify any of our comments or be of further assistance, please contact Bud Amorfini at 530-573-0582 or bamorfini@waterboards.ca.gov.

Alan Miller, PE
Chief, North Basin Regulatory Unit

Attachments - Attachment A, LID References
Attachment B, Resolution No. 68-16

BA/clhT: Master Plan NOP Comments.do
File Under: Homewood Mountain Resort - WDID 6A310023007

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[1] For details see http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/docs/ch5_laketahoebasin.pdf

Attachment A

Low-Impact Development References

Low-impact (LID) development generally involves more compact development that:

- minimizes generation of urban pollutants;
- preserves the amenity and other values of natural waters;
- maintains natural waters, drainage paths, landscape features and other water-holding areas to promote stormwater retention and groundwater recharge;
- designs communities and landscaping to minimize stormwater generation, runoff, and concentration; promote groundwater recharge; and reduce water demand;
- promotes water conservation and re-use.

The following documents are among many that provide more specific guidance in LID.

Bay Area Stormwater Management Agencies Association. Start at the Source. 1999. Online: http://www.basmaa.org/index.cfm.

Center for Watershed Protection. Better Site Design: A Handbook for Changing Development Rules in Your Community. August 1998. Online: http://www.cwp.org/.

Local Government Commission. The Ahwahnee Water Principles: A Blueprint for Regional Sustainability. July 2006. Online: http://water.lgc.org/guidebook.

Prince George's County, Maryland, Department of Environmental Protection. Low-Impact Development Design Strategies. January 2000.

Prince George's County, Maryland, Department of Environmental Protection. Low-Impact Development Hydrologic Analysis. January 2000.

United States Environmental Protection Agency. Using Smart Growth Techniques as Stormwater Best Management Practices. EPA 231-B-05-002. December 2005.

United States Environmental Protection Agency. Parking Spaces/Community Places. EPA 231-K-06-001. January 2006.

United States Environmental Protection Agency. Protecting Water Resources with Higher Density Development. EPA 231-R-06-001. January 2006.

United States Environmental Protection Agency. Growing Toward More Efficient Water Use: Linking Development, Infrastructure, and Drinking Water Policies. EPA 230-R-06-001. January 2006.

Further Online References:

Ca. Office of Environmental Health Hazard Assessment: http://www.oehha.ca.gov/ecotox.html
United States Environmental Protection Agency: http://www.epa.gov/smartgrowth/

Attachment B

STATE WATER RESOURCES CONTROL BOARD

RESOLUTION NO. 68-16

STATEMENT OF POLICY WITH RESPECT TO
MAINTAINING HIGH QUALITY OF WATERS IN CALIFORNIA

WHEREAS the California Legislature has declared that it is the policy of the State that the granting of permits and licenses for unappropriated water and the disposal of wastes into the waters of the State shall be so regulated as to achieve highest water quality consistent with maximum benefit to the people of the State and shall be controlled so as to promote the peace, health, safety and welfare of the people of the State; and

WHEREAS water quality control policies have been and are being adopted for waters of the State; and

WHEREAS the quality of some waters of the State is higher than that established by the adopted policies and it is the intent and purpose of this Board that such higher quality shall be maintained to the maximum extent possible consistent with the declaration of the Legislature;

NOW, THEREFORE, BE IT RESOLVED:

1. Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.

2. Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

3. In implementing this policy, the Secretary of the Interior will be kept advised and will be provided with such information as he will need to discharge his responsibilities under the Federal Water Pollution Control Act.

BE IT FURTHER RESOLVED that a copy of this resolution be forwarded to the Secretary of the Interior as part of California's water quality control policy submission.

CERTIFICATION

The undersigned, Executive Officer of the State Water Resources Control Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on October 24, 1968.

Dated: October 28, 1968

Kerry W. Mulligan
Executive Officer
State Water Resources
Control Board

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Maywan Krach

From: William Threlfall [wetalias-waterfrontaction@yahoo.com]
Sent: Saturday, September 27, 2008 3:58 PM
To: Placer County Environmental Coordination Services
Cc: Steve Buelna
Subject: Comments on EIR/EIS Scope for Homewood Mountain Resort

As provided in the NOP for the Homewood Mountain Resort Master Plan, I am submitting the following comments concerning the EIR/EIS scope and content.

I am a homeowner in the Homewood area, with my residence located at 24 Moana Circle, between Homewood and Tahoma (APN 098-191-020).

I encourage the inclusion of the following content in the EIR/EIS:

Socio-economic Impact of the project.
Please address the following questions, considering the project's intended residential and resort uses, as well as its proposed mix of retail and service functions:

1. To what extent will the project be well-integrated with the existing Homewood community and residents? Can we expect the project to merge successfully with the existing community, or will it stand apart in terms of style, exclusivity, affordability, and social norms? Will it unite or will it divide the community?
2. To what extent will the project's retail, services, and restaurants meet the needs of the entire Homewood community? Will the retail functions provide mainly boutique offerings intended for tourists and upscale vacationers, or will there be a mix of retail functions included those that serve the existing Homewood community as well as resort patrons? Will restaurants and food services be exclusively upscale or will there be a mix of types and price points?
3. To what extent will the proposed project impact unfilled retail, service, or recreational needs of the Homewood community? (e.g. gas station, emergency medical, hardware, family restaurant, take-out food, pharmacy, laundromat, bike path, public gathering space, mini-parks, tot-lot)

Hydrology Impact of the project: Riparian Water Rights
If the project includes any littoral parcels which have riparian water rights, please address the following questions:

1. Will those water rights be used exclusively to provide water to the littoral parcel itself, or does the project propose to divert water from littoral parcels to other other non-riparian parcels that do not have such rights?
2. If diversions to non-riparian parcels are planned, what would be their impact on the level of Lake Tahoe? Are such diversions in the public interest?
3. Will the project conform to the precedent that riparian rights afford no basis of right to use water upon non-riparian land. (Rancho Santa Margarita v. Vail, 11 Cal. 2d 501, 81 P. 2d 533)

Thank you for including the above issues and questions in the EIR/EIS scope.

William Threlfall
24 Moana Circle
P.O. Box 24
Homewood, CA 96141

39

David Landry

From: Robert La Mar [rlamar@pobox.com]
Sent: Monday, September 29, 2008 11:38 AM
To: sbuelna@placer.ca.gov; David Landry
Subject: Homewood Mountain Resort EIR Input
Importance: High

My contact information is as follows:

Robert La Mar
5565 Lagoon Road
Homewood, CA 94019
Mail address:
P.O. Box 831
Half Moon Bay, CA 94019

My concerns to be addressed in the Homewood Mountain Resort EIR are as follow:

1. Tree Removal.
    a. Healthy trees should not be removed.
    b. The healthy trees that buffer the proposed road leading to the condominiums in the south base area and the existing homes should not be removed under any circumstances.
2. Noise
    a. Language regarding unacceptable noise levels with specific decibel levels should be included, particularly as it relates to the south base residential area.
3. Light pollution
    a. All lighting should be "down lighting" to avoid light pollution in at least the south base residential area.

Thank you.

Robert La Mar

40

Mr Michael F Garber
PO Box 952
5579 Lagoon Road
Homewood
California
96141

Mr David Landry
Project Manager
Tahoe Regional Planning Agency
PO Box 5310
128 Market Street
Stateline
Nevada
89448

29 September 2008

RE: Proposed Development at the Homewood Mountain Resort.

Dear Mr Landry,

The Developers behind the proposed new developments at the Homewood Mountain Resort, Homewood, California, have stated their intention to improve the local community and to do so in an environmentally inclined manner.

Environmental design is widely understood by the general public to be the erection of wind turbines, the installation of photovoltaic solar panels and the like. It appears that this shinny-wrapper solution is the path the Developers seek to use. However, environmental design, thinking and responses envelope much more – the very term being to do with the environment. Therefore, environmental, green, sustainable (or whatever else it is referred to as,) design demands consideration of the environment at hand.

I have gained this understanding during my Architecture Degree at the University of Nottingham, a centre for environmental excellence in education and research and also through my student membership of the Royal Institute of British Architects. The pre-conceived "tree-hugger" ideas of environmental thinking are but part of the picture. The environment includes the current residents, encompassing natural resources, air, noise and water quality. The importance of natural light and ventilation are of great importance and are key elements of design to consider before accessories such as photovoltaics are clamped on to the buildings.

It is perhaps in these more basic environmental qualities that thought appears not to have been directed to a satisfactory extent. The local population has been thought of in terms of employment and local economy, which is an undeniable need that some form of development will help. Bringing of local facilities such as a hardware store and grocery store to the community seek to address environmental concerns, yet it is undeniable that residents and guests will need to travel further afield.

The resultant effects of this increased population are perhaps most felt when it comes to transportation and local services. It is important that these are resolved to a satisfactory standard that does not penalise, disadvantage or harm the existing local residents. These concerns, if resolved successfully can meet the environmental factors and sustainability of the proposed development that needs to be addressed.

I shall now seek to address concerns about environmental and sustainable matters that the proposed development raises.

Continues...

The Localised Effect on My Residence (5579 Lagoon Road).

A proposed vehicle depot, referred to by various names, apparently intended for rubber wheeled vehicles is to be sited 10 feet from the property line of my residence.

The depot raises various environmental concerns portending the use of flammable and harmful chemicals and associated fumes produced thereof. The sitting near an existing residential neighbourhood is most unsavoury, affecting residents strongly who have breathing difficulty though medical conditions such as Asthma. Both I and my mother have Asthma and it would appear hereditary, therefore affecting future generations.

The depot also raises fire-safety concerns, both given the nature of its flammable contents and also the precarious access for fire engines and associated apparatus. Although there is a fire department based locally in Homewood, they must also protect much of the West Shore. The environment in the Lake Tahoe Basin is unforgiving for accidental fires and higher risk buildings should therefore not be placed where they are an immediate threat to residential buildings and therefore risk lives and the expedited spread of fire.

Given the nature of the site, the alignment in relation to North and the sun path from East to West, the back of my residence relies upon afternoon and evening sunlight for heat gains by solar radiation. The back yard is also the most open part of the property and a Best Management Practice would be defeated if inadequate light reached the backyard because of over shading. The proposed vehicle shed will severely overshadow the back yard during the late afternoon and evening which is when its solar gain takes place. The overshadowing also seeks to threaten the environmental performance of the dwelling which relies upon these afternoon and evening solar gains.

The quality of air pollution, fire-safety and solar gains not withstanding, the vehicle shed will also garner unreasonable noise and light pollution, factors also affecting my residence from the proposed residential accommodation on the slope behind. The nose pollution from the engines of vehicles and associated warning sounders activated when reversing are incompatible with a residential neighbourhood.

It appears that this building has been poorly sited, even in relation to the proposed residential units which will also be affected by the proposed vehicle shed. A sustainable use of this land could help increase the environmental credibility of the Developer's scheme. Fostering a relationship with the existing neighbourhood by using this land to create a green space for recreation, exercise and relaxation for the combined community in Homewood would seek to address social and environmental aspects the scheme needs to consider.

The Effect on the Community of Homewood as a Whole.

The importance of local infrastructure is vital if the proposed development will be successful. The development needs to address the transport problems which Homewood, and indeed the West Shore, already faces, particularly in the height of summer. It would be highly irresponsible for the scheme to add increased congestion without substantially reducing existing congestion. The proposed development would seek to use public transport for its guests and residents to mitigate transport problems. However, an existing transport network is in place. It would be senseless to duplicate public transport, further adding to congestion.

Continues...

For a truly sustainable and environmental solution, the developer should look to address the existing transport network. The existing network is disjointed, often unreliable and whilst serving the North Shore into the night, cuts off the West Shore and indeed Truckee before many people would finish work. In this way, the public transport system ironically contributes to congestion. This lack of user-friendliness to residents and guests of the West Shore cuts off evening use, while the unreliability restricts daytime use. A timetable which can commonly fluctuate by ten minutes either side of the supposed departure time at stops is distressing to say the least.

A truly sustainable solution for the Developer would be to address the existing buses by subsidising Tahoe Area Regional Transits' network encouraging the buses to run reliably and to run in the evening so as to mitigate congestion. In addition to subsidise the upgrade of existing buses to be more appealing and environmentally friendly. It may also be necessary to increase capacity if the network can be made desirable to use for guests, the local population and workforce. For the network to work, it must address usability and in particular its currently obscure and difficult connections.

Another potentially overlooked transport infrastructure are the bicycle paths which should be used and upgraded for the safety of cyclists. The Developer could potentially help fund a cycle loan system similar to the successful system in place in Paris, France, where cycles are loaned and returned to a network of "service points". It is understood that users pick a bike from the automated service point ride to their desired destination and return the bicycle to the service point located there. More information can be found on the website of the scheme: "http://www.en.velib.paris.fr/comment_ca_marche/utiliser_velib". This type of bicycle loan system could help inspire "green transportation". However, encouraging people to use a bicycle as opposed to taking a car would reduce congestion.

It is apparent that a variety of solutions can be undertaken to minimise the impact that the proposed development would create on the local community. This is highly important for the continued sustainable growth of Homewood and the West Shore.

It is also important that the scheme not forget is original green intentions and use the natural resources available wisely. Photovoltaic roofing tiles could greatly take advantage of the huge solar gains available, particularly on the mountain. It is important to also consider harvesting rainwater and run-off for use in flushing toilets, therefore minimising usage of water which has been made suitable for drinking and cooking purposes. The use of biomass boilers could also lend to the developments environmental credits.

What is apparent is that the development must address the sustainability and environment of the community if it is to be successful. If it does not minimise its impact on the immediate, local environment of Homewood, its other environmental claims will be meaningless and hollow.

I trust that this letter is of use for your planning process.

Yours Sincerely,

Michael F Garber

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September 30, 2008

David Landry, Project Mgr
Tahoe Regional Planning Agency
P.O. Box 5310
128 Market Street
Stateline, NV. 89448

Maywan Krach, Comm. Dev.
Steve Buelna, Planner
County of Placer Community Dev. Resource Agency
3091 County Center Drive #190
Auburn, CA. 95603

Re: Homewood Mountain Resort Master Plan Project

I am writing regarding the proposed Homewood Mountain Resort Master Plan Project for the approval of a mixed-use development at Homewood Mountain Resort. I have lived next to Homewood Mountain Resort for the past 20 years on Lagoon Road. We have enjoyed the serenity of the West Shore, in addition to the family-centric experience of Homewood Resort itself.

We understand the economic need for the resort to upgrade and expand its commercial capacity, as well as the need to better monetize their land assets through the building of residential property. In fact, I met with the Project Manager, Rick Brown, several months ago, and was told that the group was interested in working with the current residents close to the resort to make a win-win for everyone. At the time, he made representations that the vehicle garages would be set away from the houses on Lagoon so as not to infringe on the "old Tahoe" experience we all enjoy.

We now come to discover through our neighbors who attended the most recent meeting, that indeed this is not the case. They are now planning to re-route the existing road that currently goes up the mountain, to a location much closer to our houses. In addition, the garage for the resort tram vehicles is practically on top of our houses on Lagoon. It was also represented that the condominium buildings would be located such that their height wouldn't rise above the height of the current trees that currently grow along the side of the resort property. We now learn that the Project is planning to file for a height variance that will enable them to build taller buildings.

These apparent changes to the plan originally presented to me are alarming, with significant concerns including:

- Continuous vehicle noise from engines, back-up signals, road noise, etc. will damage the serenity of our neighborhood; continuous vehicle travel on the road that is planned to be next door will create significant pollution for us as well as the numerous animals and birds that come down the mountain.

- The vehicle garage located on top of many of our neighbors' houses, and very near to ours, will potentially create potential direct environmental concerns like ground toxins, as well as indirect ones, such as attracting vandals and thieves into the area. We have enjoyed decades of a relatively secure neighborhood that will be put at risk with these facilities put so temptingly close.

- The view of the mountain from my and my neighbors' homes will be destroyed with tall, inappropriate buildings intervening. This is a far cry from the "old Tahoe" as it was represented to us.

- The traffic in and out of the new development will completely clog the Lagoon, Meadow, Sacramento loop that comes from Hwy 89. This will not only completely change the character of our neighborhood, it will create safety concerns for the myriad of children who play along the side of the road, as well as for the numerous walkers and bicyclists on the road. In addition, employees that come to work at the facility will likely use Lagoon for their overflow parking.

We wish to work with the HMR Project team, Placer County Community Development and the TRPA to plan and site these facilities where they don't have such an impact on the surrounding environs and residents, as they were first represented. Surely there is a way to be both commercially and environmentally responsible.

Please take advantage of all of our expertise in making this a showcase for TRPA, Placer County, the surrounding residents and environment, the HMR owners, and most important, to preserve the specialness that is Homewood.

I can be reached at echaney@marketcatalystgroup.com or via my mobile phone at 415-359-5091.

Thank you for your consideration and your expertise in making this right for all.

Sincerely,

Elizabeth Chaney Eisenhardt
5685 Lagoon Rd.
Homewood

cc: Margaret Head
Michael Garber
Placer County Board of Supervisors
Placer County Executive
TRPA Board Members

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Eisenhardt
5685 Lagoon Road
Homewood, CA 96141

Date: 9/30/08

To: Tahoe Regional Planning Agency
PO Box 5310
128 Market Street
Stateline, NV 89448

Attention: David Landry, Project Mgr.

County of Placer Community Dev. Resource Agency
Environmental Coordination Services
3091 County Center Drive, Suite 190
Auburn, CA 95603

Attention: Maywan Krach, Community Dev. Tech.

From: Paul Eisenhardt

Subj: Homewood Mountain Resort Masterplan

I am writing to express my concerns regarding the recently promulgated changes to the Homewood Mountain Resort Masterplan and the Developers intention to obtain significant and numerous variances from established policies and regulations.

As an owner of the indicated property for the past twenty (20) years, I am very appreciative of the development potential for Homewood Mountain Resort. As originally presented in working sessions with the impacted neighborhood community, the plans were significantly different than those now presented. Examples include the elimination of the scaled back density commitment for the residential units to be placed in the South Lot area of Homewood Resort. I am also surprised at the abandoning of the Developer's commitment that the buildings would not exceed the allowed height limitation of 50' and would be placed to the North side of the existing road up the mountain. Further review now indicates that the developer "representation" that the vehicle garage for snow equipment would be moved up the mountain so as to remove a current noise, pollution, and commotion issue was only a partial disclosure.

The current proposal now shoves a rubber tired vehicle garage within 10' of my neighbor's property, subjects all of us to excessive noise and diesel fueling operations, and creates additional commotion for a residential neighborhood. The noise will be exacerbated by the bells and signals that are emitted whenever these rubber tired vehicles are backed up – something it appears they will routinely need to do as no turnaround facility is provided.

The current proposal also moves the existing vehicle road to the extreme southern edge of the property and places additional condos between the existing road and the relocated road. The relocation of the road impacts existing, undisturbed forest and wetlands and the additional units are not only a numeric increase but now cram condos immediately next to the residential, low density (read as quiet) neighborhood.

None of these changes or modifications are consistent with the representations of Developer management or the public presentations that now appear to have been designed to "lull" the current residential property owners into complacency as we were "sold" the developer representations about preserving our residential neighborhood and providing a compatible development.

Alternatives exist for the developer to locate the proposed vehicle depot garage and fueling center on available, graveled areas that currently, as proposed by the developer, contain no improvements. This graveled area is a minimum of 300 feet from the nearest residential property. The graveled area is also not native land, wetlands, or existing trees. Similarly, relocation of the roadway is another contradiction of the developer. The obvious objective is relocating the roadway is to increase the density of development in an already dense project. More units of condos are proposed than the entire Lagoon/Sacramento/Meadow area ! Since the proposed units are "fractional share" ownerships, many of the occupants (based upon documented experiences at similar developments" will be renters. Regrettably, such usage generally results in excessive noise from partying and related short term activities. I am not appreciative of suddenly finding 90 residential units located within a baseball toss of my residential property. Additional density, noise, commotion etc is unacceptable and incompatible with current usage and should not go forward. Traffic density, congestion, and noise are additional issues as we are now to believe that the proposed transportation center of sleighs and buses will eliminate car usage.

I urge you to object to the current Master Plan as recently modified by the developer. Please do not allow this proposed development to go forward as now proposed. Please force the developer to honor the commitments and representations made in earlier public presentations.

I would request a reply (email is fine at paul@eisenhardtgroup.com) as to your intended "next steps". You may also contact me at my office: 601 Montgomery Street, Suite 830; San Francisco, CA 94111; Telephone 415-776-9555.

Thank you for your consideration and hopefully the uniform enforcement of regulations, the elimination of the excessive and abusive elements of the developer's current Master Plan, the need to hold this proposed development accountable, and working with your long time residents.

Paul Eisenhardt

Cc: Margaret Head
Michael Garber
Placer County Board of Supervisors
Placer County Executive
TRPA Board Members

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David Landry

From: michael J garber [garbsandgarbs@msn.com]
Sent: Tuesday, September 30, 2008 5:37 PM
To: David Landry; Maywan Krach Placer Co Comm Dev Tech; Steve Buelna Placer Co Planner
Subject: Scoping for Homewood Mountain Resort with Enviromental Concerns and transportation proposals from Margaret Head Homewood CA
Attachments: Homewood Mt Resort Rubber Wheeled Vehicle Shed Placer Co 30 Sept 2008.doc

Dear Gentlepeople,

Please the following comments regarding scoping for Homewood Mountain Resort.

Thank you,

Margaret Head

30 September 2008

Mr. David Landry, TRPA
Mr. Steven Buelma, Placer County
Mayan Kraach, Placer County

Re: Environmental Scoping for HOMEWOOD MOUNTAIN RESORT:
Location of the new Rubber Wheeled Building: Fire, Air, Noise, Light, Transportation Issues with a new proposal for transportation.

My name is Margaret Head; I have owned property in Homewood for 23 years, PAS 51.

I wish to address the **new** location of the fuel depot and maintenance shed identified as: **Rubber Wheeled Vehicle** in the South Base which Homewood Mountain Resort has submitted to the TRPA.

This depot is **sited** behind a tract **of residential single family homes**, a commercial facility that does not support the **ethos of environmental stewardship that the company advertises on their web site.**

Moving this depot from its current site near a main artery not only increases problems with fire, air quality, noise, light levels experienced by the residents of Lagoon Road. In addition this new location of the Rubber Wheeled Vehicle building will block the view of the mountain that I and several neighbors across Lagoon Road enjoy.

This depot uses **flammable** as well as hazardous diesel materials near residential dwellings, not only near Lagoon Road, houses which have existed for the last thirty years or more, but in close proximity to the condominiums which Homewood Mountain Resort proposes to build on the steep slopes behind Lagoon Road.

Regarding Fire: The Rubber Wheeled Vehicle building increases the likelihood of fire in our neighborhood because this site is not near a main artery for fire access and control. **This refueling depot is 10 feet from my property line as well as 10 feet from the property line of two other neighbors. The location of this Rubber Wheeled Building in the plans sent to the TRPA will increase the dollar amount for fire insurance which I must carry on my home. Will I be subsidized for this?**

Regarding fire, Homewood Mountain Resort needs to develop plans that the proposed increased occupancy level, a doubling of the population of Homewood, to subsidize a new fire department with hook and ladder designed to reach the extended heights of the new condos. This subsidy or fees should not come from the current property owners taxes but should be part of the Homewood Mountain impact statement. The corporation at Northstar has provided equipment for their new commercial development.

Regarding Air quality: Diminishes air quality with noxious fumes. My son and I enjoy the open mountain air, with this new location of the Rubber Wheeled Vehicle shed, the levels of chemicals and fumes will increase the asthmatic condition my son and I suffer from.

Regarding Noise levels: Constant noise of transport vehicles: trams and shuttles will shatter the serenity not only with the engine sound, but with the **constant scream** of the alarm bell as they reverse. In addition the proposed new road to the Rubber Wheeled Vehicle building will constitute a new parking lot for the extensive numbers of vehicles needed for transport. Currently there are 10 vehicles, rubber wheeled, parked outside the current building, which is sited near the main artery Tahoe Ski Bowl Road. Thus the neighbors at the west side of Lagoon will be sandwiched between two roads, with vans parked along the outskirts of the Rubber Wheeled shed. Is this the serenity that Homewood Mountain Resort advertises in their website?

Regarding Light quality: The proposed Rubber Wheeled Building will block the ambient sunlight that warms my house in the afternoon and evening as its height and breath shades my yard or garden. My house's **energy consumption will increase** which is not in keeping with **Best Management Practice**. **In addition this new building as well condos built on the steep hill will block the starry nights** which we enjoy at present.

This transportation depot, Rubber Wheeled building should move closer to Hwy 89 for access to the fire station or close to a new fire station. With a new location nearer the main artery close to Hwy 89 it will better serve the population which Homewood Mountain Resort seeks to serve.

In addition Homewood Mountain Resort should consider providing **not** alternate transportation of the intercept vans, which will in turn clog up the roads as people go the the proposed parking lots in Tahoma, but **Homewood Mountain Resort should propose to subsidize new buses for the current public transport system, TART**, as it exists rather than adding new vehicles, clogging up the overcrowded roads.

Siting the Rubber Wheeled vehicle fuel depot on this plot destroys the peace and tranquility of our neighborhood which Homewood Mountain Resorts says they are trying to engender with recollection of the OLD HOMEWOOD. Is this stewardship?

Thank you for your interest.

Sincerely,

Margaret Head
5579 Lagoon Road PO 952
Homewood, CA 96141

RECEIVED
0 2 2008
TAHOE REGIONAL
PLANNING AGENCY

31September 2008
Attn:David Landry, TRPA, Mr. Steven Buelma, and Mayan Kraach, Placer County
Re: Environmental Scoping for HOMEWOOD MOUNTAIN RESORT:
Location of the new Rubber Wheeled Building: Fire, Air, Noise, Light, and Transportation Issues with a new proposal for transportation.

My name is Margaret Head; I have owned property in Homewood for 23 years, PAS 51. I wish to address the **new** location of the fuel depot and maintenance shed identified as: **Rubber Wheeled Vehicle** in the South Base which Homewood Mountain Resort has submitted to the TRPA.

The HMR in meetings with local residents have made many assertions regarding the development: including sighting the residences on the present paved parking areas, not on the steep hillsides, and leaving the maintenance building where it is at near a main artery. The plan they have submitted to TRPA casts doubts on the assertions they have made publicly. They have made these assertions while the plan
submitted to the TRPA has been existence since 4/10/08.

This depot is **sited** behind a tract **of residential single family homes**, a commercial facility that does not support the **ethos of environmental stewardship that the company advertises on their web site.**

Moving this depot from its current site near a main artery not only increases problems with fire, air quality, noise, light levels experienced by the residents of Lagoon Road. In addition this new location of the Rubber Wheeled Vehicle building will block the view of the mountain that I and several neighbors across Lagoon Road enjoy.

This depot uses **flammable** as well as hazardous materials near residential dwellings, not only near Lagoon Road, houses which have existed for the last thirty years or more, but in close proximity to the condominiums which Homewood Mountain Resort proposes to build on the steep slopes behind Lagoon Road.

Regarding Fire: The Rubber Wheeled Vehicle building increases the likelihood of fire in our neighborhood because this site is not near a main artery for fire access and control. **This refueling depot is 10 feet from my property line as well as 10 feet from the property line of two other neighbors. The location of this Rubber Wheeled Building in the plans sent to the TRPA will increase the dollar amount for fire insurance which I must carry on my home. Will I be subsidized for this insurance?**

Regarding fire equipment, Homewood Mountain Resort needs to develop plans that the proposed increased occupancy level, a doubling of the population of Homewood, to subsidize a new fire department with hook and ladder designed to reach the extended heights of the new condos. This subsidy or fees should not come from the current property owners taxes but should be part of the Homewood Mountain impact statement. The corporation at Northstar has provided equipment for their new commercial development.

Regarding Air quality: Diminishes air quality with noxious fumes. My son and I enjoy the open mountain air, with this new location of the Rubber Wheeled Vehicle shed, the levels of chemicals and fumes will increase the asthmatic condition my son and I suffer from.

Regarding Noise levels: Constant noise of transport vehicles: trams and shuttles will shatter the serenity not only with the engine sound, but with the **constant scream** of the alarm bell as they reverse. In addition the proposed new road to the Rubber Wheeled Vehicle building will constitute a new parking lot for the extensive numbers of vehicles needed for transport. Currently there are 10 vehicles, rubber wheeled, parked outside the current building, which is sited near the main artery Tahoe Ski Bowl Road. Thus the neighbors at the west side of Lagoon will be sandwiched between two roads, with vans parked along the outskirts of the Rubber Wheeled shed. **Will the operators of HMR be restricted on repairing and working on their vehicles between the hours of 8AM-5PM weekdays without after hours as this is a residential neighborhood? Does this noise level of these transport vehicles next to a residential neigborhood reflect the serenity that Homewood Mountain Resort advertises in their website?**

Regarding Light quality: The proposed Rubber Wheeled Building will block the ambient sunlight that warms my house in the afternoon and evening as its height and breath shades my yard or garden. My house's **energy consumption will increase** which is not in keeping with **Best Management Practice. In addition this new building as well condos built on the steep hill will block the starry nights** which we enjoy at present.

This transportation depot, Rubber Wheeled building should move closer to Hwy 89 for access to the fire station or close to a new fire station. With a new location nearer the main artery close to Hwy 89 it will better serve the population which Homewood Mountain Resort seeks to serve.

In addition Homewood Mountain Resort should consider providing **not** alternate transportation of the intercept vans, which will in turn clog up the roads as people go the the proposed parking lots in Tahoma, but **Homewood Mountain Resort should propose to subsidize new buses for the current public transport system, TART**, as it exists rather than adding new vehicles, clogging up the overcrowded roads.

Siting the Rubber Wheeled vehicle fuel depot on this plot destroys the peace and tranquility of our neighborhood which Homewood Mountain Resorts says they are trying to engender with recollection of the OLD HOMEWOOD. Is this stewardship?

Thank you for your interest.

Sincerely, Margaret Head

Margaret Head
5579 Lagoon Road PO 952 96141
Homewood, CA 96141

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30 September 2008

Mr. David Landry, TRPA
Mr. Steven Buelma, Placer County
Mayan Kraach, Placer County

Re: Environmental Scoping for HOMEWOOD MOUNTAIN RESORT:
Location of the new Rubber Wheeled Building: and height variances for condos

My name is Robert Mullarkey; I have owned property in Homewood for 20 years,

I wish to address the **new** location of the fuel depot and maintenance shed identified as: **Rubber Wheeled Vehicle** in the South Base which Homewood Mountain Resort has submitted to the TRPA.

This depot is **sited** behind a tract **of residential single family homes**, a commercial facility that does not support the **ethos of environmental stewardship that the company advertises on their web site.**

Moving this depot from its current site near a main artery not only increases problems with fire, air quality, noise, light levels experienced by the residents of Lagoon Road. In addition this new location of the Rubber Wheeled Vehicle building will block the view of the mountain that I and several neighbors across Lagoon Road enjoy.

This depot uses **flammable** as well as hazardous diesel materials near residential dwellings, not only near Lagoon Road, houses which have existed for the last thirty years or more, but in close proximity to the condominiums which Homewood Mountain Resort proposes to build on the steep slopes behind Lagoon Road.

Regarding Fire: The Rubber Wheeled Vehicle building increases the likelihood of fire in our neighborhood because this site is not near a main artery for fire access and control. **This refueling depot is across the street from my property line as well as 10 feet from the property line of two other neighbors. The location of this Rubber Wheeled Building in the plans sent to the TRPA will increase the dollar amount for fire insurance which I must carry on my home.**

Regarding fire, Homewood Mountain Resort needs to develop plans that the proposed increased occupancy level, a doubling of the population of Homewood, to subsidize a new fire department with hook and ladder designed to reach the extended heights of the new condos. This subsidy or fees should not come from the current property owners taxes but should be part of the Homewood Mountain impact statement. The corporation at Northstar has provided equipment for their new commercial development.

Regarding Condo Height Variances: The height limit for buildings is 40 feet at present and I was assured that the new cosdos would not obstruct our view of the

mountain by Richard Brown, mgr of TMR by exceeding these limits. I see on the proposed plans they have asked for a variance to increase this height limit by 20 plus feet. We would be looking at the side of a condo rather that the mountain and this would have a dramatic effect on the value of our property. The reason we purchased this home was for the view. If the condos were required to comply with the present 40 foot height limit I would not have a problem with them.

In addition Homewood Mountain Resort should consider providing **not** alternate transportation of the intercept vans, which will in turn clog up the roads as people go the the proposed parking lots in Tahoma, but **Homewood Mountain Resort should propose to subsidize new buses for the current public transport system, TART**, as it exists rather than adding new vehicles, clogging up the overcrowded roads.

Thank you for your interest.

Sincerely,
Robert Mullarkey
5680 Lagoon Road
Homewood, CA 96141

45

David Landry

From: John Singlaub
Sent: Wednesday, October 01, 2008 10:48 AM
To: David Landry
Subject: FW: tau

John Singlaub
Executive Director
Tahoe Regional Planning Agency
P.O. Box 5310
Stateline, NV 89449
(775) 589-5253
(775) 588-4527 fax
jsinglaub@trpa.org
-----Original Message-----
From: Jackie Fenton [mailto:jjfenton@sbcglobal.net]
Sent: Monday, September 29, 2008 2:06 PM
To: John Singlaub
Subject: tau

Dear Mr. Singlaub: I have great concerns what is happening to Lake Tahoe from the developers who are trying to build large projects around the Lake. I own a house at 5790 Mc Kinney Dr, a few blocks from Homewood Ski Area. I am now on a zero growth lot. I cannot add one inch to my house which was built i 1964. I respect the rules that were made to take care of the lake and surrounding areas. I expect the TPRA to be the watchdog and prevent these developers from overbuilding. Homewood cannot stand the car or increased boat traffic in

the area. On weekends the boat trailors are parked all over the highway on #89 and on our residential streets. Please do not let them use the taus to increase the room density of their projects.

thank you, Jackie and David Fenton

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Rick and Ali Van Zee 747 Mandana Blvd Oakland, CA 94610

October 1, 2008

Mr. David Landry, TRPA
Ms. Maywan Krach, Placer County Planning
Re: Homewood Mountain Resort EIR - comments

Dear Mr. Landry, Dear Ms. Krach:

I am writing to you today as a follow up to my comments to the issues of the EIR for the above project made both at the APC meeting of the TRPA as well as at the Placer County Planning Staff meeting held at Granlibakken Resort on September 23, 2008.

Our family (the children and grandchildren of William Van Zee) has owned and enjoyed our 1/2-acre property at the corner of South and Sacramento Streets in Homewood since 1903 - in other words, for 105 years! We count ourselves among the oldest families in Homewood and feel fortunate we have this remarkable heritage representing the hard work and love for the land passed on by our grandfather.

Currently, our property is bordered by the dirt access road between the two ski hills to the back of us (as well as the wild mountain landscape), our neighbor, Ray Perryman to the south, Sacramento St. to the east, and the unpaved, dead-end of South St. to our norrth. This affords us a great deal of privacy, as Sacramento St. is really only used by residents of the area and as such, is a safe place to walk, ride bikes, play with children, etc. With the building of the Boat Musuem, the quiet and safety of Sacramento St. was shattered with numerous, large trucks and trailers going back and forth at all hours of the day and night (one even crashed through at 3am earlier this year!) as construction was at its height.

We have enjoyed the benefits of having the family-owned ski hill in our back yard through the years and were sad to see it sold as the era of 'mom-and-pop ski resorts' is going the way of the dinosaur unfortunately. We have known that change and development is inevitable and are not against either. That said, we have serious issues with the EIR for Art Chapman's vision of the new Homewood Mountain Resort.

1) We take enormous issue with the declaration that the impact on the community is a 'less than significant' problem! For all of us who reside in this 1/2-acre parcel development between the north ski hill and the south ski hill (Tahoe Ski Bowl Way), we will be FOREVER impacted by this enormous, out-of-character project. Our quiet way of life, our ability to walk the streets, have children play openly, enjoy the tremendous privilege of observing our unique wildllife, our not having to lock our doors will suffer forever. The damage to our neighborhood will occur in the following ways:

a) Increased paving. Currently, the plans include the paving of the dirt access road between Tahoe Ski Bowl Way and the proposed 11-home development adjacent to the main resort. It also shows the paving and continuation of South St. to join with the new Tahoe Ski Bowl Way. Studies since the 1920's have proven that the increase in pavement as cities enlarge and engulf farm lands and forest lands is the single largest contributing factor to global warming, with CO_2 emissions coming in second. Being then surrounded on 3 sides by paved roads will alter the ambient

temperature of our immediate environs which will contribute to continued drought.

b) This paving will lead to increased traffic with our property (and those of the other families on the other three corners) being at 'ground-zero' for the increase in exhaust, road noise, headlights at all times of the night and reduced safety on the streets and in our neighborhood. This becomes an even more important issue if the proposed parking structure and employee housing site is to be changed to Mr. Chapman's second choice site closer to the south ski hill. This undesired increase in traffic on our now quiet roads and the addition of new roads will not only cause all of the above, but will greatly reduce the value of all our homes. This is untenable to us.

Mr. Chapman states his shuttle service will mitigate traffic as visitors will come to HMR and stay put, taking his shuttles back and forth between the north and south ski hills....(through our neighborhood!) We, however, disagree with this claim. Peoplewho come to HMR will want to visit other areas of the lake, other ski resorts and thiswill directly lead to increased traffic on Hwy 89 and on our neighborhood streets.

c) Noise pollution. Construction of all the elements of this project will cause an over-

whelming amount of on-going noise for several years which not only disturbs human,
but animal residents of the area as well. Once construction is complete, there will still
be an increase in noise from the daily activities of the resort operation and the increased influx of people to the area. Again, another sure-fire way to reduce the value of our property. (We have no plans to sell, nor do we wished to be "forced out" of our homes but property values remain an important aspect of property ownership!)

d) Light pollution. When we stand out anywhere on our property at night, we have
an unbelievable view of the stars, planets and other constellations that make up our
universe....except when we look east across the lake toward Reno and Carson City. Unbridled development of the Carson Valley and the areas to the north and west of Reno have destroyed the night sky with so much light pollution, it looks like
dawn no matter what time of night it is. HMR, in its current form, will dramatically change our night skyscape FOREVER. Again, the increased traffic will also add to
this serious problem.

e) Wetland destruction. Currently, HMR proposes to build a three-story parking garage with employee housing at the corner of Sacramento St. and Fawn. While the site has been covered with many layers of gravel over several decades by former owners of Homewood Ski Resort (some without permit) in an attempt to provide additional parking, this area is actually a vital non-riparian wetland that historically acted as a filtration system for run-off as well as an important wetland for
wildlife. Now, however, water has no place to go other than to back up across from
this gravelled area on Sacramento St. and onto the properties facing this travesty.
One homeowner routinely has to set up planking, often higher than two feet, just to
reach the stairs to her deck in the spring. This back-up of run-off water is also a breeding ground for millions of mosquitoes - some now vectors for a number of

diseases, including West Nile virus. This wetland MUST be restored

f) Wildlife. While only two Special Species Status animals have been found in the development zone, we take issue with the discounting of the importance to all of us who live here of ALL our resident animals. Our neighborhood has long lived in harmony with bears, deer, raccoons, porcupines, several varieties of squirrels and chipmunks, coyotes and the occasional mountain lion. Because most of our neighbors have lived here for many decades, and have respect for wildlife, we have largely avoided the problems other areas face with a higher density of vacation rentals. The significant increase to Homewood's population, both resident and transient will lead to a huge incrrease in animal-human conflict. In almost all cases, it is the animal who pays the highest price for human stupidity, carelessness and greed. We find this to be a heartbreaking and untenable casualty of this proposed project.

2) The Mid-Mountain Resort. The size of this part of HMR's project is unbelievable and we see a number of problems with this, not the least of which is what it will take to build it, including demolition of wildland habitat. With its location on top of a prominent ridge, this lodge structure will be visible from 2/3 of the entire lake and set a dangerous precedent for other developers to build on other mountain/ridge tops around the lake. Instead of seeing mountain tops and treetops, soon all we'll see are rooftops! Is this what we want for the fragile beauty of Lake Tahoe? We also have issues with the roads Mr. Chapman wants to build all over the mountain - he claims to service the ski runs and the resort. These will not only degrade the wild and scenic character of Homewood/Ellis Mountain, but cause unbelievable run-off and pollution which will directly affect the clarity of Lake Tahoe. Also, the plan to build diesel vehicle maintenance/storage adjacent to the mid-mountain resort will cause innumerable problems with noise and toxic pollution.

3) 11 Private Homes. The current plan calls for the construction of 11 single family homes on 1A slope directly behind the homes closest to the north ski hill. First, we do not understand how HMR can possibly get an exception to build on such a steep slope. Second, the density is totally out of character with the 1/2-acre parcels it would directly adjoin. We have already raised the issue of traffic, pavement and noise - this would dramatically add to all of our previously stated objections.

4) Size and Scope of Entire Project. It is our strong belief that the overall size and scope of this project, including the dramatic 108 foot height of the main lodge (when accounting for the various levels being built up the slope) will completely dwarf this small, historic community! Homewood is not Incline Village, Northstar, Squaw Valley, Heavenly Valley or Ghirardelli Square! These areas have been degraded by over-reaching development for decades. Homewood is small - tiny even, with a population of 245 +/-. The amount of habitat destruction necessary to create this mega-project is

totally out of character with the historic value and nature of our area. We feel the entire footprint of this project does not fit the neighborhood it wants to squeeze into.

5) Loss of Independent Small Business. While we do miss the hardware store we used to have in Homewood, what Mr. Chapman proposes are stores and restaurants either

owned completely by him or those which will have to pay significant rents and profit percentages to him. These are revenues which will not be shared with the community or
the county. Between this development and what Topol is being allowed to do, there will be no place for independent, competitive small business in our community. This does not serve Homewood or its surrounding neighbors - it only serves Mr. Topol and Mr. Chapman.

Many others are writing to you with much more eloquent and scientific objections to the draft EIR of this project. However, the issues I have raised on behalf of our family and neighbors are ones that immediately affect us and are of great importance to us. All this being said, we are not opposed to some kind of development that would be in keeping with the character and history of Homewood (one of the last, if not THE last, historic neighborhoods left on the lake). We urge you to consider an alternative plan. We believe such a plan has been submitted to you already. We would like to see a plan that would offer a mixed-use development on the EXISTING paved footprint of the current Homewood Ski Resort. We would like to see an alternative that does not call for increased paving, habitat destruction or such increased traffic, noise, light and toxic pollution. We would like to see development that actually INCLUDES the residents of Homewood and does not dictate to us.

We respectfully ask that you take our comments seriously and not approve the current draft EIR.

Sincerely,

Ali Van Zee
5315 Sacramento Street
Homewood, CA 96141
sougasmom@aol.com

(mailing address as listed on letterhead)

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Tahoe Area
Sierra Club
Group

Tahoe Regional Planning Agency
Governing Board Members and TRPA Staff
Sent via email to Project Contact: David Landry (dlandry@trpa.org)

October 1, 2008

County of Placer, Community Development Resource Agency
Environmental Coordination Services
Sent via email to Project Contact: Maywan Krach (cdraecs@placer.ca.gov)

Subject: Notice of Preparation of Draft Environmental Impact Statement (EIS) for the Homewood Mountain Resort CEP Program Project.

Dear Governing Board Members and TRPA staff,

We would like to thank you for the opportunity to comment on the Notice of Preparation (NOP) for the Homewood Mountain Resort (HMR) CEP Project (hereafter "Project"). As we have stated in the past, we are concerned with the extent of proposed development under the CEP program, and believe that the CEP program should at most, include one or two small 'demonstration' projects aimed at testing new and unique development concepts for their ability to help achieve thresholds. However, TRPA has approved the reservation of extensive allocations and commodities for several very large redevelopment projects that are being reviewed under the existing Regional Plan (well recognized as inadequate and out of date) while the update remains overdue. We reiterate our concerns with the CEP program as it has proceeded and believe that TRPA should first focus on updating its Regional Plan to reflect existing conditions and science, rather than permit the redevelopment of most urban areas in the Basin under a flawed set of regulations.

With respect to the HMR project, we appreciate the owner's interest in making environmental improvements to the project area, and are impressed with load reductions resulting from existing and previous improvements on the mountain (such as legacy road restoration). We previously discussed the project with the owner and learned of several promising environmental improvements being considered for the project area, and agree, along with many residents, that there is a need for some type of redevelopment at HMR. However, based on our review of the NOP documentation, we have many concerns with the proposal, including the large scale of the Project relative to its location and the impacts it will create, both within Homewood, in surrounding communities, and Basin-wide.

We provide the following comments and questions to guide the information and analyses conducted in the EIS. We also hereby incorporate comments submitted by the League to Save Lake Tahoe, Judy Tornese and Lori Cress.

Please feel free to contact Jennifer Quashnick at (530) 577-4233 or jqtahoe@sbcglobal.net or Michael Donahoe at (775) 588-5466 or donahoe@charter.net if you have any questions.

Sincerely,

Michael Donahoe
Conservation Co-Chair, SLT
Tahoe Area Sierra Club

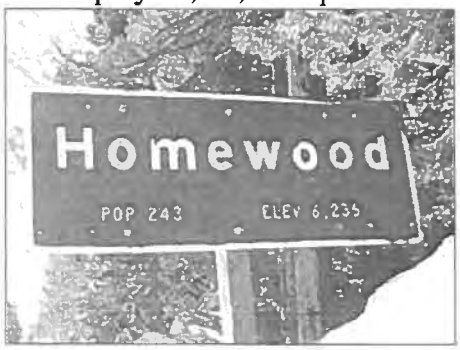
Ron Grassi, Esq. (Retired)
Conservation Co-Chair, NLT
Tahoe Area Sierra Club

Jennifer Quashnick
Environmental Consultant,
Tahoe Area Sierra Club

First, we note that our comments generally focus on the proposed developments at north and south base, the area in between and at the mid-mountain lodge. As expressed in our cover letter, we recognize the beneficial work HMR has been doing throughout the rest of the resort (i.e. "on the mountain") to restore legacy roads, reduce overall sediment loading from the mountain, reduce forest fuels and improve forest health. Therefore, our concerns regarding environmental and community impacts are focused on the bases (and mid-mountain) areas and how they will be developed.

I. Density:

Density increases proposed by this project are one of the biggest factors that will affect the environment (both aesthetically and due to the adverse impact on traffic and other thresholds) and the community of Homewood (by adding thousands of residents and guests to a very small community – a possible 400%-500% increase in population). The project proposes to add substantial new development, including almost 320 new units, possibly 1,000-1,200 or more new overnight guests[1], new employees, 28,000 square feet of commercial area, a new mid-mountain lodge of approximately 15,000 sq. ft. in size, a health spa, swimming pool, and 11 new single family homes. This proposal is substantial in itself, but moreso in a community with just 243 year round residents (picture on right taken in 2008).



The Sierra Club generally supports the concept of smart growth for dense, populated urban areas (where appropriate), which assigns higher density mixed use concepts to urban areas to reduce environmental impacts from growth, but with recognition that this is not appropriate everywhere, nor is there a "one-size-fits-all" design. With regards to Homewood, we agree that there is a need for some type of redevelopment at the project site, however, we do not feel that the increased density proposed for this very small community is appropriate, nor 'smart,' for the area.

In terms of density[2], the EIS must therefore analyze alternatives based on:

1) No Project (which includes required BMP upgrades);
2) Project allowed by existing Regional Plan with no amendments;
3) Project based on a much smaller scale. We recommend variations be analyzed which would represent 25%, 50% and 75% of the (overnight) population density of the existing proposal.
4) Alternative based on a Community Plan [CP] (where the CP is developed first in a separate, distinct public process – see discussion below).

The EIS must also assess the ability of utility companies to support the substantial population growth associated with the project. Examples include power supply, sewage treatment, natural gas supply, and water supply (discussed in detail in this letter). Ability

[1] We feel HMR should be required to provide the estimated number of people the project will bring to Homewood prior to scoping. Because this has not been required, we have estimated this based on unit and bedroom information provided.

[2] We also recommend different alternatives in other sections of this letter based on other parameters.

to support this increased population should not be based on assumed or hopeful future infrastructure improvements or expansions.

II. Community Character and Need for Community Plan:

Community Scale and Character:
PAS 157 includes Special Policy 1: *"A coordinated Homewood Community Plan should include this Plan Area as well as Plan Area 159."* PAS 159 includes the following Planning Statement: *"This area should continue to be a tourist commercial area. However, there is a need for rehabilitation while maintaining the scale and character of the west shore."* PAS 159 also includes special policy 5: *"Tourism and recreation compatible with the west shore scale of development should be encouraged in this Plan Area."*

The requirements here are very clear – any development in Homewood must be consistent with the scale and character of the community. In fact, TRPA and the owner recognize this. The NOP states that one of the guiding principles or objectives for the Master Plan (which is basically the proposed project) is that the density is *"[consistent] with the scale and character of Homewood, CA."* (p 5)[3].

However, there has been much debate regarding the intent of requirements to maintain the scale and character of a given area. TASC feels that without a community plan to determine what the scale and character of the Homewood community is, we must rely on fact: the "scale" of Homewood is a very small community of 243 people and the "character"of Homewood is a small, mountain rural town of 243 people with limited commercial facilities.

TRPA has not performed any public process per the Code to adopt a CP which otherwise defines the scale and character of Homewood. The Homewood Mountain Resort (HMR) owners holding numerous meetings with people in west and north shore communities is appreciated, but does not substitute for a Community Plan process. TRPA simply can not make the findings that this project is consistent with the scale and character of the Homewood community in the absence of an existing Community Plan.

In fact, TRPA says as much in the August 2008 Governing Board (GB) packet. The GB discussed the issue of "community character and scale" during this meeting. Although the discussion was raised based on impacts from residential development, the core issue is still the same: how to assess if proposed development is consistent with a community's character and scale. TRPA's conclusion as stated in the 'white paper' in the packet in essence agrees with our opinion that the community should develop their community plan first: "*...Given the number and variation of programs and policies out there, it is evident that there is no "silver bullet" solution. Each community must define community character, identify its specific issues, the context and area to which such regulations would apply, and resources availability to manage such programs.*" (p 229, 8/08 GB Packet).

[3] Unless otherwise noted, page numbers refer to the September 2008 NOP.

Further, the packet explains: *"changes to the current policies and procedures that would increase the regulatory control of community character will require a comprehensive review of current Basin conditions and regulations from other jurisdictions, significant analysis of policy/economic/social consequences, robust public involvement and debate. Such an important policy and regulatory changes are, in staff's view, <u>most appropriately addressed as part of the Regional Plan Update</u>. In addition, any proposed policy change can be analyzed and reviewed in the larger context of other related issues and policy shifts."* We agree. This is yet another problem with the proposed project, as well as the overall CEP program. **If this project is approved as proposed, without benefit of a Community Plan being completed first, Homewood's 'character and scale' will forever be changed.** The new Regional Plan (RP) EIS, after examining the existing condition of Homewood, would likely show that a project which increases the population of a community by 400-500% and brings in this extent of development to a small rural area is not consistent with that area's character and scale. But it will be too late, as TRPA can not require the project to be un-built.

<u>Community Plan (CP) Should be Completed First:</u>

No Baseline Information:

TRPA has never gone through the required review process to determine "community desires" or the level of development appropriate for this community because TRPA has not developed a CP for Homewood, nor does TRPA intend to develop a CP for this area prior to allowing this major overhaul of the existing community population. Instead, the developer for the Project is preparing his own Master Plan, but this plan is nothing more than a dressed up version of the Project itself. Reliance on a developer-initiated Master Plan as the overarching planning document violates Plan Area Statement (PAS) 157, which states that any significant commercial development in this area be permitted only pursuant to an adopted Community Plan that incorporates and considers the adjoining commercial areas covered by PAS 159. The proposed Project also violates PAS 157 by exceed the maximum densities allowed as well as the prohibition against new commercial facilities up the mountain.

TRPA Code § 14.6, the development of a Community Plan includes an initial assessment, which *"shall include a survey of existing conditions, an initial needs and opportunities study, a survey of applicable standards and constraints, and a determination of community goals and objectives."* From this information the preliminary plan shall be developed, which is to identify *"themes"* for the community plan, which may range from *"major retail and services"* to *"local and minor recreation serving retail and services"* or *"minor tourist accommodation."* Community Plan preparation shall include the *"establishment of baseline information about the location, amount, and condition of all threshold-related elements applicable to the community plan." See Section 14.6.C(2).* TRPA is required to refine the inventory and needs assessment for the community, which includes determining *"the amount, type, and condition of the inventory of commercial floor area, housing, public service facilities (including transportation facilities) and recreational facilities, commercial, housing, public services, and recreational facilities needed to meet the community goals, with priorities for each and a description of*

environmental improvement projects needed in the area to meet environmental thresholds." See Section 14.6.C(3).

TRPA's intent to consider nonetheless whether the Homewood Project meets criteria requiring consistency or enhancement of community character is thus disconnected from any baseline findings regarding the nature of the Homewood local community.

As discussed above, TRPA has no basis to make findings that the proposed project is consistent with or will enhance community character since there has never been an approved CP for the area. Instead, the project is simply a developer initiated project that will radically alter the character of the existing Homewood community from local low density residential and commercial establishments to a high density, tourist destination location akin to recent developments in Squaw Valley or Northstar. According to the staff report, CEP projects are supposed to occur within "urban core areas." However, TRPA has *never* before characterized Homewood as an "urban core" in the Basin. Many Homewood residents have clearly expressed disagreement that their community is an "urban core" area appropriate for high density development.

In summary, this project will overwhelm the existing community through increasing Homewood's population by 400-500%. The 'new' population will essentially dominate in any and all future planning processes for Homewood, thereby taking away the ability of the existing Community to decide the future of their Community. This is both legally and ethically questionable.

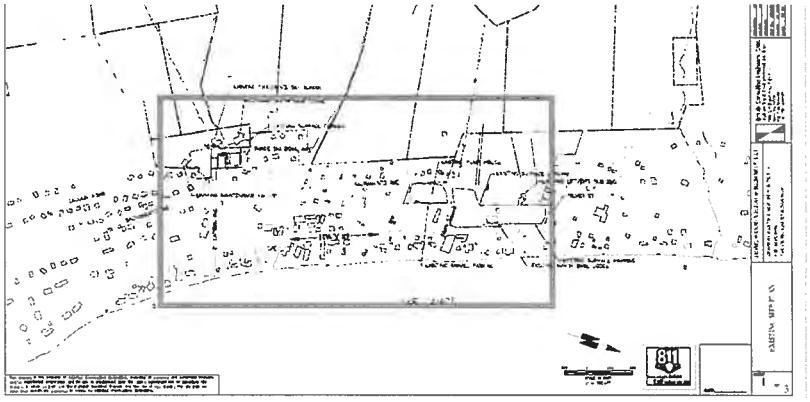
- We urge TRPA to follow its own advice (per the staff summary presented for the August 2008 meeting [discussed above] in that a Community should define its own character and scale) and first initiate the development of a Community Plan for and by the Community of Homewood as a separate process that is completed and adopted *prior to* further development of the alternatives for this EIS process.

- If TRPA refuses to do so, we then ask the owner of HMR to follow the stated principles in the NOP by requesting this be done prior to further development of the alternatives for this EIS process. Page 5 of the NOP states:
  "The overall density of the proposed HMR Master Plan is guided by three principles or objectives that developed as a result of extensive input from the West Shore communities. These principles include:...Consistency with the scale and character of Homewood, CA."

Finally, we note on page 14 of the Initial Study, the "Discussion – Items IX-1,6,8:", states that *"The proposed project is the revitalization of an existing ski resort. There is a residential component of this project, but the ski resort area itself is not expanding in an area such that it would divide an established community or its physical arrangement. There will be improvements made to update the components of the resort, similar to what many surrounding resorts have been doing in recent years."*

- We disagree with this statement. The EIS must explain how increasing the population of an established community by ~400-500%, thereby overwhelming

that established community population, through the construction of massive scale development in a central portion of that community will "not divide an established community or its physical arrangement." Physically, the geography of the Homewood area clearly forms a community that is relatively 'linear' – this proposal is located roughly in the middle of that community, clearly dividing the north from the south end of Homewood (see figure below[4]).



In general, the boxed area above represents the project area; of note is the central location of HMR within the Homewood community. This figure illustrates to apparent 'division' of the northern and southern ends of Homewood by the project area.

Further, the reference to a '*residential component*' seemingly implies that the residential part of this project is a relatively minor component (compared to the ski resort 'upgrade').

- We feel this statement is misleading. The project proposes to add almost 320 new units, of which 245 appear to be 'residential'[5]. In fact, the project would require an amendment to PAS 157 because it does not currently allow residential timeshares. Clearly, the residential component of this project is in fact one of the key additions from this project, not merely a small 'side component' as this wording might suggest.

- Additionally, the wording in this statement would suggest that this is a simple "ski resort upgrade" – this is also misleading. This is a massive overhaul of the two existing ski resort bases, land in between those bases, as well as the mid-mountain areas. This is far more than a simple 'upgrade' or improvement to a ski resort. And finally, the owners refer to this project as '*similar to what many surrounding resorts have been doing in recent years*.' Based on the proposed project, this statement appears true, which only reiterates our concerns – this level of development may be appropriate at other larger ski resorts in more developed areas (e.g. Northstar, Squaw Valley, etc.), but it is not appropriate for Homewood, as Homewood is clearly not "similar to other surrounding ski resorts." Although Homewood's distinct and unique character is obvious, this only reiterates the need

[4] Figure uses map of proposed site plan provided by HMR at:
http://www.trpa.org/documents/CEP/Homewood/HMR_MP_Maps_and_Alternative_Maps.pdf
[5] Of the 320 new units, "up to 75" are for the hotel.

for a Community Plan process *first* to capture that distinct and unique character in a CP.

Proposed Findings Regarding Community Objectives and Desires in the Absence of the Community Plan Process Violates TRPA's Goals and Policies[6]

TRPA's Goals and Policies envision that increased development should occur through the adoption of Community Plans, and substantially restrict TRPA's right to increase development allocations in the absence of such Plans. TRPA's Goals and Polices demonstrate that development allocations should flow from the adoption of Community or Master Plans to ensure that such allocations are consistent with the larger picture community plan. For example, TRPA Goal and Policy, Land Use Element, Goal No. 2 requires TRPA to "*Direct the amount and location of new land uses in conformance with the environmental threshold carrying Capacities and the other goals of the Tahoe regional Planning Compact.*" This section states that, "*evidence included in the environmental impact statement prepared for this Plan, and public testimony, the Tahoe Region is experiencing resource use problems and deficient environmental controls.*" To ensure attainment of this goal, Policy No. 2 states:

> "All plan area statements, community plans, or other specific Plans adopted by the agency shall specify the total additional Development which may be permitted within the region, not to Exceed the limitations set forth in a, b, c, d, and e, below."

This section allows additional commercial development as follows:

> "The amount of additional commercial development is based on the estimated needs of the region. Commercial development may be permitted *as specified in plan area statements, community plans, or other specific plans*. The total additional gross commercial floor area permitted shall not exceed 800,000 sq. ft., excluding minor expansion, for the first 20 years of this plan. (emphasis added.)"

See Goals & Policies, p. II-6. Similarly, TAUs are limited to additional units "as specified within a community plan and as provided for in Goal #3, of the Development and Implementation Priorities Subelement." In addition, the TRPA Goals and Policies (p. II-6.) suggest that additional commercial development must occur within the parameters of approved community plans:

> "Community plans shall guide development in specified areas for at least the first ten years of the plan and shall be kept current by periodic review. The TRPA shall actively encourage prompt development of community plans for all designated areas, with a goal of completing the community plans by December 1, 1989. The areas designated shall be those where commercial use is concentrated or should be concentrated. They shall be areas served, or easily served, by transit systems, which have adequate highway access, which have, or can have, housing in the vicinity available for employees working in the area, and which otherwise qualify as areas suitable for continued or increased levels of commercial activity. Some areas, because of their existing and proposed development patterns, may incorporate more than commercial use classifications."

[6] Here we reiterate concerns raised in our 11/23/07 Letter to TRPA.

The goals and policies also conclude that additional commercial allocations should be made according to the "best" Community Plans that have been approved:

> "As soon as TRPA has reviewed a sufficient number of proposed community plans, to adequately assess the cumulative impacts of development and proposed mitigation, TRPA shall distribute the remainder of the 25 percent of the additional commercial floor area. This distribution shall reward those [CPs] which best demonstrate the ability to achieve and maintain environmental thresholds, and have a clearly demonstrated need for the additional allocation."

See p. II-9. In addition, the Goals state:

> *"The amount of additional commercial floor area allowed outside community plans shall be no more than 40,000 square feet for the first ten years of the Regional Plan and shall be allocated to individual projects by TRPA.* TRPA may, by ordinance, allow reassignment of this commercial floor area to community plan areas in conjunction with adoption or amendment of community plans. The amount of commercial development outside [CPs] shall be checked at two-year intervals to determine if the rate at which projects are being approved exceeds the projected 4,000 square feet a year rate by more than 25 percent."

See p. VII-7. The Project proposes a higher level of development outside an approved Community Plan, contrary to the TRPA Goals and Policies. TRPA appears to justify this through inclusion of the proposed project in the CEP program, which requires a net environmental gain above and beyond that required by the Regional Plan. Multiple problems exist with this concept, including but not limited to the concern that inclusion in the CEP program should not negate the requirement for a Community Plan to be adopted before a CEP project is allowed to forever change an existing community.

III. Water Supply:

We are extremely concerned with regards to the increased demand for water that will be generated by this project, taken alone and in combination with other anticipated major redevelopment projects (including other CEP projects).

The Initial Study (IS) states (p 18 of 21): "Environmental Issue 5*: [Will the project] have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?"* The IS lists this as a "Potentially significant impact" and discusses the 'mitigation' as:

> "The EIR will discuss the source of water, the quantity of water available and the potential water sources to be utilized for all aspects of the project, including snowmaking. The EIR will address the Tahoe City PUD and Madden Creek Water Company's ability to serve this project for potable water service."

There are several reasons we are concerned with the ability to meet additional demands for water in the Basin (and specifically in Homewood):

A. Truckee River Operating Agreement (TROA)

The TROA, although not fully finalized and ready for implementation, will limit the amount of water available to the CA and NV sides of Lake Tahoe. The Agreement, as it now stands, will allocate 23,000 acre-feet/year to CA and 11,000 acre-feet/year to NV. Below is an excerpt from Section 204(b) of the Truckee-Carson-Pyramid Lake Water Rights Settlement Act, referenced in the proposed TROA Agreement; (http://www.focuswest.org/law/pl101-618II.cfm):

> (b) Lake Tahoe-
>
> (1) Total annual gross diversions for use within the Lake Tahoe basin from all natural sources, including groundwater, and under all water rights in the basin shall not exceed 34,000 acre-feet per year. From this total, 23,000 acre-feet per year are allocated to the State of California for use within the Lake Tahoe basin and 11,000 acre-feet per year are allocated to the State of Nevada for use within the Lake Tahoe basin. Water allocated pursuant to this paragraph may, after use, be exported from the Lake Tahoe basin or reused.
>
> (2) Total annual gross diversions for use allocated pursuant to paragraph (1) of this subsection shall be determined in accordance with the following conditions:
>
> (A) Water diverted and used to make snow within the Lake Tahoe basin shall be charged to the allocation of each State as follows:
>
> (i) the first 600 acre-feet used in California each year and the first 350 acre-feet used each year in Nevada shall not be charged to the gross diversion allocation of either State;
>
> (ii) where water from the Lake Tahoe basin is diverted and used to make snow in excess of the amounts specified in clause (i) of this subparagraph, the percentage of such diversions chargeable to the gross diversion allocations of each State shall be specified in the Operating Agreement; and
>
> (iii) the provisions of paragraph 204(b)(1) notwithstanding, criteria for charging incidental runoff, if any, into the Carson River basin or the Truckee River basin, including the amount and basin to be charged, from use of water in excess of the amount specified in clause (i) of this subparagraph, shall be specified in the Operating Agreement. The amounts of such water, if any, shall be included in each State's report prepared pursuant to paragraph 204(d)(1) of this title.

California TROA Appropriations:

According to data from the California State Water Board's website[7], existing water appropriations from Lake Tahoe total 37,237 acre-feet/year (see the table below, taken from a search done on the website for all appropriations from Lake Tahoe as the Water Source[8]). Including the 'pending' applications, that total increases to 46,920 acre-feet/year.

[7] http://ciwqs.waterboards.ca.gov/ewrims/ewrims/EWMenuPublic.jsp (Select "Water Right Search"; then: Water Right Type: "Appropriative" and Source (River Name or Source Name): "Lake Tahoe")

[8] Several columns irrelevant to expressing the total numerical appropriations were removed for formatting reasons (e.g. permit and application numbers, etc.)

eWRIMS Application Search Results
Displaying Water Rights where Water Right Type = Appropriative; Source = lake tahoe.

Status	Holder Name	Date	Face Amt	County	Source
Licensed	FULTON WATER COMPANY, INC	8/6/1934	0.9	P	LAKE TAHOE
Licensed	DANIEL R PUTMAN	8/31/1935	0.3	ED	LAKE TAHOE
Licensed	MARGARET M TREMBLEY	9/4/1935	0.2	ED	LAKE TAHOE
Permitted	LAKE FOREST WATER COMPANY	7/21/1952	28	P	LAKE TAHOE
Permitted	NORTH TAHOE PUBLIC UTILITY DISTRICT	6/18/1956	600	P	LAKE TAHOE
Permitted	NORTH TAHOE PUBLIC UTILITY DISTRICT	6/22/1956	1,900.00	P	LAKE TAHOE
Permitted	NORTH TAHOE PUBLIC UTILITY DISTRICT	8/13/1956	1,900.00	P	LAKE TAHOE
Permitted	FULTON WATER COMPANY, INC	8/4/1958	280	P	LAKE TAHOE
Permitted	TAHOE CITY PUBLIC UTILITY DISTRICT	8/25/1958	135	P	LAKE TAHOE
Permitted	NORTH TAHOE PUBLIC UTILITY DISTRICT	11/17/1958	49.7	P	DOLLAR CREEK, LAKE TAHOE
Permitted	TAHOE CITY PUBLIC UTILITY DISTRICT	11/27/1959	188	P	LAKE TAHOE
Permitted	TAHOE CITY PUBLIC UTILITY DISTRICT	6/29/1960	74	P	LAKE TAHOE
Permitted	FULTON WATER COMPANY, INC	6/29/1960	314	P	LAKE TAHOE
Permitted	AGATE BAY WATER COMPANY	10/14/1960	160	P	LAKE TAHOE
Permitted	TAHOE CITY PUBLIC UTILITY DISTRICT	11/16/1960	444	P	LAKE TAHOE
Permitted	LARRY ACOSTA	5/18/1961	19.2	P	LAKE TAHOE
Permitted	TAHOE CITY PUBLIC UTILITY DISTRICT	7/18/1963	253.4	P	LAKE TAHOE
Permitted	TAHOE CITY PUBLIC UTILITY DISTRICT	9/18/1963	75	P	LAKE TAHOE
Permitted	LAKE FOREST WATER COMPANY	3/27/1964	270	P	LAKE TAHOE
Permitted	LAKESIDE PARK ASSOCIATION	11/18/1966	1,070.00	ED	LAKE TAHOE
Permitted	LTBMU	11/30/1966	1,729.00	P	LAKE TAHOE
Licensed	LTBMU	1/30/1969	1.7	P	LAKE TAHOE
Pending	LTBMU	5/13/1969	940	ED	LAKE TAHOE
Pending	SOUTH TAHOE PUBLIC UTILITY DISTRICT	11/7/1969	19,000.00	ED	LAKE TAHOE
Pending	NORTH TAHOE PUBLIC UTILITY DISTRICT	3/31/1970	208	P	LAKE TAHOE
Pending	TAHOE CITY PUBLIC UTILITY DISTRICT	4/6/1970	5,774.50	P	LAKE TAHOE
Pending	SOUTH TAHOE PUBLIC UTILITY DISTRICT	5/7/1970	5,968.00	ED	LAKE TAHOE
Pending	NORTH TAHOE PUBLIC UTILITY DISTRICT	3/16/1971	416	P	LAKE TAHOE
Pending	NORTH TAHOE PUBLIC UTILITY DISTRICT	12/12/1972	3,350.00	P	LAKE TAHOE
Permitted	TAHOE PARK WATER COMPANY, INC	6/9/1982	31.9	P	LAKE TAHOE
Permitted	TAHOE PARK WATER COMPANY, INC	6/9/1982	159	P	LAKE TAHOE, UNSP
Pending	QUAIL LAKE WATER COMPANY	3/6/1984	288	P	ELLIS CREEK, LAKE TAHOE, QUAIL LAKE
Pending	CALIF DEPT OF PARKS & RECREATION	6/15/1984	350	ED, P	BURTON CREEK, LAKE TAHOE, UNSP
Pending	HEAVENLY VALLEY A NEVADA LTD PARTNERSHIP	2/26/1993	350	ED	LAKE TAHOE
Pending	HEAVENLY VALLEY A NEVADA LTD PARTNERSHIP	2/26/1993	592	ED	LAKE TAHOE

Total "Face Amount" (acre feet/year):	46,920
Pending (within total):	9,683
Total permitted & licensed:	**37,237**

This clearly raises questions about the availability of water from Lake Tahoe to supply increased demand. The 23,000 acre-feet/year is the TOTAL allocation of water for the CA side of the Basin (includes existing appropriations).[9] As the table

[9] Pers. Comm. 9/26/08. Ms. Kathy Mrowka, CA State Water Board, Division of Water Rights, Permitting.

above shows, existing appropriations well exceed this amount. What is not known or available is how much of the 'face amount' appropriated runs back into Lake Tahoe (in other words, what is the total allocated and not returned to the Lake's supply when consideration is given to appropriations based on 'by depletion' or diversion, which is discussed in Section 204(b)(2) as it pertains to snow-making in the Basin). For example (numbers are purely hypothetical), using a possible depletion percentage of 30%, a snow-making operation may be permitted 1,000 acre-feet/year, however 330 acre-feet/year (or 30%) of that will add water back to the Lake when the snow melts. Thus, the net appropriated amount for that snow-making operation would be 670 acre-feet/year.

For the Lake Tahoe allocations, this information is not yet available, but it certainly looks unlikely that there will be 'room' to take more water from Lake Tahoe to support more development; in fact, we question whether any new appropriations will be available above those already permitted and licensed (in other words, will already pending applications be turned down?).

- First, it appears that the California State Water Board will have to analyze all appropriations and examine the total amount appropriated (taking into account permits based on "depletion"), to assess where appropriations are at in terms of the 23,000 acre-feet/year limit. Only after this is done can HMR (and Tahoe City PUD and all other utility companies) assess whether there is water to support increased demand.
- The EIS must provide ample evidence that water to serve the additional population brought to Homewood by the project is available. A "Will Serve" letter from the PUDs is not enough, as the PUDs have documented their concerns with future water supplies (see below), and therefore must prove how they will supply water to this new development as well.
- The EIS must also analyze this based on a decreased water supply of 25% (a number we have heard during climate change discussions in terms of reduced precipitation).

In fact, water supply is once again a concern as recently as this week because Lake Tahoe is almost at its natural rim, which would affect whether water can be released down the Truckee River. This situation is summarized in a 9/30 Tahoe Daily Tribune article[10], which begins:

> Heading into fall, Lake Tahoe and other area lakes and reservoirs are dipping, and might leave the Truckee River a comparative trickle before snow recharges the water supply again.
>
> Two slow winters in a row - feeding 31 percent and 32 percent of normal runoff into Tahoe - mean that the lake could drop below its natural rim unless precipitation shows up this fall. This means the top of the Truckee River could go dry, and other water stores will have to be leaned on more heavily to supply the Reno-Sparks area.
>
> "At this point it looks like we will get very close to Tahoe's natural rim," said Chad Blanchard, chief hydrologist for the U.S. District Court Water Masters Office.

[10] http://www.tahoedailytribune.com/article/20080926/NEWS

> As of last week, the lake was at 6223.80, within 8 inches of the natural rim and down to just 15 percent of the dam's total storage capacity, he said.
>
> "As the lake drops, the amount going over the dam drops, and the amount going down river drops, so we have to supplement that with others..."

How 'smart' is more growth when water supply for existing development is already questionable?

Tahoe City PUD water supply:
We have raised the question of water supply before. As the NOP notes, one of those suppliers is Tahoe City PUD. In a memo from Jane Schmidt, NRCS (dated 11/26/07 and addressed to "Fire Defensible Space / BMP Retrofit Partners" regarding "Information on water usage at Lake Tahoe obtained from Utilities"[11]), Ms. Schmidt summarizes the information received by the queried utility companies. With regards to Tahoe City PUD, the memo states:

> Tahoe City PUD: There is not an unlimited water supply, even if the utility district is in compliance with safe drinking water standards. Currently, the utility makes over 90% use of groundwater wells; unless water usage patterns decline, there may be a need to develop new sources. Returning to the Lake for additional water may need to be considered."

This memo suggests that Tahoe City PUD does not have 'extra' water to supply projects with. In fact, the PUD instead suggests the need for additional sources, including taking more water from Lake Tahoe (which appears unlikely given the TROA limits and existing appropriations). This memo was based on demand associated with **existing** water use, thus additional demand from large projects, such as the proposed project, will just add more demand to an already taxed water supply.

Nevada TROA Appropriations:
Nevada's 11,000 acre-feet/year allocation is already fully appropriated:

> "Any new developments requiring water in Nevada will have to be supplied from existing appropriated rights. Nevada's 11,000 acre-feet allocation has been fully appropriated (however it is not currently being fully pumped or utilized). The only new appropriations being issued in Nevada are for di minimus domestic uses (less than 1 acre-foot of water), and then only for those homes that have long been using the water - basically grandfathering in those rights. In the future there may be the possibility of issuing some additional rights for snowmaking but only pursuant to what TROA allows." *(Alan Biaggi, NDEP, in email dated 9/12/08)*

Thus, this suggests that on the NV side, there is no flexibility for allowing more water to be taken from the Lake to support new development. Because Lake Tahoe is one water body, that the Nevada side lacks any additional room for more water appropriations is relevant to all projects in the Basin, regardless of which side of the state line they fall on (and relevant to the cumulative impacts assessment)..

In summary, the DEIS must address the following questions with regards to water supply:

[11] *See Attachment 1*

- What will the water demand be from this project compared to existing conditions (the EIS must include both)?
- What will the cumulative water demand be from this project and other projects, such as those discussed in the "Cumulative Impacts Assessment" section of this letter? How does this compare to the amount available per TROA (discussed above), where it appears that taking more water from Lake Tahoe is not an option?

B. Other Infrastructure Concerns: Aging utilities:

Additionally, the Tahoe City PUD's infrastructure is aging. As discussed in a recent article in the Sierra Sun (9/22/08):

> "Tahoe City Public Utility District officials say they are hoping a federal effort can be launched to find the millions of dollars needed to upgrade the Tahoe Basin's aging water system...The Tahoe City utility's own analysis of its system concluded that "extensive infrastructure work" is needed to meet a state fire code updated in January this year. Director of Utilities Tony Laliotis said more than $26 million in projects has been identified to improve the Tahoe City system, although not all of that money would go toward improving water flows for firefighting. "I wasn't shocked," Laliotis said of the estimate. "These are 40- to 60-year-old water systems."
>
> The Tahoe City utility delivers water to 3,800 customers. Much of its system was acquired from private water companies set up to serve specific subdivisions, and the district remains interlaced with more than a dozen water systems still in private hands.
>
> Although the district water lines have in many cases been upgraded to provide adequate fire flows — established by the state to be 1,500 gallons per minute for two hours — the private companies don't face the same stringent requirements.
>
> Alan Harry, administrator of planning and public works for the utility, called the system a "patchwork quilt." He noted that last year's Washoe Fire started within the boundaries of private water company but moved into the district's territories. There, Laliotis said, crews had better access to fire hydrants.
>
> At the time of the fire on Washoe Way, North Tahoe Fire Chief Duane Whitelaw said the private water system had neither the amount of water nor the water pressure to allow crews to effectively fight the blaze. Tahoe Park Water Company operator Rick Dewante agreed; the private company's 40,000 storage tank was about the tenth of the size needed to for fire suppression, he said.
>
> "We need to have the flow to fight (that kind of fire)," Harry said. "But (TCPUD's) capabilities are pretty darn good compared to private water companies that have no storage..."

The EIS must evaluate how the water system infrastructure serving Homewood, which as explained above, is already 40-60 years old, and where continuing to adequately serve 3,800 customers is going to require substantial and costly improvements, is going to adequately support an additional ~1,000-1,200 or more customers (a potential increase in TC PUD's customer base of 25-35%)?

customers

people

- The TC PUD does not have the funds to upgrade the existing system. Who will pay for the upgrade? What will be the result of adding thousands of additional people to the area be on this aging system in the meantime?
- Will public tax dollars be used to upgrade a system so it can support private development?
- The IS states that the DEIS will discuss the water districts' ability to support the project. We caution against any alternative that relies on the TC PUD considering drawing water from Lake Tahoe to meet water demand. We also caution against relying on a PUD to supply water at its maximum capacity, leaving no room for emergency water needs.
- The EIS should include the same information regarding the Madden Water Supply Company (e.g. age of infrastructure, number of customers the system can serve, water pressure, etc.). The EIS should also include the ability of the Company to supply additional customers.

C. Groundwater supply:

The IS states: "*The project as proposed will increase the amount of impervious surfaces on the property which is currently undeveloped and this may interfere with groundwater recharge. Additionally, the resort maintains several wells which are used for snowmaking and other water supply purposes. The EIR for the project will discuss these issues and the potential for altering of the direction or rate of flow of groundwater, and the project's potential for depleting groundwater supplies.*" (p 13 of 21). As discussed above, the ability to draw more water from Lake Tahoe appears unlikely (per TROA). Tahoe City PUD is already using over 90% of the groundwater in the area. Yet as documented in the IS, the proposed project has the ability to further deplete groundwater levels. We question what "mitigation" is available given the lack of additional water available in the area and concerns about supporting existing customers.

- The EIS must discuss the status of the groundwater use in this area. This discussion must also include the status of groundwater as it relates to adjacent areas directly or indirectly affected by any impacts to groundwater in Homewood.
- The EIS must address the status of utility companies' use of groundwater in supplying existing customer use.

IV. Climate Change and impacts on water supply:

Assessing the project's impacts on water demand relative to the *existing* water supply is no longer sufficient in itself due to the impacts of climate change, which are expected to reduce water supply as well as affect when precipitation falls, which will impact water storage systems (including reservoirs, e.g. Lake Tahoe's top 6 feet). The impacts of the proposed Project on *demand* for water are two-fold:

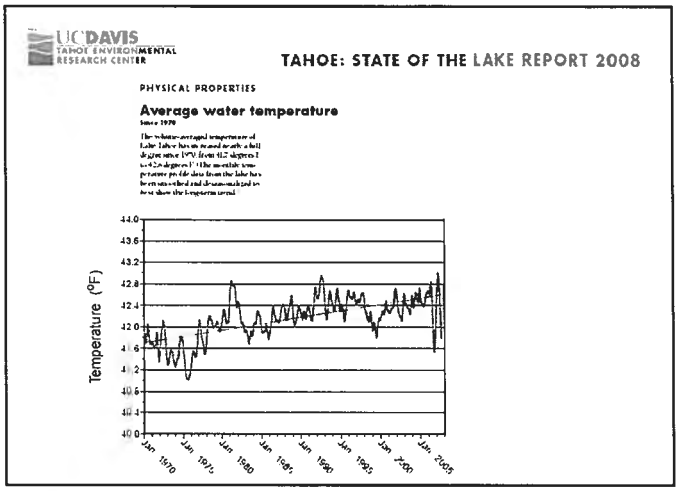
(1) the increased demand for water associated with the increased population created by the project (e.g. residents and visitors); and

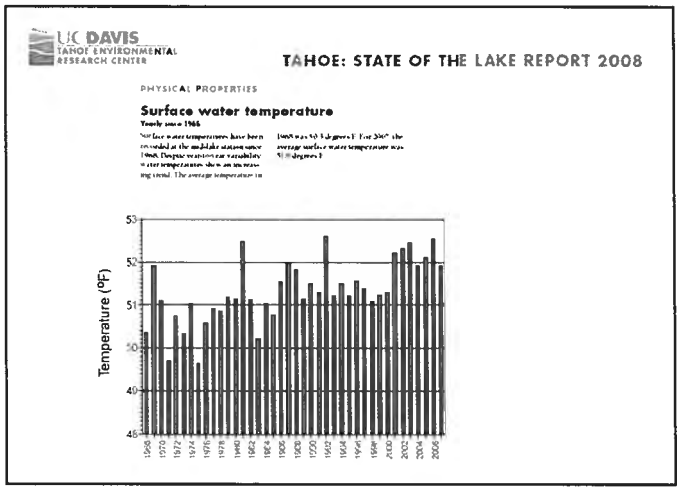
(2) the expected need to increase snow-making efforts as climate change affects precipitation amounts and types (e.g. more rain, less snow).

As discussed above, the Tahoe City PUD is already using most of its ground-water capacity and has stated that it may need to find additional water sources if demand

increases. However, if the amount of water in Lake Tahoe *decreases*, there will be less water available than exists today. We can no longer afford to ignore this "inconvenient truth." We simply can not increase demand for water in the Lake Tahoe Basin.

In fact, the "Tahoe State of the Lake Report 2008" from the Tahoe Environmental Research Center (TERC) summarizes their findings with regards to impacts on water supply, temperature and precipitation caused by global warming:





> **Meteorology**
> The Lake Tahoe ecosystem is largely driven by meteorology. In the short term, meteorological conditions are expressed as daily variations in weather. In the long term, they are expressed as normal cyclical variations such as wet and dry cycles, and long-term trends related to global climate change.
>
> Historical record:
> • The nightly minimum temperatures recorded at Tahoe City have increased by more than 4 degrees F. since 1910. (Fig. 7.1)
> • Days when air temperatures averaged below freezing have decreased by 30 days per year since 1910. (Fig. 7.2)
> • Since 1910, the percent of precipitation that fell as snow decreased from 52 percent to 34 percent. (Fig. 7.7)
> • Peak snow melt averages 2 ½ weeks earlier than in the early 1960s. (Fig. 7.8)
>
> Previous year:
> • 2007 was the 14th driest year on record. Precipitation at Tahoe City was 19.7 inches, two-thirds of the annual average of 31.6 inches. (Fig. 7.5)
> • Every month in 2007, except February and September, was drier than the 97-year average. (Fig. 7.6)
> • Snow represented 37.6 percent of total precipitation at lake level. (Fig. 7.7)

Basically, the findings show that nighttime and daytime temperatures are increasing, that more precipitation is falling as rain than snow and that snow melt averages are occurring earlier in the year. All of these findings suggest that ski resorts will need to make more snow (assuming temperatures allow) if they are to support skiing at the same level of use as today. Clearly snow-making can only be done during those periods when temperatures are below freezing (although TERC's data show there will be fewer opportunities for snow-making in the future, thus long-term investment in the ski industry is questionable). It is reasonably foreseeable that Homewood Mountain Resort would expect to increase snow-making in the future, thus increasing the demand for water. While we understand and appreciate that the owner is looking at ways to re-use runoff for snow-making back up on the mountain, we can not assume success until the concept is proven to be successful.

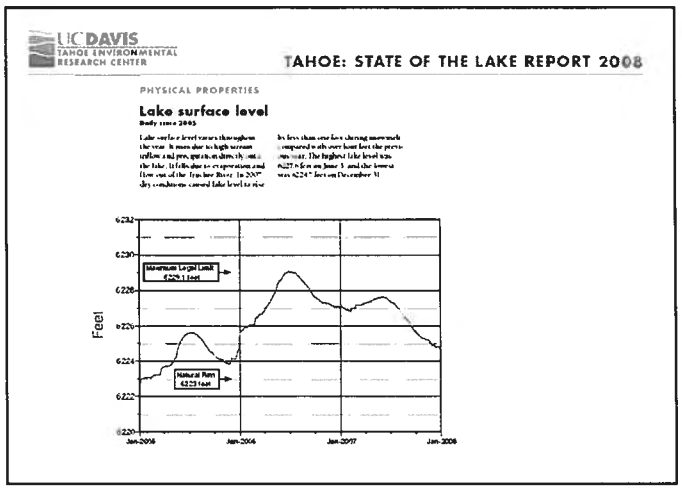
Additionally, the data show that we have less annual precipitation, a trend which may fluctuate up and down over time, but overall may continue in the long run, thus

decreasing the Basin's overall water supply. It simply makes no sense to approve projects which will significantly increase the demand for water when data tell us that we may soon have less water.

The report also discusses the lake's surface level and how it has changed in recent years – another factor which affects the amount of water taken from Lake Tahoe.

Lake surface level
Daily since 2005
Physical Properties
Lake surface level varies throughout the year. It rises due to high stream inflow and precipitation directly onto the lake. It falls due to evaporation and flow out of the Truckee River. In 2007, dry conditions caused lake level to rise by less than one foot during snowmelt, compared with over four feet the previous year. The highest lake level was 6227.6 feet on June 3, and the lowest was 6224.7 feet on December 31.

http://terc.ucdavis.edu/stateofthelake/StateOfTheLake2008_Chapter8.pdf



Of note here is the obviously downward trend we are currently experiencing. Further, as explained in the above text, dry winters can result in minimal lake levels. Yet water demand from increased populations in the Basin will not linearly follow precipitation levels. Therefore, the demand for water may remain fairly consistent while the supply of water can drop significantly. Based on TROA (legally) and environmental factors (environmentally), we can not plan to simply draw more water from Lake Tahoe during those drier years.

The EIS must:

- Fully analyze climate change and associated impacts on water supply, delivery and all related matters.
- Analyze how water demand will be met for the project in light of less water in the future (we recommend a 25% reduction be used in this assessment, per possible scenarios discussed in past discussions during climate change presentations).
- Analyze the impacts of established climate change trends on snow supply.
- Analyze the impacts of climate change on snow making needs, and how this will affect water demand (assuming, until otherwise proven successful, that water for snow-making is based on existing technology).

V. Economic Impacts and Climate Change (including impacts on ongoing mitigation):

While a project owner's ongoing costs and profits are perhaps not usually comprehensively discussed with regards to the environmental analysis, for this project, the situation is unique. As a hydrologist recently stated after reviewing 10 years worth of

water quality data, "I don't recommend anyone invest in the ski industry." Basically, the impacts of climate change are going to disappoint skiers and snowboarders. As the TERC report shows, now just 34% of annual precipitation in the Basin falls as snow; whereas in the early 1900's, that number was 52%. Recent data indicate more rain on snow events, and trends, which are expected to undoubtedly continue, will mean only more rain and less snow. Additionally, as night time temperatures are below freezing less often, opportunities for making snow will be fewer. And finally, as we've recently experienced, winters will be shorter, thus ski seasons will be shorter.

In fact, as the 11/25/05 article below[12] summarizes, "Sierra ski resorts may be first to feel economic heat of global warming" (so titled). The article begins:

> "A report predicting global warming's effects on California's economy could have dire implications for Tahoe's ski industry.
>
> Under a business-as-usual scenario, snowpack could decline by 90 percent by the end of the century, said Michael Hanemann, a professor of economics at UC Berkeley.
>
> Even under the best scenario, where greenhouse gas emissions stop today, Sierra snowpack could still shrink 36 percent over the next 50 years, according to Autumn Bernstein with the conservation group Sierra Nevada Alliance.
>
> Hanemann is one of several scientists who helped produce the report, which will come out Dec. 5 as a step to comply with Gov. Schwarzenegger's executive order this summer to reduce greenhouse gas emissions and create a Climate Action Team.
>
> Melting glaciers
>
> It's been reported that glaciers at several European ski resorts are already melting. If the Climate Action Team's predictions are true, America's ski resorts, the scientists suggest, may soon become the poster child for global warming's impacts on the economy.
>
> A smaller snowpack and earlier spring melt would shorten the ski season three to six weeks by 2050, Hanemann wrote, noting a similar report released in 2004. By the end of the century, another four to nine weeks would be chopped off.
>
> And, under a worst-case scenario, "skiing with natural snow in the Sierra would vanish except possibly at the very highest elevations," according to last year's report.
>
> More information on the report is available at www.climatechange.ca.gov/...."

In sum, we can expect that in the future, there will be fewer skiers and boarders spending money to ski/board (and to stay overnight) in the Basin. Thus, those mitigations and ongoing operations which are necessary to mitigate the impacts of this development make the economic discussion vital because once the project is constructed, it can not be un-built. However, if money runs out for the Resort, the Resort may not be able to fund the ongoing mitigations needed to mitigate impacts of the development.

[12] http://www.tahoedailytribune.com/article/20051125/NEWS/111250040

It is reasonably foreseeable that in the future, ski resort profits will decrease as snow fall and ski seasons decrease. The EIS should therefore analyze:

- A list of all mitigation measures which will require ongoing funding from the owner;
- A list of all mitigation measures which will require ongoing use by a certain number of people to be economical;
- A smaller scale project which, because less is built, requires less mitigation to mitigate impacts. Within this smaller scale alternative, the EIS should also list the mitigation measures that will require ongoing funding by the owner.

VI. Transportation:

One of our greatest concerns with the proposed project is the transportation related impacts of bringing an additional 1,000-1,200 or more people to the Homewood area. When we first spoke with the owner regarding the project, we were told that two of the ways the project would reduce traffic impacts would be:

(1) to reduce the traffic from day skiers coming from out of the Basin based on the assumption they would stay overnight at the resort instead; and

(2) to reduce peak traffic, based on the assumption that skiers would instead come to and/or leave HMR during non-peak times and stay longer (e.g. more overnight stays during the week and less skier traffic on weekends).

So we could better understand the demand that would dictate both of the above assumptions, we asked the owner to provide demographic data that would show the demand for these accommodations. Specifically, in a letter dated 1/23/08, we asked:

"Demographic Data:

We would like to see the existing usage data e.g.:

- Annual, weekly, daily/weekend day and Holiday average users
- Where users are from (more specific than in vs. out of Basin, i.e. "Bay Area, So. Cal, Sac Valley, San Jaoquin Valley, No. Sac Valley" and "Kings Beach, Tahoe Vista, Tahoe City, Homewood, So. Shore, etc.")
- Number/%of day users versus overnight stays (for each location and time of year/average day of week, etc.);
- Number/% of non-local DAY users
  - Of this Group, what days of week/Holidays do they come (perhaps show as % M-F, % Sat, % Sun, % Sun-Sun, % 3-day weekends, etc.);
- Number/% of non-local Overnight users
  - Of this group, #/% who own 2nd homes in the Basin
  - Of this group, #/% who stay in hotels vs. rent vacation homes
  - Of this group, length of stay and when (e.g. do most non-local overnight users come up just for the weekend? What % come during the week? Etc.).
  - Of this group, which west shore area they stay at (e.g. Homewood, Tahoma, Sunnyside, Tahoe City, or N. or Tahoe City, Truckee, etc.).

What other demographic data are available? For example, what are the ages, incomes and job status of non-local users? This will affect their expenditures (age & income) and days/times when they could stay overnight (job status working M-F vs. retired), etc.

Surveys:

- Have there been surveys to assess demand/desire for overnight accommodations at Homewood by existing non-local users? (The project indicates there will not be additional non-local users but

> rather a shift of *existing* non-local users from peak weekend travel times to a more spread out/off peak time, so we are looking for all information available to help us better understand this demand and therefore how the proposal accommodates it)."

Peak Traffic:
Basically, it surprised us that there would be such a demand for non-weekend accommodations from skiers and boarders; many people who come to the Basin from outside areas to ski/board have full time jobs and/or are students, and thus work Monday-Friday. This is obvious to anyone who experiences the traffic impacts on a Friday night and Sunday afternoon during the winter months. Additionally, HMR already documented this trend in their 2/14/08 response: *"[The] majority of skier visits occur on weekends and on the following holiday periods: Christmas-New Year, Martin Luther King weekend, President's Day weekend, Ski/Skate scholastic break in February which is typically the same week as President's Day weekend, and Spring Break (March and early April dependent on school district)."*

Therefore, for the project to result in a significantly sized group of users such that peak traffic would be significantly alleviated by the project (and to do so given the additional population it brings to Homewood), there would have to be a substantial number of skiers/boarders that are interested and able to come to Homewood during non-weekend and non-Holiday periods and stay overnight at the resort. Additionally, earlier discusses indicated an interest in targeting existing customers of the resort. HMR stated that the "*Primary target markets (non-local) are the San Francisco Bay Area, the metro Sacramento area, and Reno*." Therefore, we asked how many non-local customers have 2nd homes in the Basin, since clearly this group already has local accomodations.

We appreciate that HMR was quickly responsive to our requests and provided as much information as they could, however, the data that we needed to best understand this assumed demand for off-peak accommodations was not available. Now, in recent presentations and documentation from HMR, there has been but one mention of this concept of shifting users to 'off peak' times – but not from the NOP or Initial Study. Rather, found in the responses to TRPA included in the 9/10/08 Staff Summary for APC is a brief statement: *"HMR expects that by giving guests the option of staying on site the average stay will be 3-5 days with skiers perhaps going off-site (hopefully by transit, shuttles or waterborne transit) for one of those days"* (p 41). This is a nice idea but remains unsupported by any evidence. Further, other Basin locations providing overnight accommodations still experience peak usage on the weekends (e.g. Heavenly Valley Resort & Stateline area, which provides ample overnight accommodations).

Thus, what we see proposed is a project that will bring an additional ~1,000 to 1,200 or more people to Homewood with the likelihood that most of that increase will add to peak time densities, both in Homewood and on the roadways in and out of Homewood.

For consideration, we separate impacts to traffic into two categories:
(1) Additional traffic/VMT from HMR customers coming to and from the Basin; and
(2) Vehicle impacts from HMR guests during their stay.

(1) Examining traffic coming to and from Homewood:
We appreciate HMR's discussion and commitment to an alternative transportation plan [ATP] (NOP p 8-9). It is clear that HMR wants to support a better transit system, and has put far more thought into transportation than other large projects that are at this scoping stage, and we applaud those efforts. However, the existing ATP is generally aimed at reducing vehicle use among guests once they have arrived at HMR, and thus, does not mitigate the impacts from guests driving to and from HMR from outside of the Basin (driving is the only means to get to Homewood). Therefore, we first examine what those impacts may look like:

If we use the rough average of 'skiers per car' counted during the 05/06 winter season (provided by HMR last winter) – approximately 2.4 / vehicle - to assess the number of vehicles associated with 1,200 people, this translates to 500 additional vehicles in the Basin (because those staying at HMR might invite guests of their own, this number may underestimate the number of vehicles). For our purposes here, that means 500 more vehicles are driving to and from Homewood from out of the Basin (after all, we assume those who live in the Basin will not stay overnight at Homewood). Most will come via Truckee and State Route (SR) 89. Below, we examine possible increased VMT specifically in the Basin as a result of the project:

If we assume 100% come through Tahoe City via SR 89:
Homewood to Tahoe City is 7 miles and we estimate Tahoe City to the edge of the Tahoe Basin Watershed is around 3 miles, totaling 10 miles one way.
Therefore, each of the 500 vehicles will add 20 VMT (round trip) simply coming to and from HMR. This would translate to a total of 1,000 VMT added to the Basin per visit by those 1,200 overnight guests. That is 1,000 miles of resuspended particulate that can enter Lake Tahoe, of tailpipe emissions that can create unhealthy air for us to breathe and damage our already stressed pine forests, and noise that disrupts our enjoyment and wildlife (we note that TRPA's threshold evaluations show vehicle noise is a primary factor contributing to non-attainment of noise threshold standards).

However, some visitors may come via SR 89 S through Emerald Bay. Those visitors will add perhaps 60 VMT / trip. Visitors coming over Highway 267 may add 40 VMT/ trip.

These estimates do not consider the additional VMT caused outside of the Basin. Although TRPA is not legally responsible for evaluating this, Placer County should not allow more VMT on already crowded roads and highways (especially during peak use) for air quality, water quality and climate change reasons.

Further, these estimates are based on one "round" of new guests, when actually, guests will be coming and going all year round, multiplying the impacts from that 1,000 VMT by orders of magnitude.

(2) Examining Traffic once visitors are at Homewood:
As mentioned, we recognize the extensive thought and effort HMR has put towards developing the ATP to serve guests once they are at HMR. The NOP lists out numerous transportation related services, including bike trails/extensions, employee shuttle buses, employee public bus fairs, scheduled shuttle service, north-south base shuttles, electric/hybrid car rental, bicycle shares, Dial-a-Ride, and so on. This list is impressive. However, the question is whether these services can completely 'neutralize' the impacts of the additional guests on traffic, or rather, since CEP projects must show net gain, whether these services can actually *reduce* traffic/VMT from existing levels.

- The EIS must analyze the specifics of these services, including hours of use, number of trips, ridership, etc.
- The EIS should analyze various levels of ridership/use of these services, including an assessment based on low ridership and then varying degrees of ridership, up to that expected from the project.
- Expected ridership must be based on sound quantitative/survey data, which must be included in the EIS.[13]
- The EIS should use data from other Basin areas wherever available to assess expected use and trends. Where data are not available locally, the source of data used, including all associated assumptions and other inputs (and uncertainties), must be included in the EIS.
- The EIS should explain the funding source for various services to show what services (or portion thereof) will be funded by HMR versus other public or private entities and thus operate regardless of funding from HMR. This will allow for the determination of which mitigation measures rely on ongoing funding from HMR (to address questions posed under the Climate Change section). This will also inform the public of which services are covered by tax dollars.
- The transportation analysis should also include a survey, performed by survey experts with a sufficient number of participants to be statistically valid, assessing how many guests at other similar facilities in the Basin drive to locations during their stay (i.e. many visitors take a scenic drive around the lake). We appreciate HMR's desire to connect to other Regional services, including (hoped for) future waterborne transit to other Basin areas, but until such services are established, we must assume that visitors will drive to some locations (especially driving a circle around the Lake) regardless of services offered in the Homewood/west shore vicinity.

[13] Responses to TRPA included in the 9/10 APC staff summary reference VMT estimates per "Table A", which we could not locate in the staff summary (or NOP).

The NOP does not estimate changes in VMT; however, HMR recently prepared a flyer titled "Homewood Master Plan" which includes a list of "Pros(+) and Cons(-)". The flyer includes an estimated reduction of "500 vehicle trips/day."

- What is this estimated reduction based on?
- What inputs and assumptions were used to estimate this reduction?
- What time period will this estimated reduction occur (peak vs. off-peak)?

In sum, the EIS must clearly provide all of the evidence necessary for the public to perform the same technical analysis and receive the same results as those in the EIS.

Parking:

The NOP states that the proposed project will include 810 parking spaces at the north base. This includes (approximately) 300 day use in the 3-level parking garage, 60 limited surface spaces for retail and skier drop-off, and 450 underground spaces below the hotel and skier services. At the south base, there will be approx. 177 parking spaces. This is a total of 987 parking spaces. (p 4-5 NOP).

Total Parking:

First, the total proposed parking exceeds typical parking (even peak period parking, which in 05/06 ranged between ~500-700 vehicles although on a few days, exceeded this amount[14]), thus reiterating our concerns expressed in the transportation section that this project will add more vehicles to the transportation network in the Homewood area and along ingress/egress routes for the Basin.

North Base – Winter Use:

Next, more specifically, regarding the north base: during peak periods, there would be approx. 224 overnight units in use, including the workforce housing and 11 new residences. For the 75 hotel rooms, we may conservatively estimate one vehicle per room (75 vehicles) [although there will likely be more for some rooms], for the 30 penthouse condos, we estimate 2 vehicles/unit (60 vehicles) and for the 40 2-bedroom hotel condo/hotel units, we assume two vehicles/room (80 vehicles). For the 11 residential lots, 16 residential condos, 12 workforce housing and 40 fractional condos, we may assume 2 vehicles per unit (totaling 162 vehicles). This totals 378 vehicles. Assuming those owning units or staying at the hotel invite their own guests, this total could be higher (i.e. 500 to 560 vehicles assuming approx. 30% and 50% guests, resp.).

The NOP states 300 day use parking spaces will be provided in the 3-story garage (p 5), and HMR states 400 spaces will be available for total day use in the 9/10 Staff Summary (p 38). What is unclear is how the 450 parking spaces under the hotel unit are assigned. Are these reserved only for overnight guests? If this is the case, that leaves perhaps 25

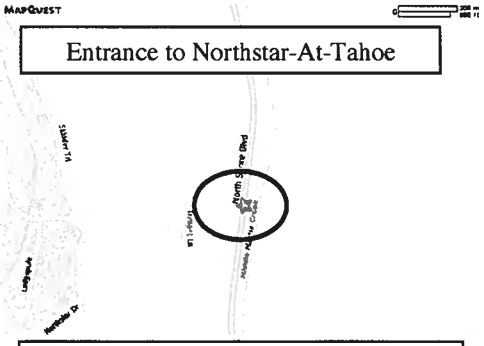
[14] In their 2/14/08 letter, HMR explained that "*parking lots are not striped. The ski operation traditionally has had parking attendants strategically line-up vehicles in the lots, maximizing space and efficiency. Refer to the parking count document previously provided. (05/06 parking counts).*" For this reason, we refer to a range of vehicle counts rather than number of parking spaces.

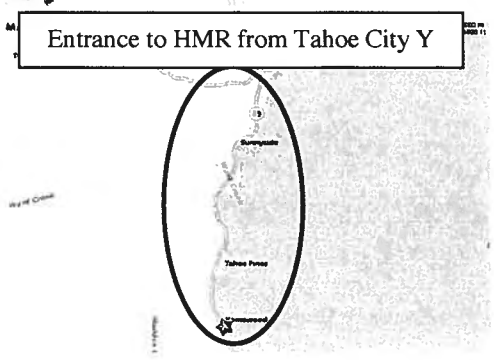
spaces under the hotel unit for day skiers, or there may be no spaces left if overnight users have guests. So where will the other ~100 day user parking spaces be located?

- The EIS must clarify these parking issues and ensure no parking on residential streets will occur.

According to the 05/06 parking counts provided by HMR, there may be over 800 vehicles on peak days. Therefore, there will be over 400 fewer parking spaces than peak period demand. HMR has stated that their transportation planning will reduce vehicle use by day users through a variety of means, including providing transit services, dial-a-ride, shuttles, etc., and placing a sign at the Tahoe City Y to advise people that HMR is "full". HMR is relying heavily on these mitigations to substantially reduce day skier impacts, therefore we are very concerned with the ability of these other 'mitigations' to reduce day skier vehicle use by over 400 vehicles.

- The EIS must perform an in depth analysis (ours presented here is merely an estimate for conceptual purposes) to assess parking space demand versus peak potential vehicle population associated with HMR's guests.
- The EIS must also provide quantitative analyses showing the mitigation measures that will reduce vehicle use by day users so that parking capacity is not exceeded. Inputs and assumptions to this analysis must be included in the EIS.
- We ask that the EIS explain how any signage will work. For example, if an electric sign will be placed by the Tahoe City Y to inform skiers/boarders that HMR is "full", this will only capture those skiers coming through Tahoe City. There are 7 miles of communities between the Tahoe City Y and Homewood. How will those people be informed not to continue driving to HMR? We understand some public education will be involved, but will ~2,000 or more day users get the car packed up then make one last call to check?
    - HMR refers to the sign used for Northstar at Tahoe as a successful example (below) but the situations are not comparable, because all skiers driving to Northstar come through the main entrance off of highway 267 *(above right)*, therefore there is no group of skiers that would miss the sign as they travel to the resort (unlike those living between Tahoe City and Homewood [*below right*]).





"Response: SIGN AT TAHOE CITY "Y":
JMA Ventures commits to providing real-time signage near the Tahoe City "Y" on busy ski days to provide skiers with information regarding the availability of parking (and supporting shuttle services) at intercept parking areas. This sign will be either staffed or operated electronically to change messages as needed to provide timely information n to arriving day skiers. A good example of the benefits of this strategy is the trailer-mounted sign used by Northstar-At-Tahoe to divert day skiers approaching Northstar in

periods when there is no remaining day skier parking available at the resort." (p43-44, APC Staff Summary)

- As touched on above, there is clearly 'lag time' between when someone leaves their home (assuming there is educate advising day skiers to call ahead for status) or passes the sign at the Tahoe City Y and when they get to HMR. During that lag time, the parking lot may fill up. However, those users may still end up driving several miles and entering Homewood, thus creating traffic impacts. Impacts would also be caused by vehicles having to turn around and go back home. How will this lag time situation be addressed so unnecessary vehicle impacts do not occur?

Regarding the 60 retail/skier drop-off spaces, the EIS must show demand associated with the new retail/commercial operations at the Base as well as that generated by the mid-mountain lodge (for all seasons).

- Will timelines be staggered to avoid conflicts between skier drop-offs and retail shoppers?
- How will these spaces be utilized in the summer months?
- What is the demand for this type of parking?

North Base – Summer Use:
HMR has discussed the use of the parking lot in the summer by vehicles with boat trailers using the boat launch across the street.

- How many truck/trailers currently park at HMR during the summer months?
- How many truck/trailers would be allowed to park at HMR if the proposed project is constructed? Will this occur only in the 300 space parking garage?
- Will this increase capacity for boat launches (and thus, boats on the Lake)?
- Due to the emissions (air, water and noise) caused by motorboats, any increase in motorboat use caused by this project must be considered in the environmental analysis. Traffic impacts from additional vehicles associated with the boat parking must also be considered.

South Base:
For the 177 spaces on south base, this is intended to serve 99-120[15] residences. Assuming that, as is typical, each residence contains two people and usually, each person has their own vehicle, this would suggest a need for perhaps 240 parking spaces. Additionally, people have visitors. Conservatively, say during a peak period (e.g. weekends), half the residents have a visitor, there is now demand for roughly 360 parking spots. Clearly, we are concerned that there will not be enough parking to support the demand generated by this project and thus, people will park in places they should not. We suggest a smaller scale project such that there is the environmental capacity to supply adequate parking.

[15] The 9/10 APC staff summary states that South Base will include 120 residences, while the NOP states 99. To err on the side of environmental caution, we use 120 for our estimates.

Roadway network:
It is a fact that no new neighborhood roads or highways are allowed in the Lake Tahoe Basin. On West Shore, there is one 2-lane highway running from South Lake Tahoe to Tahoe City: highway 89. During peak periods (winter weekends and Holidays, summer weekends, and often midweek during July and August), SR 89 experiences significant congestion. Vehicles may be stopped for miles on S SR 89, trying to exit the Basin through the Tahoe City Y on a Sunday afternoon. There are no "back roads" that can be used as alternative routes. In addition to the environmental implications (e.g. idling vehicles emit more pollution), this raises serious problems for emergency vehicles that need to get to these west shore communities quickly. There is often no shoulder for an ambulance or fire truck to use. When cars are lined up for 2 miles with nowhere to go, those emergency vehicles are stuck trying to meander through oncoming traffic, which no doubt seriously delays the time it takes for them to reach their destination. The time lost may be enough for someone to die or become seriously ill while waiting for medical attention, or for a fire to get out of control. Adding more traffic to this area, especially during peak periods, is simply irresponsible and should be prohibited. It is not good enough to hope that mitigation will work, even with the best intentions, because there has yet to be a project in the Basin which proves there is mitigation that truly mitigates 100% of the impacts to the transportation network (and as mentioned, this project does not address the vehicle impacts of guests coming to and from HMR, where the greatest impact to this peak congestion is expected). Trying to find new mitigations that could meet this objective should not be done in an area that is already so congested with no room for error.

VII. Emergency evacuations:

Wildfire:

The transportation discussion segues into our next concern: emergency evacuations. If a fire were to break out along West Shore, which recent Basin fires have proven is clearly a real threat, people only have the 2-lane SR 89 as an evacuation route. If visitor traffic alone stops traffic miles south of Tahoe City, what will happen when full communities must evacuate? Under existing conditions, the situation is already dangerous. The project could add hundreds of new vehicles to that already clogged roadway, and put ~1,000 or more people into a dangerous situation. We should be first assessing how we will protect existing communities in the event of a fire before we consider adding more people to the area.

- The EIS must include the plans for how existing communities would be evacuated in the event a wildfire breaks out.
- The EIS must then assess how this will occur with 1,000 to 2,000 more people.
- We understand HMR is considering waterborne transit options for evacuation in the event of a wildfire. The EIS must include a description of this plan and evidence supporting its application for this purpose (and the ability to provide ongoing funding regardless of HMR profit or loss). Additionally, other considerations must be included. For example, can waterborne transit provide a viable option when wind makes the Lake largely impassive by boats due to wave generation? This is especially important since the days a wildfire is more likely to

grow uncontrollably (and most threaten communities) are days where weather conditions create severe fire weather – which generally includes windy conditions. If waterborne transit can not operate on even the most extreme weather day, it should not be considered a viable option for evacuations from wildfire.

- Also, the EIS should assess evacuation methods for winter use as well (more discussion of winter dangers is below).

Avalanches, Landslides, etc.:

Additionally, concerns occurring primarily in the winter (and perhaps spring) include landslides, rock falls and avalanches. The Initial Study states:

> "According to the Geologic Hazards and Preliminary Geotechnical Evaluation by Kleinfelder, dated November 1, 2007, this site is located in a region traditionally characterized by moderate seismic activity. A major seismic event on faults in the vicinity may cause moderate shaking at the site. The site is located within Seismic Zone 3 of the California Building Code. If structures are constructed according to the current edition of the California Building Code, the likelihood of severe damage due to ground shaking should be minimal. Apparent avalanche run-out chutes were observed on the west side of Lake Louise in the Kleinfelder Report.
>
> These features are not located on the subject site, but <u>a potential exists for avalanches to occur in the subject site</u>. Multiple areas of rock outcrop, steep slopes and soil creep were observed on the subject site. <u>A potential for seismically-induced rock fall exists.</u> An abandoned mine (Noonchester) and two mine shafts are located just off-site to the south of Quail Lake.
>
> The EIR for this project will include an analysis of the impacts associated with exposure of people or property to geologic and geomorphological hazards, as well as geological units/soils that are unstable and provide mitigation measures to address any impacts of the proposed project." (p "10 of 21").

The evidence is clear – there is "the potential...for avalanches to occur on the subject site" and "potential for seismically-induced rock fall exists." The IS states that the EIS will discuss mitigation measures for this, but we have never heard of a method that can provide 100% assurance that avalanches or rock falls will not occur. In areas where currently, methods such as using dynamite for avalanche control are used, there are still occasionally unplanned avalanches. Rock falls can also not be 100% mitigated. Just consider how many times a rock has fallen onto Highway 50 over Echo Summit. It is of great concern that ~1,000 more people could be put in a dangerous situation. Further, that hundreds of these people may have their full time residences at South Base (and the 11 residence sites in between and 12 workforce housing units), and therefore be subject to these dangers full time.

- The EIS must discuss this danger and provide the technical details behind the findings of the report mentioned in the IS. The EIS must include risk assessment for these dangers, including existing conditions and any existing overnight uses currently in areas where these threats may occur and a comparative risk assessment for the proposed project and alternatives.
- The EIS must discuss proposed 'mitigation' in detail, including the established level of effectiveness (for example, evidence indicates that in "10" areas where the proposed mitigation method has been consistently used, avalanches have occurred "#"times).

- The EIS must clearly show where dangers exist, and at what level of risk, for all areas of the project site. For example, the avalanche danger to the residences at south base may be different than the danger posed to guests at north base.
- We recommend an alternative be considered which minimizes, if not outright eliminates, placing overnight accommodations in areas where threat from avalanches, land slides, and rock falls exist.

VIII. Environmental Thresholds, TMDL, Stormwater Treatment, and other environmental concerns:

The EIS must evaluate the impacts of the project on all thresholds (some discussed specifically in this section), as well as other environmental concerns included below. As a CEP project, the project should provide substantial net gains for all environmental thresholds and concerns.

- The EIS must document benefits required by the existing Regional Plan and benefits received in addition to those 'baseline levels' which justify this project's approval for the CEP program. This should be presented in an easy to read, clear format, such as a table.

Article I (b) of the Compact states: "(b) *... to establish environmental threshold carrying capacities and to adopt and enforce a regional plan and implementing ordinances which will achieve and maintain such capacities while providing opportunities for orderly growth and development consistent with such capacities.*" DUH!

The EIS must analyze the impacts of the project on all thresholds. Further, because this is a CEP project, the EIS must show how the proposed project provides benefits substantially above those required by the existing Regional Plan.

Air Quality:

Many of the air quality concerns relate to transportation impacts. More VMT means more tailpipe emissions and more resuspended road dust. These pollutants affect human health, forest health, water quality and visibility. In some cases, more congestion also increases emissions due to increased emission rates from idling cars (e.g. carbon monoxide).

- The EIS must assess the impacts of the projects an all alternatives on all federal, state and TRPA air quality standards. Emphasis must be given to carbon monoxide (Basin is currently classified as "maintenance" for conformity purposes on the CA side), ozone (ozone measurements in the Basin have recently violated standards protective of human and forest health), and particulate matter (the Basin is also in non-attainment for Particulate Matter). In all cases, there can be no net increase in these pollutants and rather, the project should produce a *net decrease* in all emissions.
- Where measurements of pollutants of concern do not exist for Homewood (and the Tahoe City Y, where traffic impacts are most likely), measurements of pollutants must be taken per established protocols for all seasons (as some pollutants and their impacts vary by season) to establish an inventory for existing

conditions. Only then can the impacts of the proposed project and alternatives on air quality be assessed.

- Emissions from all transportation impacts must be assessed (including VMT [Basin-wide], congestion at affected intersections and roadways, etc.).
- Impacts to Air Quality from all non-transportation sources:
    - Stationary sources (heating-related emissions, boiler emissions, other stationary sources);
    - Fugitive dust during construction (include existing fugitive dust from project area);
    - Resuspended dust from the project area (e.g. parking lots and garages);
    - Emissions from residential (and commercial, as applicable) outdoor barbeques, smokers, etc., and indoor devices which emit pollution such as restaurant grills. This should include emissions from the proposed kitchen at the mid-mountain lodge in addition to all such sources at the North and South Base.
    - Any proposed prescribed burning for fuels reduction. We encourage restorative ecological burning when air conditions are ripe for burning (and the use of non-burning methods to remove biomass).

Water Quality/Lake Clarity:

VMT and water quality:

Specific to water quality, the project proposes to reduce overall coverage, but at the same time, to add potentially over 1,000 more people to this area. Humans can not visit this area without causing impacts. As discussed in the transportation section of this letter, even if the project could reduce vehicle use in the vicinity of the project, it would still be expected to increase VMT associated with people coming to and from the area. This will mean more runoff from all impacted roadways, more resuspension of road dust that will float its way into the Lake (or add to the runoff into the Lake), etc. As HMR acknowledges on page 3: *"The project area is typically accessed via Interstate 80 to West Lake Boulevard ([State Route] 89)."* Currently there is no other way to get to HMR than to drive (even if waterborne transit can bring people from other parts of the Basin, non-local guests will still have to drive into the Basin). While many of the vehicle impacts we are concerned about relate to the time people will drive (e.g. peak vs. non-peak), resuspended dust from VMT creates an impact regardless of the time of day. In the case of water quality, (and for the moment, disregarding whether guest travel while in the Basin will add VMT), we have significant concerns that the increased VMT associated with the cumulative, year round impacts of the 1,000^{+} additional guests coming to and from the Resort (each weekend/week/etc.) will have water quality impacts (VMT is discussed further in the transportation section). Adding additional stormwater treatment (and capturing more sand and salt application before it can become airborne) along SR 89 in Homewood may help reduce impacts in the Homewood area, but it does not mitigate the rest of the roadways being traveled by arriving and departing guests.

- The EIS must analyze the impact of VMT on water quality from arriving and departing guests on all roadways in the Basin.

- The EIS must also analyze VMT on roadways outside of the Basin, since VMT is not only an issue of concern in Lake Tahoe, although the impacts of concern outside of the Basin may be different.

Water Quality BMPs:
We appreciate the work HMR has done to date to benefit water quality (e.g. removing legacy roads) and are impressed with the resultant load reductions which have been quantified in recent presentations by HMR's consultant (e.g. Mike Hogan). We also understand work is ongoing and further load reductions are expected from restoration on the mountain. We support this work and look forward to learning more about the restoration projects as they move forward and hope that other projects containing substantial private forest lands will work to achieve similar reductions as HMR has already been doing.

We understand the new owners implemented BMPs previously required, but not done, by the previous owners. However, what would be helpful to understand is the difference between required BMPs in total and water quality benefits proposed by the project. We expect the EIS will address this as it examines the "No Action" alternative (required BMPs only) and compares it to other alternatives. The benefits in addition to those provided by "No Action" must be very clearly defined in the EIS.

Page 8 of the NOP explains:

> "Up to 500,000 square feet of existing coverage is planned to receive BMP retrofits and water quality improvements. State grant monies in the amount of $650,000 have been awarded to Homewood to study potential mitigation measures for reducing sediment runoff in the Homewood watersheds. The monies will be used to continue the on-mountain restoration and revegetation projects. Approximately 50,000 square feet of restoration and revegetation work is planned for the summer of 2008."

It appears this work will occur regardless of the approval of the proposed CEP project? What areas are slated to be included in the 50,000 sq. feet of restoration performed with this grant funding? Are the areas being restored going to be redeveloped if this project is approved, or will funding be used in areas of the project unaffected by the new development?

- Recognizing this work may already be completed by now, we would ask the EIS to explain the project, methods, assumptions, inputs and any equations associated with the outcome of the project, and any further studies. If successful, will methods be applied to other parts of the project area in the future (and for all alternatives)?

Total Maximum Daily Load (TMDL) limits & Stormwater Treatment:
The TMDL has yet to be finalized, however, information and data are already available to assess the necessary load reductions needed to achieve our water quality goals. For example, the TMDL has found that approx. 72% of the sediment entering Lake Tahoe is from (developed) urban areas. (This also includes resuspended particulate which has become airborne but landed back on the surface to contribute to runoff, thus reiterating the importance of VMT to water clarity). **There is a need to significantly reduce impervious coverage.** We must, at the same time, examine ways to effectively treat runoff. Unfortunately, sediment basins installed throughout the Basin have proven less

effective at capturing the most important sediment size class – particles 20 microns and less in size (termed "fine sediments" in many water quality discussions). Thus, there remains the need to develop better treatment facilities that can capture the fine sediment before it enters Lake Tahoe (in addition to other preventative measures, such as removing land coverage and not approving development which increases runoff in the first place - we can not "engineer" Lake Tahoe out of non-attainment of the clarity standard).

- The EIS must include an inventory of existing runoff from the project site.
- The EIS must evaluate the projected runoff from the site for each alternative (prior to implementation of any mitigation measures).
- The EIS must evaluate the load reductions which can be mitigated based on existing technology. We can not simply assume that future (unproven) technology will be effective.
- We also look forward to the EIS providing more information regarding the newer proven technology available that may be utilized at HMR. We understand HMR may also test new technology, but impact analysis should only be performed on technology already proven effective.
- Stormwater treatment should be designed to accommodate a 100 year storm. Flooding will occur more often due to climate change, and therefore stormwater treatment facilities must be able to handle more than the 20 year storm requirement currently in place if we are to ensure effectiveness as climate change continues to affect the Basin.

Finally, the project impacts must be compared to the TMDL findings and requirements. **Basically, how will this project help meet TMDL reductions?**

Land Coverage:

HMR proposed to reduce overall coverage, but the NOP does not disclose how much coverage will be reduced. Further, TRPA asked HMR to disclose this specifically and yet on page 34 of the APC staff summary, HMR's response still fails to provide this information:

> **Coverage reduction:**
> TRPA requires substantial land coverage reduction for this overall project. The increase in density and height must result in an overall reduction in land coverage. Please specify the percentage of land coverage reduction proposed for this overall project.
>
> ***Response: COVERAGE:***
> *Homewood Mountain has TRPA verified existing land coverage of over 1,780,000 s.f. Over 400,000 s.f. of this coverage is hard coverage associated with parking and ski facilities, lodges, etc., while the balance represents roads and trails on the mountain. In 2006 and 2007, HMR restored approximately 100,000 s.f. of roads and trails on the mountain and plans to continue to restore unnecessary roads and trails. A significant percentage of this restored coverage is planned to be permanently retired. The balance will be banked for possible use on the resort, or transfer to desirable uses as permitted by the TRPA Code of Ordinances.*
>
> *HMR anticipates that at least a portion of the proposed additional height for the master plan development will be earned by retirement of some of the above land coverage.*

We appreciate the work HMR has already done to restore legacy roads on the mountain. However, this is a CEP project and is therefore held to a higher standard than other projects. Merely stating that: "*A significant percentage of this restored coverage is planned to be permanently retired. The balance will be banked for possible use on the resort, or transfer to desirable uses as permitted by the TRPA Code of Ordinances*" fails to provide important information for the public to evaluate the project. In this case, TRPA specifically asked for a percentage of reduction that the project will achieve. We agree with TRPA – it is not premature to ask for this information. All CEP projects should have a coverage reduction goal at this point in the process as that is a key component of the 'net environmental gain' all CEP projects are supposed to achieve.

- We are concerned that absent quantifiable coverage reduction in the NOP, the public can not provide informed comment for the scoping period. How can the public assess project impacts, especially for a CEP project, if key information is not yet available for the public?
- We suggest the EIS include alternatives based on a 25 and 50% reduction of total existing coverage. Where grandfathered coverage may exceed coverage based on Bailey classes, we suggest the EIS also examine an alternative that would meet Bailey class limits.

The project also states that: "*No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right-of way, except as authorized by project approvals.*" (p 10 of 21, IS). However, we are concerned that HMR proposes to meet this promise by challenging the land capability so sensitive areas are changed to higher capability. In the APC staff summary, HMR states: *"There is an unresolved issue regarding the land capability of the base areas. TRPA has assigned preliminary land capability to these areas, but a land capability challenge is proposed to determine final land capability classifications of the lower mountain.*" HMR explains their hired soil scientist completed soil sampling which indicated that "most of the lower mountain area" is high capability and thus, HMR would apply for a challenge "this spring." HMR has since applied for a challenge but states on page 10 (NOP) that soil borings taken from the existing gravel lot may indicate that area qualifies as an SEZ (results are still unavailable).

The documents fail to adequate explain this situation. For example, how do the soil borings mentioned in the NOP relate to the soil scientist's findings prior to last spring that some areas classified as low capability should be changed to higher capability (explained in the staff summary)? Were the earlier references focused on this gravel parking lot, or are these discussions focused on two different areas? Is this relevant to the water quality facilities being discussed in the above statement in the IS? The public has not been provided with adequate information to understand the situation, but rather, has been presented with confusing, disconnected information spread out over 3 different documents. How is the public supposed to provide informed comments on the scoping without adequate information to understand the situation?

Further, with regards to the response in the staff summary, we find the use of the word "preliminary" before 'land capability' as questionable. No where that we have seen has TRPA indicated it assigned 'preliminary' capability to this project (or any suggestion that

all TRPA land capability assessments are merely 'preliminary'); rather, TRPA uses the available evidence to assign a capability. This process is not an 'interim' process TRPA does until a developer comes and challenges the findings. Additionally:

- The EIS must include all history associated with any land capability classifications and changes, and the evidence supporting all classifications. For example, TRPA assigned areas as low capability for a reason (meaning they had to have some data regarding the capability). If the previous data are invalid or inadequate, this must be explained in the EIS (and supported with scientific evidence).

Finally, we would recommend deletion of the last part of the sentence that says "*except as authorized by project approvals.*"

- Why make this statement at all? Clearly we assume HMR would not proposed construction of facilities in sensitive areas without approval to do so. However, we recommend an alternative which does not proposed construction in flood plains.

The IS states on page "14 of 21" that the project will add impervious coverage in areas classified as flood plains per the proposed site maps.

- The EIS must analyze an alternative with no development in classified flood plains.

Deicing materials in parking garage:

Also, there will be more parking spaces. This will require more deicing in the winter months. Even if snow doesn't fall directly on lower levels of the parking garage, it may melt during the day and freeze at night. With HMR sand and salt the parking garage(s)? Or will there be built in heating under the pavement? If more deicing agents will be used, the impacts to water quality must be analyzed (as well as to vegetation).

Noise:

Community Noise:

The project will bring ~1,000 or more additional people into this small community. This will no doubt increase noise in the area (through vehicle noise, talking, radios, etc.).

- The EIS must include existing noise levels, determined through scientifically valid sampling techniques and methods, and including year round monitoring during average and peak use. If data are not already available, an expert must be hired to obtain this information.
- How do existing noise levels compare to the noise threshold standards?
- The EIS must evaluate the increased noise (short and long term) associated with the project for each alternative, and compare this to the noise standards.
    - If this area already exceeds TRPA's CNEL standard(s), the EIS must show how the project will help bring noise standards into attainment for this area. No additional noise impacts can be allowed.
    - If the area currently meets the CNEL standard(s), the EIS must show how the project's impacts will be mitigated so the standard is attained in the long run.

Noise from Amphitheater:
The NOP explains that "*A new outdoor amphitheater is proposed for hosting outdoor concert events...*" (p 8). Currently, the only other regular outdoor concert venue in the Basin exists in the Harvey's Casino parking lot during the summer months. There have been many problems with noise from these concerts over the years. Nearby residents are subjected to the noise from these concerts. Even those farther away hear the "bass" from music. Perhaps fewer complain because Stateline is a more tourist-oriented area, and the casino area is not where one goes to have a tranquil, quite experience in the Basin.

However, those living and visiting Homewood do expect a more tranquil and quiet experience. Thus, what happens at Harvey's is not appropriate for the Homewood community. But even moreso, the topography and layout of the Homewood community is likely to exacerbate the noise impacts of outdoor concerts. Sound may in essence 'echo or bounce' off of the mountain. Additionally, residences are located right next to North Base (on both sides), whereas there is at least some distance between the concert venue at Harvey's and nearby residences. **The noise impacts from this outdoor amphitheater on the Homewood community could be substantial**.

Noise Impacts on Wildlife:
Noise impacts to wildlife in the area may also be substantial. Further, just south of the North Base is the "Homewood Wildlife Inc." – a local wildlife shelter that has existed there for years[16]. This shelter houses many wildlife which could be disturbed by the noise from an outdoor concert.

- The EIS must analyze the noise caused by the outdoor amphitheater and examine noise impacts throughout the Homewood community.
- The EIS must examine the most recent science regarding noise impacts to humans and wildlife. This assessment must look at both chronic exposures, periodic exposures and acute exposures.
- The EIS must assess impacts on wildlife, accounting for wildlife life cycles and how noise may affect wildlife different during different times of the year.
- We also hope HMR will discuss noise impacts on the local wildlife shelter to make sure those wildlife, many of which are ill and recovering (and thus may be more affected by noise than healthy wildlife), are protected.

<u>Other Threshold and Environmental Issues of Concern:</u>

The EIS must provide an existing inventory for the following (and the existing attainment status per TRPA's threshold standards) as well as an analysis of impacts to thresholds for each alternative:

- **Wildlife** within and affected by the project area (e.g. adjacent wildlife habitat that would be affected by activities and/or structures in the project area);
    - Affected wildlife include all special status species (any species with any designation from the USFS, TRPA, CA Fish & Game or other applicable entity);

[16] See the shelter's website at: http://www.wildlifeshelter.org/

    - EIS should also analyze impacts to all wildlife, regardless of designation. Analysis and inventory should include any wildlife using the area for migratory or other 'temporary' purposes.
- Impacts to **fisheries** from the project, both in Lake Tahoe and any impacts to riparian areas within, above and adjacent to the project area; Impacts may also occur through increased demand for water associated with limited water supplies.
- Impacts to **scenic quality**. The EIS must analyze impacts to views from Lake Tahoe (near the Homewood shoreline, mid-Lake and across the Lake, at a minimum), from the beach in Homewood, from SR 89 (both directions), from all hiking trails with views of HMR (not just exclusive to trails in Homewood), etc. Scenic impacts must provide a net benefit above and beyond that required by the existing Regional Plan. Visual simulations must be done for all of these aspects for each alternative.
    - We are also interested in an explanation for how adding 3-4 story buildings to an area with minimal existing height and relatively few buildings (and a relatively large view of the mountain) can provide a scenic improvement.
- Impacts to **vegetation**. HMR has provided TASC with information regarding fuels reduction projects in the past, although we anticipate more information will now be available. The EIS must explain the prescription for thinning throughout the mountain (for each different 'ecological unit' – in other words, where the prescription varies) and the support for such prescriptions. Will removed biomass be sold commercially? Burned? Hauled away? We also encourage the use of burn days for restorative ecological burning on the mountain and the removal of biomass through non-burning means wherever possible.
    - This analysis must also address other vegetation thresholds (in addition to those related to trees) and all other applicable vegetation standards.
    - The EIS should also discuss invasive weeds and the impacts of all alternatives on providing opportunities for establishment and/or removal and prevention of invasive weeds.
- Impacts to **recreation** must be documented. How will the project affect recreation thresholds? What recreational activities and opportunities will be replaced by the proposed development (e.g. are there existing trails or other activities that will no longer exist once this is built)?
    - Per the 9/10 APC staff summary, TRPA previously asked HMR to disclose where the required 5 miles of hiking trails would be located. HMR responds by explaining that this can not yet be determined, and also states the "exact amount" of hiking trails can not be determined yet. It appears TRPA requires 5 miles, so it is unclear why HMR would respond that the amount is unknown. Where did the '5 mile' requirement come from? If this is a TRPA requirement, HMR must meet it.
- Additionally, the NOP explains "*Buildings have been arranged on the site to create several distinct neighborhoods within the development focused around key recreational uses such as gondola staging, ice pond, lodge hotel, shops and restaurant venues.*" (p 33). We do not believe that lodging and shopping are

considered "recreational uses" per TRPA's Code. Specifically, TRPA's Code (chapter 2) defines recreation as:

> Recreation (Developed): Involves outdoor activities which are enhanced by the use of man-made facilities, including, but not limited to, campgrounds, marinas, and ski areas.
>
> Recreation (Dispersed): Involves such activities as hiking, jogging, primitive camping, nature study, fishing, cross country skiing, rafting/ kayaking, and swimming. Does not usually involve the use of developed facilities.
>
> Recreation (Urban): Involves indoor and outdoor activities primarily designed for use by the residents of the Region, including, but not limited to, athletic fields and neighborhood parks.

The EIS must distinguish between retail uses and recreational uses as defined by TRPA's thresholds and Regional Plan.

- The EIS must also assess project's lighting impacts on "night sky". This is an issue the public repeatedly expressed concern with during the P7 public workshops, and one we hope the new Regional Plan will address.
- Because the project proposes to accommodate parking for boats launched on Lake Tahoe, the EIS should analyze the potential for the introduction of invasive species to Lake Tahoe. We do not encourage increased boat launching due to the environmental impacts of motorized boat use; however, either way, might there be opportunities to host a boat washing station at the parking lot? Perhaps boat washing and inspections could be a combined program that all users must utilize before being allowed to launch across the street.

IX. Open Space:

In the 9/10 Staff Summary for APC, the applicant responds to TRPA's questions about open space by explaining:

> ***"Response: PUBLIC & PRIVATE OPEN SPACE:***
> *Both base areas include open space areas for both public and private use. The base area master plan graphic is being updated to more clearly identify these areas. The North Base includes a public ice skating pond to the east of the main lodge/hotel building. The ice pond is surrounded by public plaza area that will include fire pits, bench seating and other such pedestrian oriented amenities. Please refer back to the first response relating to architectural height, scale, and massing for further delineation of the open space concept. The South Base will include private open space as an amenity to the residential development. This would include a swimming pool for residents and trail access to the base slope." (p 44).*

It appears that HMR plans to call the center area in 'the village' structure at North Base "open space," including in that definition the ice rink, fire pits, benches, etc., much like the pedestrian area one sees in downtown Aspen (on the right), where cobblestone covers the ground, outlined by occasional grass areas, lamps-posts and

Pedestrian Shopping area in Aspen, CO

benches. At South Base, the "open space" would include a swimming pool.

It appears that the definition of "Open Space" is being used incorrectly.

Generally, the term "open space" has been applied to park-like areas which in the Tahoe Basin, generally means open undeveloped forested areas where there are no buildings and no land coverage. In fact, TRPA (Chapter 18) defines open space as: "*Land with no land coverage and maintained in a natural condition or landscaped condition consistent with Best Management Practices, such as, deed restricted properties and designated open space areas.*"

- Clearly this definition does not include a 'pedestrian village' amidst tall buildings, shops and timeshare/condo units, nor a cobble-stoned covered area with benches and lamp posts (note the first part of TRPA's definition states "no land coverage.").
- HMR can not refer to this pedestrian village area (or ice rinks or swimming pools) as "open space." We encourage HMR to inventory existing "open space" within the project area per TRPA's chapter 18 definition. Then, HMR should include a net improvement in the amount of open space in the alternatives analyzed in the EIS.

X. Questions regarding proposed Mid Mountain Lodge:

The APC staff summary explains the Mid-Mountain Lodge as semi-public:

> "Mid Mountain Commercial/Recreation: The proposal seeks to replace the temporary facilities at the Mid-mountain with a new 14,000 square foot Lodge. This lodge will house the upper station of the gondola, food service for both winter and summer uses, a private club area for exclusive use of owners of the condominiums, condo-hotel units, interval ownership units, and their guests. Adjacent to the Mid-mountain Lodge will be the swimming pool intended for west shore residents' summer use. The pool is proposed as a recreational amenity for west shore residents, while the private club is proposed as an accessory use to the residential/tourist use and thus not open to the public. The summer indoor dining area, which will serve wedding/reception uses, and 50 percent of the kitchen area, are anticipated to be commercial floor area with the CFA coming from a portion of the commodities reserved through Community Enhancement Program." (p 43)

Responses from HMR included later in the 9/10APC staff summary (p 41) explain:

> ***Response: MID MOUNTAIN LODGE***
> *Mid Mountain Lodge will be open to the public without restriction. It is designed primarily as a skier/winter facility, but will be available during the spring, summer, and fall for public use and private events such as weddings. The lodge is planned to have an adjacent swimming pool open only during the summer months. The swimming pool would be open for use by Homewood and other area West Shore residents upon proof of address. The pool is designed as an amenity for locals and would be accessible by gondola from the north base.*

Finally, the NOP describes it differently yet again on page 7:

> **Mid-Mountain:** The mid-mountain will include: a new approximately 15,000 square foot day-use lodge with a gondola terminal; a new learn to ski lift; a food & beverage facility with outdoor dining; small sundry outlet; and an outdoor swimming facility for use during the summer months. The new midmountain lodge replaces the white tent structure and the existing concrete foundation located near the mid-mountain. As part of the new development, the existing composting

toilet/restroom will be removed and replaced with connection to public sewer system as required by Placer County Health and Human Services Department. The snow based vehicle shop/maintenance facility (coverage relocated from the south base area) will be relocated to the mid-mountain. Two water storage tanks will also be located at mid-mountain above the vehicle shop/maintenance facility."

This raises several questions:

- How can the public be expected to provide informed comments for the scoping notice when facts (e.g. size, use, public status, etc.) throughout the notice are inconsistent?

- The mid-mountain lodge, whether it's 14,000 or 15,000 sq. feet, private or public, will add substantial coverage to this area on the mountain. What is the existing coverage (hard and soft) for this area? We understand this will be constructed where currently, a cement foundation exists. What size is this foundation? What coverage was permitted for this area in the past? Is there coverage here that has not been permitted? How does this compare to the proposed coverage of this lodge?

- Additionally, the proposal discusses transferring the vehicle shop/maintenance facility to the mid-mountain lodge. Won't this require that vehicles now drive up to the mid-mountain lodge for maintenance? What are the environmental implications of this, as well as adding coverage to this area when compared to its existing location at So. Base? What are the land capabilities from the "transferred from" to "transferred to [mid-mountain]" areas? Will the new south base housing units be constructed where the existing maintenance area exists? Finally, where is the next environmental benefit here?

- We suggest an EIS alternative be included which minimizes the mid-mountain lodge so it is based on existing legal coverage. Also, we hope the lodge would be fully open to the public.

XI. Development Allocations/Demand for Project:

The NOP states that 50 TABU's and 12 MRBUs are requested for the project (from the CEP allocation pool). However, the 9/10 APC staff summary includes a more detailed discussion of where allocations are coming from (p 36):

"HMR proposes to transfer approximately 139 TAUs from a site in the North Stateline Community Plan that has been verified as primarily class 3. The class 3 portion of the site, the location of the Tahoe Inn and adjacent parcel on which 45 units are banked, is proposed to be restored to its natural condition. Verification of the existing units of use (TAUs and ERUs) and coverage is pending with Placer County. TRPA has been asked to confirm the land capability overlay map adopted with the CP or if necessary verify land capability. HMR is pursuing a possible partnership with the Workforce Housing Association of Truckee-Tahoe (WHATT) to evaluate the class 4 portion of the site for a possible affordable housing project.

While we are aware that the CP policies encourage transfer into this area, we believe that the subject site is primarily too sensitive to redevelop, and that the greatest overall environmental and economic benefit to the community and Tahoe Basin will be achieved by the proposed transfer and use of these rights at HMR. Additionally, recent approval of redevelopment of the CalNeva Lodge,

and proposed expansion/redevelopment of the hotel portion of the Biltmore will likely bring the Stateline area density to a point where traffic and other issues would reduce the economic viability, if not the ability to meet required environmental standards for redevelopment of the 139 units at the Tahoe Inn."

- HMR states that they feel "*the greatest overall environmental and economic benefit to the community and Tahoe Basin will be achieved by the proposed transfer and use of these rights at HMR.*"
    - First, which "community" is being referred to here? (e.g. Homewood or North Stateline?)
    - Second, evidence regarding the environmental and economic impacts of using these rights at each location, and possible alternative locations (i.e. are there opportunities to use these rights elsewhere within the NSCP?), must be included in the EIS.
        - This must include the impacts of using these units within the boundaries of the North Stateline Community Plan and the impacts of using these in the proposed project. The two locations are different in numerous ways, including topographical, social, transit-related, environmental, proximity to lake, economic, demographics, etc. The EIS must analyze all of these parameters associated with the use of these units at each location before any conclusions can be drawn regarding the benefits (or consequences) of any proposed transfers.
        - This assessment should also address the ability of each area to evacuate in the event of a wildfire or other emergency.
    - Are there units within the same or adjacent watershed to Homewood that could be utilized instead? If so, please include in an alternative analyzed in the EIS. If not, we question whether it is beneficial to transfer in development allocations to an area that is already 'maxed out.'

- Further, there is the issue of the size and use of the units. Will the units transferred to HMR be of the same size and nature as where the units are coming from? We do not believe it is an 'equal' transfer to 'exchange' (for example) a small, 300' hotel room and use it to construct a massive, 4 bedroom house or condo. We understand TRPA is discussing a way to address this issue in the new Regional Plan; we recommend the new accepted concepts be required for CEP projects (a justifiable proposition since these are, after all, 'special projects' which are supposed to provide net environmental gain in exchange for private benefits [commodities]). [This may mean more discussions with the TRPA GB are first needed to agree on revised transfer concepts that should be applied to CEP projects to prevent this 'morphing' of units. This would not in itself need to create undue delay if the project is placed on hold while a Community Plan is first developed, as proposed in our letter.]
- Decisions regarding the transfer of use can not be made based on the assumption that a proposed project (e.g. Boulder Bay) will be approved at some future date. The EIS must assess the impacts based on existing conditions, which does not include this project. The cumulative impact assessment must then consider potential impacts from possible future projects.

Finally, there is concern with the cumulative impacts associated with transferring development from one end of the lake to almost the other end of the lake. There are site-specific issues associated with development in each location. We do not believe such transfers can simply be called 1:1, nor can transfers be assessed on an individual basis when cumulative impacts exist.

- The EIS must assess the cumulative impacts of all proposed transfers to the HMR project, in addition to all proposed transfers from other current, proposed and anticipated future projects in the entire Basin.
- There appears to be no appellate case, nor code or ordinance amendment permitting transfers which "morph" TAUs such that a 300 sq. foot motel unit is transferred and used as a 3,500 sq. foot home (or 1,000, 2,000, etc . sq. foot condo). TAUs should trade on an equal square footage basis, such as 300 sq. foot for 300 sq. foot <u>and</u> 1 bedroom equals 1 bedroom. TRPA must show, through adequate science and technical review (not discussion and speculation) how chapter 6 findings are met by any transfer which changes the size, use and capacity of a TAU. We refer back to our previous suggestion for the TRPA to apply updated concepts to CEP projects for transfers of use such as TAUs.

<u>Demand for Project:</u>
We also question whether the existing market trends support the need for this additional housing for guests and whether there is adequate demand to support the small "mom-and-pop" type retails shops envisions by the project (and typical "Smart Growth" concepts).

Currently, there are many homes, condos, timeshares, etc., for sale in the Lake Tahoe Basin. The economy remains on a downward trend. Many people are losing their first home, let alone a 2nd home. We have heard that timeshares for the future "Convention Center Project area" are not selling as expected. We question whether there is sufficient demand for an additional 320 units in Homewood.

- The EIS must include information regarding existing market trends, demand for housing and timeshare/condo units, etc.
- The EIS should also include an assessment of existing for-sale units within the vicinity of HMR, and a look at for-sale trends going back 5 years. If the market has been flooded with existing units for some time (e.g. 6 months, 1 year and longer), then does it make sense to develop more units for sale while existing units remain on the market?

Additionally, the concept of "Smart Growth," and design as proposed in this project, typically creates a vision of the small 'mom and pop' stores unique to an area, where residents and guests can walk to the shops from their accommodations. In fact, the public has repeatedly expressed an interest in retaining small locally-owned businesses in TRPA's Place-Based Planning Workshops, and it appears that HMR has envisioned small retail shops to reside at HMR. However, we question whether:

(1) small business owners will be able to afford the cost of renting space in the absence of any kind of 'rent cap' (much like affordable housing, but for retail/small business rent); and

(2) there is sufficient customer base to support such businesses.

a. Can a proportion of ~1,200 guests (probably far less during off peak periods and in shoulder seasons), and a town of 243 full-time residents, provide enough business to support a small locally-owned ice cream shop?
b. Why did the previous hardware store in Homewood close? Was it because the owners did not make enough money to afford it? Will there now be enough business to support a new hardware store, especially when this type of shop will not be frequented by guests at HMR, but rather, will rely primarily on locals coming from outside of the project? We understand locals expressed a desire for a local hardware store, and appreciate HMR's interest in meeting the local's interests, however, the local population base may not be enough to support such a business at HMR.
c. What is the cumulative full time population of adjacent communities (at least those far enough away from Tahoe City that they would be more likely to go to HMR for the retail shops vs. Tahoe City – perhaps draw a line 3.5 miles from Homewood to the North and 'count' communities south of that line as HMR customers and north of that line as Tahoe City customers)?

We are concerned that in the absence of adequate market demand, HMR may be another large redevelopment project that exceeds demand. For example, the redevelopment at Stateline (in SLT) suffers from numerous unoccupied retail shops, since business owners did not make enough profit to afford the high rent. And yet the pedestrian traffic at Stateline far exceeds that which would be accommodated at HMR, even if the proposed project were constructed. This should serve as a warning to duplicating the redevelopment that occurred at Stateline (let alone with fewer customers). However, high rent is not the only problem. Small, locally-owned businesses are closing up all around the Basin, including in areas with (typically) more affordable rent. Without adequate full time population to support businesses, many can simply not afford to stay in the Basin. We are concerned that the project is relying heavily on the tourist population to support local businesses, and this may result in future unoccupied developments (creating economic, social and environmental impacts).

XII. Employee housing:

The project proposes 12 workforce housing units, suggesting this can accommodate up to 48 employees.

- The EIS must analyze the number, type and pay range of existing jobs on the property and the same for jobs resulting from the proposed project. Additionally, what is the expected 'cost' (e.g. monthly rent, purchase price, etc.) for workforce housing and how does this compare to the jobs that will result at the project? Will employees of the new "village" be able to afford the 12 'workforce housing' units?
- What is the discrepancy between the on-site workforce housing [estimated to house up to 48 employees] (assuming employees can afford it) and the total number of employees? Where will the 'additional' employees live? Is there enough affordable housing?

According to HMR's response listed in the APC staff summary (p 36), HMR is proposing to evaluate a parcel within the North Stateline Community Plan for affordable housing – almost halfway around the Lake from Homewood. While we appreciate HMR working with the "Workforce Housing Association of Truckee-Tahoe (WHATT)" to identify affordable housing for employees, we do not feel it is appropriate, nor environmentally sound, to locate employees so far away from the actual project area.

Although shuttles may help transport employees to and from HMR without their individual vehicles, there will be occurrences where employees will drive themselves to work. Perhaps they will park on a back street far enough away from HMR's proposed "enforcement" of neighborhood streets. Or, perhaps they drive to a parking lot in Tahoe City and then take a shuttle. Regardless, this will add VMT to the Tahoe Basin. It does not matter that the impacts will occur off the project site – they will occur as a result of the proposed project.

- What evidence exists that employees will be willing to live so far away from where they work? (Also taking into account the pay and type of jobs the project will create).

If HMR establishes affordable housing for its employees in another state and county, this will in essence burden the other state and county with the additional costs of supporting those employees – and mitigation for the environmental impacts they cause (e.g. VMT). How does Washoe County/NV feel about this proposal?

- In sum, the EIS must analyze alternatives for locating affordable housing for employees in the project's immediate vicinity (Homewood). Another alternative should assess opportunities perhaps within 10 miles of the project area (both ways).
- As discussed throughout this letter, the EIS must analyze a smaller scale project alternative. This alternative should assess affordable housing opportunities in the vicinity of Homewood. The project's size should not require more employees than housing is available for near the project site.

XIII. Cumulative Impact Analysis:

The cumulative impacts assessment must include the entire Lake Tahoe Basin, since every project in the Basin which draws visitors (or residents) to the Region will have an impact Basin-wide, not only because it is one watershed draining into one Lake, but also because those people will, at some point, drive to other areas of the Basin, thus creating vehicle related impacts somewhere else. The list of projects which must be assessed in this analysis include, but are not limited to:

- The 8 other CEP projects, such as:
  - 5 projects in Kings Beach and Tahoe Vista;
  - Boulder Bay project at No. Stateline (Crystal Bay);
  - 2 projects at SLT "Y"
- Sierra Colina Subdivision (near Kingsbury Grade area)
- Sandy Beach (Tahoe Vista)
- Beach Club (Kahle Drive, near Kingsbury Grade area)
- Redevelopment at So. Stateline (e.g. Convention Center, assuming it is built someday)

- Gondala Vista Timeshare Project
- And all other projects being contemplated by TRPA at this time.
- Projects outside of the Basin which will draw visitors to the Basin.[17]

The cumulative impacts assessment must evaluate impacts to all TRPA environmental thresholds. However, being a CEP project, the analysis must also include those environmental parameters recognized as important but not included in the existing (outdated) Regional Plan (but expected to be addressed in the new Regional Plan, which we feel should be updated *prior to* approval of these large CEP projects), including:

- Fine sediment (sediment less than 20 microns) and phosphorous loading to Lake Tahoe (impacted by the development and associated VMT),
- Atmospheric deposition of particulates and phosphorous (largely correlated with VMT).
- **Any and all** additional vehicle trips and VMT.
- Impacts on night sky from lighting.
- Impacts of placing more people in areas at risk for wildfire.[18]

The cumulative impact analysis must also include:

Air & Water Quality:

- The additional boats brought to the Basin and launched into Lake Tahoe due to this project and the cumulative effect of all other projects that will increase watercraft boat usage on Lake Tahoe.
- Emissions from the use of those watercraft (not just the truck pulling them);

Natural Resource Protection from Recreational Impacts:

- Recreation-based impacts from additional people (e.g. increase use of hiking and biking trails, off-highway vehicle trails [especially given proximity to McKinney-Rubicon OHV Area], etc.).
    - For example, the additional people staying in Homewood at this project may go hiking in Desolation Wilderness during their stay. The USFS 1988 Forest Plan states: "Desolation Wilderness is one of the most heavily visited areas in the wilderness system...In [1979] a quota on overnight visitors was initiated to prevent overuse. Day use continues to increase, which may be affecting the quality of the wilderness. Demand for entry into Desolation Wilderness will continue to increase and probably would not be reduced by offering other destinations." Adding people to the day use at Desolation Wilderness will create additional impacts to that area. Taken with the thousands of additional people that would be brought into the Basin by the cumulative group of all proposed and expected projects, the impacts to Desolation Wilderness could be extremely substantial.
    - What would be the impacts on the Granite Chief Wilderness?

[17] For example, the new development at Northstar at Tahoe will bring people, and their vehicles, to Lake Tahoe. According to the Tahoe Daily Tribune, 9/26/08: ""The Ritz will definitely bring new guests to Tahoe, and I think you will definitely see our guests use this as a base of operations to explore all Tahoe and Truckee," said Steven Holt, spokesman for the Ritz-Carlton Highlands."

[18] We encourage HMR and TRPA to review the "Dangerous Developments" Report published by the Sierra Nevada Alliance in 2007.

- What about other trails, including the Pacific Crest Trail, Tahoe Rim Trail, and other popular trails such as the Meeks Bay Trail?

Alternatives to be considered include those mentioned throughout this comment letter. Additionally, the NOP implies that Potential alternatives include "Modified Mix of Uses: A mixed-use Master Plan with an alternative mix of uses or numbers of residential units, commercial or ski resort uses." (p 10). However, according to information provided at the first NOP scoping on 9/10/08, "Alternative 3" represents the only proposed "Modified Mix of Uses." This alternative merely reduces housing units by 29, or 14%, of which 4 of those units 'removed' are workforce housing. Additionally, this decreases hotel rooms but increases Residential Condos. We question how much of a benefit there is from mixing around these uses without much reduction in overall size. Further, there is no mention of what the building footprint under Alt. 3 would be. The community has clearly requested an alternative that represents a much smaller project.

- The EIS should include a smaller scale project, rather than a minor reduction based on a revised mix of uses.

XIV. Height:

The proposed project will require Code amendments and Plan Area Statement amendments for additional height. The NOP states the EIS will analyze alternatives based on "No Action" and "No Code or PAS amendment." Additionally:

- The EIS must clearly identify the maximum height for all buildings in all alternatives, and identify how the maximum height compares to existing allowable height.

- The EIS should consider alternatives with options that are between the allowable height and the proposed height.

However, we believe this is another aspect that should first be identified and adopted through a Community Plan process.

XV. Community Enhancement Program (CEP) Project:

This is a CEP project, which must result in net gain threshold improvements (above those required by the existing Code).

- The EIS must specifically identify the existing requirements and the additional benefits provided by the project for all thresholds. This information must be provided in a clear format the public can easily understand. For example, first include (via a tabular format) what is required for projects under the existing Regional Plan and what will be required for this CEP project. Next, provide this comparison based on the existing thresholds (and other parameters of concern that are expected to be included in the new Regional Plan, as discussed in the next bullet [e.g. sediment reduction from air and water sources]).

- Improvements do not have to be bound by the existing thresholds categories – and should not. Recent science indicates that existing thresholds do not encompass

the full suite of environmental parameters we must consider. One example includes the need to reduce greenhouse gases, as discussed previously. Another example includes the need to reduce atmospheric particulate matter and phosphorous loading to Lake Tahoe. Additionally, the TMDL may not be finalized yet, but the information gathered for the TMDL is valid, and tells us that ~72% of the sediment going into Lake Tahoe comes from urban areas. However, we have also learned that the existing settling ponds and other techniques we've installed to reduce particles aren't sufficient. Many ponds may reduce the larger particles entering the Lake, but fail to reduce the fine sediments that are most responsible for the loss of clarity.

- The EIS must examine all current parameters of concern, many of which have already been identified in Pathway 2007 documents. The proposed project should achieve net reductions for all parameters of concern, not just those based on existing thresholds. TRPA should not approve any project that will not help achieve environmental objectives identified for inclusion in the new Regional Plan simply because the update is overdue.

- The CEP program was also intended to 'test' new development concepts for their ability to help achieve thresholds. The EIS must identify what "new" concepts are being proposed (including the evidence supporting the anticipated benefits of these new concepts) and how the project will help attain all of TRPA's thresholds (for all alternatives analyzed). The EIS should also include actions TRPA and the developer will take if 'new' concepts are not successful to prevent impacts from the project.

- The EIS must identify the project's contributions to EIP projects.

XVI. Leadership in Energy and Environmental Design (LEED):

We appreciate HMR's efforts to achieve LEED certification and apply the same concepts to the South Base, although it is not eligible for LEED certification. It is clear that building more responsibly is important to HMR's owners, and we hope HMR will endorse this approach for *all* alternatives – even those based on a smaller scale project.

XVII. Inconsistent Information in Scoping Documents:

Information is inconsistent throughout the documentation provided for this project. We are concerned that the public is unable to adequately assess this project and provide scoping input when information provide in the NOP and associated documentation (e.g. staff summary from TRPA) provides conflicting information. Examples include:

- In the APC staff summary, TRPA staff explain the mid-mountain lodge will be 14,000 sq. feet, while the NOP states 15,000 sq. feet.
- The APC staff summary and NOP are inconsistent in their descriptions of whether the mid-mountain lodge is public or semi-public. As a result, the public remains unsure of the plans for access to this Lodge. Descriptions are also inconsistent regarding the uses and facilities at the Lodge.
- The NOP states that the South Base residences will number "up to 99" while the APC staff summary states "120 residential condominiums" (p 37).

XVIII. Options for further scoping comments must remain open:

Recently, during the 9/10 public hearing for the DEIS for the Sierra Colina Project, TRPA's Executive Director responded to comments made by APC members suggesting analysis of 'additional' alternatives by explaining that because scoping had already occurred, feedback regarding new (or in one case, rejected) alternatives that should be analyzed would not be considered. In other words, it was "too late" to make those comments. Thus, we have made every effort to comment on the information provided for this scoping document and identify items the EIS must analyze.

However, as discussed above, inconsistent information exists within the scoping and associated (e.g. APC staff summary for scoping) documents. As a result, the public can not provide informed comment on many aspects of the proposed project (for example, the number of units proposed at South Base, the use of the Mid-Mountain Lodge, etc.). Additionally, as identified throughout this letter, information – including details TRPA has previously requested from HMR – has not been included (e.g. total coverage reductions [a key component of CEP projects], amount and location of hiking trails, etc.). Further, the NOP references a potential alternative that will be developed based on the results of soil borings from the gravel parking lot. This 'new' alternative may result in a different configuration of the project's buildings, village 'center', parking, etc., and yet the public will not have the opportunity to provide scoping comments on the details of such an alternative (clearly the results of the tests will not be available until well after the 10/2 due date for comments). Finally, the NOP includes many references to "up to" some number of units. This makes it impossible for the public to understand how many units will be included in the project (for all types of uses).

- As a result of these failures, TRPA must allow for additional scoping comments on information made available in the future (and if so, TRPA must prepare a notice for the public and identify the deadlines for an official comment period on the new information; simply posting it to the website without any notice is insufficient public process) or, TRPA must obtain that information from HMR first and re-initiate scoping. It is unfair, and legally questionable, to have public scoping occur when important information is lacking (including a potential additional alternative that will have a revised configuration), and inconsistencies have not yet been resolved.

ATTACHMENT 1

MEMORANDUM

November 26, 2007

TO: Fire Defensible Space / BMP Retrofit Partners

RE: Information on water usage at Lake Tahoe obtained from Utilities

FROM: Jane Schmidt, NRCS

The following information was provided by representatives of 4 utilities providing water service in the Lake Tahoe Basin (Incline Village GID – Madonna Dunbar, South Tahoe PUD – Shelly Barnes, North Tahoe PUD – Lee Schegg, and Tahoe City PUD – Bob Lourey). Recommendations for using vegetation for ground cover should take into consideration the current situation of the municipalities and companies delivering water for residential use.

1. *Approximate number of customers provided water service?*

Incline Village GID:	4,200
South Tahoe PUD:	14,000
North Tahoe PUD:	3,468
Tahoe City PUD:	3,800

2. *What are the trends in water usage in residential areas, and what is the explanation for these trends?*

   Incline Village GID: See a 50% - 60% increase in water usage in the summer, all attributed to irrigated turf.
   South Tahoe PUD: Water usage triples during summer months, due to irrigated turf.
   North Tahoe PUD: Experiencing an increase in water usage about 3 times the amount used 20 years ago. Believe increase is tied to a continuous increase in landscaping (not only irrigated turf) by property owners, as home values have steadily increased over the years.
   Tahoe City PUD: Have seen an increase in water usage, and attribute this to more landscaping installed over time. Perceive an increase in irrigated turf, but also see trends such as heavy watering of native manzanita in some neighborhoods.

3. *What are your approaches to addressing water conservation issues?*

   Incline Village GID: Lawn size is regulated according to lot size. Water audits are offered and conducted by the GID to educate residents on their opportunities to reduce water usage.

South Tahoe PUD: Watering is permitted on certain days, only. 2007 was the first year of the "Turf Buy Back" program (see attached information from their website). This program targets the replacement of residential irrigated turf with other plant species that require less water to maintain. Mulch materials are also prescribed. Generally, a minimum of 400 square feet of lawn must be converted for a property owner to participate.
North Tahoe PUD: If water is put to beneficial use, then the use is considered acceptable. However, the District must rely on storage to meet peak demand. Currently, they are challenged to keep up with demand, and may need to increase storage capacity. The County is currently considering water conservation provisions.
Tahoe City PUD: Residential water meters will be installed during 2008, and as of January, 2009, all residences will be on a rate based system. The District is hopeful that paying for water usage based on metered use will act as an incentive for water conservation.

4. *What, if any, concerns do you have with irrigated turf?*

Incline Village GID: Residential irrigated turf leads to increased fertilizer use, runoff from the fertilizer use negatively affects drinking water quality, and as the water quality declines, the current exemption to provide filtration for drinking water may be threatened. This issue is of major concern to the GID, as filtration requirements would be very expensive to implement.
South Tahoe PUD: Irrigated turf is not native, leads to over fertilization and nutrient runoff polluting water quality, it does poorly in many areas due to shade cover from trees, and therefore many lawns are poorly established.
North Tahoe PUD: Would not recommend any program that encourages more water usage by residential landowners.
Tahoe City PUD: Understand the desire for some irrigated turf by homeowners, but would like to see reasonable amounts of turf used, in combination with appropriate xeriscape landscaping to reduce water consumption.

5. *Options they favor to replace irrigated turf.*

Incline Village GID: Main approach is to reduce the size of irrigated lawns. Recommend low water usage ground cover vegetation such as Mahala mat, thymes, etc. Utilize plant lists in *Home Landscaping Guide.*
South Tahoe PUD: See attached information sheets on the Turf Buy Back program. Recommend general categories of plants, and require a 50% plant (canopy) cover at maturity for replacement of turf.

6. *Other comments.*

Incline Village GID: District also manages a pine needle recycling program. Contractors buy the pine needles, for use in CALTRANS road projects, etc. In 2007, 232 tons of needles were collected from residents in the Incline

Village, Crystal Bay, Kings Beach area. They estimate that perhaps 25% of the residents participated in this program.

South Tahoe PUD: Largest utility in the Basin. Water usage reached a record high during the Angora Fire in 2007. The utility is concerned about their ability to meet peak demands on the water system during emergencies because of the draw on wells that support fire hydrants.

North Tahoe PUD: The utility is concerned about water delivery issues to hydrants used for fire fighting. Under current water demands and current storage capacity, storage tanks must refill overnight in order to meet the typical demands on a summer day.

Tahoe City PUD: There is not an unlimited water supply, even if the utility district is in compliance with safe drinking water standards. Currently, the utility makes over 90% use of groundwater wells; unless water usage patterns decline, there may be a need to develop new sources. Returning to the Lake for additional water may need to be considered.

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COUNTY OF PLACER
Community Development Resource Agency
John Marin, Agency Director

ENVIIRONMENTAL
COORDINATION SERVICES

Gina Langford
Environmental Coordinator

October 2, 2008

Rob Brueck
Hauge Brueck Associates

Subject: **Homewood Mountain Resort Master Plan (PEIR T20080052), Comments on Notice of Preparation**

The Notice of Preparation (NOP) review period for the subject proposal ended **October 2, 2008**. Comments regarding the NOP are attached for your review and response in the Environmental Impact Report (EIR). Any additional comments that may be received will be forwarded to you.

The 1st Administrative Draft EIR (13 copies, plus one on CD in word format) should be received by this office no later than **January 2, 2009**. Please contact the project planner to review and discuss the preliminary environmental conclusions prior to ADEIR submittal.

If you require additional time in order to prepare the EIR, please do not hesitate to contact this office and request a suspension of the processing timeframes.

Sincerely,

Maywan Krach

Maywan Krach
Community Development Technician

Attached comments:

State
1. State Clearinghouse, Scott Morgan (3 pages)
2. Department of Transportation, District 3, Willaim Davis (4 pages)
3. Native American heritage Commission, Katy Sanchez (2 pages)
4. Regional Water Quality Control Board, Lahontan Region, Alan Miller (6 pages)

Public Services
1. Tahoe City Public Utility District, Jon LeRoy (2 pages)

Local Group
1. Sierra Club, Tahoe Area (48 pages)

Private
1. Bromagem, Verna (1 page)
2. Clausen, Bill (1 page)
3. Cress, Lorie & Paul (2 pages)
4. Eisenhardt, Elizabeth Chaney (2 pages)
5. Eisenhardt, Paul (2 pages)
6. Flinn, Hal & Dolores (2 pages)
7. Garber, Michael F (3 pages)
8. Gearhart, Susan (10 pages)
9. Head, Margaret (4 pages)
10. Hutchins, Loyd (2 pages)
11. Kraus, Bill (1 page)

3091 County Center Drive, Suite 190 / Auburn, California 95603 / (530)745-3132 / Fax (530)745-3003 / email: cdraecs@placer.ca.gov

12. Lozeau, Michael LLP (5 pages)
13. Mullarkey, Robert (2 pages)
14. Olivieri, Stefanie (1 page)
15. Peterson, Ted (3 pages)
16. Porteous, Lee & Mary (3 pages)
17. Shackleton, Woody (1 page)
18. Simmons, Scooter (1 page)
19. Threlfall, William (1 page)
20. Tornese, Judi & Jerry Winters (6 pages)
21. Van Zee, Rick & Ali (5 pages)

cc: ERC members
Steve Buelna, Sarah Gillmore, Richard Moorehead, Grant Miller
Applicant, JMA
project file

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STATE OF NEVADA

Jim Gibbons, Governor

Department of Conservation & Natural Resources

Allen Biaggi, Director

DIVISION OF ENVIRONMENTAL PROTECTION

Leo M. Drozdoff, P.E., Administrator

ndep NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
protecting the future for generations

October 2, 2008

Mr. David Landry
Project Manager
Tahoe Regional Planning Agency
128 Market Street
Stateline, NV 89448

Dear Mr. Landry,

This letter is to provide comments regarding the scope of the Environmental Impact Report/Statement (EIR/S) for the Homewood Mountain Resort Master Plan Project. In general, the conceptual plan seems to have many positive attributes. Following are some recommendations regarding the scope of and the range of alternatives to be included in the EIR/S.

First, I applaud the proponent for proposing to design the North Base Area according to the US Green Building's Leadership in Energy and Environmental Design (LEED). However, the South Base Area is proposed to be "designed using the LEED criteria as a template" only; LEED certification is not being proposed to be attained. It is unclear what "designed using the LEED criteria as a template" means exactly. It is therefore recommended that alternatives in the EIS/R range from attaining some level of LEED certification for the entire project to not attaining LEED certification at all for the entire project.

I applaud the applicant for having partnered with Placer County and CalTrans to develop a comprehensive plan to treat and control stormwater. While I support the conceptual plan to pump stormwater up the mountain to areas where it can be infiltrated, the EIR/S should include a preliminary feasibility analysis of this concept. If the preliminary assessment suggests pump and treat is infeasible, the applicant should attempt to incorporate other methods of advanced or alternative treatments for stormwater, such as underground infiltration galleries. I also encourage the use of low impact development technologies and techniques such as pervious pavements and the use of rain gardens throughout the project area.

I understand that the SEZ determination for the North Base Area is currently being challenged by the applicant. If, however, the determination stands, I recommend an alternative in which no mitigation is proposed. Such an alternative would prohibit any development on these low capability lands.

Finally, the project should attempt to minimize turf surfaces. If the applicant desires turf surfaces, artificial turf should be considered. If live turf is to be used, a fertilizer management plan should be developed as a mitigation measure.

Thank you for this opportunity to comment. Should you have any questions or need clarification, please contact me at 775.687.9450 or jkuch@ndep.nv.gov.

Sincerely,

Jason Kuchnicki

Jason Kuchnicki

cc: Kathy Sertic, NDEP Bureau of Water Quality Planning

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DEPARTMENT OF TRANSPORTATION
DISTRICT 3
703 B STREET
P. O. BOX 911
MARYSVILLE, CA 95901-0911
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Flex your power!
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October 2, 2008

08TAH0015
Homewood Mountain Resort
Master Plan
SCH#2008092008
03PLA28, PM 1.75/3.6

Maywan Krach
Placer County – Planning
3091 County Center Drive, Ste. 190
Auburn, CA 95603

Dear Ms. Krach:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) for the Draft Environmental Impact Report for the Homewood Mountain Resort Master Plan Project located along State Route (SR) 89 in the Homewood Community, at Lake Tahoe, California. We have reviewed the NOP and have the following concerns and comments regarding circulation, hydrology, and coordination with a Caltrans EIP project in the vicinity.

Traffic and Circulation

This proposed master plan would increase the number of vehicle trips and turning movements along the highway, and the number of pedestrians walking along and crossing the highway in the Homewood area. Although, the project would increase traffic demands along the west shore of Lake Tahoe, no significant impacts are expected outside of the Homewood area.

A traffic analysis should be prepared for this proposal to focus on the segment of SR 89 from El Capitan Avenue to Silver Street. This segment should be analyzed from driver, pedestrian, and bicyclist perspectives. The existing Silver, Fawn, and El Capitan intersections, and the proposed entrance to the north area, should be analyzed from a safety and LOS perspective, and the need for improvements should be discussed. The need for turn lanes, including a two-way-left-turn-lane for the highway, southbound right turn lanes, and right turn lanes on the approaches to the highway should be studied. Providing sidewalks along the highway, along with parallel, or eliminated, on-street

parking, would reduce congestion for drivers, and make the highway more usable for pedestrians and bicyclists.

The study should also include an analysis of the existing and projected demand for pedestrian crossings of the highway in Homewood at peak times. The locations of the crossings should be described, and any recommended improvements should be reviewed from a safety perspective on a year-round basis. Manual traffic control during the peak seasons should be considered.

The master plan includes an element that would allow for boat trailer parking in the ski area parking lots during the summer. This proposal would reduce the demand for parking along the highway during the busy summer season, and is supported by Caltrans.

It is our understanding that on-demand shuttle service and other transit enhancements are proposed. Please ensure that vehicle trip reductions estimates are based on reasonable assumptions supported by other studies.

Hydrology and Water Quality

The proposed project site is located west and up gradient of State Route 89 in Placer County (Pla-89, PM 2.1/2.3). As stated in the NOP, the further development of this site will increase impervious surface area through the construction of roads, driveways, homes, garages, etc. with a corresponding increase in surface water (storm water) runoff. This project will decrease surface water detention, retention and infiltration. Any cumulative impacts to Caltrans drainage facilities, bridges, or other State facilities arising from effects of development on surface water runoff discharge from the peak (100-year) storm event should be minimized through project drainage mitigation measures. All grading and/or drainage improvements must perpetuate maintain or improve existing drainage pathways and may not result in adverse hydrologic or hydraulic conditions within the State's highway R/W or to Caltrans drainage facilities. Means of accomplishing this, if necessary, shall be identified and backup calculations supporting this conclusion provided to Caltrans District 3 Hydraulics Branch. Please identify proposed runoff pattern and outfall.

Mitigation Measure VIII.2 of the NOP states the proponents will, "Prepare and submit, with the Improvement Plans, a drainage report in conformance with the requirements of Section 5 of the LDM and the Placer County Storm Water Management Manual [SWMM] that are in effect at the time of submittal, to the Engineering and Surveying Department for review and approval. The report shall be prepared by a registered Civil Engineer and shall, at a minimum, include: a written text addressing existing conditions, the effects of the improvements, all appropriate calculations, a watershed map, increases in downstream

flows, proposed on- and off-site improvements and drainage easements to accommodate flows from this project. The report shall identify water quality protection features and methods to be used both during construction and for long-term post-construction water quality protection. "Best Management Practices" (BMP) measures shall be provided to reduce erosion, water quality degradation, and prevent the discharge of pollutants to stormwater to the maximum extent practicable." In all of this, there is no discussion of satisfying the State of California and Caltrans. However, all of the discharge that leaves this site will be directed to drainage facilities within the State's highway R/W. It is incumbent on the project proponents to submit these plans, reports and calculations to the State of California and to Caltrans for review and comment. The proponent should provide drainage calculations that satisfy both the Placer County SWMM and Caltrans drainage requirements.

Increases in peak runoff discharge for the 100-year return storm event to the State's highway right of way and to Caltrans' highway drainage facilities must be reduced to at or below the pre-construction levels. All runoff from the project area that will enter the State's highway right of way and Caltrans' highway drainage facilities must meet all RWQCB water quality standards. The cumulative effects on drainage due to development within the region should be considered in the overall development plan of this area.

No net increase to 100-year storm event peak discharge may be realized within the State's highway right of way and/or Caltrans drainage facilities as a result of the project. Further, the developer must maintain, or improve existing drainage patterns and/or facilities affected by the proposed project to the satisfaction of the State and Caltrans. This may be accomplished through the implementation of storm water management Best Management Practices (BMPs) (i.e., detention/retention ponds or basins, sub-surface galleries, on-site storage and/or infiltration ditches, etc.) as applicable. Once installed, the property owner must properly maintain these systems. The proponent/developer may be held liable for future damages due to impacts for which adequate mitigation was not undertaken or sustained.

Runoff from the proposed project that will enter the State's highway right of way and/or Caltrans drainage facilities must meet all Lahontan Regional Water Quality Control Board water quality standards prior to entering the State's highway right of way or Caltrans drainage facilities. Appropriate storm water quality BMPs (i.e., oil/water separators, clarifiers, infiltration systems, etc.) may be applied to ensure that runoff from the site meets these standards (i.e., is free of oils, greases, metals, sands, sediment, etc.). Once installed, the property owner must properly maintain these systems.

No detailed drainage plans, drawings or calculations, hydrologic/hydraulic study or report, or plans showing the "pre-construction" and "post-construction" coverage quantities for buildings, streets, parking, etc. were received with the application package. In order to adequately evaluate project impacts upon the State's right of way and Caltrans drainage facilities the EIR should discuss the items above and any studies should be sent to Caltrans for review.

All work proposed and performed within the State's highway R/W must be in accordance with Caltrans' standards.

EIP Project

The EIR should discuss Caltrans' EIP project on SR 89 that is scheduled for this area. It is primarily a water quality project, but roadway improvements are proposed for this area. This project is currently scheduled to begin construction in 2011.

If you have any questions regarding these comments please feel free to contact me at (530)634-7618.

Sincerely,

William A. Davis
Senior Transportation Planner

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BOARD OF DIRECTORS
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Tahoe City Public Utility District

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TAHOE REGIONAL PLANNING AGENCY

September 30, 2008

Maywan Krach
County of Placer, Community Development Resource Agency
Environmental Coordination Services
3091 County Center Drive, Suite 190
Auburn, CA 95603

RE: Notice of Preparation – Homewood Mountain Resort Master Plan (HMR Master Plan)

Dear Maywan,

We have reviewed the subject project joint Notice of Preparation (August 28, 2008). This letter is intended to provide review comments relative to potential environmental impacts associated with the subject project and is based on a preliminary review of the information provided in the NOP.

This letter is not intended as an approval or a will-serve letter. A separate will-serve letter will be supplied when available. As this project progresses and more detailed information is provided, it is likely that additional comments will be generated. However, the following comments should suffice for this Notice of Preparation.

Comments:

Domestic Water

1. A portion of this project is located within the boundaries of the Tahoe City Public Utility District (TCPUD) for domestic water service. Primarily, the Project portion located at the end of El Capitan Ave. referred to as the "South Base Area" including the existing improved area along the southern portion of Tahoe Ski Bowl Way is within the TCPUD McKinney-Quail Water Service Area.
2. The proposed Project area labeled as "North Base Area (Mixed Use)" is not within the TCPUD's Water Service Area, nor is it served by any existing TCPUD water infrastructure. The purveyor of domestic water supply for this area is Madden Creek Water.
3. With regards to the proposed Project area labeled as "Between North and South Base Areas" consisting of a 2.5 acre Planned Development lot with of 11 single-family units. It is unclear at this time as to whether the proposed extension of Tahoe Ski Bowl Way and the proposed units are included within either the TCPUD water service area or that of Madden Creek Water.
4. The proposed Project area labeled as "Mid Mountain" is not within the TCPUD's Water Service Area, nor is it served by any existing TCPUD water infrastructure.
5. The proposed project in the "South Base Area" may add up to 99 new condominium residential water connections and one new commercial water connection. This represents a sizeable increase in water demand on the TCPUD's McKinney-Quail Water Service Area. A detailed water study engineering report, prepared by a register civil engineer, will be required from the Developer prior to project approval. The report should, at a minimum, address project demands, system design requirements, and an assessment of the TCPUD'S McKinney-Quail Water System's ability to provide adequate domestic and fire flows at appropriate pressures. The Developer will be responsible for any offsite system improvements required to provide the project with water service.

P.O. Box 5249, 221 Fairway Drive, Tahoe City, California 96145 (530)583-3796 • FAX (530)583-1475

6. Any required onsite domestic water system relocation or upgrade should be identified and their potential environmental impacts addressed during environmental review.
7. Any required offsite improvements to the water system should be identified and their potential environmental impacts addressed during environmental review.

Domestic Sewer

1. This project as a whole is within the boundaries of the Tahoe City Public Utility District (TCPUD) for domestic sewer service. The project is located within the service area of the Sewer Assessment District A53 as well as the West Shore Export II conveyance. The proposed development represents a sizeable increase in domestic sewer inflow on the TCPUD Sewer System. A detailed domestic sewer study engineering report, prepared by a register civil engineer, will be required from the Developer prior to project approval. The report should at a minimum address project demands, system design requirements, and an assessment of the existing sewer infrastructure's ability to provide adequate capacity for additional domestic sewerage. The Developer will be responsible for any offsite system improvements required to provide the project with sewer service.
2. Any required onsite domestic sewer system relocation or upgrade should be identified and their potential environmental impacts addressed during environmental review.
3. Any required offsite improvements to the sewer system should be identified and their potential environmental impacts addressed during environmental review.

Multi-Purpose Trail

1. The TCPUD operates a Class I multi-purpose pedestrian and bike trail along the west shore of Lake Tahoe. The NOP states that the project will integrate a TCPUD bike path into the North Base area. A detailed design prepared by a registered civil engineer and coordinated with the TCPUD for a Class I multi-purpose trail will be required from the Developer prior to project approval. The design should at a minimum address TCPUD standards for continuity of the existing Class I multi-purpose trail and provide public access easements for the operation and maintenance of the integrated trail. Additionally, any connection points or offsite improvements to the TCPUD Class I multi-purpose trail should be identified and their potential environmental impacts addressed during environmental review.

Thank you for the opportunity to provide the above comments. If you should have any questions or require additional information, please contact me at (530) 583-3796, ext. 46.

Sincerely,

Jon LeRoy
P.E.

C: David Landry/TRPA Project Manager
Cindy Gustafson/TCPUD General Manager
Alan Harry/TCPUD APPW
Matt Homolka/TCPUD District Engineer
Tony Laliotis/TCPUD Director of Utilities

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David Landry

From: sougasmom@aol.com
Sent: Monday, October 06, 2008 2:05 PM
To: David Landry
Subject: Re: Comments on Draft EIR for Homewood Mountain Resort.....

Great.

If I may, I would like to add to the issue regarding wildlife, and that is, that the current dirt road access between the two existing ski hills, as well as the undeveloped portion of the mountain in between and the proposed site of the 11 homes make up a long-established wildlife corridor used by our bears and deer and other animals. The loss of any of these important animal 'thoroughfares' will contribute as well to the increase in human-animal conflict that will be an unavoidable result of building outside the existing footprint. You might like to know that there have been recent bobcat sightings in the area. We haven't had bobcats for quite a long time and are excited by their comeback!

I apologize if adding a comment at this time isn't 'kosher'. By the way, who would I contact at the County Supervisor level to address my idea of creating a Citizen's Advisory Committee? Any suggestions?

Thanks again,

Ali Van Zee

****

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(http://local.mapquest.com/?ncid=emlcntnew00000001)

TRPA Staff Summary

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MEMORANDUM

To: David Landry

CC: EIP, P & E, Transportation, Gabby Barrett, Nicole Rinke

From: Brenda Hunt for the TRPA Planning and Evaluation Branch

Date: 10/8/08

Re: Homewood Mountain Resort EIS/EIR Scoping Comments on the Master Plan and Community Enhancement Program Project.

This memo contains official comments on the Homewood Mountain Resort (HMR) Notice of Preparation and the scoping of alternatives from the Planning and Evaluation Branch of TRPA. Additional comments may continue to arise during the continuing review of the Master Plan and associated CEP project.

Overall Community Enhancement Program NOP and scoping comments:

1. The APC staff summary has an error in the subject line. This is not an EIR/EIS on the Community Enhancement Program, but an EIR/EIS on the Homewood Master Plan and Community Enhancement Program project. Note that the NOP does not contain the same error.
   Subject: Notice of Preparation (NOP) and Determination of Scope, for a joint Environmental Impact Statement (EIS)/ Environmental Impact Report (EIR) with Placer County; for the Homewood Mountain Resort Master Plan and Community Enhancement Program, 5154 West Lake Boulevard, Placer, County, California, Assessor's Parcel Numbers (APNs) 097-130-05, TRPA File Number CEPP2008-0189.

2. There should be a description of the CEP process up front in the project description that outlines the intended goals for environmental improvements associated with the CEP. This information can be obtained from the Community Enhancement Program documentation.

3. All proposed alternatives (including the proposed project) need to be consistent with Governing Board Resolution 2008-11, and Exhibit 7 Homewood Mountain Resort, and largely consistent with the CEP criteria per their pre-application, unless HMR proposes to not take advantage of the CEP incentives including the amendments to the Code for Height & Density, amendments to the Plan Area Statement, and any commodity incentives.

4. The EIS shall include a description, and comparison analysis (in a table/matrix form) of the environmental impacts of each project alternative, how these would be mitigated, and what environmental improvements are being proposed 'above and beyond' (environmental net gain) the impact mitigations to meet the CEP criteria. It is possible that the proposed benefits may have their own set of "impacts" that may require mitigations. These differences will need to be clearly outlined within the analysis.

5. The proposed alternatives need to include more detail to ensure that they capture an array of design possibilities, mixed uses, and pedestrian and transit oriented development (PTOD) principles. These details need to include, but not be limited to, specific numbers of units, land coverage calculations, commercial floor area, parking, transportation plans, deed restricted affordable housing units, etc.

6. The proposed alternatives at a minimum, should describe what if any changes would be proposed that reduce/increase the "net environmental" aspects of the project. As stated in comment #3 above, all alternatives to the proposed/preferred still need to meet the requirements of the CEP program if incentives, including amendments are requested.

7. The response to EIP considerations in the Requirements for Participation in the CEP was not adequately addressed. The project proponent needs to demonstrate commitment = proof of dollars available, where these dollars reside, and how they will be transferred to bonds to complete this portion of the project.

8. Alternative scope. In order to comprehensively analyze a suitably scaled development for the Homewood Area it would seem appropriate to include either an additional alternative or changing the mixed use alternative to one that proposes a smaller scale, true "boutique" style of resort without the emphasis on fractional ownership. The alternatives do not appear to be substantially different in terms of quantity and impact of development.

9. Project area. The project area is not clearly defined in any of the documents. One of the maps displays an "L" shaped outline of a project area, while other maps show only the two base areas of the development. Please have the applicant clearly define the project area and describe that consistently throughout all of the documents.

10. The CEP project needs to incorporate effectiveness monitoring plans to quantitatively demonstrate benefits to socio-economic and environmental values over time.

11. Master Plan. The master plan should encompass not only the project area but the entire resort limits. Clarify if this differs from the PAS boundaries. Identify the ownership of the adjacent properties on the maps.

12. Land coverage calculations. It would be useful to include in the alternatives matrix a detail of land coverage proposed for each alternative, plus a summary of the environmental benefits proposed for each.

Land Use:

13. The proposed TRPA Code and Plan Area Statement (PAS) amendments relating to density, height, and additional land uses will require further analysis and direction based on research both the applicant and TRPA are conducting in relation to the examples of similar development. Direction on these topics will be provided in the near future.

14. Some proposed uses/accessory uses associated with the South Base (i.e. private restaurant) and the Mid-Mountain Lodge (i.e. swimming pool, private lounge) require further discussion as suggested in Item 14.

15. The proposed Single Family Dwelling (SFD) Planned Unit Development near the North Base will require alternative approaches. TRPA understands that SFD's are an allowable use within the PAS. TRPA appreciates the desire to move all potential development to the base of the mountain; however, the analysis needs to determine what the potential impacts are associated with this development, including any potential growth inducing impacts. Additionally, the analysis should include alternative access to this area through the North Base rather than improve/extend Tahoe Ski Bowl Way.

16. Maintenance facility. The proposed alternative suggests that the snow vehicle maintenance facility would be moved to the mid-mountain facility. This is not an appropriate use for the sensitive land capability nor is an allowable use for the ski area/resort at mid-mountain.

17. Mid-mountain site plan. The NOP describes the existing mid-mountain facilities as being replaced by the new mid-mountain lodge but the site plans indicate that a new beginner lift will originate from the existing mid-mountain facility. Please clarify.

18. Public Service. There was no discussion of the public service requirements of the proposed or alternative developments. The need for and potential impacts of the new water tank at mid-mountain should also be analyzed as well as any necessary utility connections/lines for the proposed alternative developments.

Recreation/Cultural Resources:

19. The discussion of the estimated number of PAOTs and increased recreational opportunities should be incorporated and calculations analyzed in the context of the Master Plan. An analysis of the estimated number of existing paots and facilities should serve as the baseline information in terms of recreation capacity.

20. What, if any, historical significance is there regarding the existing buildings/uses? Has a determination been officially made regarding the buildings over 50 years in age that currently exist within the project area? Please outline in the alternatives how any potential impacts will be mitigated.

Air Quality:

21. The alternatives analysis needs discuss the potential long-term benefits that may occur from the replacement of old buildings (including offsite TAUs that will be transferred to the project) with more efficient structures as well as a possible decrease in **emissions** associated with transportation related activities.

Noise:

22. Analysis of alternatives needs to include measured and projected CNEL for the project and effected areas.

Parking, Circulation and Transportation:

23. The actual number of proposed parking spaces and percentage of planned parking will need to be analyzed within each alternative.

24. Reduced parking should be analyzed in the alternatives. The proposed 177 parking spaces for the 99 condominium units in the South Base seem excessive. This project has the potential to result in up to 1,000 extra vehicles per day traveling on the west shore. A project that is meeting TRPA's objective of PTOD should not be allocating more than 1 car per unit. Even 1.5 cars per unit would result in only 149 parking spaces.

25. Including reduced parking spaces under Transportation Strategies might actually encourage the use of shuttles.

26. Ensure that the stated goal of implementation of an intermodal transportation plan ensures that Homewood Mountain Resort will create a plan, have it analyzed in the EIS document and ensure implementation "on the ground" of this plan as a part of one or more of the proposed alternatives.

27. The project description does not provide significant enough detail as to the proposed transportation elements that would be above and beyond those required to mitigate the likely impacts of expanding current development on this site.

28. The details and the potential impacts of water taxis will need to be addressed and analyzed within the alternatives. Also, please clarify if the proposed use is a permissible use within the PAS.

29. With respect to Cumulative Impacts - The potential cumulative impacts on traffic are important and should include a broader range of projects than are mentioned in the list and should include a traffic analysis for the entire west shore and through the intersection that exits Tahoe City, CA.

30. Provide specific details and potential alternatives for connecting the bike path through the north base.

Housing:

31. Please refrain from using terms like workforce housing. TRPA does not have a definition for this term. Please replace with "employee housing" or "multi-residential housing", etc. If what is really meant is deed restricted "affordable housing", please state that as well.

32. Income restricted housing is defined as either affordable or moderate. Each alternative should clearly define the number and type of units that are being proposing for income restricted housing both on-site and off-site.

33. TRPA has concerns that the proposed Master Plan and subsequent project is not proposing sufficient employee housing on site. The amount of on-site employee housing needs to be analyzed within the alternatives.

34. The proposed off-site employee housing including type, income restrictions, location, etc. need to be detailed in each alternative for analysis.

Water Rights and Water Use Estimates

35. Since TRPA cannot approve projects that exceed the Tahoe Basin water rights allocation of 23,000 acre feet / annum (afa) on the California Side of the Basin (11,000 acre feet / annum on the Nevada side of the Basin).

    A. The EIS must include certification that water rights proposed to be used in each alternative of the Homewood Mountain Resort Master Plan Project are available for Zone B (West Tahoe) of the California Department of Water Resources allocation of approximately 4,200 afa proposed sources.

B. Each alternative must state clearly the estimated water use on an annual basis, for comparison with existing annual water use presumed in the No Action Alternative.
C. Information provided in the Beaudin Ganze Consulting Engineers, Inc., Use Projection Report only estimates facility requirements on a gallon per day (GPD) basis for the proposed project. Without any occupancy based estimates the proposed project would require 78.9 afa for development total assuming full occupancy of 365 days per year, and snow making demand of 26.5 afa based on a calculation of 30 days of snow making per season.
D. Water rights for the total estimate must be available from Zone B (West Tahoe) which includes Tahoe City PUD and McKinney / Quail as well as other small water companies and private users from roughly Emerald Bay to Dollar Hill.

36. Snow making use projections must address source of water for snow making, since new diversions or wells for snow making are not allowed under the *Truckee-Carson-Pyramid Lake Water Rights Settlement Act* of 1990 and as administered under the negotiated Truckee River Operating Agreement (2008) especially for application outside the Tahoe Basin. After the first 600 acre-feet used for snow making applied on the California side of the Tahoe Basin, sixteen percent of water use for snowmaking must be charged to the Lake Tahoe Basin allocation of the state where the snow is deposited, and additional capacity or diversions may not be made for depositing snow outside the Tahoe Basin with the cut-off date for diversions, wells, and snow making capacity of same is May 1, 1996 [TROA, Section 6.D.6(c)].

Wildlife

37. As a means to avoid any potential impacts to wildlife, one of the alternatives should include, potentially as a sub alternative, limiting all development to the bases with no mid-mountain lodge.

Water Quality and Restoration

38. Under the heading of "Restoration and Water Quality" please provide areas restored in acres. 50,000 square feet = 1.1 acre.

39. All alternatives should consider alternatives to grass that won't require irrigation or fertilizer applications. Perhaps some type of alternative paver or other pervious surfaces should be explored and their maintenance requirements to ensure continued water quality benefits included in the analysis.

40. The analysis needs to address how any offsite water quality environmental proposals may/will change with each alternative.

41. The details and the analysis of the proposed snow making operation impacts are necessary within each alternative.

42. What is micro-hydrogeneration and what environmental impacts and benefits might be associated with this operation? This operation and its potential impacts need to be analyzed in the alternatives.

43. More detail is required and quantification of the over and above relating to the existing BMP requirements for each alternative. Estimate runoff potentially treated by HMR for SR 89 for example in the project area and the Placer County Homewood Erosion Control Project. What other facilities might be provided to these to project implementers by HMR?

44. Quantification of SEZ Restoration area, and the contribution by HMR for the proposed project and alternatives is needed. Need to quantify coverage restoration on an alternative basis.

45. Please be aware that TRPA does not consider State grant funded activities and required BMPs to mitigate existing impervious coverage as "over and above' contributions qualifying Homewood Mountain Resort for commodities under the CEP program.

Soil/Hydrology

46. The EIR/EIS needs to clearly and concisely document land capability, base allowable land coverage, existing coverage, proposed new coverage, and any proposed coverage transfers or onsite coverage removal activities that will be used to comply with TRPA land coverage limitations. Any land coverage removal efforts that will be used to offset/mitigate project-related new coverage should be addressed separately from land coverage removal efforts that are part of the EIP projects referenced in the NOP. This needs to be completed for each alternative.

47. The EIR/EIS needs to clearly and concisely documents the type, location and extent of any SEZ enhancement, restoration, or creation activities that will be conducted as part of the Master Plan and/or project. SEZ enhancement, restoration, and creation activities that will be used to offset/mitigate unavoidable project-related SEZ impacts should be addressed separately from SEZ enhancement, restoration, and creation activities that are part of the EIP projects referenced in the NOP. This needs to be completed for each alternative.

48. Coverage reduction is a very important component of CEP projects. Coverage reduction is not addressed sufficiently under the Requirements for Participation in the CEP. The proposed coverage reductions should be

focused on reducing the 400,000 square feet of hard coverage, rather than roads and cat trails which have very different properties and very different impacts associated with their coverage. Basically, the reduction in coverage should be proportional to the associated impacts. Reduction in the current hard coverage would yield environmental benefits based on its nature and location. Reducing coverage of roads and trails may yield much less environmental benefit, and in many cases may yield insignificant environmental benefits.

Scenic/Community Character:

49. The response to Scenic considerations in the Requirements for Participation in the CEP was not adequately addressed. If something is visible from the lake it has to be evaluated in the respective shorezone scenic unit.

50. TRPA has concerns regarding the Scale, massing, Height, and community character as outlined in Item 1 of the Requirements for Participation Exhibit 7 of Resolution 2008-11. TRPA is concerned that the proposed scale and mass of the buildings as seen from Hwy. 89 and Lake Tahoe will be inconsistent with the surrounding community character. Proposed project elevations indicate limited articulation and do not appear to step-up the contours of the slope as discussed during the pre-application phase of the CEP. The proposed height of certain buildings shown in the plans exceeds the max of 50 feet at the highest point of a given building envelope as it steps up the slope. Reduced building heights for the proposed buildings need addressed per the Resolution.

Subdivision:

51. The project as currently proposed is not consistent with current TRPA subdivision policies and standards that prohibit subdivisions in non-urban lands. An urban boundary line amendment would be required, or an amendment to the Goals and Policies and Code of Ordinances would be required, and analyzed in the EIS.

From: Brenda Hunt <bhunt@trpa.org>
Subject: **RE: Homewood Draft P&EScoping Comments Memo**
Date: October 8, 2008 4:09:28 PM PDT
To: Melanie Greene <mgreene@haugebrueck.com>
Cc: David Landry <dlandry@trpa.org>
▶ 1 Attachment, 2.9 KB

Melanie and David:
Melanie, please delete the separate comments from Larry, melissa, Eileen (most likely mystery staff) as all of their comments have been consolidated into the memo I sent to you. I am sorry for the confusion, but I consolidated all Planning and Evaluation Staff (Shane R., John H., Larry B., Melissa S., Scott F., Ted T., Eileen C. Brenda H. and Charles E.) comments. There may be other comments from other portions of TRPA such as, EIP (Paul/Jeanne/Audrey), Transportation (Karen Fink), and Legal (Nicole, Joanne), and ERS (David, Theresa, etc.). It is worth asking David if any of the other branches within TRPA commented.

Whoops, I take that back, there is one comment from Eileen (see excerpt of email below) that I didn't incorporate into my memo:

> David -
>
> 52) From looking over the IEC the one item of concern is 4a:
>
> Removal of native vegetation in excess of the area utilized for the actual development permitted by the land capability/IPES system.
>
> I am not sure how the project is addressing the issue of allowed coverage. Presumably, the project proponent is not counting ski hill as part of the potentially developable area. (Since I submitted my comments over 2 weeks ago I don't have the time to go back in and read the project description again.) That aside, the currently covered portion of the property most likely has removed vegetation in excess of the amount permitted under the land capability/IPES system. The current proposal does not result in any substantial reduction in coverage. However, the proposed project should be proposing reduction in hard coverage (please note my earlier comments address the value of reducing coverage of cat trails), and it should address revegetation and restoration of areas from which coverage is removed from.
>
> Eileen

I hope that makes sense. Call me if you have any questions.

Brenda Hunt
Associate II Land Use Planner
Planning and Evaluation/Pathway 2007
TRPA
PO Box 5310
128 Market St.
Stateline, NV 89449
775.589.5225 Direct
775.588.4527 Fax
bhunt@trpa.org
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54

COUNTY OF PLACER
Community Development Resource Agency
John Marin, Agency Director

ENVIIRONMENTAL
COORDINATION SERVICES

Gina Langford
Environmental Coordinator

October 14, 2008

Rob Brueck
Hauge Brueck Associates
sent by email

Subject: **Homewood Mountain Resort Master Plan (PEIR T20080052),**
Additional Comments on Notice of Preparation

The Notice of Preparation (NOP) review period for the subject proposal ended **October 2, 2008**. Additional comments, received after October 2, 2008, are attached for your review and response in the Environmental Impact Report (EIR).

The 1st Administrative Draft EIR (13 copies, plus one on CD in word format) should be received by this office no later than **January 2, 2009**. Please contact the project planner to review and discuss the preliminary environmental conclusions prior to ADEIR submittal.

If you require additional time in order to prepare the EIR, please do not hesitate to contact this office and request a suspension of the processing timeframes.

Sincerely,

Maywan Krach

Maywan Krach
Community Development Technician

Attached comments:

State
1. State Clearinghouse, Scott Morgan (3 pages)
2. Department of Transportation, District 3, Willaim Davis (4 pages)
3. Native American heritage Commission, Katy Sanchez (2 pages)
4. Regional Water Quality Control Board, Lahontan Region, Alan Miller (6 pages)

Public Services
1. Tahoe City Public Utility District, Jon LeRoy (2 pages)

Local Group
1. Keep Tahoe Blue (10 pages)
2. Sierra Club, Tahoe Area (48 pages)

Private
1. Bromagem, Verna (1 page)
2. Clausen, Bill (1 page)
3. Cress, Lorie & Paul (2 pages)
4. Eisenhardt, Elizabeth Chaney (2 pages)
5. Eisenhardt, Paul (2 pages)
6. Flinn, Hal & Dolores (2 pages)
7. Garber, Michael F (3 pages)
8. Gearhart, Susan (10 pages)
9. Head, Margaret (4 pages) (additional 3 pages received 10/3/08)

10. Hutchins, Loyd (2 pages)
11. Kraus, Bill (1 page)
12. Lozeau, Michael LLP (5 pages)
13. Mullarkey, Robert (2 pages)
14. Olivieri, Stefanie (1 page)
15. Peterson, Ted (3 pages)
16. Porteous, Lee & Mary (3 pages)
17. Shackleton, Woody (1 page)
18. Simmons, Scooter (1 page)
19. Threlfall, William (1 page)
20. Tornese, Judi & Jerry Winters (6 pages)
21. Van Zee, Rick & Ali (5 pages)

cc: ERC members
Steve Buelna, Sarah Gillmore, Richard Moorehead, Grant Miller
Applicant, JMA
project file

Received 10/14/c

50th Anniversary

KEEP TAHOE BLUE

founded in 1957

October 2, 2008

Tahoe Regional Planning Agency
PO Box 5310
Stateline, Nevada 89449
Sent via email to Project Contact: David L. Landry (dlandry@trpa.org)

County of Placer, Community Development Resource Agency
Environmental Coordination Services
3091 County Center Drive, Suite 190
Auburn, CA 95603
Sent via email to Project Contact: Maywan Krach (cdraecs@placer.ca.gov)

Re: Scoping Comments re: Homewood Mountain Resort Master Plan Project, APN 097-130-05/TRPA File Number CEPP097130005.

Dear Governing Board Members and TRPA Staff,

The League to Save Lake Tahoe (League) is a nonprofit, membership based organization dedicated to protecting and restoring the environmental quality, scenic beauty, and low-impact recreational opportunities of the Lake Tahoe Basin. The League recognizes the importance of programs that accelerate the attainment of the environmental thresholds.

Thank you for the opportunity to provide comments and concerns for the proposed Homewood Mountain Resort Community Enhancement Program (CEP) project. The League recognizes and applauds the current involvement of Homewood Mountain Resort on implementing environmental improvements on the mountain of the ski resort. We also support the concept of rewarding redevelopment projects that go farther than other projects to offer substantial environmental benefits. Incentive-based planning gives the potential for project planners to design and implement truly exceptional projects, and is commendable. However, we are concerned that the CEP process does not go far enough to define or demand "substantial environmental benefits" as tied to incentives, and that the Homewood Mountain Resort Project needs to show real "substantial environmental benefits" in excess to justify this project's developmental magnitude and classification as a CEP project (please refer to the attachment A for the League's position on the CEP).

In relation to the ~~required~~ joint Environmental Impact Report (EIR) that is required for this project; we have reviewed the proposed project and NOP and the League recommends that the following issues and concerns be included:

- Address the cumulative basin-wide impacts of the following project elements :

- The Plan Area Statement (PAS) amendments for height and allowed uses (fractional ownership of residential units) in relation to this project's ability to set a precedent for allowing Basin-wide amendments to both PAS and Community Plans.

- The transfer and/or trading of Tourist Accommodation Units including the bedroom ratio of transferred TAUs (for example, transferring a one bedroom TAU from Crystal Bay to a three bedroom TAU on the West Shore of Lake Tahoe) as well as what type of land capability each TAU is from.

- The construction and year-round operation and maintenance (i.e. winter deicing of parking areas, snowmaking, commercial operations, etc.) of the Resort including impacts to water quality, air quality, noise, scenic, and vegetation environmental thresholds.

- Lighting impacts of the project.

- Transportation (including Vehicle Miles Traveled (VMTs), level of service, and emissions per person per mile) impacts.

- Increasing the overnight population density of Homewood substantially by adding over 320 tourist accommodation and residential units to the project area. This substantial increase has the potential to increase the overnight population of Homewood by 400 – 500 percent.

- Address the following in relation to the projects classification under the CEP:

  - All environmental benefits and impacts should be disclosed, including the substantial environmental improvements and mitigation in excess that are being asserted for the project's classification as a CEP special project.

  - The EIR should disclose the exact amount of land coverage that will be restored and permanently retired by the project in addition to any SEZ restoration; as the CEP requires a project to go above and beyond to reduce impervious surfaces.

  - Quantify the mitigation requirements for environmental improvements under the existing permit for Homewood Mountain Resort with that which would be required for the proposed project. The mitigation for the proposed project should be "in excess" of what the existing permit requires in order for the project to be considered a CEP project.

  - The EIR should quantify the projects contributions to EIP projects and determine if the project's contributions are substantial enough and go "above and beyond" for the projects classification as a CEP project.

  - The required affordable/moderate income housing requirements for multi-residential housing units under the CEP has yet to be fully disclosed in the NOP project description. The EIR needs to include all impacts that are associated with these housing units, and should also analyze the positive and negative impacts associated with all alternative locations for the housing requirements.

- Address the following transportation impacts and mitigation measures:
  - The EIR needs to include a detailed description and analysis of the transportation linkages and traffic solutions that the project proposes such as the dial-a-ride, shuttle services, water-taxi services, and bike path connections; including an analysis of potential impacts to air and water quality that each service may contribute.

- The project should include in the analysis of transportation impacts and mitigation measures that this project will create on both the West and North Shores. Specifically, address the traffic associated impacts that the project will produce on weekends and during holiday periods. As the project currently stands, no shuttle services will be provided to the North Shore, which will also be expected to see an increase in transportation demands due to this project.

- The NOP does not estimate changes in VMTs; however, this project can realistically be assumed to create additional VMTs. The EIR needs to fully analyze the increases in VMTs that this project will create using the "best available data" and current trends.

- Include environmental impacts (such as VMTs, and air quality) associated with the increases of visitor transportation trips into and out of the Basin due to the population increase of the West Shore that this project will create including impacts associated with increased levels of green house gases (GHGs).

- Include an analysis of traffic impacts to response time for emergency vehicles and emergency evacuations along the West Shore, which is an area currently impacted by traffic congestion during the summer and winter periods of high use.

• Address impacts to environmental thresholds including the following:

  - The EIR should establish a baseline of the existing environmental conditions of the project site and the West Shore to accurately analyze the impacts of the project.

  - Any additional hard coverage, including roads, needs to be analyzed in the EIR including the environmental and community impacts associated with the additional hard coverage.

  - Analyze and quantify any short-term and long-term impacts and mitigation measures to the natural hydrologic patterns, including impacts to groundwater that the proposed project will have.

  - The EIR must include the most up-to-date and accurate data pertaining to the land capability classifications within the project area.

  - Impacts to scenic resources from the highway corridor and the Lake need to be analyzed.

  - Include in the EIR a thorough wildlife analysis component including potential impacts to sensitive avian species, fishery resources, and other species of concern.

  - Include a historical analysis of the loss of wetland function of the graveled parking lot on Fawn and Sacramento Streets.

  - In the event that a portion of the North Base Area is an SEZ, the EIR should include any alternative site locations and the associated impacts to each location.

• Address the following infrastructure issues and concerns:
  - The EIR should include an analysis of the sewage collection and treatment facilities in relation to their current capacities and the projected demand that the Homewood Mountain Resort will have on the sewage systems.

  - Include an analysis of the existing power supply infrastructure and the demands that the Homewood Mountain Resort project will have on the existing infrastructure.

- The EIR must determine what the water demand will be from this project compared to existing conditions, as well as analyze the cumulative impacts of the project's water demand Basin-wide.

- The EIR needs to include a detailed analysis on the impacts to the Tahoe City Public Utility District's water supply and infrastructure, in relation to the currently degraded state of the PUD's water system and the high demand for water that the Homewood Mountain Resort project will have.

- The EIR should also analyze the impacts to Basin-wide Lake Tahoe water allocations that the Homewood Mountain Resort project will be subject to under the new Truckee River Operations Agreement (TROA), and **prove** that there will be enough water long-term to sustain the maintenance and operations of the Resort. Under the new agreement, California is allotted up 23,000 acre feet of water per year. According to data from the California State Water Board's website existing water appropriations from Lake Tahoe total 37,237 acre-feet/year, which is above the TROA California allocation.

- The impacts (local and Basin-wide) of the high water demanding snow-making operations that the Homewood Mountain Resort will need for successful winter operations needs to be addressed in this EIR.

- Address the following Homewood community issues:

  - The potential impacts to the "Community Character" of the West Shore of Lake Tahoe including the potential transportation, environmental, scenic, and recreational impacts that the Homewood Mountain Resort will have on the surrounding West Shore communities.

  - Lack of a Community Plan; according the TRPA Staff "white paper" on community character and scale in the August 2008 Governing Board Packet "*Each community must define community character, identify its specific issues, the context and area to which such regulations would apply, and resources availability to manage such programs*." (p 229). Without such a community plan the Homewood Mountain Resort Project has no means in which to adhere to the actual community character as defined by the Homewood community itself. The League purposes that a community plan is implemented before this project is approved.

  - The EIR needs to analyze the project's proposed substantial commercial floor area (CFA) allocations and development outside of a community plan area in relation to the fact that the TRPA's Goals and Policies states that increased development should occur through the adoption of Community Plans. This project is not in compliance with current TRPA Goals and Policies.

- Include an avalanche risk assessment of the proposed project site in the EIR.

- The EIR should provide accurate demographic data pertaining to the annual, weekly, weekday/weekend day and holiday average users of the Resort's existing conditions and of the proposed project; including data on where users are from, Basin entry points, number of non-local day users, number of local day users, income status of users, etc.

- The EIR should analyze the current environmental trends of the Lake Tahoe Basin (State of the Lake Report, UC Davis) in relation to the environmental impacts that the project will have on water quality, water demand, and erosion (including more frequent major flood events), and climate change should also be addressed in relation to environmental impacts, snow-making needs, and potential economic impacts.

- Address this projects' ability to reach and maintain the Total Maximum Daily Loads (TMDLs) as will be set and required by the Lahontan Regional Water Quality Control Board.

- All project alternatives listed in the EIR should be specific on the projects quantifiable aspects (i.e. up to 75 units should be concrete and specific; 75 units). This will allow the project alternatives to be accurately analyzed to the baseline environmental conditions.

- Once the scoping period is completed new information on the project may become available, such as land capability classifications, and being such should be allowed public commenting for inclusion into the joint EIR.

- Present a realistic economic analysis in the EIR that takes into account the current economic situation and the likely housing market trends (based on the currently accepted and analyzed market trend forecasts) for at least the next 20 years to determine if the proposed size and mass of the proposed units is appropriate.

- Include a conservation alternative that includes restoration of disturbed sites (including mountain maintenance roads, ski lifts, paved surfaces, and current structures) and allows for low impact recreation.

The Homewood Mountain Resort project is being classified as a CEP project, which allows these "special projects" certain commodities such as additional TAUs, height, and commercial floor area (CFA) to be allotted for "above and beyond" environmental improvements. The CEP criteria set forth for special projects under TRPA Code Section 33.3D item 3c, states that inclusion as a special project must meet the following criteria: assist in the attainment of the environmental thresholds by constructing projects listed in the TRPA Environmental Improvement Program; provide substantial environmental benefits or mitigation in excess; and transfer development out of sensitive lands. Following this criteria, projects of a large scale and density, such as the Homewood Mountain Resort project, are not needed in order to provide for substantial environmental benefits. And being so, the League would strongly support a project that is reduced in scale and overall density while providing measureable and quantifiable significant benefits in environmental improvements. The League would like to see a project alternative of this nature included in the EIR for the Homewood Mountain Resort project.

In light of the new Regional Plan update, the League recommends that the TRPA should first and foremost focus its energies on updating the Regional Plan in order to reflect existing conditions and science, rather than permit large redevelopment projects, such as the currently proposed CEP projects, that may promise "substantial environmental benefits" in the Basin under flawed and inadequate regulations.

Thank you for this opportunity to comment on the scope of the upcoming joint EIR/EIS for the Homewood Mountain Resort CEP project. If you have any questions pertaining to the League's recommendations for the environmental document please contact Flavia Sordelet at (530) 541-5388 or flavia@keeptahoeblue.org.

Thank you,

Flavia Sordelet
Environmental Program Advocate
League to Save Lake Tahoe
(530) 541-5388

Attachment A

50th Anniversary
KEEP
TAHOE
BLUE
founded in 1957

November 9, 2007

Tahoe Regional Planning Agency
P.O. Box 5310

Stateline, NV 89449

Regional Planning Partners
P.O. Box 1803
Truckee, CA 96160

RE: Comments regarding the Community Enhancement Program (CEP)

Dear Brenda Hunt and Darin Dinsmore,

The League to Save Lake Tahoe (League) is a nonprofit, membership based organization dedicated to protecting and restoring the environmental quality, scenic beauty, and low-impact recreational opportunities of the Lake Tahoe Basin. The League recognizes the importance of programs that accelerate the attainment of the environmental thresholds.

The League to Save Lake Tahoe appreciates the opportunity to provide comments with regards to the Community Enhancement Program (CEP), which has been previously known as the "demonstration program".

Transportation related Concerns

There proposed CEP projects have not addressed a variety of additional parking and transportation related concerns. Many CEP projects are seeking to reduce parking and/or coverage in some capacity, while increasing density, residential units, and commercial floor area (CFA) at the same time. We strongly support the effort to reduce coverage and minimize resources devoted to parking. However, the potential is high for the increased density of commercial, tourist accommodation, and/or residential units to actually result in more vehicle miles traveled, traffic congestion, and pressure for more parking spaces (on site and/or off-site) to accommodate the demand. More people may be visiting these Special Project sites. The transportation related issues and environmental impacts need to be fully analyzed for VMT, air quality, land coverage, soil conservation, and water quality protection. This also emphasizes the need for a firm commitment to implement an effective mass transit system that attains the expected use by the public. Without an adequate mass transit system and the assurance that it will actually be utilized, the demand on the auto transportation infrastructure could be intensified locally.

For additional tourist accommodations, what would be the net increase of VMTs within and from outside the Basin?

Height Concerns

There is an inconsistency between the proposed height of projects in the CEP and TRPA's scenic threshold. Higher buildings as proposed by the CEP will be visible from the Lake and/or obstruct views of the Lake and surrounding mountains. The scenic threshold would therefore be compromised, especially within the Shorezone and Lake itself. The height of the proposed structures should be evaluated from multiple positions, such as surrounding neighborhoods, side streets, and any vistas, not just from the major roadway units, as these plans are intended to improve the community itself. Thus, the quality of the community experience could be affected by higher structures blocking views and affecting daylight exposure.

If any structure compromises the TRPA's scenic threshold, what mitigations would be required to regain compliance? If trees or other native vegetation needs to be planted, how much will this cost and how long will it take for these mitigation measures to accomplish the goal? For example, how long will it take newly planted trees to break the view of a three story building?

Potential habitat fragmentation is a cumulative impact associated with increased height allowances. Higher buildings located within the Pacific Fly Way may jeopardize the integrity of migratory bird patterns and should be analyzed carefully with regards to the wildlife habitat threshold.

Smart growth principles should not be universally applied in the Lake Tahoe Basin; instead the appropriate principles should be selected based upon the setting of the community consistent with its size and community vision. Since Tahoe is not a major metropolitan area, such as Portland, limited growth must be considered first. Nonetheless, creating walkable zones where people do not have to rely on fossil fuel based modes of transport, and therefore reducing existing sprawl, may foster a more livable community, providing it is supported by effectively funded and effectively operated mass transit opportunities.

Coverage Issues

One of the specific goals of the Special Projects as described in the TRPA Code of Ordinances, section 33.3 D (a) is "...to promote major projects that... promote transfer of development that results in substantial environmental benefits". Environmentally sensitive land parcels (whether on site or off site) should be retired and deed restricted from further development. Special emphasis should be given to beach and SEZ restoration, thereby enhancing the applicable thresholds. The feasibility of creating a funding mechanism to acquire and retire sensitive lots and parcels from private ownership should be investigated.

Additionally, there is a great need to aspire for more than just a reduction in coverage. Restoring natural habitat functions to disturbed ecosystems should be pursued rather than implementing expensive engineered solutions. For example, recent Total Maximum Daily Load (TMDL) research has concluded that most of the fine sediments that are affecting lake clarity stem from urban runoff and the most cost-effective remedy is to restore natural stream and wetland function.

The TMDL has reported the lack to date of existing offsets for SEZ and fragile land development. Currently required offsets are less than those recognized nationally as effective. Prior to approval of new projects, nationally recognized standards should be incorporated in the CEP projects.

Threshold Attainment

Achieving substantial environmental net gains must be a primary objective of the CEP process and as stated in section 33.3 D (c) "that address a Threshold standard found not to be in attainment per the 2001 Threshold Evaluation." Threshold attainment needs to be more of a top priority consistent with the purpose of the TRPA Code of Ordinances, Chapter 33: Allocation of Development: "...through issuance of allocations, distributes, in an orderly fashion, growth and development *within the confines of attainment and maintenance of the environmental thresholds.*"

An analysis of how increased VMTs associated with higher density-focused development might impact air quality as well as other thresholds needs to be examined.

In addition, if any projects exceed the current height scale, then soil impacts need to be addressed due to the additional excavation needs. Potential intrusion into groundwater sources (aquifers and water tables) may occur. Also, by placing structures so close to the water table, pollutant control strategies become all the more essential. In addition, any pollutant plumes in the area need to be carefully analyzed for decontamination.

The best available technology (BAT) for achieving the highest standards possible for water quality, lake clarity, and other thresholds must be utilized. Any BMPs need to have the capacity to treat all storm water runoff on site, ideally for a 100-year storm scenario.

Measures are being taken to prevent or minimize the impact to old-growth trees. If the removal of any old-growth trees is intended, these actions must be evaluated in terms of their consequences and impacts to the community and its environment. Also, it is vastly important that coverage/pavement does not interfere with or intrude within outer drip-lines of the vegetation.

In the recent Cal-Neva project, the local community and public raised concerns about noise emanating from decks and balconies. This noise intrudes on community gathering places, parks, and disturbs wildlife as well. In addition, with higher buildings and a higher altitude source for this noise, the potential to reflect and broadcast noise over a greater distance is more likely.

To insure the acceleration of the attainment of the thresholds and properly inform the Regional Plan, there must be a long-term funded monitoring and reporting mechanism included in any project plan. How will the effectiveness of BMPs designed to treat storm water runoff be monitored to ensure that they are adequately protecting water quality and the clarity of Lake Tahoe? Were they designed well-enough to treat all storm water runoff?

Carbon Footprint Comparisons

The carbon footprint of any redevelopment project must be calculated, consistent with current climate change scenarios. The current carbon footprint of existing structure(s) must be compared with those of the potential project. A disproportionately large scale project, with increased carbon emissions, may be called into question because of the potential conflict with TRPA thresholds and cumulative environmental impacts. In addition, will higher buildings increase the amount of greenhouse gases expelled into the atmosphere during decommissioning, construction, and operation and maintenance? What kinds of carbon offset mechanisms will be used to achieve, at minimum, a carbon neutral designation?

The Lake Tahoe Basin has the capability to become a leader in the movement for recognition and responsiveness to global climate change. Portland, OR has recently proposed a plan to charge a "carbon tax" for projects that do not meet energy efficiency requirements and examples such as this should be investigated for construction within the Tahoe Basin.

Green Building

The CEP process should strive to implement the most environmentally sound building techniques available. The importance of green building in the Lake Tahoe Basin was emphasized as a top priority during numerous public input workshops of the 56 Acre Project.

The U.S. Green Building Council (USGBC) had created the Leadership in Energy and Environmental Design (LEED) certification process that guides building projects to ensure the most environmentally responsible, sustainable, and energy efficient designs.

As communities in the Tahoe Basin should aspire to be leaders in climate change responsiveness, they should also be leaders in green building practices. In March of 2007, the City of San Jose adopted a policy that would require all buildings in excess of 10,000 sq. ft. to achieve a minimum level (silver) of LEED certification. As Tahoe is recognized for its scenic significance and receives substantial resources for environmental improvements, a higher level of LEED certification is justified. New redevelopment projects should be striving for at least Gold LEED certification. This type of responsible building promotes the Tahoe Basin as a leader in green practices, reduces carbon footprints, and increases the energy efficiency of projects.

Commodity Award Process

The CEP process is allocating commodities prior to the completion of project EIR/EIS or even an adopted master or community plan. These essential actions must be taken first prior to award of any commodities, especially in consideration that the TRPA has suggested that the CEP projects are intended to inform the Regional Plan. Approval of bonus awards for projects that may adversely impact the environmental threshold carrying capacities (ETTCs) prior to the updated approval of the EIS and Regional Plan is premature and not rationally consistent with the plan adoption process.

Summary Conclusion

Finally, it should be stressed that while water quality and lake clarity are of high concern and focus for our region (as evidenced by the proportion of funding for the EIP), the CEP needs to focus on an acceleration of the attainment of the all of the environmental thresholds.

We appreciate the opportunity to provide comments and if you are in need of further information please contact us at 530-541-5388.

Sincerely,

Carl Young

Program Coordinator

League to Save Lake Tahoe

Received 10/13/08 - Placer
Received 10/14/08 - Comment Record

56

2 October 2008

Attn: David Landry, Trpa, Project Mgr. Maywan Krach and Steve Buelna, Placer County Community Development

RE: Homewood Mountain Resort Master Plan (HMR Master Plan) submitted by Homewood Village Resorts, LLC. : Public Scoping with comments on South Base for the proposed resort.

HMR will present a huge environmental effect on Homewood community, inclusive of the South Base along Lagoon Road and Tahoe Ski Bowl Way, not only during the construction process with increased heavy goods vehicles but also with the mitigation variances that HMR developers propose. (I live on Lagoon Road, PAS 51 or 5579 Lagoon Road.)

Public meetings:
These meetings have been held after Labor Day when the bulk of Homewood population is not in residence; chaired by HMR to catalog proposed improvements but not structured to a open dialog with the community present, married with inconsistent statements by Art Chapman and Rick Brown, a spokesperson. At Obexer's with a model for the HMR resort, open on Tuesdays and Thursdays, does not show the topographical feature of the unit to be built. In many senses the developers are trying to tell the local community they need this new density or they will leave (all or nothing), as opposed to trying to dialog **to find a solution** for the community and the developer**. However, this new community developed by HMR threatens to divide Homewood as the South Base will be a gated community.**

Mitigation Fees: Protection after completion of the proposed development.
HMR Master Plan is applying for variance with mitigations, with compounding environmental hazards: fire protection with new height densities and erosion problems, with excavation of the South Base Mountain.

Who will pay the mitigation fees when the developers leave or if the project is not finished? The development should have a **permanent mitigation fee** to protect existing homeowners' along Lagoon Road in the South Base from land erosion and avalanche.

Environmental Impacts: new requests by HMR for Variances, with local residents not having time to study the proposed plans to relay concerns:
I have attended four community meetings and attended two scoping meetings: TRPA 9/10/08 and Placer County, Tahoe City 9/23/08 in which residents expressed that the Tahoe community does not know enough about the ramifications of this project regarding fire due to increase heights of the units, increased traffic due to the volume of the development, lighting, and water at the 9/23/08 scoping meeting. I am disabled which makes it more difficult for me to attend these meetings.

South Base Area:

Rubber Wheeled Building called the rubber tire vehicle maintenance facility now moved contiguous with existing residential property.

1. Toxic spills and chemical: **Fire and air quality hazards** with potential of noxious chemical and toxic spills close to the existing residential neighborhood, 10 feet from my property line. This building has moved from its current site. The building should move closer to a main artery away from the current residential neighborhood. HMR should provide new equipment for protect the neighborhood from fire given this new population density on steep slopes.

2.Noise:
Vertical Surfaces: Rubber Wheeled Vehicle: building a hard vertical surface with retaining walls **will echo** sound creating a **canyon effect** between my home and existing homes on Lagoon.

Extensive transport with alarm bells: parked on the new road: intercept trams and service vehicles, maintenance vehicles, food service vehicles with engine sounds, all with **alarm bells** that sound when these vehicles back up breaks the existing tranquility.

Maitenance after 5PM: Will HMR guarantee there will be no after hours work on these vehicles, with **pneumatic** hammers at night. This will shatter the peace of this neighborhood.

Vehicles are parked along the roadway as a **staging center** which is not conducive to a rural view of the Old Homewood, which HMR promotes in their literature. Presently there are 10 vehicles by the current maintenance facility rubber wheeled parked.

Proposed Linkages:

Transportation: HMR is putting more vehicles on the road with intercept shuttles and **should subsidize existing transportation TART with new buses** the. This would benefit not only day users but their employees. The West Shore Dial a Ride service increases traffic with more vehicles, as they reduplicate trips.

Environmental Improvement Projects (EIP): Pedestrian Facilities South Base HMR.
HMR proposes new summer use but in the South Base there are
1. No play areas for children.
2. No greenbelts among the condos which would help for fire access.
3.No parks or benches for the disabled.
4. No cylist paths or pedestrian walkways in the plans at the South Base, **which encourages the use of .motorized** transport.
5.HMR urbanizes the mountain by leaving out these pedestrian facilities.

Land Uses: Soil Erosion and Drainage Concerns.

Geology and Soils :Excavating the mountain, at South Base, behind Lagoon Road will impact soil erosion, drainage. Changing the shape of the mountain will affect drainage for the homes on Lagoon Road. Will HMR enter into a **legal agreement**, or a bond to protect the homes on Lagoon from **avalanche**, a crucial problem when the hill washed away in 2000?

Aesthetics:
Loss of the **view** shed with condos on the mountain and **starry** nights on Lagoon Road.

Land Use and Planning:
Division of an established community with gate on Tahoe Ski Bowl Way dividing the new development from the existing homes.

Will owners at the South Base be compensated for the noise of construction, the roar of heavy goods vehicles and jack hammers, as residing here at the slope of the mountain on Lagoon will shatter the peace we seek by living here?

Noise:
1. Increased density will result in **elevated** decibels as the volume will **reverberate** off the vertical surfaces of the new buildings and retaining walls.

2. Current social functions gatherings/weddings: the decibel level is **not** currently monitored by HMR, after 10 PM and the sheriff has been called in several instances to monitor the level of sound to abide by the **noise ordinance.**

Public Services:
HMR should set aside a contingency fund to build a new infrastructure for the community services: providing new equipment for fire, new hook and ladders to reach extensive heights, supply funds to upgrade the current transportation service, TART with out raising the taxes of current residents.

Transportation and Utilites:
HMR should fund studies for the creation for the appropriate services necessary for this new development. Subsiding the local transportation would alleviate congestion on Hwy 89.

Thank you for your consideration,

Margaret Head
5579 Lagoon Road PO 952 Homewood, CA

Tahoe Regional Planning Agency
P. O. Box 5310
128 Market St.
Stateline, NV 89448

Attn: David Landry, Project Mgr.

County of Placer Comm.Dev. Resource Agency
3091 County Center Dr., #190
Auburn, CA 95603

Attn: Maywan Krach, Comm. Dev.
Steve Buelna, Planner

RE: **Homewood Mountain Resort: Planned Expansion**

Homewood, California has been my home and my home away from home not only as an adult but as a child.

Homewood is primarily a single residential neighborhood that includes a quaint center as well as Chamberlands. The proposed development by Homewood Mountain Resort will drastically change the character of the community, which is occupied by families who have been here for generations.

The proposed density of condominiums increases noise, excessive light pollution and traffic problems on Hwy 89 will for ever change the easy going ambience that prevails that has attracted the many generations who have owned property in Chamberlands and Homewood.

Chamberlands:
Rubber Wheeled Vehicle Fuel Depot currently known as Maintenance Shed and **Shifting of the access road that goes up the mountain.**

In several instances, Homewood Mountain Resort at public meetings have expressed that the current maintenance shed will not move and that condominiums will not be built on the current ski hill that abounds Lagoon Road, but on the pavement that exists at the bottom of the mountain.

However in reviewing the plans submitted to the TRPA, the new **Rubber Wheeled Vehicle** shed, a commercial use building is 10 feet from my property line and this building will house vehicles that will impair the air quality,

- with fumes and diminished air quality will affect my medical condition;
- the depot will shield light from my house, so my home's energy consumption will increase;
- be a commercial maintenance building sited next to single family homes with associated problems of fuel leaks, oil spills, as well as on- going movement that will break the tranquility which my neighbors' seek in this low key community;

- This commercial use **building 10 feet from my property** line will completely block my view of the mountain and by placing such a building will diminish my property value.

Moving the Access Road:
My neighbors along Lagoon Road Homewood California near the proposed development of condominiums express stress that we will lose tranquility.

- On the proposed plan sent to the TRPA, **two roads** will bound our single family houses: Lagoon Road and this **new access road** a few feet from out property lines, so our **houses will be squashed** between two roads.
- With the density of development not only will maintenance vehicles be parked outside for us to view, but garbage trucks, linen and laundry trucks, food service vehicles will emit fumes, noise, and change the character of the neighborhood.

Many of the families have lived on Lagoon Road for over 30 years; we are concerned that the community will lose the neighborhood feel with such density of condominiums.

- Loss of starry nights from light pollution with this density;
- Loss of the skyline view with Homewood Mountain Resort applying for height restrictions above the norm.
- Congestion on Hwy 89 from Tahoe City to Homewood: the proposed density will exacerbate the existing condition which is gridlocked at weekends and at four o'clock in the afternoon;
- Loss of wetlands and destroying of the character of the existing community.
- Improper use of the public streets by Homewood Mountain Resort for employee parking on Meadow Road an area that the public should use for snowshoeing or cross country skiing.
- Loss of the neighborhood of single family homes with the density.

Thank you for your consideration.

Sincerely,

Margaret Head
Michael Garber

FROM IERS 3.29.10

INTEGRATED ENVIRONMENTAL

Generalized Soil and Vegetation Treatment Specifications for Homewood Mountain Resort Redevelopment

The overarching objectives of the soil and revegetation treatments described in these specifications is to control sediment at its source, to maximize hydrologic and biological function in the soil and to develop and support a robust vegetation community. Specific treatment outcomes include:

- maximizing infiltration and minimizing runoff
- protecting the soil surface with functional mulch cover
- re-establishing soil nutrient cycling
- re-establishing an appropriate, self-sustaining native plant community

Soil and Vegetation Restoration Treatments for Disturbed Areas

- Where a discernable layer of topsoil, mulch and/or duff exists, a minimum of six inches (6") of this material shall be removed and stored appropriately onsite.
- Soil samples shall be collected and analyzed to determine nutrient content. Soil amendment additions will be determined by the soil-revegetation specialist based on these results.
- Aged or composted wood chips shall be used as the primary soil amendment.
- Composted wood chips shall be placed on the surface of disturbed areas to specified depth (approx. 4-6") then incorporated into the soil to a minimum depth of twelve inches (12") using approved loosening method.
- For slopes steeper than 3:1, soil tilling shall be conducted in a manner that mixes the subsurface material with the topsoil-amendment material and leaves the subsurface irregular or "scalloped" (i.e. rough, not smooth).
- Salvaged topsoil/duff shall be applied to surface following soil loosening and amendment incorporation and then lightly mixed into the top 2 inches of the soil matrix.
- Soil surface shall be left in a roughened condition which mimics native soil roughness. Soil relief shall be between four and eight inches (4-8") over a twenty-four inch (24") distance.
- Slow-release organic fertilizer shall be applied to the soil surface and incorporated into the soil to a depth of no more than two inches (2") by raking or other approved methods. Appropriate fertilizer application rate(s) will be determined by the soil-revegetation specialist based on the results of soil nutrient testing. Fertilizer must be incorporated into soil prior to seed application to prevent burning of seed and low germination rates.
- Upland seed mix (see table) shall be spread by hand or hand applicator evenly across treatment area at a rate of 50 PLS lbs/acre in the construction staging area and at two times that rate (100 PLS lbs/acre) for slopes steeper than 3:1. Seed shall be raked into soil using the flat side of a steel rake so that seed is covered by a minimum of ¼ inch and a maximum ½ inch of soil material. Hydroseed-type applications shall not be used since it makes raking in of seed difficult and may cause premature germination.
- Mulch shall be applied evenly across all treatment areas so that at least 98% of the soil surface is covered. Mulch depth shall not exceed two inches (2") in any areas where seed mix

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has been applied. Mulch material shall consist of pine needles and associated duff material, tub grindings or wood chips.

- Following completion of soil and revegetation treatments, all further vehicle and equipment traffic (and foot traffic to the greatest extent possible) shall be excluded from treatment areas using temporary perimeter fencing or other physical barrier until all construction in the project vicinity is completed.
- All slopes steeper than 3:1 shall be irrigated to encourage rapid plant establishment and deep root penetration. Irrigation shall be applied so that water penetrates to at least eight inches (8") below the ground surface within twenty-four (24) hours of irrigation. Irrigation system must be able to meet these specifications without displacing mulch or causing erosion.

Table 1. Generalized upland seed mix for Homewood Mountain Resort Redevelopment LID areas

Species (Common Name)	**Species (*Botanical name*)**	**Pure Live Seed (%)**
Squirreltail (*high-elevation Sierra collection*)	*Elymus elymoides ssp. elymoides* (Sierra)	20-30
Blue Wildrye (*high-elevation Sierra collection*)	*Elymus glaucus*	20-30
Mokelumne or El Dorado Brome (*high-elevation Sierra collection*)	*Bromus carinatus* (Mokelumne)	20-30
Antelope Bitterbrush (*high-elevation Sierra collection*)	*Purshia tridentata*	2-5
Sulfur-flower Buckwheat	*Eriogonum umbellatum*	2-5
Wax Currant	*Ribes cereum*	0.5-1
	TOTAL PLS POUNDS PER ACRE RATE	**75-125**

LID Areas

- LID treatment areas shall receive a similar application as described above. LID areas are not expected to be wet during much of the growing season and are therefore not under the influence of a mesic or wet hydrologic regime.
- Specific seeding and planting in the LID areas will be developed in conjunction with the landscape architect.
- Soil treatment will be identical to the Disturbed Area treatments.

Water Routing

- Since water will be routed into LID areas for treatment, LID areas will be designed such that concentrated flows will be routed through energy dissipaters using rocks or other landscape elements in order to eliminate scouring flows

Treatment matrix and specifications for Homewood Mountain Resort Ski Area Master Plan Project

Prepared by Michael Hogan

Integrated Environmental Restoration Services

November 6th, 2010

Type	Description	Applied to	Specification
A	Upland disturbed areas	Disturbed/excavated sites	Full soil restoration treatment Remove and salvage topsoil where available Test soil for OM Apply organic amendment-topsoil Till-mix to 18” Seed mix per general spec Pine needle mulch Irrigate if needed
B	Infiltration enhancement	Existing semi-compacted slopes above project area	Apply wood chips/tub grindings Spot till/mix (48” OC) to 24” 25% seed rate Pine needle mulch Irrigate if needed
H	Road removal	Existing dirt access road-North Base	Re-contour road to match native grade Apply type A treatment
Bio	Biological stormwater treatment	All stormwater ‘LID’ areas	See full description below

Bioretention-LID: refers to areas that use a specific soil-vegetation mix to treat and infiltrate stormwater. LID or “Low Impact Development” is a term commonly used in the US to describe the broad range of treatments used to achieve this goal. We use the term ‘Bio’ or biological treatment to describe these treatments. Bio treatments are used in a treatment train with other hard structures to achieve overall stormwater treatment effectiveness. Biological treatments are used upslope as well as in the throughflow areas as an integrated hydrologic treatment strategy that starts with source control above the project. The following soil specification is used for Bio or LID treatment areas:

All treatment areas shall be below the surrounding grade and shall be protected on the inflow and outflow areas with flow dissipation/spreading elements.

Routing through the flow areas shall follow a ‘tortuous path’ regime to the greatest extent possible and shall be field fit and approved by the soil-revegetation specialist in the field.

Soil mixture shall be placed into an excavated area such that soil immediately after mixing is 1-2 inches above final grade to allow for re-densification. Soil may be mixed in place if the final soil mixture meets the specifications listed.

Soil mixture shall meet the following standards:

Soil shall be of a loamy sand or coarse sandy loam texture with a CEC ≥ 5 meq/100 grams of dry soil; 8-10 percent organic matter content by dry weight (not volume); 2-5 percent fines passing the 200 sieve; and a minimum soil depth of 18 inches with the above qualities permeability of between 4 and 12 in/hr by ASTM D 2434 (Standard Test Method for Permeability of Granular Soils).

Compost shall be used for all or part of the organic matter content that meets the following requirements:
Organic matter content between 45% and 65% as determined by loss of ignition test method.

- pH between 5.5 and 8.0.
- Carbon:nitrogen ratio between 30:1 and 50:1
- Maximum electrical conductivity of 6 mmhos/cm
- Moisture content range between 35 and 50%.
- No viable weed seeds.
- Manufactured inert material (plastic, concrete, ceramics, etc.) should be less than 1% on a dry weight or volume basis

P content shall be as follows:

Bray P*	Total P**	Soluble P***	CEC
(mg/kg)	(percent)	(mg/kg)	(meq/100g)
<200	0.06	<2	>5

Total soil particle size distribution shall be as follows:

Sieve Size	Percent Passing
3/8”	100
#4	95-100
#10	75-90
#40	25-40
#100	4-10
#200	2-5

All soil shall be submitted to the soil-revegetation inspector for testing prior to application.
Vegetation shall vary depending on site use and seasonal moisture content of the site. Specific configuration of each area shall be shown on the plans and shall be field fit to achieve the stated goals.

ECOLOGICAL AND HUMAN BENEFITS OF SEZ RESTORATION

Prepared by Michael Hogan for Homewood Mountain Resort

April 3rd, 2010

INTRODUCTION

As Homewood Mountain Resort undergoes a facilities redevelopment, ecological and habitat elements of the Homewood watersheds are also being improved. The main areas that will be directly affected by the redevelopment will be the North and South Base areas. The upper mountain, long impacted by old logging roads and other legacy impacts, is being treated through a systematic watershed restoration program where over 240,000 ft^2 of roads have already been removed and/or treated, with at least another 260,000ft^2 of roads slated for treatment in the future. While the upper mountain restoration is targeting legacy impacts, the base areas will target reduction of sediment and nutrients through construction-related improvements such as low impact development-types of treatments and infiltration facilities.

The redevelopment project will retain much of the North and South base areas as impervious coverage. However, within the redevelopment plan, HMR is proposing to undertake two SEZ restoration projects: a wetland restoration project near the North Base and a stream restoration project at the South Base. This document describes the South Base stream restoration project.

The South Base Homewood (Ellis) Creek restoration project consists of widening approximately 340 feet of constrained stream channel, construct a set of step pools through the area and create primary and secondary flood plains to the extent possible. The intent of this project includes ecological and aesthetic improvement of the restored area while addressing several 'beneficial uses' which are those water related elements as defined by the Lahontan Water Quality Control Board Basin Plan. This report describes a generalized restoration approach and the benefits from implementing this stream restoration. Specific construction plans will be developed as the project gets closer to actual construction and as engineering plans are finalized.

CURRENT CONDITIONS

Homewood (Ellis) Creek has headwaters high up in the steep, rocky watershed which makes up part of the Homewood Mountain Resort. The creek is fed by at least two springs. The lower spring is less than ½ mile upstream from the restoration area and in most years runs year round. Thus Homewood Creek in the South Base area typically also runs year round even though sections of the stream at mid mountain may be dry or stagnant. In fact, water quality data indicates that water quality in the base area is in some years better than that which exists high up in the undisturbed portions of the watershed. However, as in many recreation and residential areas, creeks at Homewood have been constrained and channelized in order to allow for additional ground surface on which to build or use for other purposes. Historically, creeks themselves took on a lower level of importance. Now, we are gaining a greater realization of the importance of creeks from both an environmental and aesthetic standpoint. It is with this in mind, and with the intention of reversing years of neglect that we propose to restore a section of Homewood Creek in the vicinity of the HMR South Base redevelopment.

Current conditions consist of a highly constrained creek section with steep, artificially constructed banks and a culverted section under Tahoe Ski Bowl Way and an area that is bordered on both sides by paved parking areas.

The maximum flow corridor width above an existing foot bridge and above the culverted section is approximately 20-25 feet. Using a median value, the total potential cross sectional area is 247.5 ft^2. Following construction, the maximum bank full height will remain at 10-12 feet but the maximum flow corridor width will extend to a minimum of 40 feet at the road crossing and up to 60 feet above that

crossing. Using the ultra-conservative value of 40 feet, the post restoration minimum cross sectional area would be 460 ft^2. Additionally, the new configuration will also contain primary and secondary flood plains which will allow for additional benefits from those areas including increased habitat and maximum wetted cross sectional area.

The creek is currently constrained physically, ecologically and aesthetically.

Figure 1: Photo of Homewood Creek showing constrained flow path and steep sided banks

LIABILITY ASSESSMENT

Current conditions lead to the following liabilities (note: liabilities in the sense used here refer to levels of ecosystem services that are below optimal):

- Increased velocity and energy in the constrained sections (relative to the optimal potential)
- Lower contact time with bed and banks, thus reducing groundwater recharge potential
- Increased bed and bank erosion due to increased velocities
- No soil contact time in the culverted area
- Potential for sediment and oil-grease laden snow to reach creek from the parking lot areas
- Probability of culvert clogging by branches and other debris, thus causing potential massive erosion and property damage from flooding
- Lack of flood plain contact due to lack of primary flood plain
- Increased probability of flooding due to lack of volumetric capacity in constrained channel

- Limited aesthetic appeal due to lack of access and low level of surrounding aesthetic appeal

Flow rates

IERS has implemented near continuous flow monitoring in Homewood Creek at the South Base since the summer of 2009. Volumetric flow rates during spring snowmelt range from a maximum peak of 26 cfs to a normal peak of 10-20 cfs to a summer steady state average of 0.13 cfs. The 26 cfs value was, no doubt, exceeded during the December 2005 and the January 1997 peak flows. However, no measurements were taken during those flow events.

Future Condition Benefits

Existing conditions of the stream in the South Base area have been driven by human needs and values. In a similar manner, future conditions are driven by different human values. Those values are more closely aligned with our current understanding of habitat and other ecological functions. Input variables also include a more current understanding of the liabilities of a tightly constrained creek, as is the case with Homewood Creek. Liabilities include increased potential for flooding, bank collapse and channel clogging, all of which can result in property damage to the land owner and downstream neighbors. Further, future conditions take into account those beneficial uses that are listed in the Lahontan Basin Plan, many if not most of which coincide with other project driven benefits.

Benefits

When a stream cross section is widened, the resulting additional area allows water to slow in that area, thus reducing kinetic energy. This condition changes a number of physical and biological components of the stream. In a highly constrained creek, such as Homewood Creek in the restoration area, these changes tend to be beneficial. The following list describes the most obvious benefits of the Homewood Creek restoration.

- Flood attenuation
    - By widening the stream cross section, we allow more space for water to be contained in. This basic principle of stream restoration is shown in Figures 6 and 7, which describe graphically how widening the stream channel and incorporating multiple flood plains allows water to stay within the banks. Figure 6 shows how flood flows are likely to exceed bank full capacity and flood the surrounding areas, thus creating ecological and human liabilities.
- Culvert removal=less opportunity for clogging, damming and releasing
    - Homewood Creek within the restoration area is currently constrained by a culvert. Culverts present a significant potential for clogging by debris in large flow events, which often leads to culvert failure and the subsequent release of great amounts of sediment into the waterway. The restoration plan includes a 'bottomless culvert', or bridge across the creek which will allow bed contact and greatly reduce the potential for clogging. For a graphic description of culvert failure, go to: http://www.youtube.com/watch?v=p_uqPR4Ir5o
- Bed contact
    - Removal of the culvert allows for additional streambed contact. Currently, the culvert run of the stream eliminates any bed contact and associated groundwater recharge potential and aquatic invertebrate habitat.
- Ground water recharge
    - In addition to the culvert elimination of groundwater recharge in that area, widening of the creek and reduction of flow rates in the restoration area through widening and low

flow meanders results in additional contact time for water moving through that section, thus allowing more time for groundwater recharge. Additionally, a wider stream profile, which results in more potential cross sectional wetted area, allows for more lateral rewatering of the soil profile in the restoration area.

- Bank erosion reduction
  - By widening the wetted cross sectional profile, flow rates are reduced, thus lowering the energy available for bank cutting and erosion.
- Fish passage
  - Fish passage potential will be enhanced by creating a more advantageous environment for small fish. The restoration plan includes small step pools and removal of the culvert which allows for more fish-friendly habitat.
- Aeration
  - Aeration is the process of introducing oxygen into the water column. Natural streams, especially in high gradient environments such as exist in the Homewood Creek watershed, tend to be well aerated due to the multiple steps that occur in the stream channel. When water if forced over rocks or other obstacles, oxygen is introduced as water goes from laminar to turbulent flow, as shown in figure 2.

Figure 2: laminar to turbulent flow in a creek, showing oxygenation

Aeration has multiple benefits that align with the Lahontan Basin Plan beneficial uses. Some of the well known benefits of aeration include:

- Reintroduction of O_2 into the water column, thus optimizing O_2 availability for biological oxygen demand (BOD)-induced O2 reductions
- carbon dioxide reduction (decarbonation)
- oxidation of iron and manganese found in many well waters (oxidation tower)
- ammonia and hydrogen sulfide reduction (stripping)

Aeration is also an effective method of bacteria control. (From: http://www.gewater.com/handbook/ext_treatment/ch_4_aeration.jsp)

- Aesthetic enhancement
  - The Homewood Stream restoration project will provide for an improvement in aesthetic value, which is difficult to quantify. However, currently, the stream is highly constrained both physically and visually in two ways. Where the creek is running in its bed up and down gradient of the culvert, as previously mentioned, the creek is constrained. Upslope of the culvert, the creek is overgrown by willows making viewing difficult to impossible. Down gradient of the culvert, the creek is surrounded on both sides by parking lots (see figs 1, 4, and 5) and screened by willows, making viewing uninteresting and difficult. The restoration plan includes open areas on both sides of the creek, a wider creek bank not so constrained by willows and elimination of the culvert which will create a more natural appearing and functioning creek. These improvements are designed with aesthetics in mind and allow unimpeded view corridors and easier access creek viewing areas. Coincidentally, the enhancement of aesthetic value coincides with Lahontan's 'recreational' beneficial use.
- Habitat

- Creek restoration will incorporate habitat improvement from fish passage potential to avian habitat improvement. Fish passage will be enhanced by the stream configuration itself and shading will be more consistent (shading currently consists of some sections of completely shaded creek with other areas completely open). Avian habitat will also be enhanced by the development of more diverse habitat for birds which will include more shrub species both for nesting and for food values in mind. Willow, alder and various current species will be planted as well as grasses and forbs, which will also enhance rodent habitat. Willows will be less dense, allowing more freedom of movement through the stream corridor.

- Sediment
  - Sediment will be addressed through the velocity reduction in the stream itself. This is not likely to be a major influence but will assist in medium to course sediment reduction.

Table 1: Lahontan Regional Water Quality Beneficial Uses. Beneficial uses in blue font are directly addressed by this project.

Beneficial Use	Indicator of Unacceptable Disturbance (Water Quality Protection Criteria)
Municipal and Domestic Supply	1. California ambient water quality standards a. Total Dissolved Salts 60mg/l b. Chlorine 0.1mg/l c. Nitrogen 0.15mg/l d. Phosphorus 0.018mg/l 2. Suspended sediment concentrations in streams tributary to Lake Tahoe shall not exceed a 90th percentile value of 60 mg/L. 3. Waters shall not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes.
Ground Water Recharge	In ground waters designated as MUN, the median concentration of coliform organisms over any seven-day period shall be less than 1.1/100 milliliters.
Water Contact Recreation	Waters shall not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes.
Noncontact Water Recreation	None
Commercial and Sportfishing	High heavy metal concentrations
Cold Freshwater Habitat	Same as Spawning, Reproduction, and Development
Wildlife Habitat	None defined
Spawning, Reproduction, and Development	Species dependent standards, however lake clarity sediment protection standard would protect all fish and invertebrate species.
Suspended Sediment Objective for Lake Tahoe	Suspended sediment concentrations in streams tributary to Lake Tahoe shall not exceed a 90th percentile value of 60mg/L. (Lahontan Basin Plan, 1995)

SUMMARY

The Homewood Creek restoration project is designed to provide ecological and aesthetic benefits to a 300+ foot section of creek in the Homewood South Base area that has been channelized and constrained. The conceptual plans describe a creek restoration project that enhances ecological function through widening, adding step pools, developing flood plains and increasing plant and habitat diversity. These functions also address many of the Lahontan 'Beneficial Uses' and supports TRPA's Soil Conservation SC-2 Stream Environment Zone indicator. Given the current constrained nature of the stream and adjacent SEZ, initial calculations suggest that we will expand SEZ area by at least 100%. The

Homewood Creek Restoration Project is also designed to provide a much higher level of human interaction with and aesthetic improvement of the creek by providing walking and viewing areas adjacent to the creek.

Figure 3: Location of South Base stream restoration area

Figure 4: Google Earth image showing location of stream restoration. Approximate length of restoration: 340 feet

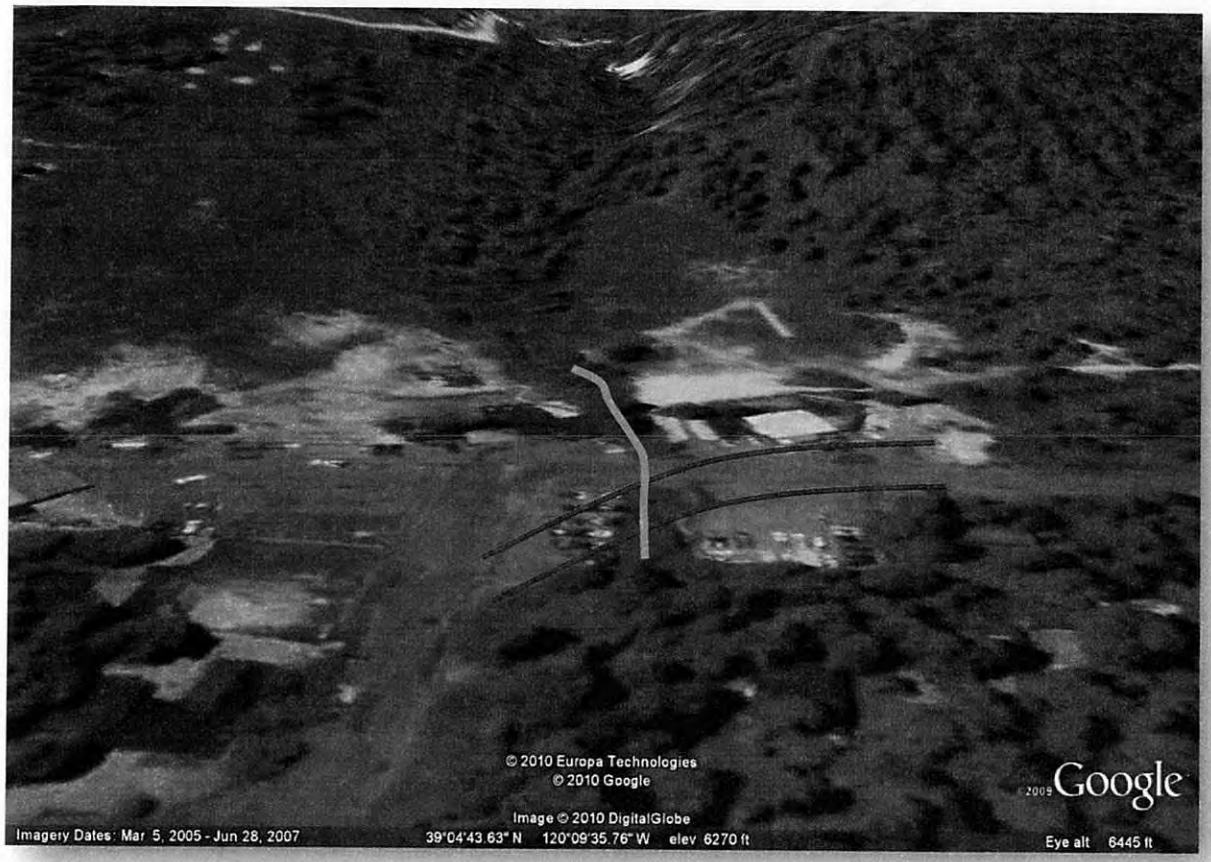
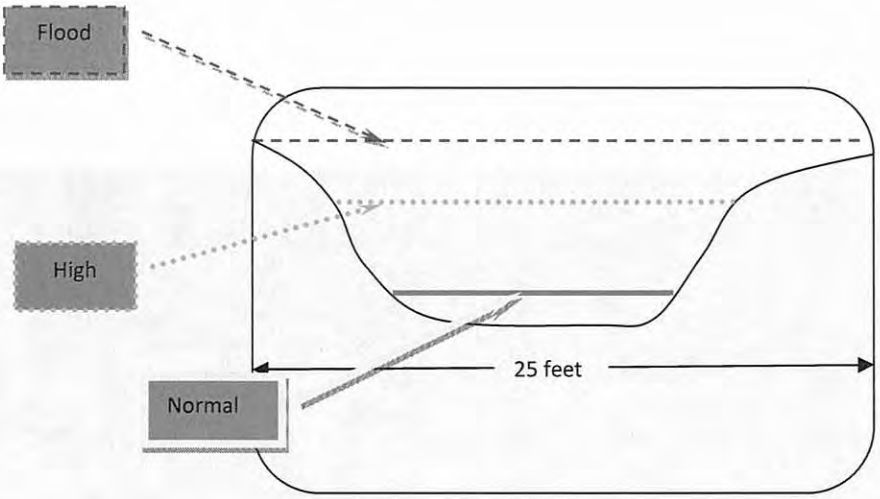
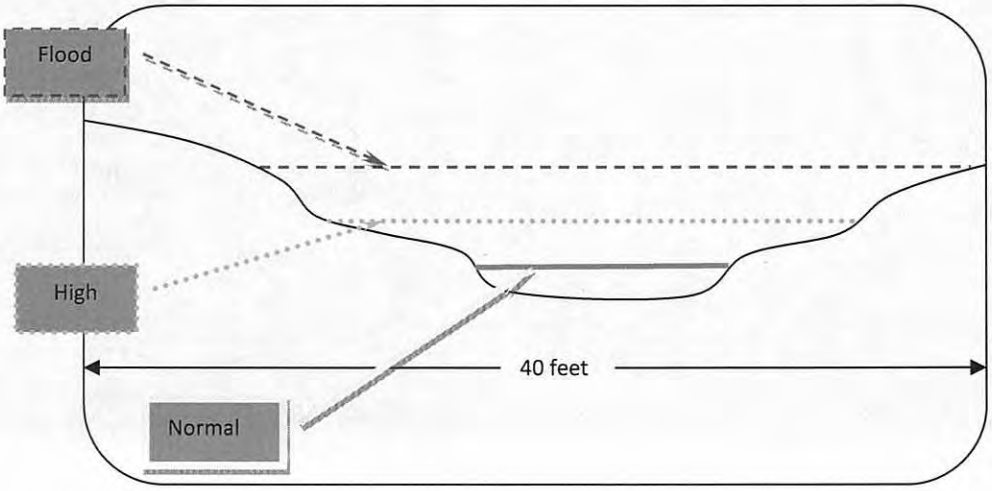


Figure 5: Oblique Google Earth image showing approximate alignment of stream restoration and approximate new road alignment





Figures 6 and 7 showing typical cross sections of before (fig 6) and after (fig 7) restoration. Prior to restoration, a give volume of water is constrained. That same volume, after restoration has more area to fill, thus reducing flows and energy at a given point. This figure compares conceptual normal, spring high and flood or extreme flows, indicating that extreme flows are more likely to exceed bank full height prior to restoration.

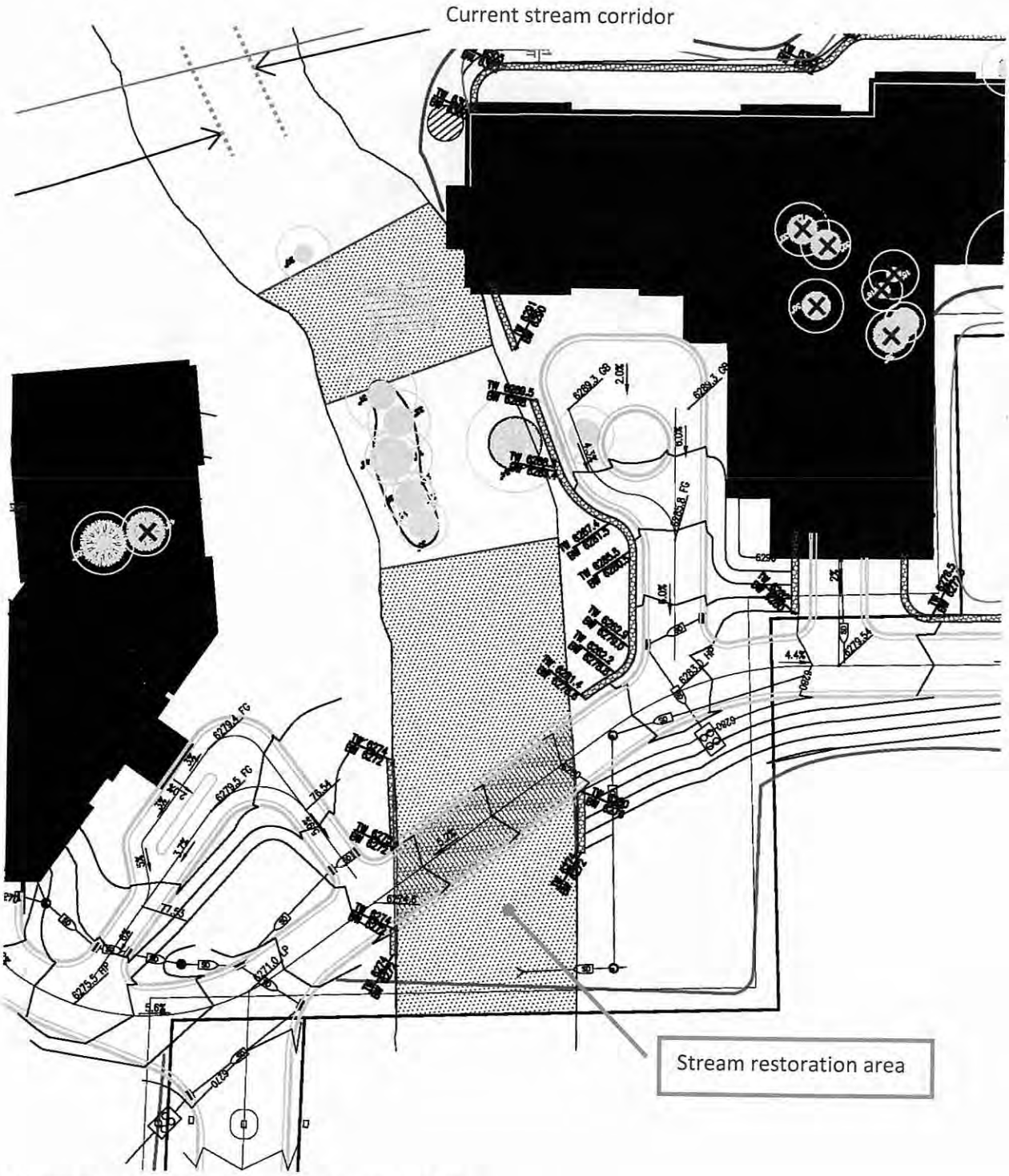


Figure 8: CAD rendering of total stream restoration area width (40')

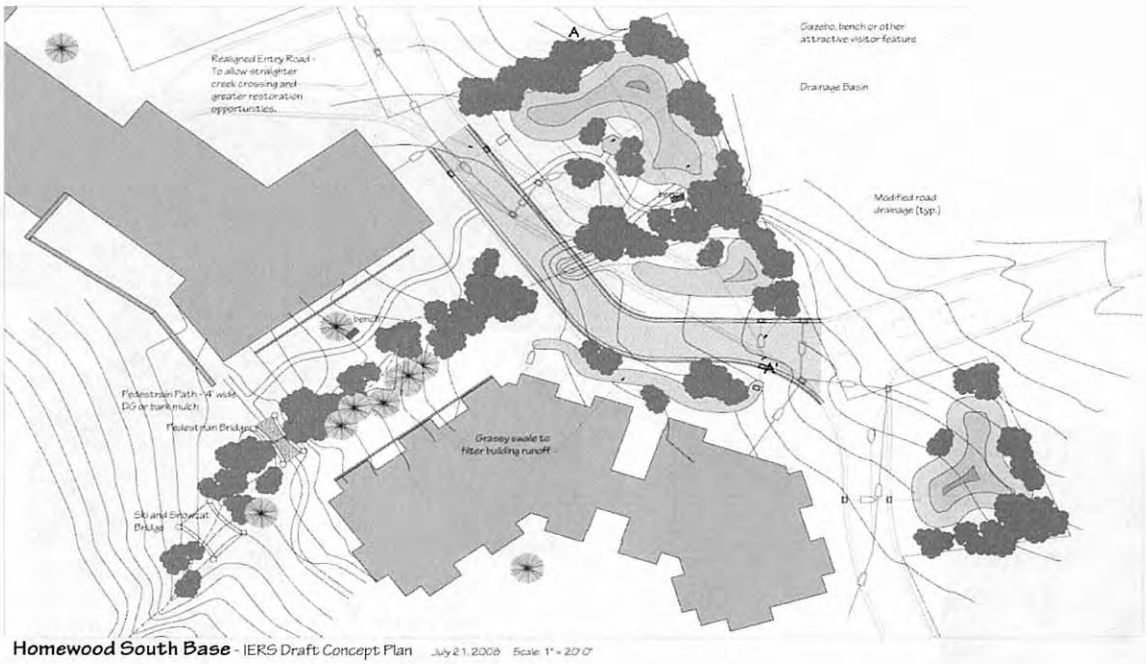


Figure 9: architect's concept plan of stream restoration showing viewing areas

TAHOE REGIONAL PLANNING AGENCY

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January 5, 2011

David Tirman
Homewood Village Resorts LLC
PO Box 3928
Truckee, Ca 96160

**RE: SOIL HYDROLOGIC APPROVAL
HOMEWOOD MOUNTAIN RESORT – EIS/EIR MASTER PLAN ALTERNATIVE 1, PLACER COUNTY, APNs: 097-060-024, 097-050-072 and 075,TRPA FILE NUMBERS: LCAP2010-0029, 0063 an 0064.**

Dear Mr. Tirman:

This soil hydrologic review is associated with the EIR/EIS review of the Homewood Mountain Resorts Ski Area Master Plan. While there are several alternatives being reviewed as part of the EIR/EIS, this soil hydrologic review is specific to Alternative 1 (Homewood Mountain Resort (HMR) Ski Area Master Plan) only. This review and approval is based on site plans submitted by Nichols Engineering ("exhibits 1-4") dated 12/15/10 and TRPA date stamped plans of 12/17/10 (attached). This approval is based on the information contained in these site plans, and on the assumption that all representations are accurate and true. It is also acknowledged that while these drawings are comprehensive in terms of information provided, these plans are not at 100% design ready and, therefore, may change at the time of a project application. Additional soil hydrologic review (and applications) may be required at the time of project application when the site plans are at 100% design ready.

Foundation / Footing Approval

With the exception of subterranean garages (to be addressed below), all excavations related to foundations and footings as presented on the site plans are conceptually approved. This approval is based on the representations in both the submitted site plans and the December 1, 2010 Kleinfelder memo (attached) which indicate that the bottom of all footings are at least 2 feet above the estimated seasonal high groundwater (SHGW) level. It appears that there are several locations identified on submitted cross sections that indicate that non-garage areas could possibly intercept SHGW. Per the applicant's consultants, this is due to the large scale of the presented cross sections and that no actual ground water interception will occur. This approval is based on the representation that there is a minimum separation of 2 feet from the bottom of all footings to the SHGW.

As the project plans presented for this soils hydrologic review are not at 100% design ready, new plans and cross sections are required for additional TRPA Land Capability Staff review and approval at the time of a project submittal. The cross sections shall be of an appropriate scale (1:10 or 1:20) in order to definitively show that there is no SHGW interception. Please note that this may require new soil hydrologic scoping applications and fees. If there are any changes to the proposed project (e.g. location of

development, depth, etc.) this may also precipitate the requirement for new soil hydrologic scoping applications and fees.

Proposed TRPA Chapter 64 Code Amendment – Interception of Groundwater for Subterranean Parking

As part of this project alternative, the applicant is proposing to amend TRPA Code Subsection 64.7.A(2)(i) to allow for the consideration of groundwater interception for below-grade parking in Ski Area as follows:

(i) It is necessary to provide below grade parking for projects qualifying for additional height under Subsection 22.4.D <u>or 22.4.G</u>, to achieve environmental goals including scenic improvements, land coverage reduction, and area-wide drainage systems; and measures are included in the project to prevent groundwater from leaving the Project area as surface flow and that groundwater, if any is interfered with, is rerouted into the groundwater flow to avoid adverse impacts to hydrologic conditions, SEZ vegetation, and mature trees.

If this language is approved and adopted by the TRPA Governing Board, this soil hydrologic review approves the interception of SHGW as it relates to subterranean garages (as shown on the site plans). Please note that all groundwater intercepted must be exfiltrated and reinfiltrated on site. This reinfiltration is currently addressed via the "GW Reinjection Galleries" indicated on the site plans.

Best Management Practices (BMPs)

<u>Stormwater Infiltration Vaults</u>

This soil hydrologic review does not give approval for the BMP design, but rather, evaluates the location and depths of BMPs as currently presented on the site plans. As the project is not at 100% design, it is understood that the design for BMPs may be modified and could potentially require an additional soil hydrologic review at the time of the project application. It is recognized that the project area has site specific constraints related to the depth of excavations in relationship to groundwater, interception of groundwater by subterranean garages and significant amounts of stormwater and surface water that need to be treated and infiltrated as part of the proposed development. As such, the TRPA Stormwater Management Program staff have indicated that they would like the bottom of all stormwater infiltrating features to be at least 2 feet above SHGW, which will aid in achieving 'above and beyond' mitigation measures required for this project as a participant in the Community Enhancement Program. These guidelines have been met under the current proposed design in all areas except "North-1". For this area, or any storm water infiltrating areas that may have less than2 feet of separation to SHGW, the stormwater being infiltrated must meet TRPA Code of Ordinances Chapter 81 in regard to surface water discharge standards and/or be redesigned to provide the required 2 feet separation. Please note, that the final BMP plan to be submitted as part of the project application will be reviewed, and approved, by TRPA Stormwater Management Program staff.

<u>Bioretention Areas</u>

This soil hydrologic review gives conceptual approval for the depth (18 inches) and location of bioretention areas as presented on the site plans. This approval is based on the concept that bioretention areas are located over open and infiltrating matrixes, but does not apply to bioretention over closed impermeable pretreatment vaults.

Dewatering
As groundwater is anticipated to be intercepted during project construction, a dewatering plan must be submitted and approved as part of the actual project approval.

Please note that it is possible that variations in the soil or groundwater conditions could exist at the site that are different than what has been investigated or reported. Also, changes in site conditions could occur at some time in the future due to variations in rainfall, snowfall, temperature, regional water usage, or other factors. These variations and/or changes could cause the groundwater level to be higher than interpreted. ***Because of this, the applicant is required to notify the TRPA immediately if significantly different subsurface conditions are encountered than what has been interpreted from the investigation.***

Also please be aware that this approval is only for excavations depths as referenced (and conditioned) above, and does not represent approval for the project.

The TRPA has the following recommendations for the project:

1. Temporary Best Management Practices (BMPs) are to be installed and maintained prior to excavation and during all phases of the proposed project

2. All excavated materials shall be hauled away from the site to a legally acceptable location. No fills or re-contouring, other than backfill for the cut-retaining structures, shall be allowed.

3. Blasting of rocks should be kept to an absolute minimum to avoid damage to surrounding rocks and vegetation.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this soils/hydrological approval may be appealed within twenty-one (21) days from the time TRPA releases any final decision. Thank you for your cooperation. Should you have any questions about these matters, please contact this me at 775-589-5313.

Sincerely,

Heather Beckman
Senior Planner – IPES & Land Capability Program Manager
Planning Branch

Attachments 1 – 4: Site Plans with TRPA signature for approval as it relates to excavations only
Attachment 5: Kleinfelder December 1, 2010 memo

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December 1, 2010
File: 98510.01

Ms. Heather Beckman
Tahoe Regional Planning Agency
P. O. Box 5310
Stateline, NV 89449

SUBJECT: Submittal of Revised Soils/Hydrologic Exhibits
Homewood Mountain Resort
5145 West Lake Boulevard
Homewood, California 96141

References: Second Revised Soils/Hydrologic Scoping and Final Report, Homewood Mountain Resort, 5145 West Lake Boulevard, Homewood, California 96141, by Kleinfelder, dated October 7, 2010.

Revised Soils/Hydrologic Scoping and Final Report, Homewood Mountain Resort, 5145 West Lake Boulevard, Homewood, California 96141, by Kleinfelder, dated April 1, 2010.

Soils/Hydrologic Scoping and Final Report, Homewood Mountain Resort, Homewood, California, by Kleinfelder, Inc., dated February 18, 2010.

Updated Groundwater Evaluation Report, Homewood Mountain Resort, Homewood, California, by Kleinfelder, Inc., dated July 14, 2008.

Groundwater Evaluation Report, Homewood Mountain Resort, Homewood, California, by Kleinfelder, Inc., dated October 31, 2007.

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Kleinfelder West, Inc. has prepared this submittal to accompany the Revised Soils/Hydrologic Exhibits for the North Base (Sheets 1 and 2) and South Base (Sheet 3) prepared by Nichols Consulting Engineers (NCE), Chtd., dated December 1, 2010, for the Homewood Ski Area Master Plan.

Plan views of the North Base and South Base areas (Sheets 1 and 3, respectively) contain the proposed structures, proposed drainage system for groundwater and stormwater, the proposed groundwater and stormwater infiltration galleries, and the estimated radius of influence of groundwater and stormwater infiltration. Cross Sections of the North Base and South Base areas are presented on Sheets 1, 2, & 3 respectively. These sections reference the finished floor (FF) elevations for all structures. The base of foundations are assumed to be two feet lower than the FF elevations.

These exhibits indicate that the parking garages at the North and South Base areas are projected to intercept the seasonal high groundwater surface. All other structures including foundations, pools, and elevator shafts are projected to be above the seasonal high groundwater.

Groundwater infiltration and stormwater infiltration are estimated to raise the groundwater level 0.8 feet and 0.7 feet, respectively, under the groundwater and stormwater infiltration galleries with a radius of influence of 20 to 45 feet. All structures with the exception of the parking garages, including foundations, pools, and elevator shafts, are projected to be above the groundwater level within the sphere of influence of infiltration galleries.

Bioretention areas were not utilized in primary stormwater infiltration gallery design. Any stormwater applied to bioretention areas will reduce the flow rate into the infiltration galleries. Therefore, the amount of groundwater rise under the stormwater galleries should not exceed the design condition of 0.7 feet.

Groundwater

Table 1 presents the seasonal high groundwater levels used to estimate the groundwater contours on Sheets 1 and 3. As shown in Sheet 1, groundwater flows across the North Base area to the north, northeast, and east towards Lake Tahoe. As shown in Sheet 3, groundwater flows across the South Base area to the east towards Lake Tahoe.

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Estimated groundwater flow rates intercepted by proposed retaining walls at the North Base area range from 15 to 37 gallons per minute (gpm) and at the South Base area range from 4 to 11 gpm as shown in Table 2. The estimated groundwater flow rates were calculated using the length and depth of wall, depth of groundwater interception, and groundwater gradient derived from Sheets 1 and 3. Two hydraulic conductivity values were used to estimate the range of flows, 1×10^{-3} centimeters per second (cm/sec) and 4×10^{-4} cm/sec. These values are typical for silty sand and silty sand with gravel materials that were logged in test pits and borings in the areas of the retaining walls.

Groundwater will be routed around the retaining walls to underground infiltration galleries at the North Base (North-5 and North-6) and South Base (South-3 and South-4). Infiltration galleries have been designed using an infiltration rate of 4 inches per hour and the maximum groundwater flow rates of 37 gpm for the North Base and 11 gpm for the South Base.

An analytical groundwater flow model was used to estimate the height and radius of the rise in groundwater levels created by groundwater infiltration. Hydraulic conductivity and thickness of the alluvial aquifer underlying the underground infiltration galleries was derived using results of a 7-day aquifer test of Homewood Well #2, located in the gravel parking lot. The thickness of the aquifer was 200 feet and the hydraulic conductivity was 16.7 feet per day yielding a transmissivity of 3,340 feet^2/day.

Our estimate is based on applying groundwater at the rate of 4 inches per hour per square foot of infiltration gallery derived from the Tahoe Regional Planning Agency (TRPA) spreadsheet. Assuming a 30 day rate of application, a rise in groundwater levels of approximately 0.8 feet was estimated under the galleries. The radius of influence of a 0.5 foot-rise in groundwater levels was estimated to be approximately 45 feet.

This radius is shown at the edges of infiltration galleries North-5, North-6, South-3, and South-4 in Sheets 1 and 3.

Calculations of infiltration gallery volume, elevations, seasonal high groundwater elevations, feet of groundwater clearance, and gallery dimensions are also listed in Sheets 1 and 3. The bottom of the groundwater infiltration galleries have a minimum of 0.1 feet of groundwater clearance.

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Stormwater

Stormwater flow rates have been calculated by NCE as shown in Table 3. Calculations of infiltration gallery volume, elevations, seasonal high groundwater elevations, feet of groundwater clearance, and gallery dimensions are also listed in Sheets 1 and 3. The bottom of the stormwater infiltration galleries have a minimum of 1.5 feet of groundwater clearance.

Stormwater was applied at the rate of 4 inches per hour per square foot of infiltration gallery derived from the TRPA spreadsheet.. Assuming a 7 day rate of application, a rise in groundwater levels of approximately 0.7 feet was estimated under the galleries. The radius of influence of a 0.5 foot-rise in groundwater levels was calculated at approximately 20 feet.

This radius is shown at the edges of infiltration galleries North-1, North-2, North-3, North-4, South-1, and South-2 on Sheets 1 and 3.

Limitations

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions, and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee, or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

This letter may be used only by the Client and the registered design professional in responsible charge and only for the purposes stated for this specific engagement within a reasonable time from its issuance, but in no event later than two (2) years from the date of the letter.

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Should you have any questions regarding this submittal, please contact David Herzog at 775-689-7800.

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Sincerely,

KLEINFELDER WEST, INC.

REGISTERED CERTIFIED ENGINEERING GEOLOGIST
DAVID J. HERZOG
No. 1295
Exp. 3/31/12
STATE OF CALIFORNIA

David J. Herzog, RG, CEG
Senior Engineering Geologist

Joshua P. Fortmann
Science and Engineering Manager

cc: David Tirman, Homewood Mountain Resort

TABLES

Table 1 Seasonal High Groundwater Levels (Kleinfelder)
Table 2 Retaining Wall Data (Kleinfelder)
Table 3 Stormwater Calculations (NCE)

SHEETS

1 North Base, TRPA Soils-Hydro Exhibit – Plan View & Sections (NCE)
2 North Base, TRPA Soils-Hydro Exhibit – Sections (NCE)
3 South Base, TRPA Soils-Hydro Exhibit – Plan View & Sections (NCE)

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TABLES

Table 1
Seasonal or Measured High Groundwater Levels
Homewood Mountain Resort
Homewood, California

Well ID	Survey Elevation (feet msl)	Measured High Groundwater Depth[1] (feet bgs)	Date of Occurrence[2]	Seasonal High Groundwater Depth[3] (feet bgs)	Seasonal High or Measured High Groundwater Elevation[4] (feet msl)
GP-1	6237.02	7.72	5/3/07	5.00	6232.02
GP-2	6236.20	NA		5.50	6230.70
GP-3	NM	NA		4.50	NM
GP-4	6237.85	NA		11.00	6226.85*
GP-5	6237.26	NA		6.50	6230.76
GP-6	6236.72	7.22	4/27/07	8.41	6229.50
GP-7	6238.00	9.00	4/13/07	8.00	6230.00
GP-8	6237.88	8.37	5/3/07	4.30	6233.58
GP-9	6236.14	NA		2.75	6233.39
GP-10	6236.86	NA		> 2.0	<6234.86
GP-11	6236.74	5.18	5/3/07	1.17	6235.57
GP-12	6238.18	4.61	4/29/08	3.50	6234.68
GP-13	6238.21	1.99	5/3/07	2.00	6236.22
GP-14	6238.49	0.89	5/3/07	2.00	6237.60
GP-15	6253.48	17.42	4/28/08	NA	6236.06
GP-16	NM	NA		> 3.0	NM
GP-17	6241.52	11.92	4/11/07	NA	6229.60*
GP-18	6243.01	NA		>8.0	<6235.01
GP-19	6287.72	>18.30		NA	<6270.07
GP-20	6285.40	17.78	4/18/08	NA	6267.62
GP-21	6312.65	NA		> 3.0	<6309.65
GP-25	6302.18	10.90	5/1/08	NA	6291.28
GP-26	6301.56	10.84	5/5/08	NA	6290.72
GP-27	6328.66	17.67	1/4/08	NA	6310.99
GP-29	6342.53	>19.82		NA	<6322.71
GP-31	6309.96	9.18	5/5/08	NA	6300.78
GP-32	6294.56	13.39	5/12/08	NA	6281.17
GP-33	6274.39	>11.50		>7.5	<6262.89
GP-34	NM	NA		> 2.0	NM
GP-35	6272.79	NA		> 8.0	<6264.79
GP-36	6264.18	1.75	5/12/08	13.58	6262.43
GP-37	6297.37	11.75	4/29/08	NA	6285.62
GP-39	6300.64	0.97	4/14/08	NA	6299.67
GP-41	6302.24	3.17	4/28/08	NA	6299.07
GP-43	6298.44	6.83	1/4/08	NA	6291.61
GP-45	6279.93	>18.95		NA	<6260.98
GP-46	6272.93	NA		> 10.0	<6262.93
GP-47	NM	NA		>12.0	NM
GP-48	NM	NA		>2.0	NM
GP-51[5]	6276.61	>19.00		4.00	6257.61[(6)]
GP-52[5]	6285.48	>18.90		5.00	6266.58[(6)]
GP-55[5]	6285.56	19.50	1/4/08	5.00	6266.06[(6)]
GP-56	6313.76	8.09	5/12/08	NA	6305.67
GP-58	NM	NA		> 10.5	NM
MW-1 N	NM	NA	6/26/00	4.56	NM
MW-2-N	6235.19	5.44	6/7/99	4.65	6230.54
MW-3 N	6235.81	6.53	6/7/99	5.11	6230.70
MW-4 N	NM	NA	6/7/99	5.79	NM
MW-1 S	NM	NA	6/3/98	17.65	NM
MW-2 S	NM	NA	6/3/98	15.72	NM
MW-3 S	NM	NA	6/3/98	16.38	NM
MW-4 S	NM	NA	6/7/99	16.15	NM
MW-5 S	NM	NA	6/3/98	15.63	NM

1- Measured Spring 2007 and Spring 2008
2- Date of measured high groundwater depth measurement
3- Based on soil core samples from Geoprobe borings
4- Based on highest elevation from either measured groundwater or soil core samples
5- Soil oxidation at depths of 4 to 5 feet is inconsistent with measured groundwater levels greater than 19 feet
6- Measured high groundwater depth from 2007/2008 monitoring used
*- Elevation considered unreliable and not used for groundwater contours
NA = Not available
NM = Not measured
msl = above mean sea level
bgs = below ground surface

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Table 2
Retaining Wall Data
Homewood Mountain Resort
Homewood, California

Location	Finished Floor Elevation	Length of Wall	Depth of Wall	Groundwater Interception	Groundwater Gradient	Flow Rate-k=0.0004 cm/sec	Flow Rate-k=0.001 cm/sec
	feet msl	feet	feet	feet	ft/ft	gpm	gpm
North Base							
Parking Garage (Sections 1 through 4)	6,240	878	29 to 32	17	0.17	15	37
North Base Total						**15**	**37**
South Base							
North Building Parking (Section 5)	6,280	376	19	13	0.12	3	9
South Building Parking (Section 6)	6,270	100	19	4	0.2	0.5	1
South Building Parking-Section 7	6,270	110	21	4	0.2	1	1
South Base Total						4	11
Mid-Mountain							
Section 8 Walls	7,285		14				
	7,323		8				
	7,327		11.5				
Section 10 Cuts for Tanks	7,480		20.5				

Note: North Base Sections refer to Cross Sections 1 through 4 on Sheet 1 (Nichols Consulting Engineers, Chtd. 12/1/10)
Note: South Base Sections refer to Cross Sections 5 through 7 on Sheet 3 (Nichols Consulting Engineers, Chtd. 12/1/10)
k= hydraulic conductivity
msl = above mean sea level
ft/ft = feet per foot
gpm = gallons per minute
cm/sec = centimeters per second

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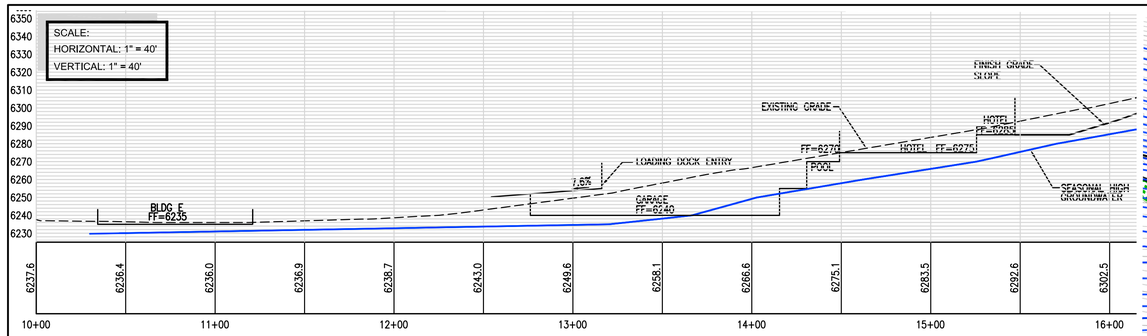
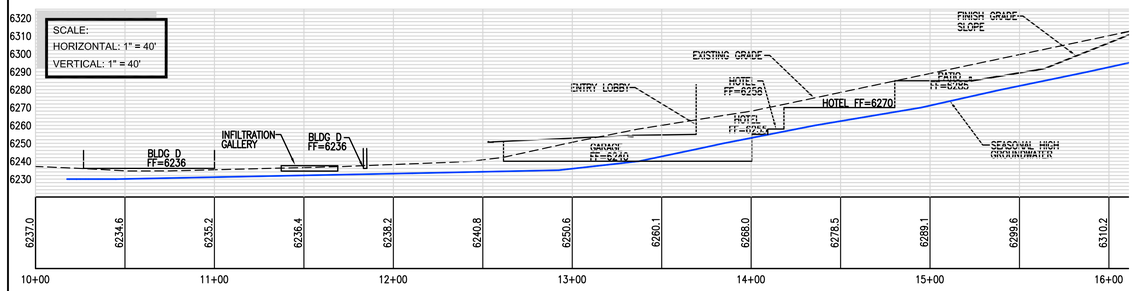
SHEETS 1 THROUGH 3
NICHOLS CIVIL ENGINEERS, CHTD.



NORTH BASE CROSS SECTION 1



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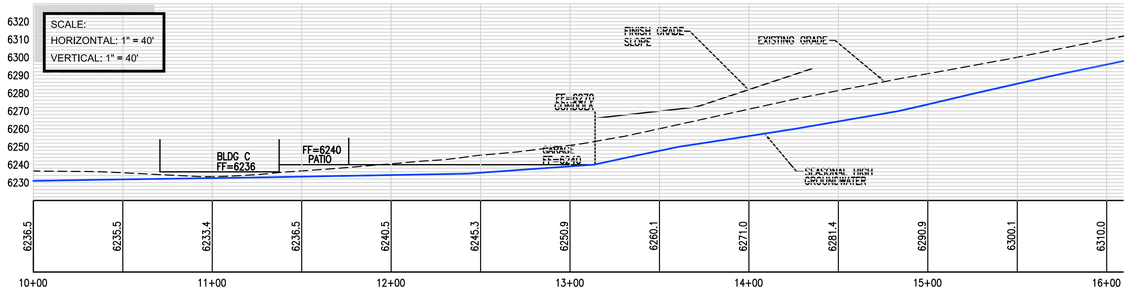

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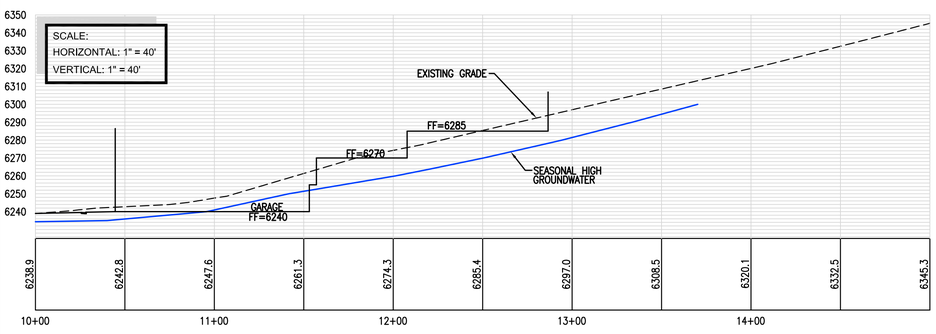

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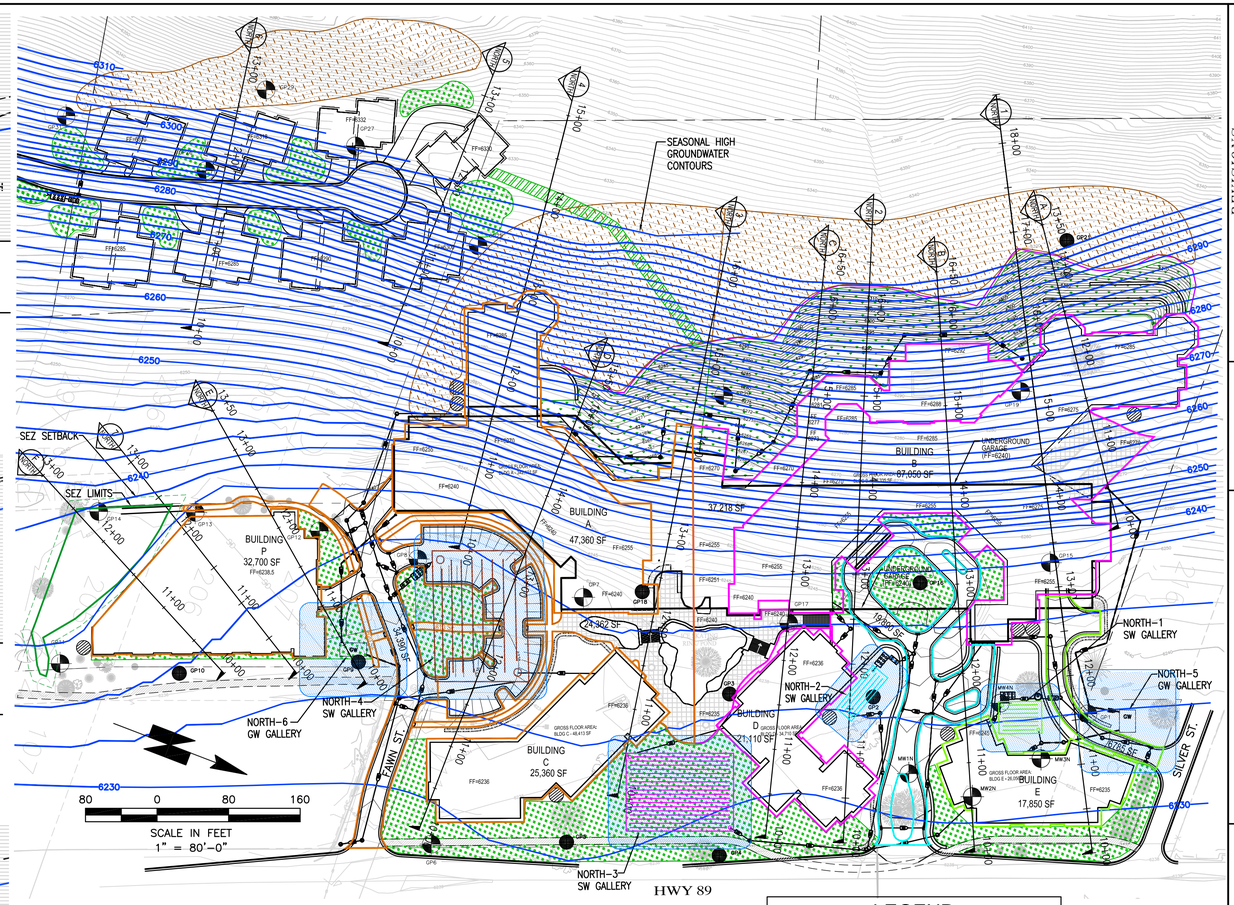
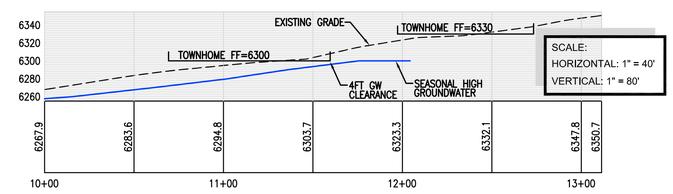
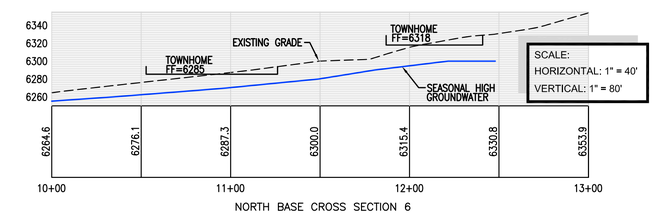
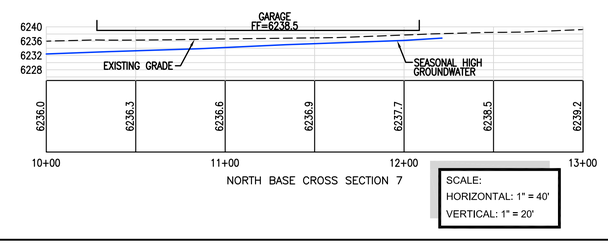




NORTH BASE CROSS SECTION 5



NORTH BASE CROSS SECTION 6



NORTH BASE CROSS SECTION 7

LEGEND

- PARCEL BOUNDARY
- STORM DRAIN PIPE
- GROUNDWATER DRAIN PIPE
- MW1S MONITORING WELL LOCATION
- GP47 BORING LOCATION
- 6270 GROUNDWATER CONTOUR (PER KLEINFELDER)
- STORM DRAIN MANHOLE
- STORM DRAIN DROP INLET
- STORMWATER TREATMENT VAULTS
- STORMWATER UNDERGROUND INFILTRATION GALLERY
- GW SEASONAL HIGH GROUND WATER UG COLLECTION GALLERY
- CISTERN
- TYPE A REVEGETATION DEPTH=12"
- TYPE B REVEGETATION DEPTH=12"
- TYPE H REVEGETATION ACCESS ROAD RESTORATION
- BIORETENTION INFILTRATION & TREATMENT AREA, DEPTH=18"
- UNDERGROUND GALLERY SPHERE OF INFLUENCE

PRELIMINARY
FOR REVIEW
NOT FOR CONSTRUCTION
DATE: 12-01-10

REVISIONS

No.	Date

DESIGNED: CKC
DRAWN: CKC
CHECKED:
JOB No: 4514.02.14
SCALE: NTS
DATE: 12/01/2010

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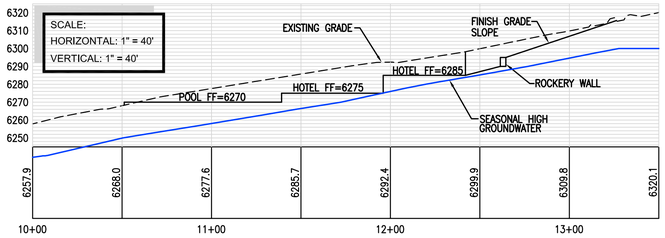
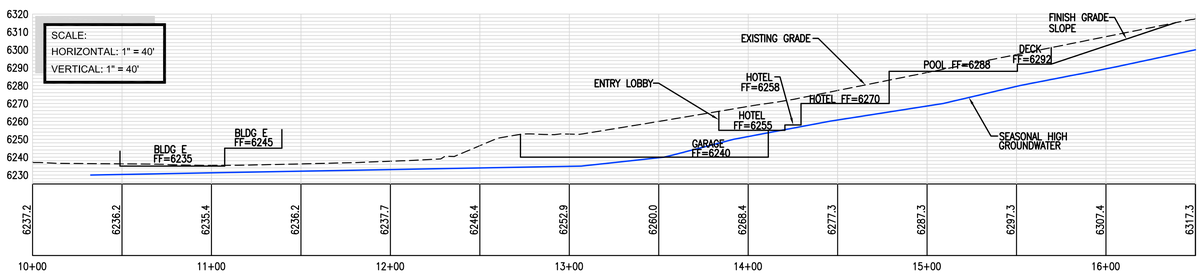
TRUCKEE, CALIFORNIA 96160

NORTH BASE
TRPA SOILS-HYDRO EXHIBIT
PLAN VIEW AND SECTIONS (1-7)

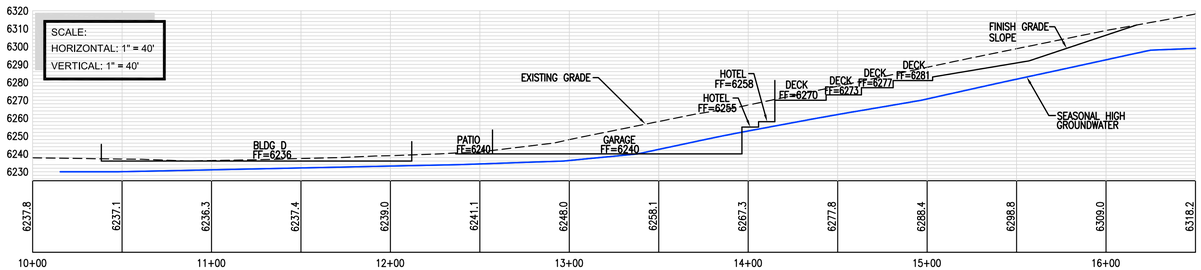
SHEET
1



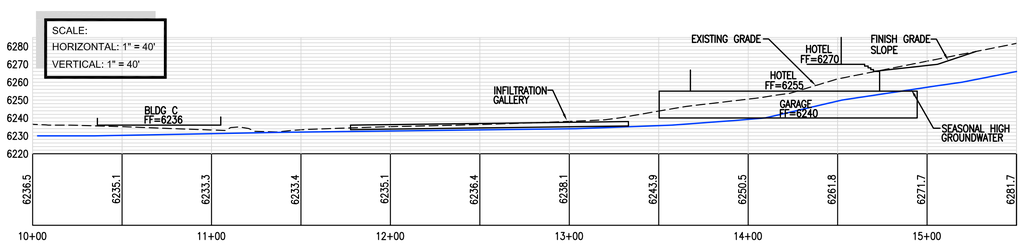
NORTH BASE CROSS SECTION A



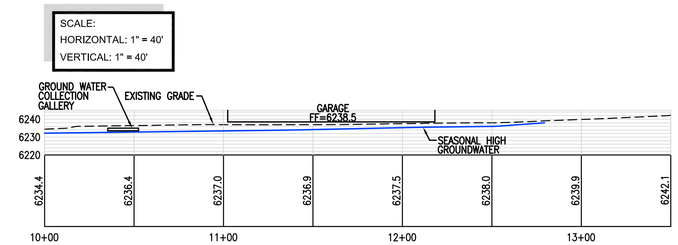
NORTH BASE CROSS SECTION B



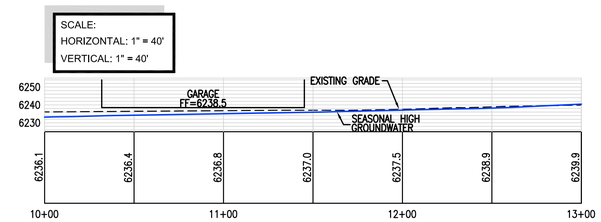
NORTH BASE CROSS SECTION C



NORTH BASE CROSS SECTION D



NORTH BASE CROSS SECTION E



NORTH BASE CROSS SECTION F

PRELIMINARY
FOR REVIEW
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CONSTRUCTION
DATE: 12-01-10

REVISIONS

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DESIGNED: CKC
DRAWN: CKC
CHECKED:
JOB No: 4514.02.14
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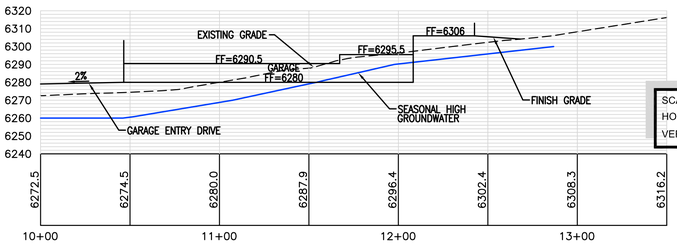
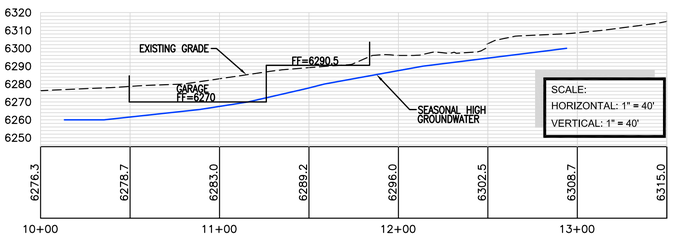
NORTH BASE
TRPA SOILS-HYDRO EXHIBIT
SECTIONS (A-F)

SHEET
2



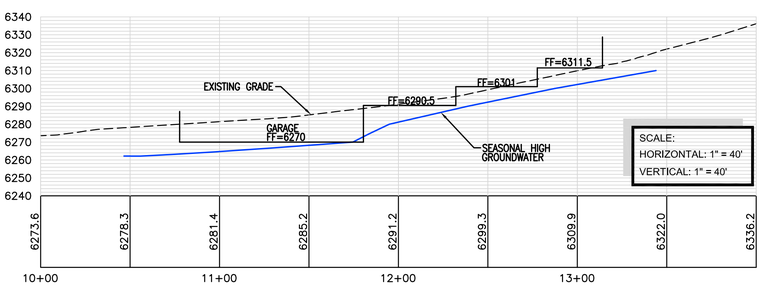
SCALE:
HORIZONTAL: 1" = 40'
VERTICAL: 1" = 40'

SOUTH BASE CROSS SECTION 5



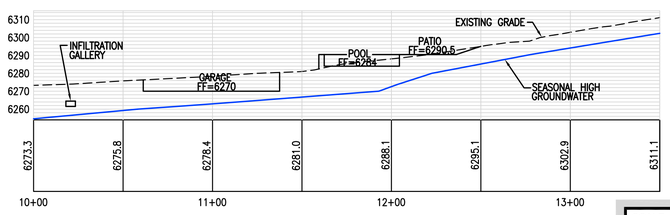
SCALE:
HORIZONTAL: 1" = 40'
VERTICAL: 1" = 40'

SOUTH BASE CROSS SECTION 6



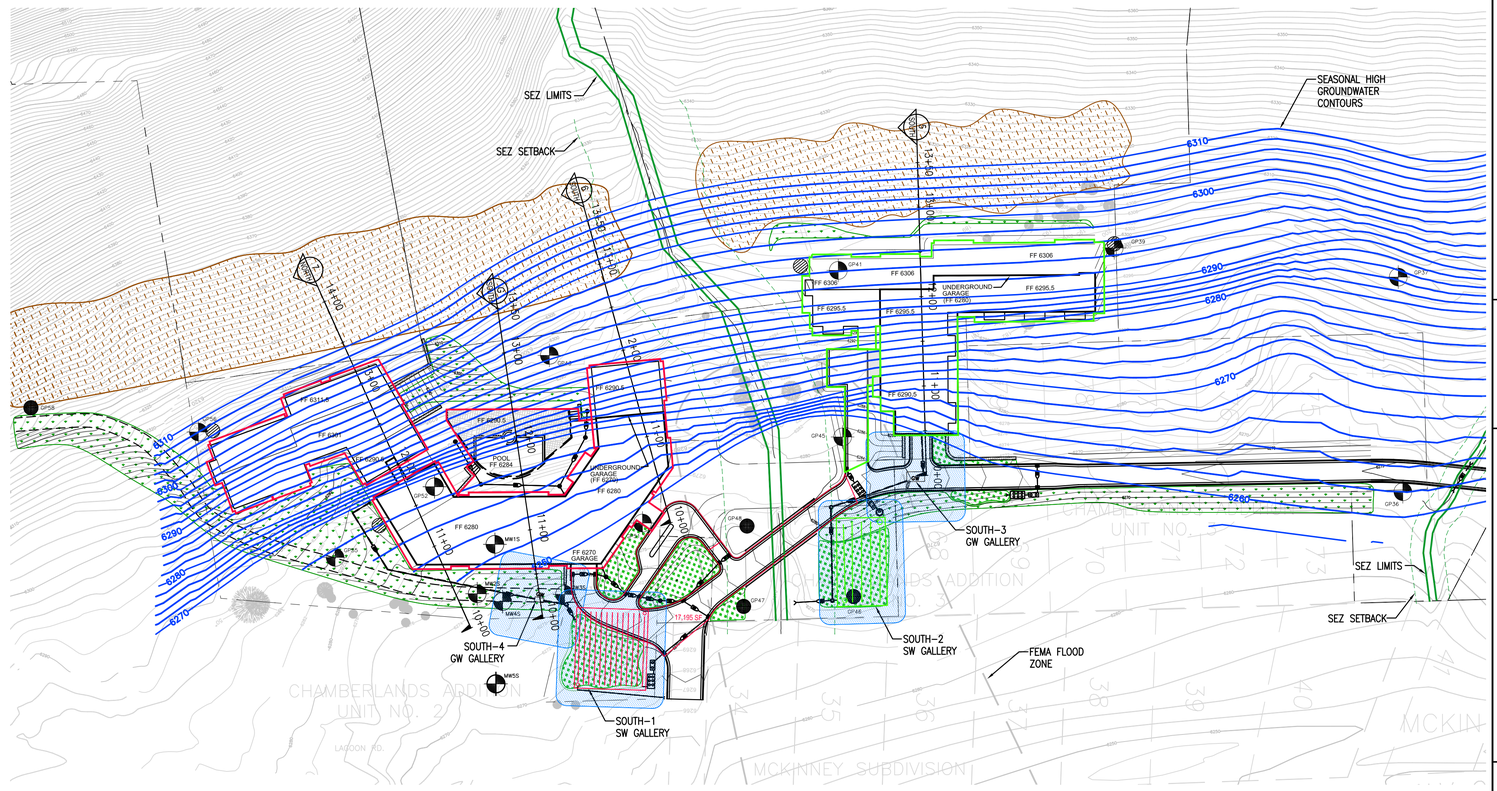
SCALE:
HORIZONTAL: 1" = 40'
VERTICAL: 1" = 40'

SOUTH BASE CROSS SECTION 7



SCALE:
HORIZONTAL: 1" = 40'
VERTICAL: 1" = 40'

SOUTH BASE CROSS SECTION G



	Underground Infiltration Galleries									
	North-1	North-2	North-3	North-4	North- 5	North- 6	South-1	South-2	South-3	South-4
Type	SW	SW	SW	SW	GW Intercept.	GW Intercept.	SW	SW	GW Intercept.	GW Intercept.
Total Impervious Area (sf)	24,635	19,890	145,378	174,587	-	-	89,307	44,527	-	-
Gallery volume (cf)	2,681	2,167	15,904	23,441	900	900	9,650	8,040	660	150
Finish Grade (ft)	6237	6237.5	6239	6240	6236	6236	6272	6272	6280	6276
Bottom Elev. of Gallery (ft)	6232.5	6233	6234.5	6235.5	6232.5	6233.5	6268	6267.5	6271.5	6261.5
SHGW (ft)	6231	6231	6232.5	6233.5	6232	6233.39	6256.5	6262.93	6260.98	6256.5
GW Clearance (ft)	1.5	2	2	2	0.5	0.11	11.5	4.5	10.5	5
Adjacent GW Monitoring Well Data (well#, SHGW)	MW3N, 6230.7	GP2, 6230.7	GP5, 6230.76	GP8, 6233.58	GP-1	GP-9	MW3S, 6256.5	GP46	GP-45	MW3S
Infil. Gallery Dimensions (ft)	48x36x3	63x22x3	120x86x3	145x105x3	25X18	30X15	90x80x2.5	100x52x3	20x11x3	10x5x3

Legend:
SW= stormwater
GW= groundwater
MW= monitoring well
GP= monitoring well

PRELIMINARY
FOR REVIEW
NOT FOR
CONSTRUCTION
DATE: 12-01-10

LEGEND

- PARCEL BOUNDARY
- STORM DRAIN PIPE
- GROUNDWATER DRAIN PIPE
- MW1S — MONITORING WELL LOCATION
- GP47 — BORING LOCATION
- 6270 — GROUNDWATER CONTOUR (PER KLEINFELDER)
- STORM DRAIN MANHOLE
- STORM DRAIN DROP INLET
- STORMWATER TREATMENT VAULTS
- STORMWATER UNDERGROUND INFILTRATION GALLERY
- GW — SEASONAL HIGH GROUND WATER UG COLLECTION GALLERY
- CISTERN
- TYPE A REVEGETATION DEPTH=12"
- TYPE B REVEGETATION DEPTH=12"
- TYPE H REVEGETATION ACCESS ROAD RESTORATION
- BIORETENTION INFILTRATION & TREATMENT AREA, DEPTH=18"
- UNDERGROUND GALLERY SPHERE OF INFLUENCE

80 0 80 160
SCALE IN FEET
1" = 80'-0"

REVISIONS

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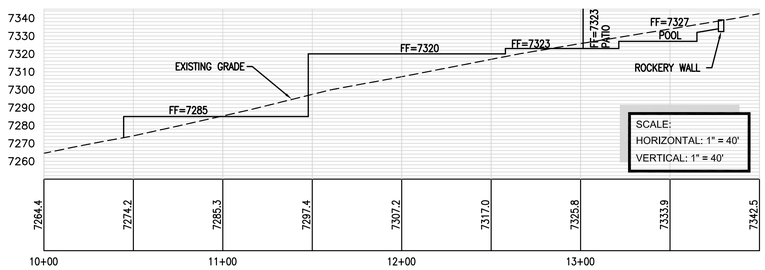
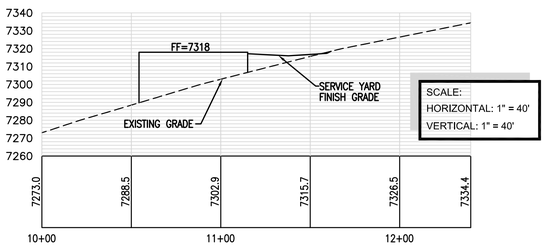
SOUTH BASE
TRPA SOILS-HYDRO EXHIBIT
PLAN VIEW AND SECTIONS (5-7 & G)

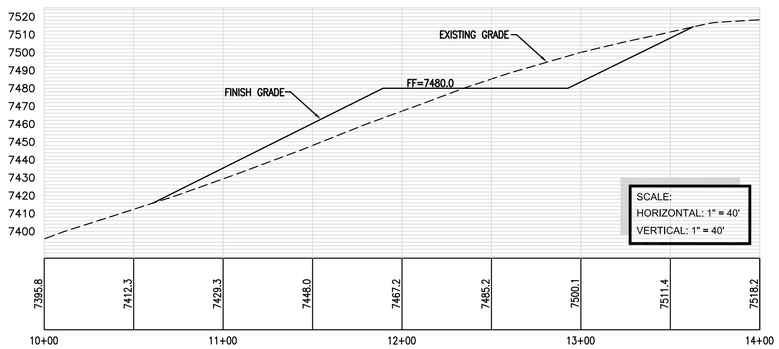
SHEET
3



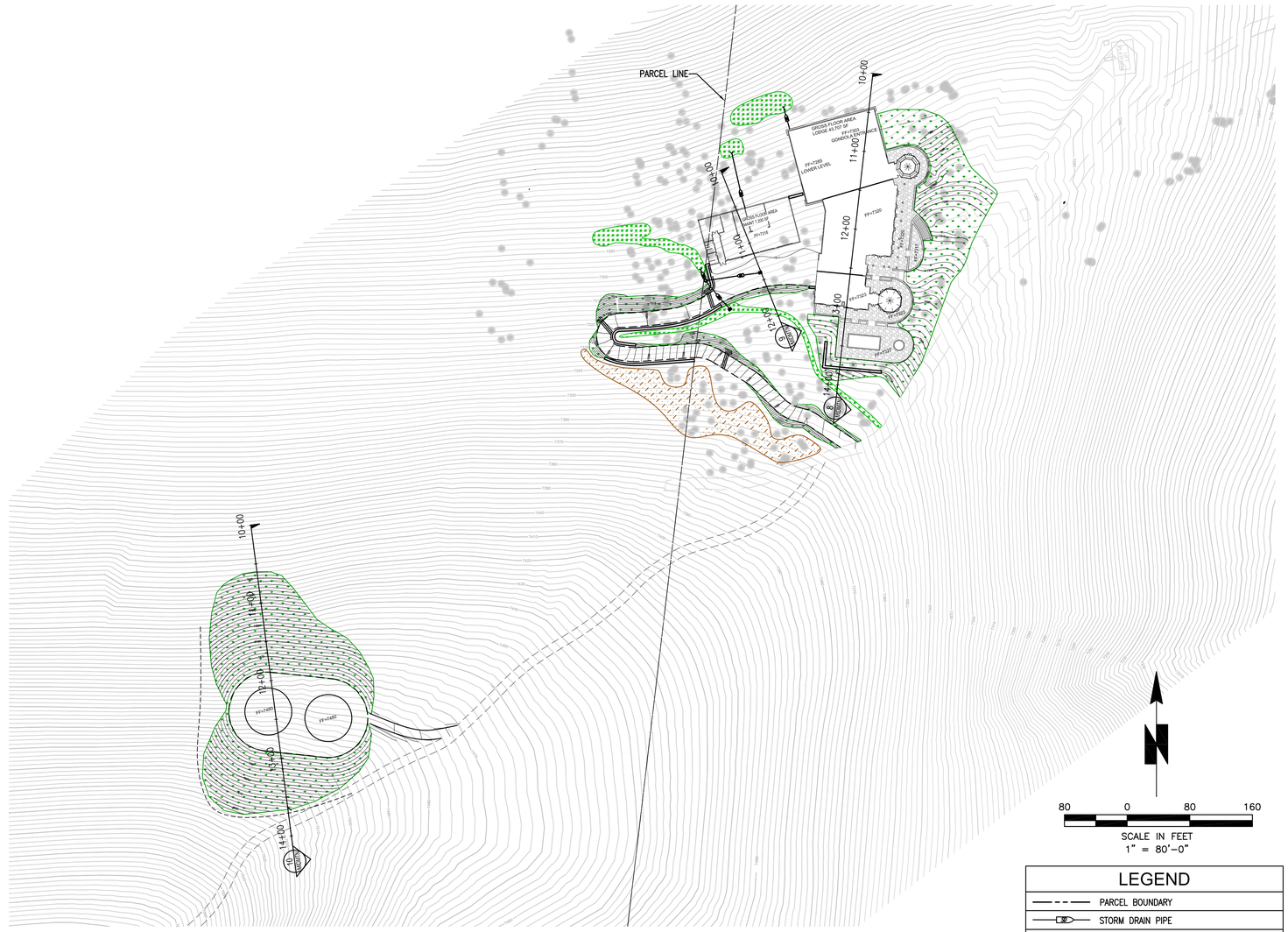
MID MOUNTAIN CROSS SECTION 8



MID MOUNTAIN CROSS SECTION 9



MID MOUNTAIN TANK CROSS SECTION 10



LEGEND

	PARCEL BOUNDARY
	STORM DRAIN PIPE
	GROUNDWATER DRAIN PIPE
MW15	MONITORING WELL LOCATION
DP47	BORING LOCATION
6270	GROUNDWATER CONTOUR (PER KLEINFELDER)
	STORM DRAIN MANHOLE
	STORM DRAIN DROP INLET
	STORMWATER TREATMENT VAULTS
	STORMWATER UNDERGROUND INFILTRATION GALLERY
GW	SEASONAL HIGH GROUND WATER UG COLLECTION GALLERY
	CISTERN
	TYPE A REVEGETATION DEPTH=12"
	TYPE B REVEGETATION DEPTH=12"
	TYPE H REVEGETATION ACCESS ROAD RESTORATION
	BIORETENTION INFILTRATION & TREATMENT AREA, DEPTH=18"

PRELIMINARY
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NOT FOR
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DATE: 12-01-10

NOTE:
GROUNDWATER NOT OBSERVED DURING GEOTECHNICAL EXPLORATION OF MID-MOUNTAIN AREA. (REFERENCE "GEOTECHNICAL ENGINEERING REPORT FOR MID-MOUNTAIN LODGE, HOMEWOOD MOUNTAIN RESORT" PREPARED BY HOLDREGE & KULL, JANUARY 12, 2010).

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No.	Date	CHKD	APPD

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MID-MOUNTAIN
TRPA SOILS-HYDRO EXHIBIT

SHEET
4

Table 1
2006-2007 Groundwater Level Data
Homewood Mountain Resort

Boring ID	Well?	TD	Survey Elevation	DTW 10/17/06	ELEVATION 10/17/2006	DTW 11/6/06	ELEVATION 11/6/2006	DTW 3/14/07	ELEVATION 3/15/2007	DTW 3/20/07	ELEVATION 3/20/2007	DTW 3/28/07	ELEVATION 3/29/2007	DTW 4/4/07	ELEVATION 4/4/2007	DTW 4/13/07	ELEVATION 4/13/2007	DTW 4/19/07	ELEVATION 4/19/2007	DTW 4/27/07	ELEVATION 4/27/2007	DTW 5/3/07	ELEVATION 5/3/2007	DTW 5/10/07	ELEVATION 5/10/2007	DTW 5/16/07	ELEVATION 5/16/2007	DTW 5/28/07	ELEVATION 5/25/2007	Seasonal High GW Depth[5]	Seasonal High GW Elevation[5]	Transducer Serial No.
GP-1	Y	14.25	6237.02	8.74	6228.28	8.78	6228.24	8.52	6228.50	8.20	6228.82	8.09	6228.93	8.07	6228.95	7.96	6229.06	8.06	6228.96	8.04	6228.98	7.72	6229.30	8.08	6228.94	8.16	6228.86	8.20	6228.82	5.00	6232.02	
GP-2	N	8.00	6238.20																											5.50	6230.70	
GP-3	N	12.00	NM																											4.50	NM	
GP-4	N	12.00	6237.85																											11.00	6226.85	
GP-5	N	6.50	6237.26																											6.50	6230.76	
GP-6	Y	13.90	6236.72	8.58	6228.14	8.41	6228.31	8.25	6228.47	8.05	6228.67	7.90	6228.82	7.86	6228.86	7.77	6228.95	7.83	6228.89	7.22	6229.50	7.58	6229.14	7.76	6228.96	7.95	6228.77	8.05	6228.67	8.41	6228.31	
GP-7	Y	9.07	6238.00	NM	NM	>9.07	<6228.93	>9.07	<6228.93	>9.07	<6228.93	>9.07	<6228.93	>9.07	<6228.93	9.00	6228.00	>9.07	<6228.93	>9.07	<6228.93	>9.07	<6228.93	>9.07	<6228.93	>9.07	<6228.93	>9.07	<6228.93	8.00	6230.00	
GP-8	Y	9.30	6237.88	>9.30	< 6228.58	> 9.30	< 6228.58													8.43	6229.45	8.37	6229.51	8.58	6229.30	8.64	6229.24	8.72	6229.16	4.30	6233.58	
GP-9	N	12.00	6236.14																											2.75	6233.39	
GP-10	N	2.00	6236.88																											> 2.0	<6234.86	
GP-11	Y	8.35	6236.74	7.61	6229.13	7.65	6229.09							5.70	6231.04	5.60	6231.14	5.76	6230.98	5.35	6231.39	5.18	6231.56	5.64	6231.10	5.92	6230.82	6.27	6230.47	1.17	6235.57	
GP-12	Y	13.15	6238.18	9.67	6228.51	9.67	6228.51									5.62	6232.56	5.50	6232.68	5.68	6232.50	5.3	6232.88	6.17	6232.01	5.9	6232.28	5.95	6232.23	3.50	6234.68	
GP-13	Y	10.95	6238.21	4.13	6234.08	4.41	6233.80							2.75	6235.46	2.68	6235.53	2.63	6235.58	2.23	6235.98	1.99	6236.22	2.2	6236.01	2.38	6235.83	2.55	6235.66	2.00	6236.21	
GP-14	Y	9.55	6238.49	5.45	6233.04	5.83	6232.66									1.92	6236.57	1.92	6236.57	1.78	6236.71	0.89	6237.60	1.48	6237.01	1.71	6236.78	2.14	6236.35	2.00	6236.49	
GP-15	Y	18.75	6253.48	>18.75	<6234.73	>18.75	<6234.73									>18.75	<6234.73	>18.75	<6234.73	>18.25	>6234.98	>18.25	>6234.98	>18.25	>6234.98	>18.25	>6234.98	>18.25	>6234.98	NA	<6234.73	1059629
GP-16	N	3.00	NM																											> 3.0	NM	
GP-17[1]	Y	18.50	6241.52	12.95	6228.57	12.98	6228.54							11.92	6229.60	12.01	6229.51	12.14	6229.38	12.10	6229.42	12.01	6229.51	12.18	6229.34	12.25	6229.27			NA	NA	1059630
GP-18	N	8.00	6243.01														6243.01													>8.0	<6235.01	
GP-19	Y	18.30	6287.72	>18.30	<6269.42	>18.30	<6269.42									>18.30	<6269.42	>18.30	<6269.42	>18.30	<6269.42	>18.30	<6269.42	>18.30	<6269.42	>18.30	<6269.42	>18.30	<6269.42	NA	NA	1059633
GP-20	Y	18.21	6285.40	>18.21	<6267.19	>18.21	<6267.19									>18.21	<6267.19	>18.21	<6267.19	>18.21	<6267.19	>18.21	<6267.19	>18.21	<6267.19	>18.21	<6267.19	>18.21	<6267.19	NA	NA	1059634(baro)
GP-21	N	3.00	6312.65																											> 3.0	<6309.65	
GP-25[2]	Y	19.10	6302.18	>19.10	<6283.08	>19.10	<6283.08							11.35	6290.83	11.93	6290.25	13.10	6289.08	14.01	6288.17	13.18	6289.00	14.02	6288.16	14.46	6287.72	15.04	6287.14	NA	NA	1059636
GP-26	Y	19.05	6301.56	>19.05	< 6282.51	>19.05	< 6282.51							14.19	6287.37	12.11	6289.45	13.00	6288.56	14.33	6287.23	14.51	6287.05	14.94	6286.62	15.86	6285.70	17.92	6283.64	NA	NA	
GP-27	Y	19.50	6328.66	>19.50	< 6309.16	>19.50	< 6309.16									>19.50	< 6309.16	>19.50	< 6309.16	>19.90	< 6309.16	>18.90	< 6309.16	>18.90	< 6309.16	>18.90	< 6309.16	>18.90	< 6309.16	NA	NA	1059632
GP-29	Y	19.85	6342.53	>19.85	< 6322.68	>19.85	< 6322.68									>19.85	< 6322.68	>19.85	< 6322.68	>19.82	< 6322.71	>19.82	< 6322.71	>19.82	< 6322.71	>19.82	< 6322.71	>19.82	< 6322.71	NA	NA	
GP-31	Y	19.25	6309.96	>19.25	< 6290.71	19.02	6290.94									11.86	6298.10	11.70	6298.26	12.20	6297.76	11.92	6298.04	12.04	6297.92	12.45	6297.51	12.52	6297.44	NA	NA	
GP-32	Y	18.05	6294.56	>18.05	< 6276.51	>18.05	< 6276.51									14.99	6279.57	14.74	6279.82	15.49	6279.07	15.9	6278.66	16.19	6278.37	16.78	6277.78	17.62	6276.94	NA	NA	
GP-33	Y	11.50	6274.39	>11.50	<6262.89	>11.50	<6262.89									>11.50	<6262.89	>11.50	<6262.89	>11.48	<6262.91	>11.48	<6262.91	>11.48	<6262.91	>11.48	<6262.91	>11.48	<6262.91	>7.5	<6266.89	
GP-34	N	2.00	NM																											> 2.0	NM	
GP-35	N	8.00	6272.79																											> 8.0	< 6264.79	
GP-36	Y	12.45	6264.18	>12.45	< 6251.73	>12.45	< 6251.73							9.97	6254.21	3.72	6260.46	6.68	6257.50	10.67	6253.51	8.04	6256.14	9.24	6254.94	>12.45	< 6251.73	>12.45	< 6251.73	13.58	6250.60	
GP-37	Y	19.60	6297.37	18.83	6278.74	18.92	6278.45							12.03	6285.34	12.02	6285.35	12.23	6285.14	12.25	6285.12	12.35	6285.02	12.54	6284.83	12.77	6284.60	13.12	6284.25	NA	NA	
GP-39	Y	19.30	6300.64	>19.30	< 6281.34	>19.30	< 6281.34									2.25	6298.39	2.58	6298.06	1.72	6298.92	2.81	6297.83	3.13	6297.51	3.71	6296.93	4.53	6296.11	NA	NA	1059631
GP-41[3]	Y	19.30	6302.24	>19.30	< 6282.94	>19.30	< 6282.94							3.34	6298.90	4.65	6297.59	5.20	6297.04	5.01	6297.23	5.52	6296.72	6.38	6295.86	8.14	6294.10	9.05	6293.19	NA	NA	1059635
GP-43[4]	Y	15.10	6298.44	13.75	6284.69	13.2	6285.24					9.25	6289.19	10.32	6288.12	10.08	6288.36	10.64	6287.80	10.72	6287.72	10.76	6287.68	10.97	6287.47	11.16	6287.28	12.53	6285.91	NA	NA	1059645
GP-45	Y	18.95	6279.93	>18.95	< 6260.98	>18.95	< 6260.98	>18.95	< 6260.98	>18.95	< 6260.98	>18.95	< 6260.98	>18.95	< 6260.98	>18.95	< 6260.98	>18.95	< 6260.98	>18.80	<6261.13	>18.80	<6261.13	>18.80	<6261.13	>18.80	<6261.13	>18.80	<6261.13	NA	NA	
GP-46	N	10.00	6272.93																											> 10.0	< 6262.93	
GP-47	N	12.00	NM																											>12.0	NM	
GP-48	N	2.00	NM																											>2.0	NM	
GP-51	Y	19.00	6276.61	>19.00	< 6257.61	>19.00	< 6257.61	>19.00	< 6257.61	>19.00	< 6257.61	>19.00	< 6257.61	>19.00	< 6257.61	>19.00	< 6257.61	>19.00	< 6257.61	>18.77	<6257.84	>18.77	<6257.84	>18.77	<6257.84	>18.77	<6257.84	>18.77	<6257.84	4.00	6272.61	
GP-52	Y	18.90	6285.48	>18.90	< 6266.58	>18.90	< 6266.58	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
GP-55	Y	19.60	6285.56	>19.60	< 6265.96	>19.60	< 6265.96									>19.60	< 6265.96	>19.60	< 6265.96	>19.93	< 6265.96	>19.60	< 6265.96	>19.60	< 6265.96	>19.60	< 6265.96	>19.60	< 6265.96	5.00	6280.56	1059627
GP-56	Y	18.80	6313.76	>18.80	< 6294.96	>18.80	< 6294.96									10.44	6303.32	11.51	6302.25	12.35	6301.41	9.36	6304.40	11.1	6302.66	13.24	6300.52	17.98	6295.78	NA	NA	1059628
GP-58	N	10.50	NM																											> 10.5		
MW-2 N	Y	11.45	6235.19	6.20	6228.99			6.68	6228.51	6.40	6228.79	5.58	6229.61	5.52		5.44	6229.75	5.52	6229.67	6.24	6228.91	6.12	6229.07	6.22	6228.97	5.59	6229.60	6.28	6228.91	4.65	6230.54	*T.O.C.cut- 5-10-07
MW-3 N	Y	13.55	6235.81	7.32	6228.49	7.36	6228.45	7.12	6228.69	6.85	6228.96	6.70	6229.11	6.68		6.59	6229.22	6.68	6229.13	6.75	6229.06	6.53	6229.28	6.7	6229.11	6.75	6229.06	6.81	6229.00	5.11	6230.70	

DTW= Depth to water in feet below top of casing
NM= Not Measured
1-Minimum depth to water in GP-17 on 4/11/07 from transducer data
2-Minimum depth to water in GP-25 on 4/10/07 from transducer data
3-Minimum depth to water in GP-41 on 4/7/07 from transducer data
4-Minimum depth to water in GP-43 on 4/9/07 from transducer data
5-Seasonal High Groundwater Depth and Elevation based on soil core samples for Geoprobe borings and measured groundwater level in MW-2N and MW-3N.

DTW or ELEVATION left blank indicate that the well could not be located or was inaccessible due to excessive snow
D = Destroyed

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Table 2
2008 Groundwater Level Data
Homewood Mountain Resort

Boring ID	TD	Survey Elevation	DTW 3-6-08	ELEVATION 3-6-08	DTW 3-13-08	ELEVATION 3-13-08	DTW 3-19-08	ELEVATION 3-19-08	DTW 3-24-08	ELEVATION 3-24-08	DTW 3-31-08	ELEVATION 3-31-08	DTW 4-7-08	ELEVATION 4-7-08	DTW 4-15-08	ELEVATION 4-15-08	DTW 4-21-08	ELEVATION 4-21-08	DTW 4-29-08	ELEVATION 4-29-08	DTW 5-5-08	ELEVATION 5-5-08	DTW 5-12-08	ELEVATION 5-12-08	DTW 5-19-08	ELEVATION 5-19-08	Transducer Serial No.
GP-1	14.25	6237.02					10.45	6226.57	10.33	6226.69	10.13	6226.89	10.10	6226.92	9.85	6227.17	9.72	6227.30	9.81	6227.21	9.95	6227.07	9.80	6227.22	9.80	6227.22	
GP-6	13.90	6236.72			10.40	6226.32	10.16	6226.56	10.08	6226.64	9.96	6226.76	9.80	6226.92	9.49	6227.23	9.41	6227.31	9.63	6227.09	9.75	6226.97	9.61	6227.11	9.61	6227.11	
GP-7	9.07	6238.00											>9.07	<6228.93	>9.07	<6228.93	>9.07	<6228.93	>9.07	<6228.93	>9.07	<6228.93	>9.07	<6228.93	>9.07	<6228.93	
GP-8	9.30	6237.88					>9.30	<6228.58	>9.30	<6228.58	>9.30	<6228.58	>9.30	<6228.58	>9.30	<6228.58	>9.30	<6228.58	>9.30	<6228.58	>9.30	<6228.58	>9.30	<6228.58	>9.30	<6228.58	
GP-11	8.35	6236.74																									
GP-12	13.15	6238.18					6.70	6231.48	5.95	6232.23	5.28	6232.90	5.07	6233.11	4.96	6233.22	4.92	6233.26	4.61	6233.57	4.92	6233.26	5.05	6233.13	5.29	6232.89	
GP-13	10.95	6238.21					5.94	6232.27	5.58	6232.63	5.12	6233.09	4.64	6233.57	3.70	6234.51	3.52	6234.69	3.18	6235.03	2.96	6235.25	2.51	6235.70	2.36	6235.85	
GP-14	9.55	6238.49					4.32	6234.17	3.80	6234.69	3.35	6235.14	2.93	6235.56	2.21	6236.28	2.43	6236.06	1.50	6236.99	1.42	6237.07	0.90	6237.59	1.27	6237.22	
GP-15	18.75	6253.48															>18.75	<9234.73	>18.75	<9234.73	>18.75	<9234.73	>18.75	<9234.73	>18.75	<9234.73	1059629
GP-17	18.50	6241.52													13.90	6227.62	13.80	6227.72	13.90	6227.62	13.97	6227.55	13.86	6227.66	13.85	6227.67	1059630
GP-19	18.30	6287.72													>18.30	<6269.42	>18.30	<6269.42	>18.30	<6269.42	>18.30	<6269.42	>18.30	<6269.42	>18.30	<6269.42	1059633
GP-20	18.21	6285.40													>18.21	<6267.19	>18.21	<6267.19	>18.21	<6267.19	>18.21	<6267.19	>18.21	<6267.19	>18.21	<6267.19	830352
GP-25	19.10	6302.18																	11.54	6290.64	11.76	6290.42	12.35	6289.83	13.14	6289.04	1059636
GP-26	19.05	6301.55																			10.84	6290.72	11.18	6290.38	12.68	6288.88	
GP-27	19.50	6328.66															>19.50	<6309.16	>19.50	<6309.16	>19.50	<6309.16	>19.50	<6309.16	>19.50	<6309.16	1059632
GP-29	19.85	6342.53																			>19.85	<6322.68	>19.85	<6322.68	>19.85	<6322.68	
GP-31	19.25	6309.96																	9.66	6300.30	9.18	6300.78	9.30	6300.66	9.92	6300.04	
GP-32	18.05	6294.56															16.53	6278.03	14.92	6279.64	13.49	6281.07	13.39	6281.17	13.96	6280.60	
GP-33	11.50	6274.39																	>11.50	<6262.89	>11.50	<6262.89	>11.50	<6262.89	>11.50	<6262.89	
GP-36	12.45	6264.18					underwater		underwater		underwater		underwater		>12.45	<6251.73	11.33	6252.85	5.91	6258.27	2.40	6261.78	1.75	6262.43	1.85	6262.33	
GP-37	19.60	6297.37											14.69	6282.68	13.00	6284.37	12.34	6285.03	11.75	6285.62	12.05	6285.32	12.17	6285.20	12.42	6284.95	1059634(baro)
GP-39	19.30	6300.64															1.59	6299.05	1.15	6299.49	1.56	6299.08	2.25	6298.39	3.00	6297.64	1059631
GP-41	19.30	6302.24																			4.29	6297.95	5.23	6297.01	6.54	6295.70	1059635
GP-43	15.10	6298.44															10.42	6288.02	9.55	6288.89	10.19	6288.25	10.13	6288.31	10.52	6287.92	1059645
GP-45	18.95	6279.93	>18.95	<6260.98	>18.95	<6260.98	>18.95	<6260.98	>18.95	<6260.98	>18.95	<6260.98	>18.95	<6260.98	>18.95	<6260.98	>18.95	<6260.98	>18.95	<6260.98	>18.95	<6260.98	>18.95	<6260.98	>18.95	<6260.98	
GP-51	19.00	6276.61	>19.00	<6257.61	>19.00	<6257.61	>19.00	<6257.61	>19.00	<6257.61	>19.00	<6257.61	>19.00	<6257.61	>19.00	<6257.61	>19.00	<6257.61	>19.00	<6257.61	>19.00	<6257.61	>19.00	<6257.61	>19.00	<6257.61	
GP-52	18.90	6285.48	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
GP-55	19.60	6285.56															>19.60	<6265.96	>19.60	<6265.96	>19.60	<6265.96	>19.60	<6265.96	>19.60	<6265.96	1059627
GP-56	18.80	6313.76																	10.23	6303.53	9.38	6304.38	8.29	6305.47	8.93	6304.83	1059628

DTW= Depth to water in feet below top of casing

DTW or ELEVATION left blank indicate that the well could not be located or was inaccessible due to excessive snow

Re-installed transducers on 11-15-07

D = Destroyed

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Table 3
Seasonal or Measured High Groundwater Levels
Homewood Mountain Resort

Well ID	Survey Elevation	Measured High Groundwater Depth[1]	Date of Occurrence[2]	Seasonal High Groundwater Depth[3]	Seasonal High or Measured High Groundwater Elevation[4]
GP-1	6237.02	7.72	5/3/07	5.00	6232.02
GP-2	6236.20	NA		5.50	6230.70
GP-3	NM	NA		4.50	NM
GP-4	6237.85	NA		11.00	6226.85*
GP-5	6237.26	NA		6.50	6230.76
GP-6	6236.72	7.22	4/27/07	8.41	6229.50
GP-7	6238.00	9.00	4/13/07	8.00	6230.00
GP-8	6237.88	8.37	5/3/07	4.30	6233.58
GP-9	6236.14	NA		2.75	6233.39
GP-10	6236.86	NA		> 2.0	<6234.86
GP-11	6236.74	5.18	5/3/07	1.17	6235.57
GP-12	6238.18	4.61	4/29/08	3.50	6234.68
GP-13	6238.21	1.99	5/3/07	2.00	6236.22
GP-14	6238.49	0.89	5/3/07	2.00	6237.60
GP-15	6253.48	17.42	4/28/08	NA	6236.06
GP-16	NM	NA		> 3.0	NM
GP-17	6241.52	11.92	4/11/07	NA	6229.60*
GP-18	6243.01	NA		>8.0	<6235.01
GP-19	6287.72	>18.30		NA	<6270.07
GP-20	6285.40	17.78	4/18/08	NA	6267.62
GP-21	6312.65	NA		> 3.0	<6309.65
GP-25	6302.18	10.90	5/1/08	NA	6291.28
GP-26	6301.56	10.84	5/5/08	NA	6290.72
GP-27	6328.66	17.67	1/4/08	NA	6310.99
GP-29	6342.53	>19.82		NA	<6322.71
GP-31	6309.96	9.18	5/5/08	NA	6300.78
GP-32	6294.56	13.39	5/12/08	NA	6281.17
GP-33	6274.39	>11.50		>7.5	<6262.89
GP-34	NM	NA		> 2.0	NM
GP-35	6272.79	NA		> 8.0	<6264.79
GP-36	6264.18	1.75	5/12/08	13.58	6262.43
GP-37	6297.37	11.75	4/29/08	NA	6285.62
GP-39	6300.64	0.97	4/14/08	NA	6299.67
GP-41	6302.24	3.17	4/28/08	NA	6299.07
GP-43	6298.44	6.83	1/4/08	NA	6291.61
GP-45	6279.93	>18.95		NA	<6260.98
GP-46	6272.93	NA		> 10.0	<6262.93
GP-47	NM	NA		>12.0	NM
GP-48	NM	NA		>2.0	NM
GP-51[5]	6276.61	>19.00		4.00	6257.61[(6)]
GP-52[5]	6285.48	>18.90		5.00	6266.58[(6)]
GP-55[5]	6285.56	19.50	1/4/08	5.00	6266.06[(6)]
GP-56	6313.76	8.09	5/12/08	NA	6305.67
GP-58	NM	NA		> 10.5	NM
MW-1 N	NM	NA	6/26/00	4.56	NM
MW-2-N	6235.19	5.44	6/7/99	4.65	6230.54
MW-3 N	6235.81	6.53	6/7/99	5.11	6230.70
MW-4 N	NM	NA	6/7/99	5.79	NM
MW-1 S	NM	NA	6/3/98	17.65	NM
MW-2 S	NM	NA	6/3/98	15.72	NM
MW-3 S	NM	NA	6/3/98	16.38	NM
MW-4 S	NM	NA	6/7/99	16.15	NM
MW-5 S	NM	NA	6/3/98	15.63	NM

1- Measured Spring 2007 and Spring 2008
2- Date of measured high groundwater depth measurement
3- Based on soil core samples from Geoprobe borings
4- Based on highest elevation from either measured groundwater or soil core samples
5- Soil oxidation at depths of 4 to 5 feet is inconsistent with measured groundwater levels greater than 19 feet
6- Measured high groundwater depth from 2007/2008 monitoring used
*- Elevation considered unreliable and not used for groundwater contours

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Table 4-Revised
Retaining Wall Data
Homewood Mountain Resort
Homewood, California

Location	Finished Floor Elevation	Length of Wall	Depth of Wall	Groundwater Interception	Groundwater Gradient	Flow Rate-k=0.0004 cm/sec	Flow Rate-k=0.001 cm/sec
	feet msl	feet	feet	feet	ft/ft	gpm	gpm
North Base							
Parking Garage (Sections 1 through 4)	6,240	878	29 to 32	17	0.17	15	37
North Base Total						**15**	**37**
South Base							
North Building Parking (Section 5)	6,280	376	19	13	0.12	3	9
South Building Parking (Section 6)	6,270	100	19	4	0.2	0.5	1
South Building Parking-Section 7	6,270	110	21	4	0.2	1	1
South Base Total						**4**	**11**
Mid-Mountain							
Section 8 Walls	7,285		14				
	7,323		8				
	7,327		11.5				
Section 10 Cuts for Tanks	7,480		20.5				

Note: North Base Sections refer to Cross Sections 1 through 4 on Sheet C19 (Nichols Consulting Engineers, Chtd. 4/30/10)
Note: South Base Sections refer to Cross Sections 5 through 7 on Sheet C20 (Nichols Consulting Engineers, Chtd. 4/30/10)
k= hydraulic conductivity

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HOMEWOOD~~/TAHOE SKI BOWL~~ SKI AREA

PLAN DESIGNATION:

Land Use Classification	RECREATION
Management Strategy	MITIGATION
Special Designation	SCENIC RESTORATION AREA
Special Area #1	
	TDR RECEIVING AREA FOR: 1. Existing Development

DESCRIPTION:

Location: This area encompasses the Homewood and Tahoe Ski Bowl ski areas and is found on TRPA maps C-10, C-11, C-12, and the Homewood Quadrangle.

Existing Uses: This area contains facilities that support downhill skiing. Quail Lake in the planning area supplies water to Chambers Lodge, Moana Beach, and Homewood.

Existing Environment: Most of this area is classified as high hazard. Modifications to the natural environment include ski runs, base facilities at ~~Tahoe Ski Bowl,~~the Homewood ski area, and a few unimproved roads. Dominant plant species include mature fir, willow, and manzanita.

PLANNING STATEMENT: This area should continue to provide opportunities for downhill skiing within guidelines prepared through ski area master plans and scenic restoration plans.

PLANNING CONSIDERATIONS:

1. Water diversions from Quail Lake can dry up the outlet stream during the summer.

2. Parking facilities are limited and pose congestion problems in adjoining neighborhoods.

3. Base facilities for the ~~Tahoe Ski Bowl~~South Base of Homewood Ski Area encroach upon a stream environment zone.

4. Scenic Resource Evaluation Areas 20 and 21, and Scenic Roadway Unit II are within this Plan Area.

SPECIAL POLICIES:

1. A coordinated Homewood Community Plan and/or Ski Area Master Plan should include this Plan Area as well as Plan Area 158 and 159.

2. All affected parties should coordinate planning to assess the feasibility and demand for expanded ski facilities.

3. The water in Quail Lake should be used to provide minimum instream flows for Quail Creek.

4. Multi-use of ski area base facilities is encouraged, especially joint use agreements between the ski areas and local marinas to share parking space.

~~5.Common management and consolidation of the two ski areas is encouraged.~~

~~6.~~5. Upgrading and redevelopment of the Homewood base ski facilities should be encouraged.

~~7.~~6. New commercial facilities are limited to the base areas of the existing facilities and Special Area 1.

~~8.~~7. Access for cross country skiing should be improved.

~~9.~~8. Any new or additional commercial uses shall be permitted only pursuant to an adopted Community Plan and/or Ski Area Master Plan.

PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

General List: The following list of permissible uses is applicable throughout the Plan Area.

Residential	Employee housing (S) and single family dwelling (S).
Tourist Accommodation	Bed and breakfast facilities (S), and hotel, motels, and other transient dwelling units (S).
Commercial	Eating and drinking places (S), food and beverage retail sales (S), general merchandise stores (S), outdoor retail sales (S), amusements and recreation services (S), Personal Services (S), and secondary storage (S).
Public Service	Pipelines and power transmission (S), public safety facilities (S), public utility centers (S), transmission

	and receiving facilities (S), transportation routes (S), government offices (S), and transit stations and terminals (S).
Recreation	Cross country skiing courses (S), day use areas (A), outdoor recreation concessions (A), riding and hiking trails (A), skiing facilities (S), Participant Sports Facility (S), and snowmobile courses (S).
Resource Management	Reforestation (A), regeneration harvest (A), sanitation salvage cut (A), selection cut (A), special cut (A), thinning (A), timber stand improvement (A), tree farms (S), early successional stage vegetation management (A), nonstructural fish habitat management (A), nonstructural wildlife habitat management (A), structural fish habitat management (A), structural wildlife habitat management (A), farm/ranch accessory structures (S), grazing (S), range pasture management (S), range improvement (S), fire detection and suppression (A), fuels treatment (A), insect and disease suppression (A), prescribed fire management (A), sensitive plant management (A), uncommon plant community management (A), erosion control (A), runoff control (A), and SEZ restoration (A).

MAXIMUM DENSITIES: Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive program, special use determinations, allocation limitations and general site development standards.

USE	MAXIMUM DENSITY
Residential	
Single Family Dwelling	1 unit per parcel
Employee Housing (Multiple family dwellings only)	15 units per acre
Tourist Accommodation	
Bed and Breakfast Facilities	10 units per acre
Hotel, Motel and other Transient Units	20 units per acre

MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL: The maximum community noise equivalent level for this Plan Area, including the Highway 89 corridor, is 55 CNEL.

ADDITIONAL DEVELOPED OUTDOOR RECREATION: The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located

within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time:

SUMMER DAY USES **0 PAOT** WINTER DAY USE **~~4,000~~1,100 PAOT** OVERNIGHT USES **280 PAOT**

OTHER: Five miles hiking trails.

ENVIRONMENTAL IMPROVEMENT PROGRAMS: The capital improvement and other improvement programs required by the Regional Goals and Policies Plan and Environmental Improvement Plan (EIP) for this area shall be implemented.[§]

[§] Amended 5/22/02

158
MCKINNEY TRACT

PLAN DESIGNATION:

Land Use Classification	RESIDENTIAL
Management Strategy	MITIGATION
Special Designation	SCENIC RESTORATION AREA
Special Area #1	
Special Designation	TDR RECEIVING AREA FOR: 1. Existing Development ~~1.~~2. Multi-Residential Units

DESCRIPTION:

Location: The McKinney Tract area is located just south of Homewood and north of McKinney Creek along Highway 89 on the west shore of Lake Tahoe. It can be located on TRPA map C-11.

Existing Uses: The existing use in this area is residential at a density of one single family dwelling per parcel. The South Base of the Homewood Ski Area is located in this Plan Area and is designated as Special Area 1. Most of the shoreline in this area is privately owned, although there is one public beach. The plan area is 70 percent built out.

Existing Environment: The McKinney Tract area is approximately 30 percent SEZ, 65 percent low hazard and perhaps ten percent high hazard. Some seeped soils exist in this area which exhibit a lower land capability than mapped. The unit is 15 percent covered and 22 percent disturbed. The shorezone tolerance district is 7. The area contains high quality, but degraded fish habitats.

PLANNING STATEMENT: This area should remain residential with a density of one single family dwelling per parcel. Special Area #1 should continue to operate as the South Base Area of the Homewood Ski Area and may allow multiple family dwellings.

PLANNING CONSIDERATIONS:

1. Some of the area contains seeped soils ~~exist~~ which exhibit characteristics of a lower land capability district than mapped

2. Prime fish habitat in Lake Tahoe is tentatively identified for habitat restoration.

3. There are problems associated with erosion and SEZ impacts in the vicinity of ~~Tahoe Ski Bowl~~the Homewood Ski Area South Base.

4. Scenic Roadway Unit 10 and Scenic Shoreline Unit 12 are within this Plan Area. The roadway unit is targeted for restoration as required by the scenic threshold.

SPECIAL POLICIES:

1. The Scenic Roadway and Shoreline Unit should be reevaluated for attainment in this area.

2. A coordinated Homewood Ski Area Master Plan should include Special Area 1 of this Plan Area as well as Plan Area 157 and Special Area 1 of Plan Area 159.

PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

General List: The following list of permissible uses is applicable throughout the Plan Area:

Residential	Single family dwelling (A).
Public Service	Local public health and safety facilities (S), transit stations and terminals (S), pipelines and power transmission (S), transmission and receiving facilities (S), transportation routes (S), public utility centers (S), local post offices (S), and day care centers/pre-schools (S).
Recreation	Participant sports facilities (S), day use areas (A), riding and hiking trails (A), and beach recreation (A).
Resource Management	Reforestation (A), sanitation salvage cut (A), special cut (A), thinning (A), early successional stage vegetation management (A), structural and nonstructural fish/ wildlife habitat management (A), fire detection and suppression (A), fuels treatment/ management (A), insect and disease suppression (A), sensitive and uncommon plant management (A), erosion control (A), SEZ restoration (A), and runoff control (A).

Special Area #1: In addition to the general list, the following uses are permissible:

Residential	Multiple family dwelling (S),
Recreation	Skiing facilities (A),

Shorezone: Within the specified shorezone tolerance district, the following primary uses may be permitted in the backshore, nearshore, and foreshore. Accessory structures shall be regulated pursuant to the regulations applicable to the primary use upon which they are dependent in accordance with Chapter 18. The following structures may be permitted in the shorezone as an allowed (A) or special (S) use only if they are accessory to an existing, allowed use located on the same or adjoining littoral parcel.

Tolerance District 7

Primary Uses	Beach recreation (A), safety and navigational devices (A), and salvage operation (A).

Accessory Structures	Buoys (A), piers (A), fences (S), boat ramps (S), breakwaters or jetties (S), floating docks and platforms (A), shoreline protective structures (S), and water intake lines (S).

MAXIMUM DENSITIES: Pursuant to Chapter 21 DENSITY, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive program, special use determinations, allocation limitations and general site development standards.

USE	MAXIMUM DENSITY
Residential	
Single Family Dwelling	1 unit per parcel
Multiple Family Dwelling (Special Area #1 only)	15 units per acre

MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL:. The maximum community noise equivalent level for this Plan Area, including the Highway 89 corridor, is 55 CNEL.

ADDITIONAL DEVELOPED OUTDOOR RECREATION: The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time.

SUMMER DAY USES **0 PAOT** WINTER DAY USES **0 PAOT** OVERNIGHT USES **0 PAOT**

ENVIRONMENTAL IMPROVEMENT PROGRAMS: The capital improvement and other improvement programs required by the Regional Goals and Policies Plan and Environmental Improvement Plan (EIP) for this area shall be implemented.[§]

[§] Amended 5/22/02

159
HOMEWOOD/COMMERCIAL

PLAN DESIGNATION:

Land Use Classification	TOURIST
Management Strategy	REDIRECTION
Special Designation	PRELIMINARY COMMUNITY PLAN AREA
	TDR RECEIVING AREA FOR:
	1. Existing Development
	SCENIC RESTORATION AREA
Special Area #1	
Special Designation	TDR RECEIVING AREA FOR:
	~~2~~1. Multi-Residential Units

DESCRIPTION:

Location: This area is located along Highway 89 between Obexer's Marina and Homewood Ski Area and is located on TRPA map C-11.

Existing Uses: The area is a mixture of small commercial services, two marinas, ~~a sea plane base,~~ motel facilities, and some residential use. The area is 90 percent built out. The North Base of the Homewood Ski Area is located in this Plan Area and is designated as Special Area 1.

Existing Environment: The area is 70 percent low hazard, 10 percent high hazard and 10 percent SEZ. The shorezone is tolerance district 7. The land coverage and disturbance is high.

PLANNING STATEMENT: This area should continue to be a tourist commercial area. However, there is a need for rehabilitation while maintaining the scale and character of the west shore~~.~~.

PLANNING CONSIDERATIONS:

1. The prime fish habitat in Lake Tahoe is tentatively identified for habitat restoration.
2. Scenic Roadway Unit 11 and Scenic Shoreline Unit 12 are within this Plan Area, and the roadway unit is targeted for restoration as required by the scenic threshold.
3. Ownership of a narrow littoral strip is unknown.
4. Facilities at Obexer's marina are in poor condition.

5. There are no runoff containment facilities at the marinas~~, and the sea plane base parking facilities are inadequate~~.

6. The Homewood Ski Area is adjacent to this Plan Area.

SPECIAL POLICIES:

1. ~~Community planning for development of this area should include consideration of the adjoining ski areas in PAS 157.~~ A coordinated Homewood Community Plan and/or Ski Area Master Plan should include Special Area 1 of this Plan Area as well as Plan Area 157 and Special Area 1 of Plan Area 158.

~~2.The Community Plan or the Homewood Marina Master Plan should consider the sea plane base and establish a noise corridor for the sea plane base.~~

~~3.~~2. This area should be considered for a major water borne transit stop.

~~4.~~3. The marina facilities should be expanded and upgraded to accommodate increasing boating needs.

~~5.~~4. Tourism and recreation compatible with the west shore scale of development should be encouraged in this Plan Area.

PERMISSIBLE USES: Pursuant to Chapter 18 PERMISSIBLE USES and if applicable, Chapter 51 PERMISSIBLE USES AND ACCESSORY STRUCTURES IN THE SHOREZONE AND LAKEZONE, the following primary uses may be permitted within all or a portion of the Plan Area. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed shall be considered nonconforming uses within this Plan Area. The establishment of new uses not listed shall be prohibited within this Plan Area.

General List: The following list of permissible uses is applicable throughout the Plan Area:

Residential	Employee housing (S), and single family dwelling (S).
Tourist Accommodation	Bed and breakfast facilities (A), hotel, motels, and other transient dwelling units (A), timeshare (hotel/motel design) (S), and timeshare (residential design) (S).
Commercial	Auto, mobile home and vehicle dealers (S), building materials and hardware (S), eating and drinking places (A), food and beverage retail sales (A), furniture, home furnishings and equipment (S), general merchandise stores (A), mail order and vending (A), nursery (A), outdoor retail sales (S), service stations (A), amusements and recreation services (S), outdoor amusements (S), animal husbandry services (S), auto repair and service (S), broadcasting studios (A), business support services (A), contract construction services (S), financial services (A), health care services (A), personal services (A), professional offices (A), repair services (A), secondary storage (S), small scale manufacturing (S), vehicle storage and parking (S), and warehousing (S).

Public Service	Airfields, landing strips, and heliports (new non-emergency, sites prohibited) (S), churches (A), cultural facilities (A), day care centers/pre-schools (A), government offices (S), local assembly and entertainment (A), local post office (A), local public health and safety facilities (A), membership organizations (A), public utility centers (S), schools – kindergarten through secondary (A), social service organizations (A), pipelines and power transmission (S), transit stations and terminals (S), transportation routes (S), and transmission and receiving facilities (S).
Recreation	Day use areas (A), recreation center (S), participant sports facilities (A), beach recreation (A), boat launching facilities (S), cross country skiing courses (S), outdoor recreation concessions (A), marinas (A), riding and hiking trails (S), skiing facilities (S), snow mobile courses (S), and visitor information center (S).
Resource Management	Reforestation (A), sanitation salvage cut (A), thinning (A), timber stand improvement (A), tree farms (A), early successional stage vegetation management (A), A), nonstructural fish habitat management (A), nonstructural wildlife habitat management (A), structural fish habitat management (A), structural wildlife habitat management (A), fire detection and suppression (A), fuels treatment (A), insect and disease suppression (A), sensitive plant management (A), uncommon plant community management (A), erosion control (A), runoff control (A), and SEZ restoration (A).

Special Area #1: In addition to the general list, the following uses are permissible:

Residential	Multiple family dwelling (S),
Commercial	Privately Owned Assembly and Entertainment (S),

Shorezone: Within the specified shorezone tolerance district, the following primary uses may be permitted in the backshore, nearshore, and foreshore. Accessory structures shall be regulated pursuant to the regulations applicable to the primary use upon which they are dependent in accordance with Chapter 18. The following structures may be permitted in the shorezone as an allowed (A) or special (S) use only if they are accessory to an existing, allowed use located on the same or adjoining littoral parcel.

Tolerance District 7

Primary Uses	Water oriented outdoor recreation concessions (A), beach recreation (A), waterborne transit (A), boat launching facilities (S), tour boat operations (A), safety and navigation devices (A), marinas (S), sea plane operations (S) and salvage operations (S).
Accessory Structures	Buoys (A), piers (A), fences (S), boat ramps (S), breakwaters or jetties (S), floating docks and platforms (A), shoreline protective structures (S,), and water intake lines (A).

MAXIMUM DENSITIES: Pursuant to Chapter 21 DENSITY and Chapter 54 SHOREZONE DEVELOPMENT STANDARDS, the following list establishes the maximum allowable densities that may be permitted for any parcel located within the Plan Area. The actual development permitted may be further limited by transfer of development rights limitations, residential density incentive program, special use determinations, allocation limitations and general site development standards.

USE	MAXIMUM DENSITY
Residential	
Single Family Dwelling	1 unit per parcel
Multiple Family Dwelling (Special Area #1 only)	~~8~~ 15 units per acre
Employee Housing	~~8~~ 15 units per acre
Tourist Accommodation	
Bed and Breakfast	10 units per acre
Hotel, Motel, and other Transient Units - with less than 10% of units with kitchens - with 10% or more units with kitchens	 20 units per acre 15 units per acre
Timeshare	As per the limitations set forth in this table

MAXIMUM COMMUNITY NOISE EQUIVALENT LEVEL:. The maximum community noise equivalent level for this Plan Area is 60 CNEL. The maximum community noise equivalent level for the Highway 89 corridor is 60 CNEL.

ADDITIONAL DEVELOPED OUTDOOR RECREATION: The following are the targets and limits for additional developed outdoor recreation facilities specified in Chapter 13 to be located within this Plan Area. Specific projects and their timing are addressed in the TRPA Five-Year Recreation Program pursuant to Chapter 33 Allocation of Development. The following additional capacities allowed are measured in persons at one time.

SUMMER DAY USES **0 PAOT** WINTER DAY USES **0 PAOT** OVERNIGHT USES **0 PAOT**

ENVIRONMENTAL IMPROVEMENT PROGRAMS: The capital improvement and other improvement programs required by the Regional Goals and Policies Plan and Environmental Improvement Plan (EIP) for this area shall be implemented.[§]

[§] Amended 05/22/02

Appendix F
HMR Master Plan - Proposed TRPA Code of Ordinance Amendments

Chapter 64 amendment =
Amend Subsection 64.7.A(2)(i) as follows for Alternatives 1, 5, and 6:

(i) It is necessary to provide below grade parking for projects qualifying for additional height under Subsection 22.4.D **or 22.4.G**, to achieve environmental goals including scenic improvements, land coverage reduction, and area-wide drainage systems; and measures are included in the project to prevent ground water from leaving the project area as surface flow and that groundwater, if any is interfered with, is rerouted into the groundwater flow to avoid adverse impacts to hydrologic conditions, SEZ vegetation, and mature trees.

Add Subsection 64.7.A(2)(k) as follows for Alternative 3:

(k) It is necessary to provide below grade parking for buildings located within a Ski Area Master Plan designated through Resolution 2008-11 to be Special Projects pursuant to TRPA Code Section 33.3.D(3) that are designed to step up the slope; incorporate community design features; and achieve environmental goals including land coverage reduction, and area-wide drainage systems; and measures are included in the project to prevent ground water from leaving the project area as surface flow and that groundwater, if any is interfered with, is rerouted into the groundwater flow to avoid adverse impacts to hydrologic conditions, SEZ vegetation, and mature trees.

Chapter 22 amendment =
Amend Subsection 22.2.A Definitions as follows for Alternatives 1, 5, and 6:

22.2.A Maximum Height: The maximum height of a building is the difference between the point of lowest natural ground elevation along an exterior wall of the building, and the elevation of the coping of the highest flat roof, the deck line of the highest mansard roof or the ridge of the highest hip, gable, gambrel, shed or other pitched roof, whichever is highest. The maximum height of a structure other than a building is the difference between the point of lowest natural ground elevation along the exterior foundation of the structure and the elevation of the highest point of the structure. **Maximum height for buildings in Special Projects within adopted Ski Area Master Plans shall be measured as provided in Subsection 22.4.G.**

Amend 22.4.D(5) as follows for Alternatives 1, 5, and 6:

(5) Security for Improvements: Projects which utilize any of the additional height provisions provided in subsections 22.4.D, 22.4.E **and 22.4.G** shall ensure the public benefit(s) for which the additional height was earned is implemented consistent with the following provisions.

(a) Project Approval: TRPA shall require, as a condition of approval, of any project which relies on the use of an additional height provision provided in subsections 22.4.D, 22.4.E **and 22.4.G** and, that all necessary permits for development of the

associated public benefit be issued prior to commencement of construction of the project utilizing the additional height.

(b) Project Funding: Prior to the commencement of construction of any project which relies on the use of an additional height provision provided in subsections 22.4.D, 22.4.E **and 22.4.G** and, that all necessary permits for development of the associated public benefit be issued prior to commencement of construction of the project utilizing the additional height.

(c) Project Completion: For each irrevocable commitment, the project applicant shall demonstrate, and the TRPA shall find, sufficient evidence of intent and ability to complete development of the public benefit for which the additional height was earned.

Add 22.4.G as follows for Alternatives 1, 5, and 6:

22.4.G Additional Height for Adopted Ski Area Master Plan Projects: The maximum height specified in Table A may be increased to a maximum height of 50 feet for projects located in special areas within the Homewood Ski Area Master Plan designated for additional height. In these special areas, the maximum height may be measured from average natural grade, which is the average grade between the lowest point and highest points of natural grade along an exterior wall of the building. The maximum height of a building is the difference between the point of average natural ground elevation along an exterior wall of the building, and the elevation of the ridge of the highest hip, gable, gambrel, shed, or other pitched roof, or parapet wall, whichever is highest. To be eligible for this method of measurement the project and buildings shall be designed to step up the slope; shall incorporate community design features such as pitched roofs, articulated facades, articulated roof planes and the use of earth tone colors consistent with the Design Review Guidelines; and TRPA must find that:

A. The project meets findings 1, 3, 6 (amended #6 to add “or ski area master plan” after “community plan”), 8 and 9 as set forth in Subsection 22.7;

B. The additional height is necessary to reduce land coverage, provide underground parking pursuant to Subsection 64.7(A)(i), and maximize permissible density within the designated project area; and

C. The project is consistent with Resolution 2008-11, the special policies outlined for the Homewood Village Resort Ski Area Master Plan special areas, and the environmental improvements for special projects pursuant to Code Subsection 33.3.D(3)(a-d); and

D. the project meets the security requirements of Subparagraph 22.4.D(5).

The following provisions shall be included in the HMR Ski Area MP Document

The maximum height of buildings, and method of measuring building height within an adopted ski area master plan shall be as provided in Subsection 22.4.G, shall comply with design

provisions of Chapter 30 to step up the slopes of natural terrain, and shall be consistent with the following:

a) buildings that are located at the North Base area and are set back at least 40 feet from the highway edge of pavement shall not exceed a maximum height of 42 feet and shall have a minimum roof pitch of 5:12;
b) buildings that are located at the North Base area and are setback at least 200 feet but not more than 675 feet from the highway edge of pavement shall not exceed a maximum height of 50 feet and shall have a minimum roof pitch of 2:12;
c) buildings that are located at the South Base area shall not exceed a maximum height of 50 feet and shall have a minimum roof pitch of 5:12; and
d) buildings that are located at the Mid-Mountain area shall not exceed a maximum height of 35 feet and shall have a minimum roof pitch of 2:12.

Special Areas of Plan Areas 157, 158, and 159 are designated as eligible for additional height pursuant to Subsection 22.4.G of the TRPA Code of Ordinances provided that TRPA finds that:

(1) The project incorporates Pedestrian Transit-Oriented Design Features consistent with Subsection 13.7.D(3)(specifically (a-e), including buildings to be oriented to the street, sidewalks, alternative parking strategies, mixed uses, integration of the private and public open spaces and circulation routes; and
(2) The project located within the Special Height District retains and treats the 50-year one-hour storm utilizing on-site and offsite systems incorporating best available technologies; and
(3) The project shall implement a minimum of two Environmental Improvement Program (EIP) projects; and
(4) The project shall be certified under the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) or under an equivalent sustainable/green building program; and
(5) The project shall ensure the required public benefit(s) set forth above and in the master plan are implemented consistent with the provisions of Subsection 22.4.D (5) of the TRPA Code of Ordinances; and
(6) The project results in a permanent reduction of no less than 10 percent of existing land coverage within the project area.

Empidonax traillii

willow flycatcher

Element Code: ABPAE33040

Status	NDDB Element Ranks	Other Lists
Federal: None	**Global:** G5	**CDFG Status:**
State: Endangered	**State:** S1S2	

Habitat Associations

General: INHABITS EXTENSIVE THICKETS OF LOW, DENSE WILLOWS ON EDGE OF WET MEADOWS, PONDS, OR BACKWATERS; 2000-8000 FT ELEVATION

Micro: REQUIRES DENSE WILLOW THICKETS FOR NESTING/ROOSTING. LOW, EXPOSED BRANCHES ARE USED FOR SINGING POSTS/HUNTING PERCHES.

Occurrence No. 104 **Map Index:** 30668 **EO Index:** 4384

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1994-06-28
Site: 1994-06-28
Record Last Updated: 2005-12-06

Quad Summary: Tahoe City (3912022/538B)
County Summary: Placer

Lat/Long: 39.14117º / -120.20401º
UTM: Zone-10 N4336166 E741647
Area:
Elevation: 6,600 ft
Mapping Precision NON-SPECIFIC
Symbol Type: POLYGON
Township: 15N
Range: 16E
Section: 15 **Qtr:** S
Meridian: M

Location: WARD CREEK, ABOUT 2.5 MILES WEST OF THE WESTERN SHORE OF LAKE TAHOE AND 4 MILES SW OF TAHOE CITY.

Location Detail: OFF OF WARD CREEK BLVD - DRIVE 0.4 MILE ON FS RD 15N62; MEADOW AREA IS LOCATED BEHIND A LOG FENCE.

Ecological: HABITAT CONSISTS OF WET MEADOW DOMINATED BY WILLOW SPECIES (WITH LODGPOLE PINE INTERMIXED) ALONG WARD CREEK. ALDER ALSO PRESENT.

Threat: POSSIBLE THREAT FROM HUMAN RECREATION IN THE VICINITY OF THE CREEK DURING NESTING SEASON.

General: 1 ADULT AND 1 OF UNKNOWN AGE OBSERVED DURING A SURVEY CONDUCTED ON 28 JUNE 1994.

Owner/Manager: USFS-LAKE TAHOE BMU

Occurrence No. 140 **Map Index:** 65863 **EO Index:** 65942

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2004-06-13
Site: 2004-06-13
Record Last Updated: 2006-08-16

Quad Summary: Homewood (3912012/538C)
County Summary: Placer

Lat/Long: 39.11044º / -120.18045º
UTM: Zone-10 N4332818 E743789
Area:
Elevation: 1,950 ft
Mapping Precision NON-SPECIFIC
Symbol Type: POLYGON
Township: 15N
Range: 16E
Section: 35 **Qtr:** N
Meridian: M

Location: BLACKWOOD CREEK, 0.7 TO 1.7 MI WEST OF LAKE TAHOE.

Location Detail: MAPPED ALONG BLACKWOOD CREEK IN SECTION 35 AS PER SOURCE.

Threat: COWBIRDS.

General: BREEDING & NESTING SITE. 4 ADULTS OBSERVED FROM 13 JUN 2004 THROUGHOUT SUMMER.

Owner/Manager: USFS

Gulo gulo

California wolverine

Element Code: AMAJF03010

Status	NDDB Element Ranks	Other Lists
Federal: None	**Global:** G4	**CDFG Status:**
State: Threatened	**State:** S2	

Habitat Associations

General: FOUND IN THE NORTH COAST MOUNTAINS AND THE SIERRA NEVADA. FOUND IN A WIDE VARIETY OF HIGH ELEVATION HABITATS.

Micro: NEEDS WATER SOURCE. USES CAVES, LOGS, BURROWS FOR COVER & DEN AREA. HUNTS IN MORE OPEN AREAS. CAN TRAVEL LONG DISTANCES

Occurrence No. 81 **Map Index:** 14024 **EO Index:** 23296

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1953-07-22
Site: 1953-07-22
Record Last Updated: 1989-08-10

Quad Summary: Tahoe City (3912022/538B)
County Summary: Placer

Lat/Long: 39.20766º / -120.20173º
UTM: Zone-10 N4343552 E741616
Radius: 1 mile
Elevation: 6,150 ft
Mapping Precision NON-SPECIFIC
Symbol Type: POINT
Township: 15N
Range: 16E
Section: 28 **Qtr:** SE
Meridian: M

Location: 0.25 MI INSIDE ENTRANCE TO SQUAW VALLEY.
General: ONE OBSERVATION.
Owner/Manager: UNKNOWN

Occurrence No. 189 **Map Index:** 34775 **EO Index:** 29197

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1994-06-22
Site: 1994-06-22
Record Last Updated: 1996-06-18

Quad Summary: Rockbound Valley (3812082/523B), Pyramid Peak (3812072/523C)
County Summary: El Dorado

Lat/Long: 38.87538º / -120.18791º
UTM: Zone-10 N4306706 E743951
Radius: 2/5 mile
Elevation: 8,100 ft
Mapping Precision NON-SPECIFIC
Symbol Type: POINT
Township: 12N
Range: 16E
Section: 23 **Qtr:** XX
Meridian: M

Location: VICINITY OF ISLAND LAKE, DESOLATION WILDERNESS AREA; SOUTHWEST OF LAKE TAHOE.
Location Detail: T/R/SEC PROVIDED IN SURVEY FORM, BUT APPROXIMATED SECTION ON TOPOGRAPHIC MAP.
Ecological: ROCKY OUTCROPPING.
General: 1 OBSERVED AT 20-30 FEET, POPPED OUT OF ROCKS AND RAN OFF; REPORTED TO PACIFIC RANGER DISTRICT, ELDORADO NF.
Owner/Manager: USFS-ELDORADO NF

Oncorhynchus clarkii henshawi

Lahontan cutthroat trout

Element Code: AFCHA02081

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	**Global:** G4T3	**CDFG Status:**
State: None	**State:** S2	

Habitat Associations

General: HISTORICALLY IN ALL ACCESSIBLE COLD WATERS OF THE LAHONTON BASIN IN A WIDE VARIETY OF WATER TEMPS & CONDITIONS.

Micro: CANNOT TOLERATE PRESENCE OF OTHER SALMONIDS. REQUIRES GRAVEL RIFFLES IN STREAMS FOR SPAWNING.

Occurrence No. 9 **Map Index:** 13941 **EO Index:** 14873

Occ Rank: Unknown
Origin: Introduced Back into Native Hab./Range
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-08-XX
Site: 1993-08-XX
Record Last Updated: 1996-05-03

Quad Summary: Tahoe City (3912022/538B), Granite Chief (3912023/539A)
County Summary: Placer

Lat/Long: 39.23258º / -120.24250º
UTM: Zone-10 N4346210 E738011
Area: 117.4 acres
Elevation: 6,680 ft

Mapping PrecisionSPECIFIC
Symbol Type:POLYGON

Township: 16N
Range: 16E
Section: 17 **Qtr:** NW
Meridian: M

Location: POLE CREEK, TRIBUTARY TO TRUCKEE RIVER.

Location Detail: 1 MILE OF OCCUPIED HABITAT (1982)

Ecological: REINTRODUCED POPULATION; PRESENCE CONFIRMED BY J. DEINSTADT IN 1983 & E. GERSTUNG IN 1993; NO OTHER FISH IN CREEK; BARRIER AT LOWER END PREVENTS INVASION BY TRUCKEE FISH.

Threat: SILTATION IN CREEK FROM LOGGING AND ROADS.

General: HABITAT QUALITY GOOD. 1982 ESTIMATED TOTAL POPULATION OF 200 CT-L

Owner/Manager: USFS-TAHOE NF, PVT

Rorippa subumbellata

Tahoe yellow cress

Element Code: PDBRA270M0

Status	NDDB Element Ranks	Other Lists
Federal: Candidate	**Global:** G1	**CNPS List:** 1B.1
State: Endangered	**State:** S1.1	

Habitat Associations

General: LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS.

Micro: SANDY BEACHES, ON LAKESIDE MARGINS AND IN RIPARIAN COMMUNITIES; ON DECOMPOSED GRANITE SAND. 1885-1900(2395)M.

Occurrence No. 16 **Map Index:** 14228 **EO Index:** 3426

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-XX-XX
Site: 2000-XX-XX
Record Last Updated: 2008-03-17

Quad Summary: Emerald Bay (3812081/523A), Meeks Bay (3912011/538D)
County Summary: El Dorado

Lat/Long: 39.00159º / -120.10327º
UTM: Zone-10 N4320946 E750849
Area: 7.5 acres
Elevation: 6,230 ft
Mapping Precision SPECIFIC
Symbol Type: POLYGON
Township: 13N
Range: 17E
Section: 04 **Qtr:** SE
Meridian: M

Location: SOUTH END OF RUBICON BAY, NORTHERN BOUNDARY OF D.L. BLISS STATE PARK, LAKE TAHOE.

Location Detail: NORTHERN COLONY IS 200 FEET FROM LAKE EDGE AND JUST NORTH OF THE NORTHERN BOUNDARY OF D.L. BLISS STATE PARK. SOUTHERN COLONY IS A TRANSPLANT SITE JUST INSIDE THE PARK BOUNDARY AT LESTER BEACH, ADJACENT TO THE DAY USE PARKING AREA.

Ecological: ON DECOMPOSED GRANITE BEACH WITH PHACELIA HASTATA SSP. COMPACTA ON FLAT GROUND. ADJACENT TO WILLOW THICKET WITH A JUNCUS "TURF" AT THE BASE.

Threat: PRIVATE BEACH USE THREATENS PLANTS. PLANTS PROBABLY WILL NOT BE NEGATIVELY IMPACTED BY FLUCTUATION IN LAKE LEVEL.

General: N COLONY: NONE SEEN IN 1979, 19 IN 1981, 45 IN 1982, 55 IN 1983, 161 IN 1986, 182 IN 1988, 35 IN 1990, UNKNOWN NUMBER SEEN IN 1993 AND 1994. NONE FOUND IN 1998, 1999, OR 2000. S COLONY: 832 IN 1990, UNKNOWN NUMBER SEEN EVERY YEAR 1994-2000.

Owner/Manager: PVT IN USFS-LAKE TAHOE BMU,DPR

Occurrence No. 17 **Map Index:** 14204 **EO Index:** 3427

Occ Rank: Unknown
Origin: Introduced Back into Native Hab./Range
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2000-XX-XX
Site: 2000-XX-XX
Record Last Updated: 2008-03-17

Quad Summary: Meeks Bay (3912011/538D)
County Summary: El Dorado

Lat/Long: 39.04036º / -120.12136º
UTM: Zone-10 N4325199 E749146
Area: 14.2 acres
Elevation: 6,229 ft
Mapping Precision SPECIFIC
Symbol Type: POLYGON
Township: 14N
Range: 17E
Section: 20 **Qtr:** SE
Meridian: M

Location: GABION REVETMENT NORTH OF MEEKS CREEK ON MEEKS BAY, LAKE TAHOE.

Location Detail: TWO NATURAL (NOW EXTIRPATED) COLONIES AND ONE INTRODUCED COLONY MAPPED HERE. NATURAL COLONIES MAPPED IN THE SE 1/4 OF SECTION 20; THE INTRODUCED COLONY IS WITHIN THE NE 1/4 OF SECTION 29.

Ecological: ON ROCKY, DECOMPOSED GRANITE BEACH WITH LOTUS OBLONGIFOLIA, GRASSES, AND JUNCUS.

Threat: HEAVY BEACH USE IN VICINITY AND HIGH LAKE LEVEL HAS ELIMINATED HABITAT FOR NATURAL COLONIES.

General: SITE FENCED IN 1981; 181 PLANTS PRESENT. NONE SEEN 1982-1986, SITE INUNDATED; PLANTS EXTIRPATED FROM SITE (FERREIRA 1986). 500 PLANTS TRANSPLANTED IN 1987: 278 SEEN IN 1990, 166 IN 1991, <10 IN 1997, 8 IN 1999, UNKNOWN NUMBER SEEN IN 2000.

Owner/Manager: USFS-LAKE TAHOE BMU

Rorippa subumbellata

Tahoe yellow cress

Element Code: PDBRA270M0

Status	NDDB Element Ranks	Other Lists
Federal: Candidate	**Global:** G1	**CNPS List:** 1B.1
State: Endangered	**State:** S1.1	

Habitat Associations

General: LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS.

Micro: SANDY BEACHES, ON LAKESIDE MARGINS AND IN RIPARIAN COMMUNITIES; ON DECOMPOSED GRANITE SAND. 1885-1900(2395)M.

Occurrence No. 18 **Map Index:** 14198 **EO Index:** 13187

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Unknown

Dates Last Seen
Element: 1994-XX-XX
Site: 2000-XX-XX
Record Last Updated: 2008-02-29

Quad Summary: Meeks Bay (3912011/538D), Homewood (3912012/538C)
County Summary: El Dorado, Placer

Lat/Long: 39.06790º / -120.12705º
UTM: Zone-10 N4328241 E748557
Area: 13.3 acres
Elevation: 6,229 ft
Mapping Precision SPECIFIC
Symbol Type: POLYGON
Township: 14N
Range: 17E
Section: 08 **Qtr:** SW
Meridian: M

Location: TAHOMA, ON SMALL PRIVATE BEACHES ABOUT 0.1 MILE NORTHWEST PLACER / EL DORADO COUNTY LINE.

Location Detail: ADJACENT TO CONCRETE WALKWAY.

Ecological: WHITE, SANDY, DECOMPOSED GRANITE BEACH.

Threat: DEBRIS AND ROCK DUMPED NEXT TO WALKWAY IN 1982. NO BEACH PRESENT IN 1999.

General: 2 PLANTS SEEN IN 1979, ONLY 1 PLANT SEEN IN 1981. UNKNOWN NUMBER OF PLANTS FOUND IN 1980, 1993 AND 1994. NO PLANTS OBSERVED DURING SURVEYS IN 1982, 1983, 1986, 1988, 1990, 1995, 1996, 1997, 1998, 1999, OR 2000.

Owner/Manager: PVT

Occurrence No. 19 **Map Index:** 14115 **EO Index:** 25919

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2004-08-14
Site: 2004-08-14
Record Last Updated: 2008-03-17

Quad Summary: Homewood (3912012/538C)
County Summary: Placer

Lat/Long: 39.10719º / -120.15889º
UTM: Zone-10 N4332515 E745665
Area: 9.8 acres
Elevation: 6,229 ft
Mapping Precision SPECIFIC
Symbol Type: POLYGON
Township: 15N
Range: 16E
Section: 36 **Qtr:** XX
Meridian: M

Location: MOUTH OF BLACKWOOD CREEK AND JUST SOUTH OF THE KASPIAN PICNIC AREA, IDLEWILD, LAKE TAHOE.

Location Detail: TWO COLONIES. NORTHERN COLONY IS NEAR KASPIAN PICNIC AREA. SOUTHERN COLONY IS ON BOTH SIDES OF THE MOUTH OF BLACKWOOD CREEK.

Ecological: ON DECOMPOSED GRANITE SAND. ASSOCIATED WITH PHACELIA FRIGIDA, EPILOBIUM GLANDULOSUM, MIMULUS PRIMULOIDES, POLYGONUM, TRIFOLIUM, LEPIDIUM, SALIX, GRASSES, AND RUSHES.

Threat: DOCK IMPROVEMENT SOUTH OF CREEK MAY HAVE IMPACTED PORTION OF OCCURRENCE. THREATENED BY FOOT TRAFFIC AND RECREATION.

General: S COLONY: 35 PLANTS IN 1979, 103 IN 1980, 107 IN 1981, 208 IN 1982, 459 IN 1983, 1270 IN 1986, 669 IN 1988, 965 IN 1990, ALSO FOUND 1993, 1994, 1997, 1998, 1999, 2000, AND 2004; NOT FOUND 1995 OR 1996. 11 AT N COLONY IN 1991, NONE IN 1997.

Owner/Manager: PLA COUNTY, PVT

Rorippa subumbellata

Tahoe yellow cress

Element Code: PDBRA270M0

Status	NDDB Element Ranks	Other Lists
Federal: Candidate	**Global:** G1	**CNPS List:** 1B.1
State: Endangered	**State:** S1.1	

Habitat Associations

General: LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS.

Micro: SANDY BEACHES, ON LAKESIDE MARGINS AND IN RIPARIAN COMMUNITIES; ON DECOMPOSED GRANITE SAND. 1885-1900(2395)M.

Occurrence No. 21 **Map Index:** 14127 **EO Index:** 3106

Occ Rank: None
Origin: Refugium; Artificial Habitat/Occurrence
Presence: Possibly Extirpated
Trend: Unknown

Dates Last Seen
Element: 1994-XX-XX
Site: 2000-XX-XX
Record Last Updated: 2008-03-17

Quad Summary: Tahoe City (3912022/538B)
County Summary: Placer

Lat/Long: 39.12919º / -120.15620º
UTM: Zone-10 N4334964 E745822
Radius: 80 meters
Elevation: 6,230 ft
Mapping Precision SPECIFIC
Symbol Type: POINT
Township: 15N
Range: 16E
Section: 24 **Qtr:** SE
Meridian: M

Location: SOUTHWEST SIDE MOUTH OF WARD CREEK, APPROXIMATELY 1 MILE SOUTH OF SUNNYSIDE, LAKE TAHOE.

Ecological: SCATTERED ON GRAVELLY SAND AND GRAVEL/DECOMPOSED GRANITE. ASSOCIATED WITH GRASSES AND WEEDY SPECIES SUCH AS VERBASCUM.

Threat: WEEDY SPECIES CROWDING OUT THIS PLANT. ADJACENT TRASH BURNING AND CONSTRUCTION ACTIVITIES THREATEN.

General: 50 PLANTS SEEN IN 1979, 136 SEEN IN 1980, 20 IN 1981, 9 IN 1982, 121 IN 1983, 285 IN 1986, 186 IN 1988, 172 IN 1990, UNKNOWN NUMBER IN SEEN IN 1993 AND 1994. NONE FOUND IN 1995, 1996, 1998, 1999, OR 2000 SURVEYS.

Owner/Manager: PVT IN USFS-LAKE TAHOE BMU

Occurrence No. 28 **Map Index:** 30484 **EO Index:** 3999

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Unknown

Dates Last Seen
Element: 1994-XX-XX
Site: 2000-XX-XX
Record Last Updated: 2008-02-29

Quad Summary: Homewood (3912012/538C)
County Summary: Placer

Lat/Long: 39.07308º / -120.14052º
UTM: Zone-10 N4328779 E747373
Radius: 80 meters
Elevation: 6,230 ft
Mapping Precision SPECIFIC
Symbol Type: POINT
Township: 14N
Range: 17E
Section: 07 **Qtr:** SE
Meridian: M

Location: MOUTH OF MCKINNEY CREEK, CHAMBERS LODGE, LAKE TAHOE.

Location Detail: ON BOTH SIDES OF THE MOUTH OF THE CREEK. FOUND IN AMONG ROCKS ON THE NORTH BANK OF THE MOUTH OF THE CREEK, AND BETWEEN WILLOWS ON HIGHER GROUND ON THE SOUTH BANK.

Threat: HEAVY RECREATIONAL USE ON BEACH.

General: 19 PLANTS OBSERVED IN 1990. UNKNOWN NUMBER OBSERVED IN 1989, 1993, AND 1994. NO PLANTS FOUND IN 1981, 1995, 1996, 1997, 1998, 1999, OR 2000 SURVEYS.

Owner/Manager: PVT

Occurrence No. 29 **Map Index:** 30485 **EO Index:** 4000

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-XX-XX
Site: 2000-XX-XX
Record Last Updated: 2000-03-03

Quad Summary: Tahoe City (3912022/538B)
County Summary: Placer

Lat/Long: 39.15297º / -120.14374º
UTM: Zone-10 N4337638 E746816
Area: 32.2 acres
Elevation: 6,230 ft
Mapping Precision SPECIFIC
Symbol Type: POLYGON
Township: 15N
Range: 17E
Section: 18 **Qtr:** NW
Meridian: M

Location: BETWEEN SUNNYSIDE AND TAHOE CITY ON THE NORTHWEST SHORE OF LAKE TAHOE.

Location Detail: MAPPED ALONG THE SHORE AND WITHIN THE NE 1/4 OF THE NW 1/4 OF SECTION 18 AND THE SE 1/4 OF THE SW 1/4 OF SECTION 17.

General: PLANTS APPARENTLY OBSERVED HERE BETWEEN 1989-1991 BY SHAFFER. PLANTS ABSENT DURING SURVEYS IN 1979-1981, 1990; PRESENT IN 1993; ABSENT IN 1994-2000. NO BEACH PRESENT IN 1999.

Owner/Manager: UNKNOWN

Rorippa subumbellata

Tahoe yellow cress

Element Code: PDBRA270M0

Status	NDDB Element Ranks	Other Lists
Federal: Candidate	**Global:** G1	**CNPS List:** 1B.1
State: Endangered	**State:** S1.1	

Habitat Associations

General: LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS.

Micro: SANDY BEACHES, ON LAKESIDE MARGINS AND IN RIPARIAN COMMUNITIES; ON DECOMPOSED GRANITE SAND. 1885-1900(2395)M.

Occurrence No. 30 **Map Index:** 43911 **EO Index:** 43911

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Unknown

Dates Last Seen
Element: 1994-XX-XX
Site: 1999-XX-XX
Record Last Updated: 2000-09-27

Quad Summary: Homewood (3912012/538C)
County Summary: Placer

Lat/Long: 39.09677º / -120.16403º
UTM: Zone-10 N4331345 E745257
Radius: 1/10 mile
Elevation: 6,230 ft
Mapping Precision NON-SPECIFIC
Symbol Type: POINT
Township: 14N
Range: 16E
Section: 01 **Qtr:** XX
Meridian: M

Location: CHERRY STREET, ABOUT 0.8 MILE SOUTH OF BLACKWOOD CREEK ON HIGHWAY 89, LAKE TAHOE.

Location Detail: ON NARROW COBBLE/SAND BEACH.

Threat: LOTS OF FOOT AND RECREATION TRAFFIC.

General: PLANTS SEEN IN 1990-1994, NOT SEEN 1995-2000.

Owner/Manager: UNKNOWN

Occurrence No. 33 **Map Index:** 70991 **EO Index:** 71909

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1993-XX-XX
Site: 2000-XX-XX
Record Last Updated: 2008-03-05

Quad Summary: Meeks Bay (3912011/538D)
County Summary: El Dorado

Lat/Long: 39.03135º / -120.11600º
UTM: Zone-10 N4324214 E749641
Radius: 80 meters
Elevation: 6,225 ft
Mapping Precision SPECIFIC
Symbol Type: POINT
Township: 14N
Range: 17E
Section: 29 **Qtr:** E
Meridian: M

Location: MEEKS BAY VISTA, SOUTH OF MEEKS BAY, LAKE TAHOE.

Location Detail: ABOUT 100 FEET SOUTH OF THE MEEKS BAY VISTA / RUBICON BAY PROPERTY LINE.

Ecological: ON A WHITE SAND POCKET BEACH.

General: 15 PLANTS OBSERVED IN 1980 AND 1981. UNKNOWN NUMBER ALSO SEEN IN 1993. NO PLANTS WERE FOUND DURING SURVEYS IN 1982, 1983, 1986, 1990, 1994, 1998, AND 2000.

Owner/Manager: PVT

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

October 27, 2009

Document Number: 091027022054

Garth P. Alling
Hauge Brueck Associates LLC
Box 10291
Zephyr Cove, NV 89448

Subject: Species List for Homewood Mountain Resort Master Plan EIR/EIS

Dear: Mr. Alling

We are sending this official species list in response to your October 27, 2009 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be January 25, 2010.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at www.fws.gov/sacramento/es/branches.htm.

Endangered Species Division

TAKE PRIDE IN AMERICA

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 091027011426

Database Last Updated: January 29, 2009

Quad Lists

Listed Species

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus (=Salmo) clarki henshawi
Lahontan cutthroat trout (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)

Candidate Species

Amphibians

Bufo canorus
Yosemite toad (C)

Rana muscosa
mountain yellow-legged frog (C)

Mammals

Martes pennanti
fisher (C)

Plants

Rorippa subumbellata
Tahoe yellow-cress (C)

Quads Containing Listed, Proposed or Candidate Species:

ROCKBOUND VALLEY (523B)
TAHOE CITY (538B)
HOMEWOOD (538C)
MEEKS BAY (538D)
WENTWORTH SPRINGS (539D)

County Lists

No county species lists requested.

Key:

(E) *Endangered* - Listed as being in danger of extinction.
(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.
(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
Critical Habitat - Area essential to the conservation of a species.
(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.
(C) *Candidate* - Candidate to become a proposed species.
(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the

California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be January 25, 2010.

CNPS California Native Plant Society — Inventory of Rare and Endangered Plants

v7-10b 4-21-10

Status: search results - Tue, May. 11, 2010 12:30 c

{QUADS_123} =~ m/538C/ Search

Tip: Words meant to be searched as a unit should be wrapped in quotes, e.g., "coastal dunes".[all tips and help.][search history]

Your Quad Selection: Homewood (538C) 3912012

Hits 1 to 6 of 6

Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
		1	**Botrychium crenulatum**	scalloped moonwort	Ophioglossaceae	List 2.2
		1	**Botrychium montanum**	western goblin	Ophioglossaceae	List 2.1
		1	**Carex praticola**	northern meadow sedge	Cyperaceae	List 2.2
		1	**Epilobium oreganum**	Oregon fireweed	Onagraceae	List 1B.2
		1	**Rorippa subumbellata**	Tahoe yellow cress	Brassicaceae	List 1B.1
		1	**Scutellaria galericulata**	marsh skullcap	Lamiaceae	List 2.2

No more hits.

powered by WODA

May 7, 2007

Midkiff & Associates, Inc.
PO Box 12427
Zephyr Cove, NV 89448
775 588 1090

RE: Remote camera surveys for furbearers (e.g., pine martens) Homewood Ski Resort

Dear Mr. Midkiff:

This letter reports the results of Wildlife Resource Consultants' remote camera survey for pine martens (*Martes americana*) and other furbearers for Homewood Ski Resort. The project is situated in Placer County, California, in Township 14 north, Range 16 east, sections 1, 2, 11, and 12.

METHOD

The protocol for the photographic bait stations followed that described in American Marten, Fisher, Lynx, and Wolverine: Survey Methods for their Detection (Zielinski and Kucerea 1995, USDA Pacific Southwest Research Station). Two cameras were placed at least one mile apart at locations with the most appropriate habitat, and where track plate marten detections were recorded in 1996 and 1997 (U.S. Forest Service, Lake Tahoe Basin Management Unit, wildlife occurrence records).

One camera station was placed near the west shore of Lake Louise (UTM: 0743548, 4328656; elevation 7,746 feet) and the other one was established near the bottom of the Dutch Treat ski run (UTM: 0744564, 4328928; elevation 6,994 feet) (Figure 1). The UTM locations are approximate due to heavy tree cover that interferes with the satellite reception. The two camera stations used Trail Master 550 (Passive Infrared Trail Monitor) in conjunction with the Trail Master 35-1 camera kit. The two remote cameras operated for three weeks, from March 18 through April 8, 2007.

Stations were baited with a whole chicken that was attached to a tree by threading wire through the chicken's cavity and wrapping the wire around the bird and a nail. Opened cans of Kal Kan dog food were also hung by wire and used as bait during weeks two and three. In addition, both stations were baited with scent lure the first week.

RESULTS

Pine martens were detected during weeks 2 through 3 at the Dutch Treat ski run station and week 3 at the Lake Louise station.

Dutch Flat ski run Station

The number of recorded events (i.e., the receiver is also an event recorder that stores the date, time, event number when the beam is broken, and whether a picture is taken each time the beam is broken) during the first week the camera was set up was 247. The number of events recorded during the second week was 747 while the number of events recorded during the third week was 620.

Marten tracks and scats were noted around the base and vicinity of the bait tree when the bait was replaced and the film changed the second week. Photographs of martens were taken March 29, March 30, April 2, and April 3.

March 30

Martens were photographed throughout a 24-hour time period on March 29, beginning at 3:50 hours and ending at 22:49 hours.

Three photographs of a similar-looking marten were taken at 3:50, 3:59, and 4:35. Although these photographs were taken nine, 36, and 45 minutes apart, based on size, coat color, and coat condition, it appears to be the same animal.

Ten photographs of a new marten with a damaged coat on the left rib area (hereafter referred to as scar marten) were taken between 5:13 and 5:36.

Seven pictures of a large marten were taken during the day at 11:15 through 11:37. This animal appears much larger than the previous two martens with a richer brown colored tail and haunches.

Two photographs of a marten were taken at 19:17 and 19:21 hours. This animal could be the marten that was first photographed at 3:50 hours (hereafter referred to as bald spot, due to the small patch of missing fur visible on its left hind leg, perhaps from a bite mark).

Five photographs of scar marten were taken beginning at 20:53, 20:56, 21:33, 21:37 and 21:39.

A marten was photographed at 22:49. Based on size and coat color, this marten appears to be the bald spot marten, the same animal first photographed at 3:50 hours and again at 19:17 and 19:21 hours. On March 30, it appears the bald spot animal was again photographed at 5:02 hours.

Two photographs of scar marten were taken at 5:07 and again at perhaps 5:09. The time is cut off on the second photograph. Because the chicken was gone when the film was changed, it is assumed that the martens continued to consume the chicken. Further events could not be photographed as the roll of film was finished.

In summary, on March 29, it appears that a minimum of two martens (the small dark furred bald spot marten and the scar marten), and probably three (the very large individual photographed during the day), were photographed at the Dutch Flat ski run Station.

April 2

Two photographs of the small dark furred marten called bald spot were taken at 1:34 and again at 2:07.

Three photographs of a marten were taken April 3 at 9:50, 9:52, and 10:06. This animal appears to be the same large individual previously photographed during the day.

April 3
Three photographs of a marten were taken at 4:05, 4:08, and 4:13. No clearly identifying features of the marten (e.g., scar, bite marks) are evident.

Lake Louise Station
The number of recorded events during the first week the camera was set up was only two; they were the photographs taken when the camera station was established. The bait was untouched. The number of events recorded during the second week was 401. Events recorded could have been due to snowfall, although the bait was also missing. The number of events recorded during the third week was 545.

No evidence of marten activity (e.g., tracks, scat) was noted around the station when snow was present. Photographs of martens were taken April 4 when no snow was on the ground in the vicinity of the station. Snow remaining in the general area was firm and would not show any tracks.

April 4
Ten photographs of a marten were taken beginning some time at night. Unfortunately, the time feature on the Trail Master failed to properly record the time. The same marten appears to be photographed for the series of ten shots. The marten is the same size, very glossy, with dark brown fur extending from its tail onto its rump and hind legs.

DISCUSSION
Marten occur at Homewood Ski Resort and are found in the central portion of the resort's busy area (Dutch Flat ski run camera station) as well as on the periphery (Lake Louise camera station). It can be assumed that they use the whole resort area where suitable habitat is present. Martens have been reported to occur outside the ski resort's boundary. A Homewood Ski Resort ski patroller, Danney Bartlett, reported that he saw a pine marten about mid-February at Richardson's bowl, an informally named site located approximately one mile north of Lake Louise. Mr. Bartlett's description of the animal and its behavior makes it likely he did see a pine marten.

Based on size, fur color, and unique marks (e.g., apparent scar), it appears that a minimum of two and possibly up to four marten may occupy Homewood Ski Resort. Due to its glossy smooth coat, which could be an artifact of the camera, the marten photographed at Lake Louise does not seem to be similar to any of the individuals photographed at the Dutch Flat ski run. However, it cannot be ruled out that is was one of the martens previously photographed since no martens were photographed at the Dutch Flat ski run at the same date and time.

In the Sierra Nevada, the home range size for martens is estimated between 790 to 889 acres. The Homewood Ski Resort is estimated at approximately 1,500 acres. Therefore, it would seem that the home ranges of the photographed martens overlap, as is known for males and females, or perhaps some individuals are transient or predispersal young.

While martens were detected at Homewood Ski Resort during the day in winter, no martens were detected at stations in the winter after daylight in the Final Report Baseline and Initial Monitoring Assessment of *Martes americana*, the American Marten, at Heavenly Ski Resort, Lake Tahoe

(Dr. Cablk and S. Spaulding, USFS, LTBMU). The Dutch Flat ski run camera station was situated between two ski runs. Although neither run is a main ski run, it can be assumed they had some skier activity during the day. The Lake Louise camera station was outside the patrolled ski area boundary, but not out of the ski area limits. Based on tracks, some skiers do ski in the vicinity of Lake Louise.

For a presence or absence survey, as soon as the target species is detected, the survey can end. However, the Dutch Flat ski run camera station was maintained for one extra week after the first series of detections.

No other furbearer species, such as fisher (*Martes pennanti*), wolverine (*Gulo gulo luteus*), or Sierra Nevada red fox (*Vulpes vulpes necator*) were identified at the camera stations.

Should you have any questions, please feel free to contact me.

Sincerely,

Sue Fox
Principal Biologist
Wildlife Resource Consultants

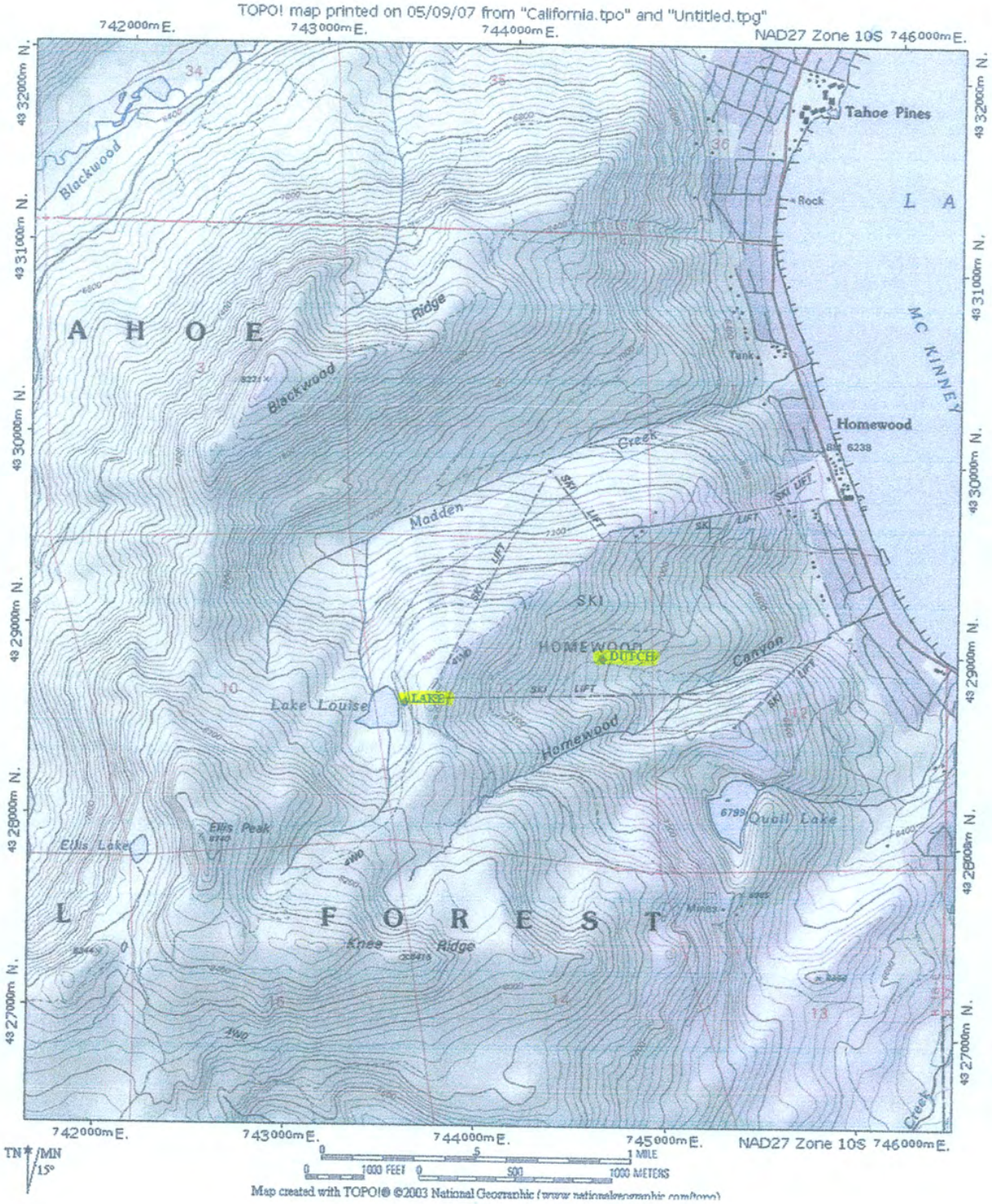

Figure 1. Locations of the two camera stations used for the pine marten surveys at Homewood Ski Resort, March 18 through April 8, 2007.

July 10, 2007

Midkiff & Associates, Inc.
PO Box 12427
Zephyr Cove, NV 89448
775 588 1090

RE: Protocol Spotted Owl Surveys - Homewood Ski Resort

Dear Mr. Midkiff:

This letter reports the results of Wildlife Resource Consultants' survey of the Homewood Ski Resort for spotted owls (*Strix occidentalis*). The project is situated in Placer County, California, in Township 14 north, Range 16 east, sections 1, 2, 11, and 12.

The surveys adhered to the *Protocol for Surveying for Spotted Owls in Proposed Management Activity Areas and Habitat Conservation Areas (March 12, 1991, Revised February 1993*). Ten call stations between ¼ to ½ miles apart were established along roads (see Figure 1). The UTMs for these call stations are listed in Appendix A. Three nighttime surveys were conducted at the site: May 29, June 8, and June 27, 2007. No spotted owls were detected during the surveys.

Should you have any questions, please feel free to contact me.

Sincerely,

Sue Fox
Principal Biologist
Wildlife Resource Consultants

base: 2005 IKONOS color satellite imagery, georeferenced

0 250 500 1,000 Meters

1:18,000

Homewood Wildlife Surveys 2007

Figure 1. Spotted Owl Call Stations

Wildlife Resource Consultants
P. O. Box 68
Cedarville, CA 96104

September 22, 2007

Midkiff & Associates, Inc.
PO Box 12427
Zephyr Cove, NV 89448
775 588 1090

RE: Wildlife surveys - Homewood Ski Resort

Dear Mr. Midkiff:

This letter reports the results of Wildlife Resource Consultants' survey of the Homewood Ski Resort for the following species: northern goshawk (*Accipiter gentilis*), willow flycatcher (*Epidonax traillii*), osprey (*Pandion haliaetus*), amphibians, and bats. In addition, a general reconnaissance survey was performed and a list of species observed in the project area was compiled (see Table 2). The Homewood Ski Resort project area is situated in Placer County, California, in Township 14 north, Range 16 east, sections 1, 2, 11, and 12.

Northern goshawk

Method

Northern goshawks are listed as a species of concern by the U.S. Fish and Wildlife Service and are designated a sensitive species by the U.S. Forest Service (USFS) and a Species of Special Interest by the Tahoe Regional Planning Agency (TRPA). Potential northern goshawk habitat was surveyed using the *9 August 2000 Survey Methodology for Northern Goshawks in the Pacific Southwest Region, U.S. Forest Service*. Two site visits are required per survey year. The broadcast acoustic surveys were conducted July 13 and 14, and August 13 and 14, 2007. Prior to conducting the protocol surveys, a color aerial photograph (scale 1:6,000) was reviewed and a reconnaissance survey was performed to determine where the survey points should be placed. Sixty-one call stations were established so that all suitable habitat was within 150 meters of a calling station (see Figure 2).

Results and Discussions

No northern goshawks were detected during the surveys. The likelihood of goshawks nesting in the Homewood Ski Resort project area is considered low. Goshawks begin courtship activities in February, when the ski resort is open and busy with skiers. This species is highly susceptible to human disturbance, especially during courtship and nest building, and they are known to abandon nest areas following human intrusion. Moreover, the project area habitat does not contain preferred nesting habitat characteristics as it is primarily second-growth trees dissected by numerous ski runs. There are some patches of habitat that receive less human disturbance and that contain larger diameter trees (e.g., south portion Quail Lake). Such locations are the most likely sites for a goshawk nest territory. The USFS Lake Tahoe Basin Management Unit (LTBMU) does not have any records of goshawks nesting within one mile of the Homewood Ski Resort nor does the agency have any records of goshawks nesting in any other Lake Tahoe basin ski resorts (e.g., Heavenly).

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530 708 0691

Willow flycatcher

Method

The willow flycatcher is a USFS LTBMU sensitive and Management Indicator Species. Potentially suitable willow flycatcher habitat was surveyed using *A Willow Flycatcher Survey Protocol for California June 6, 2000 (Authors: Helen Bombay, Teressa Ritter, Brad Valentine)*. Two surveys are required per survey year. Prior to conducting the protocol surveys, a color aerial photograph (scale 1:6,000) was reviewed and a reconnaissance survey was performed to determine where the survey points should be placed. The broadcast acoustic surveys were conducted June 16 and 17 and July 2 and 3, 2007. Forty-six call stations were established (see Figure 3). In suitable habitat, the survey points were spaced at a maximum distance of 50 meters apart. In some locations, call stations were farther than 50 meters apart because they were separated by unsuitable habitat.

Results and Discussions

No willow flycatchers were detected during the surveys. Suitable nesting habitat is present in the project area. Nesting habitat typically includes moist meadows with perennial streams and smaller spring-fed or boggy areas with willow (*Salix spp*.) or alder (*Alnus spp*.). Willow flycatcher nest territories generally contain open water (i.e., running water or standing water), boggy seeps, or saturated soil. Willow flycatchers have been found in riparian environments of various shapes and sizes ranging from small willow-surrounded lakes or ponds with a fringe of meadow or grassland to various willow-lined streams, grasslands, or boggy areas. These habitat types are present in the project area.

Wilson's warbler (*Wilsonia pusilla*) was commonly observed in the upper elevation reaches of Madden Creek. The yellow warbler (*Dendroica petechia*) was also observed along Madden Creek and at Quail Lake. Nesting yellow warblers are a California state species of concern.

Osprey

Method

Ospreys are a TRPA Species of Special Interest and are protected by the Migratory Bird Treaty Act. No specific protocol exists for detecting nesting ospreys. The survey technique relied on direct observations of ospreys and a search for indirect evidence (e.g., nests, prey remains, feathers). Three site visits were performed: June 8, 18, and July 1, 2007. A total of 10 hours were spent surveying forested habitat. The surveys were conducted on foot and by vehicle. Vehicle surveys were performed along all roads in the project area to search for potential osprey nests. The forest was scanned with binoculars for visual evidence of nesting activity such as perched birds or stick nests.

Results and Discussions

Ospreys were detected flying over the project area on several occasions and were observed foraging in Quail Lake on June 17. However, no osprey nests were located in the project area.

Amphibians

Method

Amphibian surveys were conducted using a standard, active visual encounter technique for eggs, larvae, metamorphs, and adults. Two biologists conducted the creek surveys on June 17 and 18, 2007. The biologists walked on different sides, one-way down Homewood Canyon (Creek) and Madden Creek. Logs and rocks were turned over in boggy areas (e.g., upper elevations of Madden Creek) to search for adult amphibians. Netting was performed in shallow water (< 1 meter) at Quail Lake and Lake Louise as well as in Madden Creek. One night of spotlighting was conducted at Lake Louise on June 17.

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Results and Discussions
Adults, larvae, and newly metamorphosed pacific tree frogs (*Hyla regilla*) and western toads (*Bufo boreas*) were found in the project area. Pacific tree frogs were detected at Lake Louise, Quail Lake, along Madden Creek, and in the upper elevations of Homewood Canyon (Creek) (UTM: 0743641, 4327757). Western toads were only found in the latter location.

The mountain yellow-legged frog is a federal candidate species and USFS sensitive species, and the northern leopard frog is a sensitive species. Neither of these species was detected in the project area. Aquatic habitat with trout (e.g., Quail Lake, Lake Louise) is considered unsuitable habitat for mountain yellow-legged frogs due to predaceous trout. However, no trout were detected in Madden Creek, which could provide suitable habitat for mountain yellow-legged frogs.

Bats
Method
Acoustic surveys were conducted for bat species using Pettersson ultrasonic detectors (Model D240X). The detectors were turned on around 7:00 pm and operated throughout the night to sample the temporal activity of bats for one night at each location. Table 1 shows the detector locations. Bat surveys were conducted June 16 and 18, 2007. SonoBat™ software was used to determine species identification. SonoBat extracts individual calls from recordings made by the Pettersson recorders, produces a sonogram of the call, and allows comparison with samples from known species.

Table 1. Location of bat detectors for the Homewood Ski Resort Project area (Zone 11, NAD 27).

SITE NUMBER	Survey Date	EASTING	NORTHING
1 - Lake Louise	June 16	0743521	4328681
2 - Lake Louise	June 16	0743509	4328512
3 – North summit	June 16	0743882	4328584
4 – Homewood lodge	June 16	0745815	4329072
5 – Homewood Canyon	June 18	0745085	4328811
6 – Madden Creek	June 18	0744247	4329935

Results and Discussions
The Lake Louse tapes (sites 1 and 2) and north summit tape (site 3) were bad recordings that contained no identifiable calls. However, bats were recorded at all three sites. It is possible that the winds during the night of June 16 adversely affected the quality of the recordings. Bats roost inside the Homewood lodge (i.e., vocalizations, scat, urine, and other evidence of their presence was noted). The Homewood lodge (site 4) tape contained bat calls, but most of the files were of non-bat noise. Although there were files with bat calls, the calls were masked by the background noise (e.g., refrigerators, other equipment). The bat call frequencies are wide ranging and a best guess is that they are a species of Myotis, but it cannot be confirmed. Only one bat species, the little brown Myotis (*Myotis lucifugus*), was recorded at sites 5 and 6. Only a few calls were recorded at each site.

Sierra Nevada mountain beaver
Method
Drainages with flowing or standing water were surveyed by one or two biologists. A single biologist walked up and down the drainage, while two biologists walked down a drainage on

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opposite sides. The location of burrows and any sign (e.g., fresh plant clippings, runways) were recorded using a hand-held GPS unit.

Results and Discussions

Sierra Nevada mountain beavers were recorded in four drainages (see Figure 5). Active and inactive colonies were detected in all four drainages. The presence of mountain beaver burrows was the primary criteria for determining the presence of a colony. Active colonies had signs such as hay piles, fresh plant clippings, and clipped, maintained runways. Water flowed through many of the burrows. However, some burrows with clipped plants were located up to 15 meters from water.

Table 2. Wildlife Species Observed in the Homewood Ski Resort Project Area, including those detected during camera surveys for furbearers and acoustic surveys for bats.

Birds		
American goldfinch (*Carduelis tristis*)	Downy woodpecker (*Picoides pubescens*)	Red-breasted nuthatch (*Sitta canadensis*)
American kestrel (*Falco sparverius*)	Evening grosbeak (*Coccothraustes vespertinus*)	Red-naped sapsucker (*Sphyrapicus nuchalis*)
American robin (*Turdus migratorius*)	Fox sparrow (*Passerella iliaca*)	Red-tailed hawk (*Buteo jamaicensis*)
Barn swallow (*Hirundo rustica*)	Green tailed towhee (*Pipilo chlorurus*)	Red-winged blackbird (*Agelaius phoeniceus*)
Black-headed grosbeak (*Pheucticus melanocephalus*)	House finch (*Carpodacus mexicanus*)	Rufous-sided towhee (*Pipilo erythrophthalmus*)
Blue grouse (*Dendragapus obscurus*)	House wren (*Troglodytes aedon*)	Solitary vireo (*Vireo solitarius*)
Brewer's blackbird (*Euphagus cyanocephalus*)	Hermit thrush (*Catharus guttatus*)	Song sparrow (*Melospiza melodia*)
Brewer's sparrow (*Spizella breweri*)	Lazuli bunting (*Passerina ciris*)	Steller's jay (*Cyanocitta stelleri*)
Broad-tailed hummingbird (*Selasphorus platycercus*)	MacGillivray's warbler (*Oporornis tolmiei*)	Warbling vireo (*Vireo gilvus*)
Brown creeper (*Certhia americana*)	Mallard (*Anas platyrhynchos*)	Western bluebird (*Sialia mexicana*)
Brown-headed cowbird (*Molothrus ater*)	Mountain quail (*Oreortyx pictus*)	Western wood-pewee (*Contopus sordidulus*)
California quail (*Callipepla californica*)	Mountain chickadee (*Parus gambeli*)	White-breasted nuthatch (*Sitta carolinensis*)
Calliope hummingbird (*Stellula calliope*)	Mourning dove (*Zenaida macroura*)	White-headed woodpecker (*Picoides albolarvatus*)
Cassin's finch (*Carpodacus cassinii*)	Northern flicker (*Colaptes auratus*)	Wilson's warbler (*Wilsonia pusilla*)
Common nighthawk (*Chordeiles minor*)	Northern harrier (*Circus cyaneus*)	White-crowned sparrow (*Zonotrichia leucophrys*)
Common raven (*Corvus corax*)	Olive-sided flycatcher (*Contopus borealis*)	Yellow-rumped warbler (*Dendroica coronata*)
Cooper's hawk (*Accipiter cooperii*)	Orange-crowned warbler (*Vermivora bachmanii*)	Yellow warbler (*Dendroica petechia*)

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Birds		
Dark-eyed junco (*Junco hyemalis*)	Osprey (*Pandion haliaetus*)	
Chipping sparrow (*Spizella passerina*)	Pine grosbeak (*Pinicola enucleator*)	
Mammals		
Black bear (*Ursus americanus*)	Little brown myotis (*Myotis lucifugus*)	Raccoon* (*Procyon lotor*)
California ground squirrel (*Spermophilus beecheyi*)	Mountain cottontail (*Slyvilagus nuttallii*)	Sierra Nevada mountain beaver * (*Aplodontia rufa*)
Coyote (*Canis latrans*)	Mule deer * (*Odocoileus hemionus*)	Vole (*Microtus* spp)
Chipmunk (*Tamias* spp.)	Northern pocket gopher * (*Thomomys talpoides*)	Western gray squirrel (*Sciurus griseus*)
Douglas squirrel (*Tamiasciurus douglasii*)	Pine marten (*Martes americana*)	Western jumping mouse (*Zapus princeps*)
Golden-mantled ground squirrel (*Spermophilus lateralis*)	Porcupine* (*Erithizon dorsatum*)	Woodrat * (*Neotoma* spp.)
Reptiles and Amphibians		
Pacific tree frog (*Hyla regilla*)	Western toad (*Bufo boreas*)	

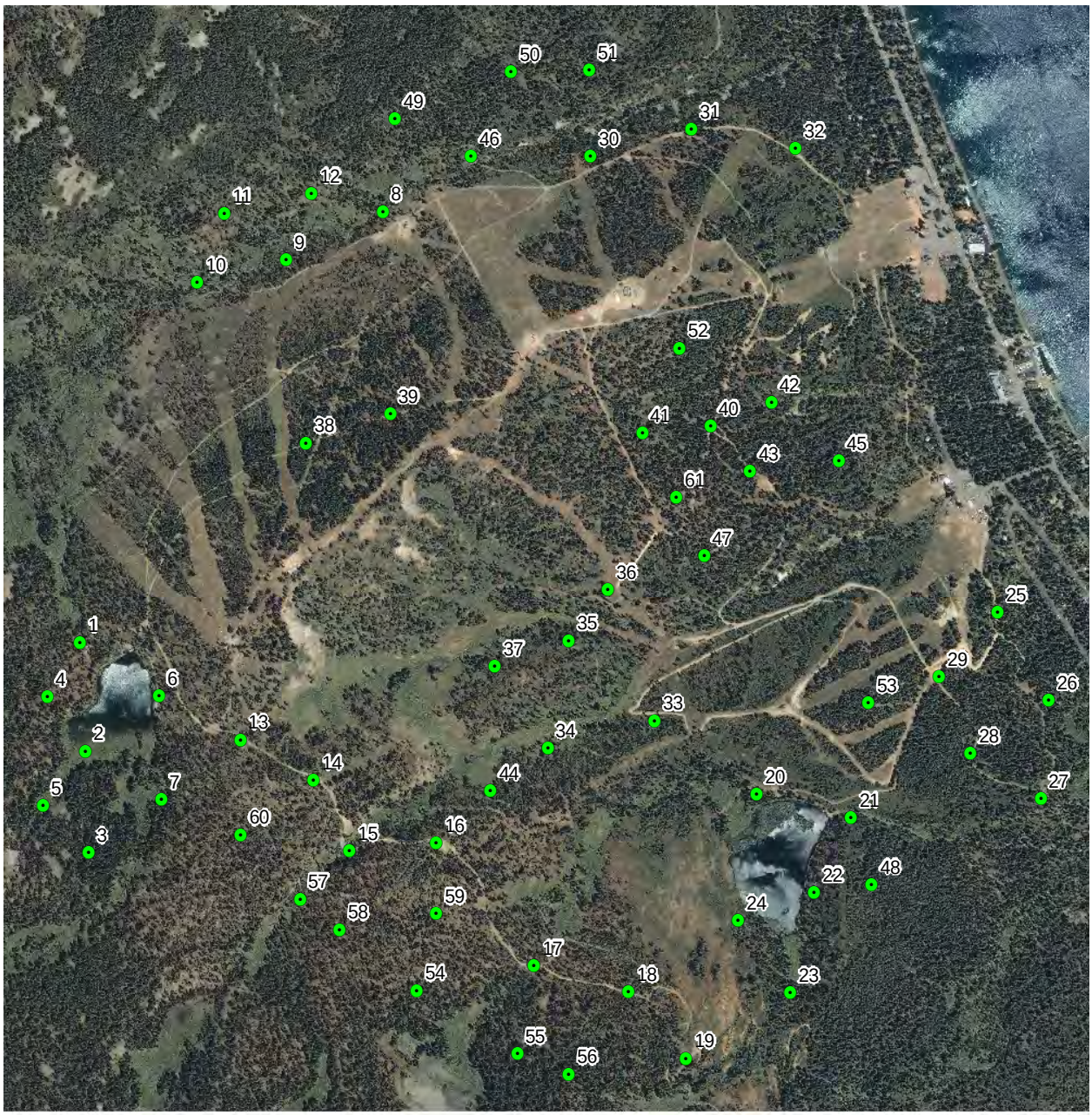
* Species detected by sign such as tracks, scat, burrows

Should you have any questions, please feel free to contact me.

Sincerely,

Sue Fox
Principal Biologist
Wildlife Resource Consultants

Wildlife Resource Consultants
PO Box 68
Cedarville CA 96104
530 708 0691



base: 2005 IKONOS color satellite imagery, georeferenced

0 250 500 1,000 Meters

1:18,000

Homewood Wildlife Surveys 2007

Figure 2. Northern Goshawk Call Stations

Wildlife Resource Consultants
P. O. Box 68
Cedarville, CA 96104

base: 2005 IKONOS color satellite imagery, georeferenced

0 250 500 1,000 Meters

1:18,000

Homewood Wildlife Surveys 2007

Figure 3. Willow Flycatcher Call Stations

Wildlife Resource Consultants
P. O. Box 68
Cedarville, CA 96104

base: 2005 IKONOS color satellite imagery, georeferenced

0 250 500 1,000 Meters

1:18,000

Homewood Wildlife Surveys 2007

Figure 4. Drainages occupied by Sierra Nevada mountain beaver.

Wildlife Resource Consultants
P. O. Box 68
Cedarville, CA 96104

August 6, 2008

Todd Wees
JMA Ventures, LLC
PO Box 3938
Truckee, CA 96160

RE: Protocol Northern Goshawk Surveys - Homewood Ski Resort

Dear Mr. Wees:

This letter reports the results of Wildlife Resource Consultants' survey of the Homewood Ski Resort for northern goshawks (*Accipiter gentilis*). The Homewood Ski Resort project area is situated in Placer County, California, in Township 14 north, Range 16 east, sections 1, 2, 11, and 12.

Northern goshawks are listed as a species of concern by the U.S. Fish and Wildlife Service and are designated a sensitive species by the U.S. Forest Service (USFS) and a Species of Special Interest by the Tahoe Regional Planning Agency (TRPA). Potential northern goshawk habitat was surveyed using the *9 August 2000 Survey Methodology for Northern Goshawks in the Pacific Southwest Region, U.S. Forest Service*. Two site visits are required per survey year. The broadcast acoustic surveys were conducted June 24 and 25, July 30, and August 3, 2008. The 2008 survey utilized the same survey point locations as the 2007 survey. Sixty-one call stations were established so that all suitable habitat was within 150 meters of a calling station (see Figure 1).

No northern goshawks were detected during the surveys. This survey concludes the second year of a two-year, broadcast acoustic protocol survey for northern goshawks. As stated in the 2007 report:

> The likelihood of goshawks nesting in the Homewood Ski Resort project area is considered low. Goshawks begin courtship activities in February, when the ski resort is open and busy with skiers. This species is highly susceptible to human disturbance, especially during courtship and nest building, and they are known to abandon nest areas following human intrusion. Moreover, the project area habitat does not contain preferred nesting habitat characteristics as it is primarily second-growth trees dissected by numerous ski runs. There are some patches of habitat that receive less human disturbance and that contain larger diameter trees (e.g., south portion Quail Lake). Such locations are the most likely sites for a goshawk nest territory. The USFS Lake Tahoe Basin Management Unit (LTBMU) does not have any records of goshawks nesting within one mile of the Homewood Ski Resort nor does the agency have any records of goshawks nesting in any other Lake Tahoe basin ski resorts (e.g., Heavenly).

Wildlife Resource Consultants
PO Box 68
Cedarville CA 96104
530 708 0691

Should you have any questions, please feel free to contact me.

Sincerely,

Sue Fox
Principal Biologist
Wildlife Resource Consultants

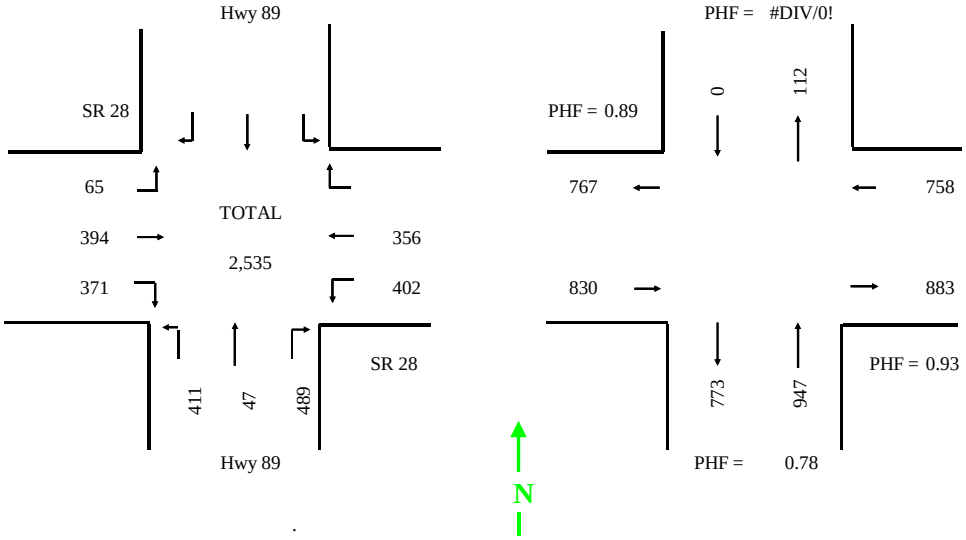
Wildlife Resource Consultants
PO Box 68
Cedarville CA 96104
530 708 0691

INTERSECTION TURNING MOVEMENT SUMMARY

INTERSECTION:	**Highway 89/State Route 28**	**TIME:**	**3:00 PM to 6:00 PM**
JURISDICTION:		**DATE:**	**Fri 8-22-08**
PROJECT TITLE:	**Homewood Mountain Resort EIS**	**PROJECT NO:**	**RN08-0403**

PEAK HOUR PERIOD: 3:15 PM to 4:15 PM

PEAK 15 MINUTE PERIOD: 3:45 PM to 4:00 PM



INTERSECTION .

PEAK HOUR FACTOR: 0.87

RUNNING COUNTS	SR 28 Eastbound Left	Thru	Right	SR 28 Westbound Left	Thru	Right	Hwy 89 Northbound Left	Thru	Right	Hwy 89 Southbound Left	Thru	Right	
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	8	89	84	84	92		94	6	61				518
3:30 PM	25	192	173	160	172		195	15	192				1124
3:45 PM	39	285	257	261	275		316	32	306				1771
4:00 PM	58	384	372	375	355		409	45	385				2383
4:15 PM	73	483	455	486	448		505	53	503				3006
4:30 PM	86	564	537	569	513		588	66	550				3473
4:45 PM	95	661	631	670	610		681	72	670				4090
5:00 PM	109	759	699	781	687		764	77	752				4628
5:15 PM	128	829	759	899	783		835	83	838				5154
5:30 PM	139	898	826	987	839		893	92	894				5568
5:45 PM	151	980	890	1062	908		945	104	949				5989
6:00 PM	164	1061	959	1139	957		988	116	1015				6399

PERIOD COUNTS													
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	8	89	84	84	92		94	6	61				518
3:30 PM	17	103	89	76	80		101	9	131				606
3:45 PM	14	93	84	101	103		121	17	114				647
4:00 PM	19	99	115	114	80		93	13	197				730
4:15 PM	15	99	83	111	93		96	8	47				552
4:30 PM	13	81	82	83	65		83	13	120				540
4:45 PM	9	97	94	101	97		93	6	82				579
5:00 PM	14	98	68	111	77		83	5	86				542
5:15 PM	19	70	60	118	96		71	6	56				496
5:30 PM	11	69	67	88	56		58	9	55				413
5:45 PM	12	82	64	75	69		52	12	66				432
6:00 PM	13	81	69	77	49		43	12					344

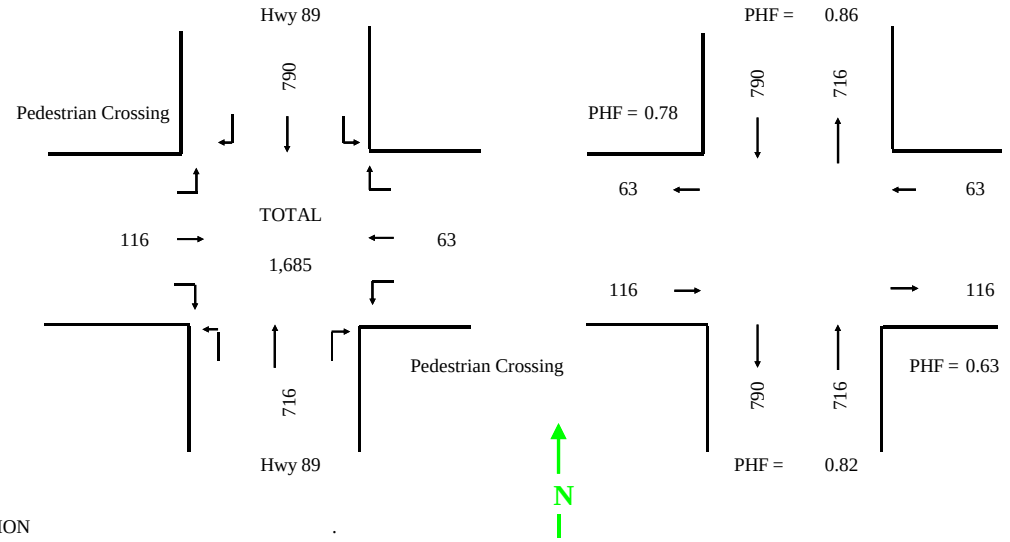
HOURLY TOTALS													
Beginning At	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:00 PM	58	384	372	375	355		409	45	503				2501
3:15 PM	65	394	371	402	356		411	47	489				2535
3:30 PM	61	372	364	409	341		393	51	478				2469
3:45 PM	56	376	374	409	335		365	40	446				2401
4:00 PM	51	375	327	406	332		355	32	335				2213
4:15 PM	55	346	304	413	335		330	30	344				2157
4:30 PM	53	334	289	418	326		305	26	279				2030
4:45 PM	56	319	259	392	298		264	32	263				1883
5:00 PM	55	302	260	358	270		224	39					1508

INTERSECTION TURNING MOVEMENT SUMMARY

INTERSECTION:	**Highway 89/Pedestrian Crossing**	**TIME:**	**3:00 PM to 6:00 PM**
JURISDICTION:		**DATE:**	**Fri 8-22-08**
PROJECT TITLE:	**Homewood Mountain Resort EIS**	**PROJECT NO:**	**RN08-0403**

PEAK HOUR PERIOD: 4:00 PM to 5:00 PM

PEAK 15 MINUTE PERIOD: 4:45 PM to 5:00 PM



INTERSECTION .

PEAK HOUR FACTOR: 0.86

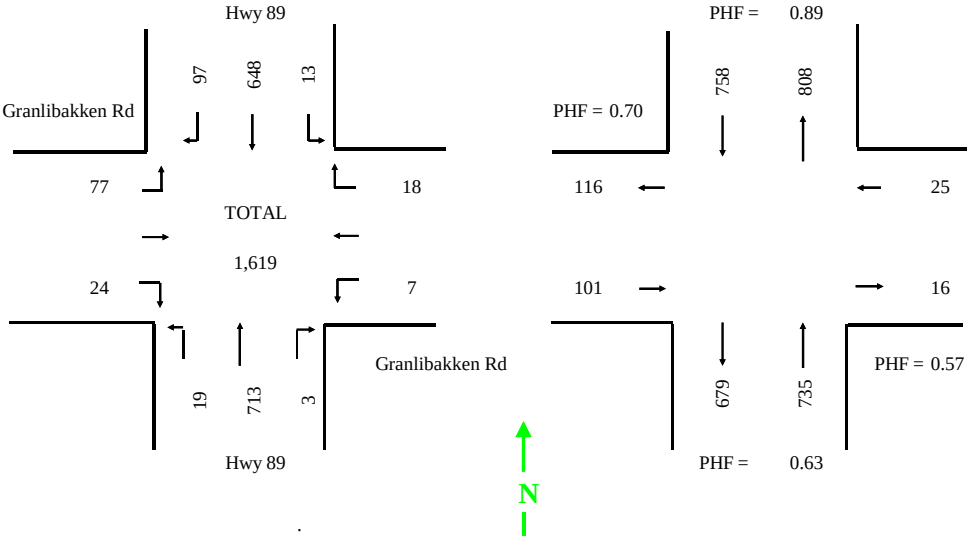
	Pedestrian Crossing Eastbound			Pedestrian Crossing Westbound			Hwy 89 Northbound			Hwy 89 Southbound			
RUNNING COUNTS	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM		20			26			183			212		441
3:30 PM		44			42			378			381		845
3:45 PM		73			59			566			540		1238
4:00 PM		84			73			759			725		1641
4:15 PM		118			98			916			928		2060
4:30 PM		155			100			1068			1095		2418
4:45 PM		169			124			1257			1286		2836
5:00 PM		200			136			1475			1515		3326
5:15 PM		220			150			1610			1699		3679
5:30 PM		229			166			1770			1894		4059
5:45 PM		254			198			1915			2080		4447
6:00 PM		271			215			2034			2211		4731
PERIOD COUNTS													
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM		20			26			183			212		441
3:30 PM		24			16			195			169		404
3:45 PM		29			17			188			159		393
4:00 PM		11			14			193			185		403
4:15 PM		34			25			157			203		419
4:30 PM		37			2			152			167		358
4:45 PM		14			24			189			191		418
5:00 PM		31			12			218			229		490
5:15 PM		20			14			135			184		353
5:30 PM		9			16			160			195		380
5:45 PM		25			32			145			186		388
6:00 PM		17			17			119			131		284
HOURLY TOTALS													
Beginning At	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:00 PM		84			73			759			725		1641
3:15 PM		98			72			733			716		1619
3:30 PM		111			58			690			714		1573
3:45 PM		96			65			691			746		1598
4:00 PM		116			63			716			790		1685
4:15 PM		102			52			694			771		1619
4:30 PM		74			66			702			799		1641
4:45 PM		85			74			658			794		1611
5:00 PM		71			79			559			696		1405

INTERSECTION TURNING MOVEMENT SUMMARY

INTERSECTION:	**Highway 89/Granlibakken Road**	**TIME:**	**3:00 PM to 6:00 PM**
JURISDICTION:		**DATE:**	**Fri 8-29-08**
PROJECT TITLE:	**Homewood Mountain Resort EIS**	**PROJECT NO:**	**RN08-0403**

PEAK HOUR PERIOD: 4:15 PM to 5:15 PM

PEAK 15 MINUTE PERIOD: 4:15 PM to 4:30 PM



INTERSECTION .

PEAK HOUR FACTOR: 0.83

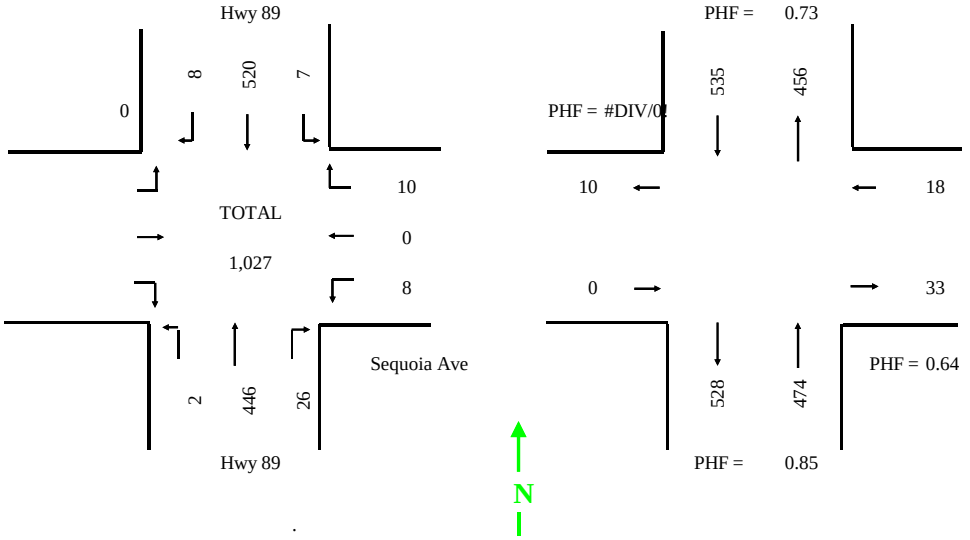
	Granlibakken Rd Eastbound			Granlibakken Rd Westbound			Hwy 89 Northbound			Hwy 89 Southbound			
RUNNING COUNTS	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	18		12	0		2	3	112	0	2	102	20	271
3:30 PM	35		25	0		7	14	244	1	15	342	50	733
3:45 PM	48		36	1		10	22	371	2	19	463	74	1046
4:00 PM	60		43	2		17	32	539	5	24	585	90	1397
4:15 PM	75		47	6		21	39	678	7	30	746	102	1751
4:30 PM	95		51	8		26	44	964	8	33	896	116	2241
4:45 PM	121		61	9		28	52	1124	9	36	1060	161	2661
5:00 PM	133		68	13		35	56	1260	10	40	1207	179	3001
5:15 PM	152		71	13		39	58	1391	11	43	1394	199	3371
5:30 PM	158		84	14		46	69	1548	11	48	1597	228	3803
5:45 PM	173		88	15		55	73	1680	12	55	1779	244	4174
6:00 PM	179		91	15		61	78	1810	13	60	1970	255	4532
PERIOD COUNTS													
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	18		12	0		2	3	112	0	2	102	20	271
3:30 PM	17		13	0		5	11	132	1	13	240	30	462
3:45 PM	13		11	1		3	8	127	1	4	121	24	313
4:00 PM	12		7	1		7	10	168	5	5	122	16	353
4:15 PM	15		4	4		4	7	139	1	6	161	12	353
4:30 PM	20		4	2		5	5	286	1	3	150	14	490
4:45 PM	26		10	1		2	8	160	1	3	164	45	420
5:00 PM	12		7	4		7	4	136	1	4	147	18	340
5:15 PM	19		3	0		4	2	131	0	3	187	20	369
5:30 PM	6		13	1		7	11	157	1	5	203	29	433
5:45 PM	15		4	1		9	4	132	1	7	182	16	371
6:00 PM	6		3	0		6	5	130		5	191	11	357
HOURLY TOTALS													
Beginning At	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:00 PM	60		43	2		17	32	539	7	24	585	90	1399
3:15 PM	57		35	6		19	36	566	8	28	644	82	1481
3:30 PM	60		26	8		19	30	720	8	18	554	66	1509
3:45 PM	73		25	8		18	30	753	8	17	597	87	1616
4:00 PM	73		25	11		18	24	721	4	16	622	89	1603
4:15 PM	77		24	7		18	19	713	3	13	648	97	1619
4:30 PM	63		33	6		20	25	584	3	15	701	112	1562
4:45 PM	52		27	6		27	21	556	3	19	719	83	1513
5:00 PM	46		23	2		26	22	550		20	763	76	1528

INTERSECTION TURNING MOVEMENT SUMMARY

INTERSECTION:	**Highway 89/Sequoia Avenue (South)**	**TIME:**	**3:00 PM to 6:00 PM**
JURISDICTION:		**DATE:**	**Fri 8-22-08**
PROJECT TITLE:	**Homewood Mountain Resort EIS**	**PROJECT NO:**	**RN08-0403**

PEAK HOUR PERIOD: 4:15 PM to 5:15 PM

PEAK 15 MINUTE PERIOD: 4:45 PM to 5:00 PM



INTERSECTION .

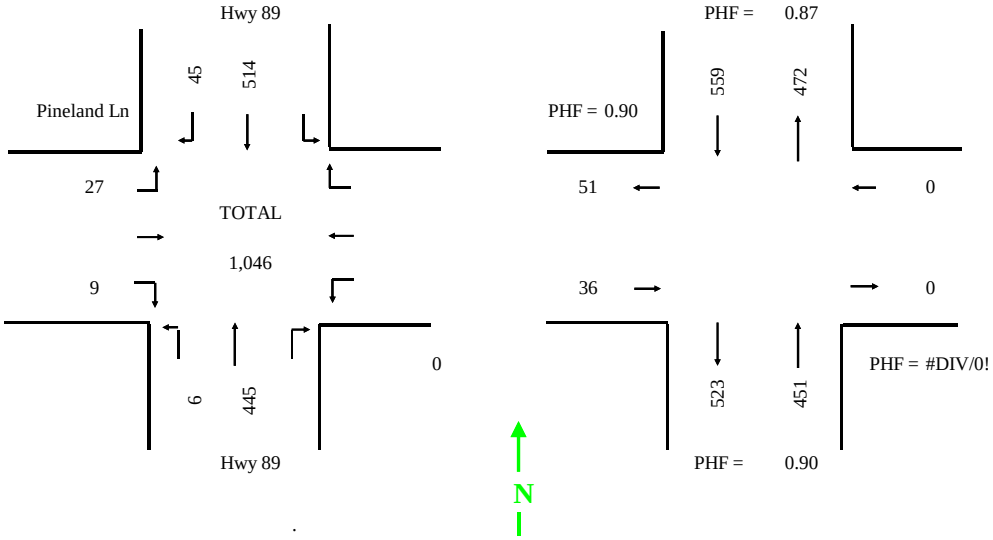
PEAK HOUR FACTOR: 0.79

	Eastbound			Sequoia Ave Westbound			Hwy 89 Northbound			Hwy 89 Southbound			
RUNNING COUNTS	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM				4	0	3	2	140	6	4	129	0	288
3:30 PM				6	1	3	2	236	11	6	232	0	497
3:45 PM				7	1	4	3	364	13	13	361	2	768
4:00 PM				9	1	6	4	446	16	15	451	8	956
4:15 PM				9	2	6	4	507	18	17	535	10	1108
4:30 PM				11	2	8	4	620	21	17	644	11	1338
4:45 PM				13	2	8	4	721	28	19	764	14	1573
5:00 PM				13	2	13	5	851	36	20	941	18	1899
5:15 PM				17	2	16	6	953	44	24	1055	18	2135
5:30 PM				19	2	17	6	1031	51	28	1077	24	2255
5:45 PM				19	2	17	7	1080	54	29	1260	24	2492
6:00 PM				21	2	19	9	1203	59	30	1433	24	2800
PERIOD COUNTS													
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM				4	0	3	2	140	6	4	129	0	288
3:30 PM				2	1	0	0	96	5	2	103	0	209
3:45 PM				1	0	1	1	128	2	7	129	2	271
4:00 PM				2	0	2	1	82	3	2	90	6	188
4:15 PM				0	1	0	0	61	2	2	84	2	152
4:30 PM				2	0	2	0	113	3	0	109	1	230
4:45 PM				2	0	0	0	101	7	2	120	3	235
5:00 PM				0	0	5	1	130	8	1	177	4	326
5:15 PM				4	0	3	1	102	8	4	114	0	236
5:30 PM				2	0	1	0	78	7	4	22	6	120
5:45 PM				0	0	0	1	49	3	1	183	0	237
6:00 PM				2	0	2	2	123	5	1	173	0	308
HOURLY TOTALS													
Beginning At	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:00 PM				9	1	6	4	446	16	15	451	8	956
3:15 PM				5	2	3	2	367	12	13	406	10	820
3:30 PM				5	1	5	2	384	10	11	412	11	841
3:45 PM				6	1	4	1	357	15	6	403	12	805
4:00 PM				4	1	7	1	405	20	5	490	10	943
4:15 PM				8	0	10	2	446	26	7	520	8	1027
4:30 PM				8	0	9	2	411	30	11	433	13	917
4:45 PM				6	0	9	3	359	26	10	496	10	919
5:00 PM				8	0	6	4	352	23	10	492	6	901

INTERSECTION TURNING MOVEMENT SUMMARY

INTERSECTION:	**Highway 89/Pineland Lane**	**TIME:**	**3:00 PM to 6:00 PM**
JURISDICTION:		**DATE:**	**Fri 8-29-08**
PROJECT TITLE:	**Homewood Mountain Resort EIS**	**PROJECT NO:**	**RN08-0403**

PEAK HOUR PERIOD: 4:15 PM to 5:15 PM
PEAK 15 MINUTE PERIOD: 5:00 PM to 5:15 PM



INTERSECTION
PEAK HOUR FACTOR: 0.89

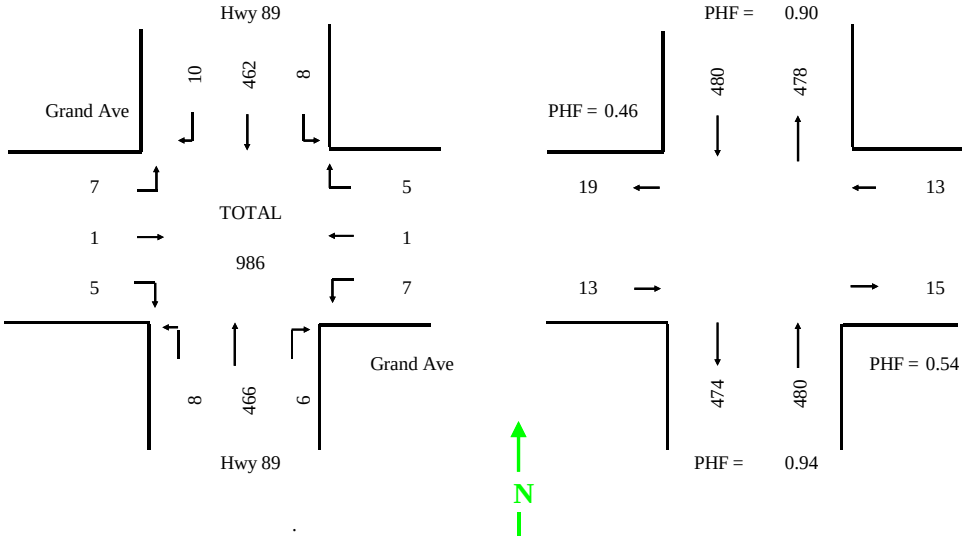
	Pineland Ln Eastbound			Westbound			Hwy 89 Northbound			Hwy 89 Southbound			
RUNNING COUNTS	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	4		2				1	84			78	13	182
3:30 PM	8		4				2	200			185	26	425
3:45 PM	16		6				4	348			291	35	700
4:00 PM	23		6				6	440			398	44	917
4:15 PM	35		7				8	563			508	54	1175
4:30 PM	43		9				8	688			631	70	1449
4:45 PM	49		11				11	793			767	81	1712
5:00 PM	57		13				11	886			873	88	1928
5:15 PM	62		16				14	1008			1022	99	2221
5:30 PM	66		16				14	1116			1174	107	2493
5:45 PM	73		17				18	1203			1330	117	2758
6:00 PM	77		17				20	1289			1438	121	2962
PERIOD COUNTS													
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	4		2				1	84			78	13	182
3:30 PM	4		2				1	116			107	13	243
3:45 PM	8		2				2	148			106	9	275
4:00 PM	7		0				2	92			107	9	217
4:15 PM	12		1				2	123			110	10	258
4:30 PM	8		2				0	125			123	16	274
4:45 PM	6		2				3	105			136	11	263
5:00 PM	8		2				0	93			106	7	216
5:15 PM	5		3				3	122			149	11	293
5:30 PM	4		0				0	108			152	8	272
5:45 PM	7		1				4	87			156	10	265
6:00 PM	4		0				2	86			108	4	204
HOURLY TOTALS													
Beginning At	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:00 PM	23		6				6	440			398	44	917
3:15 PM	31		5				7	479			430	41	993
3:30 PM	35		5				6	488			446	44	1024
3:45 PM	33		5				7	445			476	46	1012
4:00 PM	34		7				5	446			475	44	1011
4:15 PM	27		9				6	445			514	45	1046
4:30 PM	23		7				6	428			543	37	1044
4:45 PM	24		6				7	410			563	36	1046
5:00 PM	20		4				9	403			565	33	1034

INTERSECTION TURNING MOVEMENT SUMMARY

INTERSECTION:	**Highway 89/Grand Avenue**	**TIME:**	**3:00 PM to 6:00 PM**
JURISDICTION:		**DATE:**	**Fri 8-22-08**
PROJECT TITLE:	**Homewood Mountain Resort EIS**	**PROJECT NO:**	**RN08-0403**

PEAK HOUR PERIOD: 3:00 PM to 4:00 PM

PEAK 15 MINUTE PERIOD: 3:00 PM to 3:15 PM



INTERSECTION .

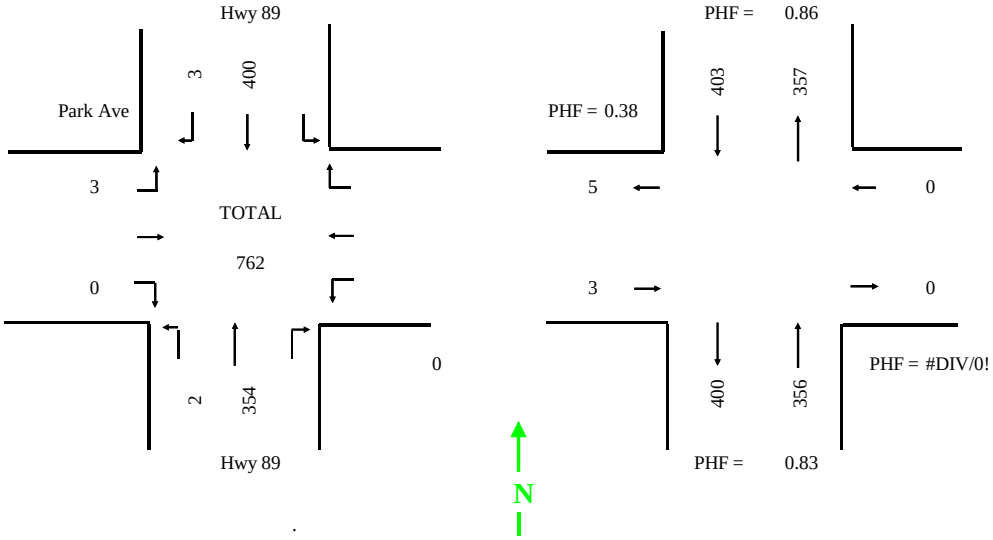
PEAK HOUR FACTOR: 0.92

	Grand Ave Eastbound			Grand Ave Westbound			Hwy 89 Northbound			Hwy 89 Southbound			
RUNNING COUNTS	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	1	1	3	2	1	3	1	121	2	1	129	3	268
3:30 PM	1	1	3	2	1	3	5	227	2	1	241	6	493
3:45 PM	2	1	3	5	1	4	7	352	3	7	357	8	750
4:00 PM	7	1	5	7	1	5	8	466	6	8	462	10	986
4:15 PM	8	1	5	8	2	6	9	540	8	11	553	11	1162
4:30 PM	8	2	5	9	3	6	9	632	8	12	651	11	1356
4:45 PM	11	2	10	9	3	10	9	765	9	13	766	14	1621
5:00 PM	12	2	10	11	3	11	12	833	10	14	851	17	1786
5:15 PM	12	3	11	15	3	11	12	934	10	15	968	20	2014
5:30 PM	14	4	11	18	4	11	13	1010	10	15	1088	22	2220
5:45 PM	16	4	12	20	4	12	17	1092	10	15	1194	23	2419
6:00 PM	17	4	12	23	4	12	18	1171	10	15	1293	27	2606
PERIOD COUNTS													
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	1	1	3	2	1	3	1	121	2	1	129	3	268
3:30 PM	0	0	0	0	0	0	4	106	0	0	112	3	225
3:45 PM	1	0	0	3	0	1	2	125	1	6	116	2	257
4:00 PM	5	0	2	2	0	1	1	114	3	1	105	2	236
4:15 PM	1	0	0	1	1	1	1	74	2	3	91	1	176
4:30 PM	0	1	0	1	1	0	0	92	0	1	98	0	194
4:45 PM	3	0	5	0	0	4	0	133	1	1	115	3	265
5:00 PM	1	0	0	2	0	1	3	68	1	1	85	3	165
5:15 PM	0	1	1	4	0	0	0	101	0	1	117	3	228
5:30 PM	2	1	0	3	1	0	1	76	0	0	120	2	206
5:45 PM	2	0	1	2	0	1	4	82	0	0	106	1	199
6:00 PM	1	0	0	3	0	0	1	79	0	0	99	4	187
HOURLY TOTALS													
Beginning At	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:00 PM	7	1	5	7	1	5	8	466	6	8	462	10	986
3:15 PM	7	0	2	6	1	3	8	419	6	10	424	8	894
3:30 PM	7	1	2	7	2	3	4	405	6	11	410	5	863
3:45 PM	9	1	7	4	2	6	2	413	6	6	409	6	871
4:00 PM	5	1	5	4	2	6	4	367	4	6	389	7	800
4:15 PM	4	2	6	7	1	5	3	394	2	4	415	9	852
4:30 PM	6	2	6	9	1	5	4	378	2	3	437	11	864
4:45 PM	5	2	2	11	1	2	8	327	1	2	428	9	798
5:00 PM	5	2	2	12	1	1	6	338	0	1	442	10	820

INTERSECTION TURNING MOVEMENT SUMMARY

INTERSECTION:	**Highway 89/Park Avenue**	**TIME:**	**3:00 PM to 6:00 PM**
JURISDICTION:		**DATE:**	**Fri 8-29-08**
PROJECT TITLE:	**Homewood Mountain Resort EIS**	**PROJECT NO:**	**RN08-0403**

PEAK HOUR PERIOD: 5:00 PM to 6:00 PM
PEAK 15 MINUTE PERIOD: 5:15 PM to 5:30 PM



INTERSECTION
PEAK HOUR FACTOR: 0.84

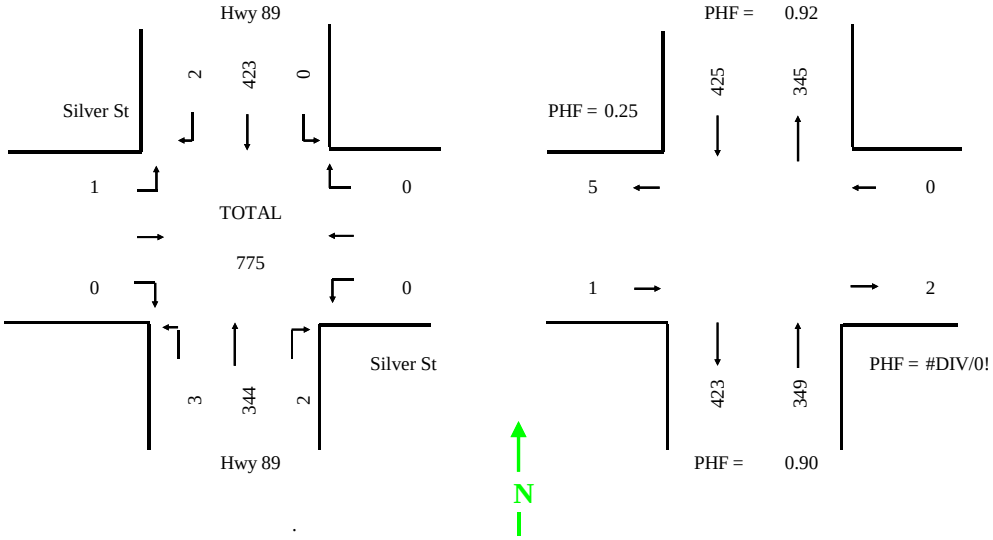
RUNNING COUNTS	Park Ave Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Hwy 89 Northbound Left	Thru	Right	Hwy 89 Southbound Left	Thru	Right	
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	3		0				1	88			93	0	185
3:30 PM	3		0				1	148			169	4	325
3:45 PM	3		0				1	246			274	5	529
4:00 PM	4		0				1	330			357	7	699
4:15 PM	6		0				1	424			436	10	877
4:30 PM	6		0				1	511			527	14	1059
4:45 PM	7		1				1	603			607	16	1235
5:00 PM	8		1				2	684			701	16	1412
5:15 PM	9		1				2	755			787	18	1572
5:30 PM	11		1				3	861			904	18	1798
5:45 PM	11		1				4	953			1007	18	1994
6:00 PM	11		1				4	1038			1101	19	2174
PERIOD COUNTS													
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	3		0				1	88			93	0	185
3:30 PM	0		0				0	60			76	4	140
3:45 PM	0		0				0	98			105	1	204
4:00 PM	1		0				0	84			83	2	170
4:15 PM	2		0				0	94			79	3	178
4:30 PM	0		0				0	87			91	4	182
4:45 PM	1		1				0	92			80	2	176
5:00 PM	1		0				1	81			94	0	177
5:15 PM	1		0				0	71			86	2	160
5:30 PM	2		0				1	106			117	0	226
5:45 PM	0		0				1	92			103	0	196
6:00 PM	0		0				0	85			94	1	180
HOURLY TOTALS													
Beginning At	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:00 PM	4		0				1	330			357	7	699
3:15 PM	3		0				0	336			343	10	692
3:30 PM	3		0				0	363			358	10	734
3:45 PM	4		1				0	357			333	11	706
4:00 PM	4		1				1	354			344	9	713
4:15 PM	3		1				1	331			351	8	695
4:30 PM	5		1				2	350			377	4	739
4:45 PM	4		0				3	350			400	2	759
5:00 PM	3		0				2	354			400	3	762

INTERSECTION TURNING MOVEMENT SUMMARY

INTERSECTION:	**Highway 89/Silver Street**	**TIME:**	**3:00 PM to 6:00 PM**
JURISDICTION:		**DATE:**	**Fri 8-29-08**
PROJECT TITLE:	**Homewood Mountain Resort EIS**	**PROJECT NO:**	**RN08-0403**

PEAK HOUR PERIOD: 5:00 PM to 6:00 PM

PEAK 15 MINUTE PERIOD: 5:15 PM to 5:30 PM



INTERSECTION .

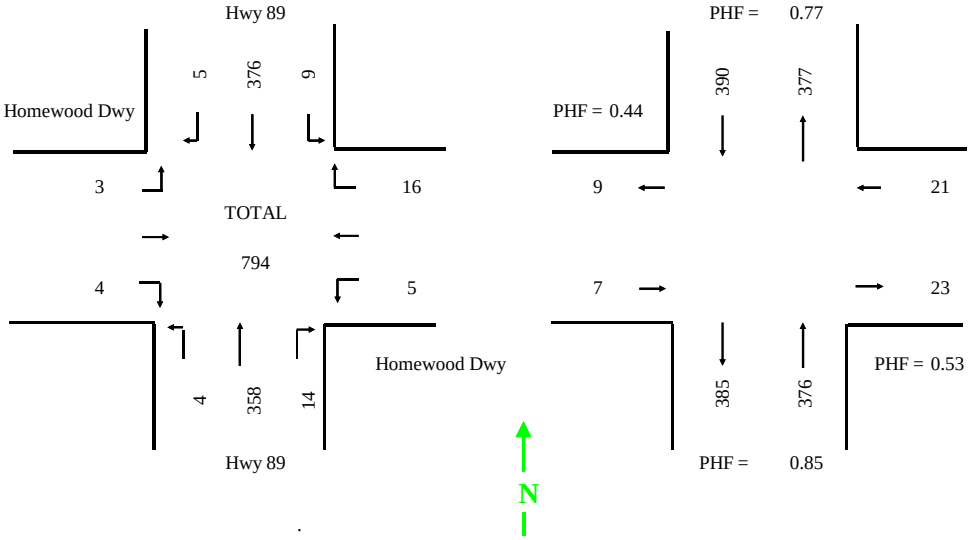
PEAK HOUR FACTOR: 0.92

RUNNING COUNTS	Silver St Eastbound Left	Thru	Right	Silver St Westbound Left	Thru	Right	Hwy 89 Northbound Left	Thru	Right	Hwy 89 Southbound Left	Thru	Right	
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	0		2	0		0	1	72	1	0	81	0	157
3:30 PM	0		3	0		1	1	171	1	0	153	0	330
3:45 PM	0		3	0		1	1	242	2	0	237	0	486
4:00 PM	0		3	0		1	2	326	2	0	316	2	652
4:15 PM	0		3	0		1	3	426	2	0	404	2	841
4:30 PM	0		3	0		1	3	507	2	0	485	3	1004
4:45 PM	0		4	0		1	3	597	2	0	578	4	1189
5:00 PM	0		4	0		1	4	667	2	0	679	4	1361
5:15 PM	0		4	0		1	5	763	2	0	762	5	1542
5:30 PM	1		4	0		1	6	856	3	0	877	5	1753
5:45 PM	1		4	0		1	7	927	3	0	989	5	1937
6:00 PM	1		4	0		1	7	1011	4	0	1102	6	2136
PERIOD COUNTS													
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	0		2	0		0	1	72	1	0	81	0	157
3:30 PM	0		1	0		1	0	99	0	0	72	0	173
3:45 PM	0		0	0		0	0	71	1	0	84	0	156
4:00 PM	0		0	0		0	1	84	0	0	79	2	166
4:15 PM	0		0	0		0	1	100	0	0	88	0	189
4:30 PM	0		0	0		0	0	81	0	0	81	1	163
4:45 PM	0		1	0		0	0	90	0	0	93	1	185
5:00 PM	0		0	0		0	1	70	0	0	101	0	172
5:15 PM	0		0	0		0	1	96	0	0	83	1	181
5:30 PM	1		0	0		0	1	93	1	0	115	0	211
5:45 PM	0		0	0		0	1	71	0	0	112	0	184
6:00 PM	0		0	0		0	0	84	1	0	113	1	199
HOURLY TOTALS													
Beginning At	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:00 PM	0		3	0		1	2	326	2	0	316	2	652
3:15 PM	0		1	0		1	2	354	1	0	323	2	684
3:30 PM	0		0	0		0	2	336	1	0	332	3	674
3:45 PM	0		1	0		0	2	355	0	0	341	4	703
4:00 PM	0		1	0		0	2	341	0	0	363	2	709
4:15 PM	0		1	0		0	2	337	0	0	358	3	701
4:30 PM	1		1	0		0	3	349	1	0	392	2	749
4:45 PM	1		0	0		0	4	330	1	0	411	1	748
5:00 PM	1		0	0		0	3	344	2	0	423	2	775

INTERSECTION TURNING MOVEMENT SUMMARY

INTERSECTION:	**Highway 89/Homewood Driveway**	**TIME:**	**3:00 PM to 6:00 PM**
JURISDICTION:		**DATE:**	**Fri 9-5-08**
PROJECT TITLE:	**Homewood Mountain Resort EIS**	**PROJECT NO:**	**RN08-0403**

PEAK HOUR PERIOD: 3:45 PM to 4:45 PM
PEAK 15 MINUTE PERIOD: 4:30 PM to 4:45 PM



INTERSECTION
PEAK HOUR FACTOR: 0.79

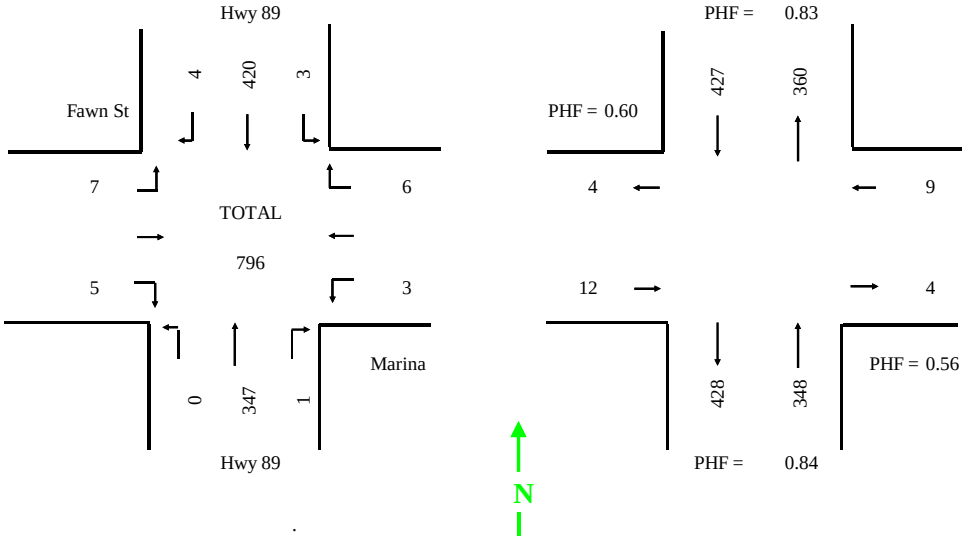
RUNNING COUNTS	Homewood Dwy Eastbound Left	Thru	Right	Homewood Dwy Westbound Left	Thru	Right	Hwy 89 Northbound Left	Thru	Right	Hwy 89 Southbound Left	Thru	Right	
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	0		0	0		0	5	81	2	2	88	0	178
3:30 PM	0		0	2		1	8	156	3	3	181	2	356
3:45 PM	1		2	2		3	10	235	6	8	276	2	545
4:00 PM	1		2	2		6	10	333	9	10	365	2	740
4:15 PM	1		2	5		10	11	408	13	12	458	5	925
4:30 PM	2		5	5		11	13	488	15	14	531	5	1089
4:45 PM	4		6	7		19	14	593	20	17	652	7	1339
5:00 PM	4		8	8		19	14	638	21	17	713	8	1450
5:15 PM	6		8	10		22	15	726	23	19	804	10	1643
5:30 PM	6		8	10		23	15	805	24	20	906	10	1827
5:45 PM	6		9	11		25	16	863	26	20	983	11	1970
6:00 PM	7		9	12		25	16	911	27	20	1038	12	2077
PERIOD COUNTS													
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	0		0	0		0	5	81	2	2	88	0	178
3:30 PM	0		0	2		1	3	75	1	1	93	2	178
3:45 PM	1		2	0		2	2	79	3	5	95	0	189
4:00 PM	0		0	0		3	0	98	3	2	89	0	195
4:15 PM	0		0	3		4	1	75	4	2	93	3	185
4:30 PM	1		3	0		1	2	80	2	2	73	0	164
4:45 PM	2		1	2		8	1	105	5	3	121	2	250
5:00 PM	0		2	1		0	0	45	1	0	61	1	111
5:15 PM	2		0	2		3	1	88	2	2	91	2	193
5:30 PM	0		0	0		1	0	79	1	1	102	0	184
5:45 PM	0		1	1		2	1	58	2	0	77	1	143
6:00 PM	1		0	1		0	0	48	1	0	55	1	107
HOURLY TOTALS													
Beginning At	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:00 PM	1		2	2		6	10	333	9	10	365	2	740
3:15 PM	1		2	5		10	6	327	11	10	370	5	747
3:30 PM	2		5	3		10	5	332	12	11	350	3	733
3:45 PM	3		4	5		16	4	358	14	9	376	5	794
4:00 PM	3		6	6		13	4	305	12	7	348	6	710
4:15 PM	5		6	5		12	4	318	10	7	346	5	718
4:30 PM	4		3	5		12	2	317	9	6	375	5	738
4:45 PM	2		3	4		6	2	270	6	3	331	4	631
5:00 PM	3		1	4		6	2	273	6	3	325	4	627

INTERSECTION TURNING MOVEMENT SUMMARY

INTERSECTION:	**Highway 89/Fawn Street**	**TIME:**	**3:00 PM to 6:00 PM**
JURISDICTION:		**DATE:**	**Fri 8-29-08**
PROJECT TITLE:	**Homewood Mountain Resort EIS**	**PROJECT NO:**	**RN08-0403**

PEAK HOUR PERIOD: 4:30 PM to 5:30 PM

PEAK 15 MINUTE PERIOD: 5:15 PM to 5:30 PM



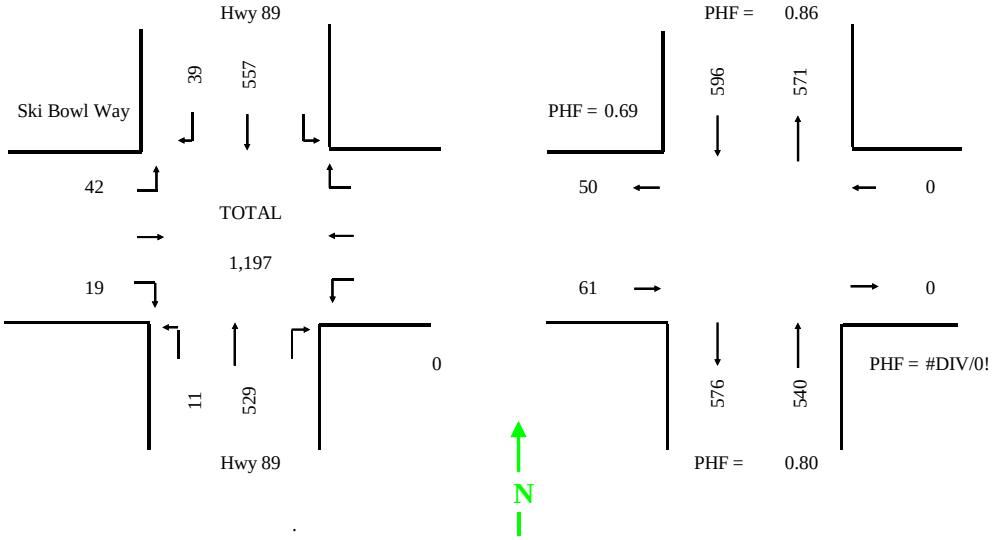
INTERSECTION PEAK HOUR FACTOR: 0.91

RUNNING COUNTS	Fawn St Eastbound Left	Thru	Right	Marina Westbound Left	Thru	Right	Hwy 89 Northbound Left	Thru	Right	Hwy 89 Southbound Left	Thru	Right	
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	0		0	0		1	2	78	0	0	88	0	169
3:30 PM	1		1	1		4	3	176	1	0	165	1	353
3:45 PM	1		1	3		4	4	256	3	0	259	1	532
4:00 PM	3		1	5		5	4	338	3	0	349	3	711
4:15 PM	4		2	5		6	6	429	3	1	428	5	889
4:30 PM	5		3	5		7	7	514	3	1	527	6	1078
4:45 PM	5		5	6		8	7	604	3	2	614	8	1262
5:00 PM	5		7	8		10	7	676	4	3	719	9	1448
5:15 PM	8		7	8		11	7	779	4	3	819	10	1656
5:30 PM	12		8	8		13	7	861	4	4	947	10	1874
5:45 PM	15		8	8		15	7	923	4	5	1047	11	2043
6:00 PM	15		8	8		15	7	960	4	6	1096	11	2130
PERIOD COUNTS													
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	0		0	0		1	2	78	0	0	88	0	169
3:30 PM	1		1	1		3	1	98	1	0	77	1	184
3:45 PM	0		0	2		0	1	80	2	0	94	0	179
4:00 PM	2		0	2		1	0	82	0	0	90	2	179
4:15 PM	1		1	0		1	2	91	0	1	79	2	178
4:30 PM	1		1	0		1	1	85	0	0	99	1	189
4:45 PM	0		2	1		1	0	90	0	1	87	2	184
5:00 PM	0		2	2		2	0	72	1	1	105	1	186
5:15 PM	3		0	0		1	0	103	0	0	100	1	208
5:30 PM	4		1	0		2	0	82	0	1	128	0	218
5:45 PM	3		0	0		2	0	62	0	1	100	1	169
6:00 PM	0		0	0		0	0	37	0	1	49	0	87
HOURLY TOTALS													
Beginning At	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:00 PM	3		1	5		5	4	338	3	0	349	3	711
3:15 PM	4		2	5		5	4	351	3	1	340	5	720
3:30 PM	4		2	4		3	4	338	2	1	362	5	725
3:45 PM	4		4	3		4	3	348	0	2	355	7	730
4:00 PM	2		6	3		5	3	338	1	3	370	6	737
4:15 PM	4		5	3		5	1	350	1	2	391	5	767
4:30 PM	7		5	3		6	0	347	1	3	420	4	796
4:45 PM	10		3	2		7	0	319	1	3	433	3	781
5:00 PM	10		1	0		5	0	284	0	3	377	2	682

INTERSECTION TURNING MOVEMENT SUMMARY

INTERSECTION:	**Highway 89/Ski Bowl Way**	**TIME:**	**3:00 PM to 6:00 PM**
JURISDICTION:		**DATE:**	**Fri 9-5-08**
PROJECT TITLE:	**Homewood Mountain Resort EIS**	**PROJECT NO:**	**RN08-0403**

PEAK HOUR PERIOD: 4:15 PM to 5:15 PM
PEAK 15 MINUTE PERIOD: 5:00 PM to 5:15 PM



INTERSECTION .
PEAK HOUR FACTOR: 0.90

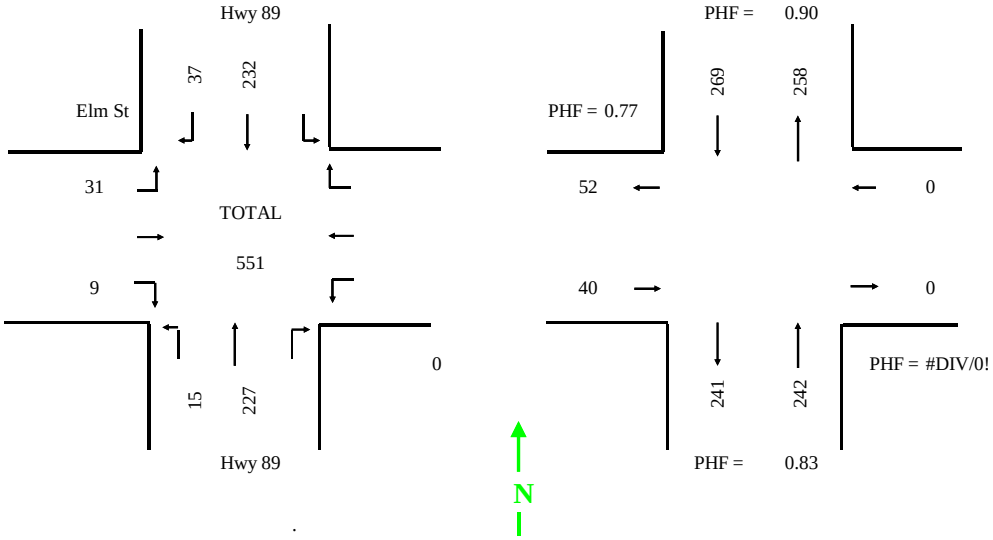
	Ski Bowl Way Eastbound			Westbound			Hwy 89 Northbound			Hwy 89 Southbound			
RUNNING COUNTS	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	5		1				0	74			66	9	155
3:30 PM	10		5				1	169			142	17	344
3:45 PM	18		6				3	276			271	24	598
4:00 PM	27		7				4	344			363	34	779
4:15 PM	34		8				4	481			501	48	1076
4:30 PM	49		15				6	602			636	63	1371
4:45 PM	56		19				7	711			756	72	1621
5:00 PM	61		24				10	846			917	84	1942
5:15 PM	76		27				15	1010			1058	87	2273
5:30 PM	83		33				17	1135			1140	91	2499
5:45 PM	88		40				17	1250			1217	99	2711
6:00 PM	95		42				18	1346			1331	111	2943
PERIOD COUNTS													
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	5		1				0	74			66	9	155
3:30 PM	5		4				1	95			76	8	189
3:45 PM	8		1				2	107			129	7	254
4:00 PM	9		1				1	68			92	10	181
4:15 PM	7		1				0	137			138	14	297
4:30 PM	15		7				2	121			135	15	295
4:45 PM	7		4				1	109			120	9	250
5:00 PM	5		5				3	135			161	12	321
5:15 PM	15		3				5	164			141	3	331
5:30 PM	7		6				2	125			82	4	226
5:45 PM	5		7				0	115			77	8	212
6:00 PM	7		2				1	96			114	12	232
HOURLY TOTALS													
Beginning At	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:00 PM	27		7				4	344			363	34	779
3:15 PM	29		7				4	407			435	39	921
3:30 PM	39		10				5	433			494	46	1027
3:45 PM	38		13				4	435			485	48	1023
4:00 PM	34		17				6	502			554	50	1163
4:15 PM	42		19				11	529			557	39	1197
4:30 PM	34		18				11	533			504	28	1128
4:45 PM	32		21				10	539			461	27	1090
5:00 PM	34		18				8	500			414	27	1001

INTERSECTION TURNING MOVEMENT SUMMARY

INTERSECTION:	**Highway 89/Elm Sreet**	**TIME:**	**3:00 PM to 6:00 PM**
JURISDICTION:		**DATE:**	**Fri 8-22-08**
PROJECT TITLE:	**Homewood Mountain Resort EIS**	**PROJECT NO:**	**RN08-0403**

PEAK HOUR PERIOD: 5:00 PM to 6:00 PM

PEAK 15 MINUTE PERIOD: 5:00 PM to 5:15 PM



INTERSECTION .

PEAK HOUR FACTOR: 0.94

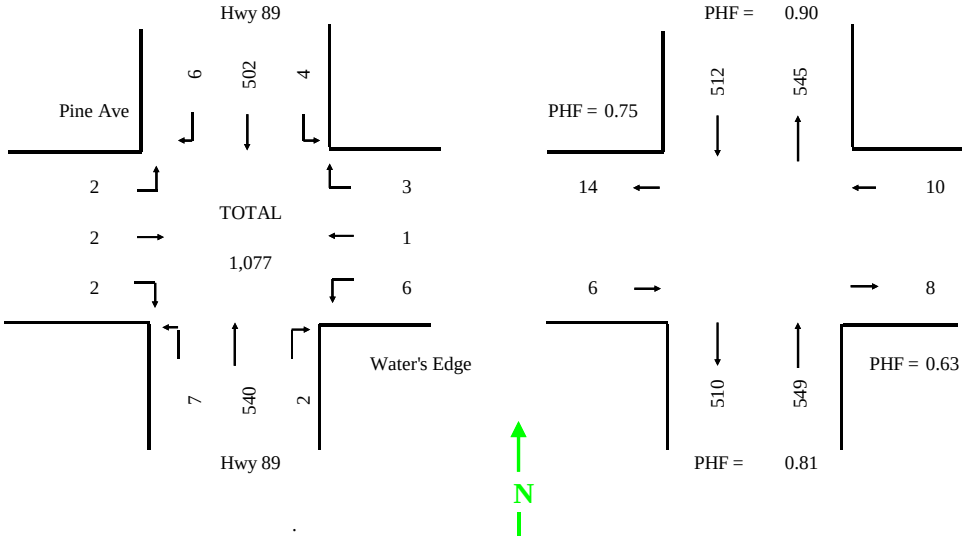
	Elm St Eastbound			Westbound			Hwy 89 Northbound			Hwy 89 Southbound			
RUNNING COUNTS	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	6		4				4	51			53	9	127
3:30 PM	9		5				5	112			102	14	247
3:45 PM	10		8				9	171			149	19	366
4:00 PM	15		9				10	212			214	29	489
4:15 PM	19		11				11	280			262	37	620
4:30 PM	25		15				17	345			315	48	765
4:45 PM	26		18				17	394			377	64	896
5:00 PM	31		18				18	446			435	66	1014
5:15 PM	35		22				24	513			493	74	1161
5:30 PM	47		23				27	565			550	83	1295
5:45 PM	54		26				31	618			614	94	1437
6:00 PM	62		27				33	673			667	103	1565
PERIOD COUNTS													
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	6		4				4	51			53	9	127
3:30 PM	3		1				1	61			49	5	120
3:45 PM	1		3				4	59			47	5	119
4:00 PM	5		1				1	41			65	10	123
4:15 PM	4		2				1	68			48	8	131
4:30 PM	6		4				6	65			53	11	145
4:45 PM	1		3				0	49			62	16	131
5:00 PM	5		0				1	52			58	2	118
5:15 PM	4		4				6	67			58	8	147
5:30 PM	12		1				3	52			57	9	134
5:45 PM	7		3				4	53			64	11	142
6:00 PM	8		1				2	55			53	9	128
HOURLY TOTALS													
Beginning At	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:00 PM	15		9				10	212			214	29	489
3:15 PM	13		7				7	229			209	28	493
3:30 PM	16		10				12	233			213	34	518
3:45 PM	16		10				8	223			228	45	530
4:00 PM	16		9				8	234			221	37	525
4:15 PM	16		11				13	233			231	37	541
4:30 PM	22		8				10	220			235	35	530
4:45 PM	28		8				14	224			237	30	541
5:00 PM	31		9				15	227			232	37	551

INTERSECTION TURNING MOVEMENT SUMMARY

INTERSECTION:	**Highway 89/Pine Avenue**	**TIME:**	**3:00 PM to 6:00 PM**
JURISDICTION:		**DATE:**	**Fri 8-29-08**
PROJECT TITLE:	**Homewood Mountain Resort EIS**	**PROJECT NO:**	**RN08-0403**

PEAK HOUR PERIOD: 3:00 PM to 4:00 PM

PEAK 15 MINUTE PERIOD: 3:00 PM to 3:15 PM



INTERSECTION .

PEAK HOUR FACTOR: 0.90

	Pine Ave Eastbound			Water's Edge Westbound			Hwy 89 Northbound			Hwy 89 Southbound			
RUNNING COUNTS	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	1	0	0	1	0	2	1	169	0	1	124	1	300
3:30 PM	1	1	0	3	0	2	3	273	0	1	230	2	516
3:45 PM	2	1	1	3	1	2	3	408	2	2	368	5	798
4:00 PM	2	2	2	6	1	3	7	540	2	4	502	6	1077
4:15 PM	3	2	2	9	2	3	8	658	2	4	640	7	1340
4:30 PM	4	2	2	10	2	7	9	759	2	4	760	9	1570
4:45 PM	5	2	3	12	2	7	10	880	2	4	919	16	1862
5:00 PM	8	2	4	12	2	7	10	998	2	4	1078	19	2146
5:15 PM	10	2	4	15	2	7	11	1084	2	5	1213	20	2375
5:30 PM	10	2	4	16	2	8	11	1183	2	5	1351	23	2617
5:45 PM	12	4	4	16	2	10	12	1257	2	7	1479	27	2832
6:00 PM	14	4	4	17	2	10	12	1370	2	7	1612	28	3082
PERIOD COUNTS													
Period End	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:15 PM	1	0	0	1	0	2	1	169	0	1	124	1	300
3:30 PM	0	1	0	2	0	0	2	104	0	0	106	1	216
3:45 PM	1	0	1	0	1	0	0	135	2	1	138	3	282
4:00 PM	0	1	1	3	0	1	4	132	0	2	134	1	279
4:15 PM	1	0	0	3	1	0	1	118	0	0	138	1	263
4:30 PM	1	0	0	1	0	4	1	101	0	0	120	2	230
4:45 PM	1	0	1	2	0	0	1	121	0	0	159	7	292
5:00 PM	3	0	1	0	0	0	0	118	0	0	159	3	284
5:15 PM	2	0	0	3	0	0	1	86	0	1	135	1	229
5:30 PM	0	0	0	1	0	1	0	99	0	0	138	3	242
5:45 PM	2	2	0	0	0	2	1	74	0	2	128	4	215
6:00 PM	2	0	0	1	0	0	0	113	0	0	133	1	250
HOURLY TOTALS													
Beginning At	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**TOTAL**
3:00 PM	2	2	2	6	1	3	7	540	2	4	502	6	1077
3:15 PM	2	2	2	8	2	1	7	489	2	3	516	6	1040
3:30 PM	3	1	2	7	2	5	6	486	2	3	530	7	1054
3:45 PM	3	1	2	9	1	5	7	472	0	2	551	11	1064
4:00 PM	6	0	2	6	1	4	3	458	0	0	576	13	1069
4:15 PM	7	0	2	6	0	4	3	426	0	1	573	13	1035
4:30 PM	6	0	2	6	0	1	2	424	0	1	591	14	1047
4:45 PM	7	2	1	4	0	3	2	377	0	3	560	11	970
5:00 PM	6	2	0	5	0	3	2	372	0	3	534	9	936

Homewood Parking Data

2007-2008

Date	Number of Occupied Parking Spaces	% of Total
26-Dec	167	18%
2-Jan	0	0%
9-Jan	821	87%
16-Jan	300	32%
23-Jan	375	40%
30-Jan	398	42%
6-Feb	368	39%
13-Feb	533	57%
20-Feb	301	32%
27-Feb	256	27%
6-Mar	406	43%
13-Mar	329	35%
20-Mar	391	42%
27-Mar	0	0%
Average of 5 Highest Days:	510	54%

2008-2009

Date	Number of Occupied Parking Spaces	% of Total
26-Dec	673	71%
2-Jan	636	68%
9-Jan	300	32%
16-Jan	270	29%
23-Jan	--	--
30-Jan	242	26%
6-Feb	214	23%
13-Feb	307	33%
20-Feb	664	70%
27-Feb	423	45%
6-Mar	374	40%
13-Mar	344	37%
20-Mar	247	26%
27-Mar	254	27%
3-Apr	117	12%
10-Apr	144	15%
Average of 5 Highest Days:	554	59%
Average (2007-2009):	**532**	**56%**

Alternative 1 (Summer)

ITE Land Use & Code	Project Land Use	Density	Measure	Daily Rate	Friday PM Peak Rate	Friday PM Peak In	Friday PM Peak Out	Daily Trips	Friday PM Peak Trips	Friday PM Peak In	Friday PM Peak Out
NORTH BASE											
*50% of lodging guests arrive on Friday **											
310 - Hotel	Hotel Rooms	38	occupied rooms	1.5	0.75	100%	0%	57	29	29	0
310 - Hotel	*2-bedroom condo/hotel	30	occupied rooms	1.5	0.75	100%	0%	45	23	23	0
230 - Residential Condos	Penthouse Condos	15	rooms	1.5	0.75	100%	0%	23	11	11	0
265 - Timeshare	Fractional Ownership	10	units	1.5	0.75	100%	0%	15	8	8	0
Remaining 50% of lodging units, residential units, and retail use analyzed using typical TRPA and ITE trip generation rates											
310 - Hotel	Hotel Rooms	37	occupied rooms	8.92	0.70	49%	51%	330	26	13	13
				Internal Capture			45%	149	12	6	6
				External Trips				182	14	7	7
310 - Hotel	*2-bedroom condo/hotel	30	occupied rooms	8.92	0.70	49%	51%	268	21	10	11
				Internal Capture			45%	120	9	5	5
				External Trips				147	12	6	6
230 - Residential Condos	Penthouse Condos	15	rooms	5.86	0.52	67%	33%	88	8	5	3
				Internal Capture			45%	40	4	2	1
				External Trips				48	4	3	1
265 - Timeshare	Fractional Ownership	10	units	10.1	0.79	40%	60%	101	8	3	5
				Internal Capture			45%	45	4	1	2
				External Trips				56	4	2	3
230 - Residential Condos	Residential Condos & Townhomes	52	units	5.86	0.52	67%	33%	305	27	18	9
				Internal Capture			39%	119	11	7	3
				External Trips				186	16	11	5
220 - Apartment	Employee Housing	13	units	6.72	0.62	65%	35%	87	8	5	3
				Internal Capture			39%	34	3	2	1
				External Trips				53	5	3	2
820 - Shopping Center	Commercial	25	ksf	42.94	3.75	48%	52%	1074	94	45	49
				Internal Capture			***	382	33	20	13
				External Trips				692	61	25	36
				Alternative Mode			12%	80	7	3	4
				External Vehicle Trips				612	54	22	32
				Pass-By			34%	208	18	8	11
				External Roadway Trips				404	36	15	21
Restaurant	**Hotel Accessory	1.8	ksf								
Bar	**Hotel Accessory	1.26	ksf								
Meeting Space	**Hotel Accessory	3.005	ksf								
Fitness Center/Spa	**Hotel Accessory	10.59	ksf								
Base Lodge		30	ksf	Winter Only							
431 - Miniature Golf Course	Miniature Golf Course	12	holes	3.30	0.33	33%	67%	40	4	1	3
				Internal Capture			15%	6	0	0	0
				External Trips				34	4	1	2
							RAW Trip Generation	**2431**	**265**	**171**	**94**
SOUTH BASE											
230 - Residential Condos	Residential Condos	99	units	5.86	0.52	67%	33%	580	51	34	17
				Internal Capture			39%	226	20	13	7
				External Trips				354	31	21	10
							RAW Trip Generation	**580**	**51**	**34**	**17**

MID MOUNTAIN			
Base Lodge	15	ksf	Winter Only

ADDITIONAL RECREATION				
Outdoor Amphitheater		1500	seats	Special Events only - not typical

*** Retail Internal Capture					
From		Daily	PM	PM In	PM Out
Residential	23%	204	18	12	6
Lodging	20%	157	13	6	6
Emp. Apts.	24%	21	2	1	1
Total Retail Internal Capture		382	33	20	13

Alternative Modes/Shuttle/Transit Services				
Summer Dial-A-Ride	60	6	3	3
Summer Dial-A-Ride Trip Reduction	-165	-16	-8	-8
Water Taxi	-86	-16	-8	-8
Shuttle Service	32	2	1	1
Shuttle Service Trip Reduction	-59	-7	-4	-3
Total Alternative Mode Trip Reduction	-218	-31	-16	-15

Total RAW Trip Generation	3011	317	205	111
Internal Capture	-1121	-94	-57	-39
Total External Trips	1891	222	149	73
Alternative Mode Reduction	-218	-31	-16	-15
Total External Vehicle Trips	1673	191	133	58
Pass-By Trips	-208	-18	-8	-11
Total External Roadway Trips	**1464**	**173**	**125**	**47**

*40 condo units, 20 with lock-offs
** Hotel definition includes accessory uses.
*** Based on the number of trips internalized by the residential and lodging units that go to the retail use

Alternative 4 (Summer)

ITE Land Use & Code	Project Land Use	Density	Measure	Daily Rate	Friday PM Peak Rate	Friday PM Peak In	Friday PM Peak Out	Daily Trips	Friday PM Peak Trips	Friday PM Peak In	Friday PM Peak Out
NORTH BASE											
210 - Single Family Residential	Residential Lots	8	dwelling units	10	1.01	63%	37%	80	8	5	3
				Internal Capture			28%	22	2	1	1
				External Trips				58	6	4	2
820 - Shopping Center	Commercial	15	ksf	42.94	3.75	48%	52%	644	56	27	29
				Internal Capture			***	37	4	2	1
				External Trips				607	53	25	28
				Alternative Mode			5%	30	3	1	1
				External Vehicle Trips				577	50	23	26
				Pass-By			34%	196	17	8	9
				External Roadway Trips				381	33	15	17
				RAW Trip Generation				**724**	**64**	**32**	**32**
SOUTH BASE											
210 - Single Family Residential	Residential Lots	8	dwelling units	10	1.01	63%	37%	80	8	5	3
				Internal Capture			28%	22	2	1	1
				External Trips				58	6	4	2
				RAW Trip Generation				**80**	**8**	**5**	**3**

***** Retail Internal Capture**					
From		Daily	PM	PM In	PM Out
Residential	23%	37	4	2	1
Total Retail Internal Capture		37	4	2	1

Total RAW Trip Generation		804	72	37	35
Internal Capture		-82	-8	-5	-3
Total External Trips		723	64	32	32
Alternative Mode Reduction	5%	-36	-3	-2	-2
Total External Vehicle Trips		686	61	30	31
Pass-By Trips		-196	-17	-8	-9
Total External Roadway Trips		**490**	**44**	**22**	**22**

*** Based on the number of trips internalized by the residential units that go to the retail use

Alternative 5 (Summer)

ITE Land Use & Code	Project Land Use	Density	Measure	Daily Rate	Friday PM Peak Rate	Friday PM Peak In	Friday PM Peak Out	Daily Trips	Friday PM Peak Trips	Friday PM Peak In	Friday PM Peak Out
NORTH BASE											
*50% of lodging guests arrive on Friday **											
310 - Hotel	Hotel Rooms	38	occupied rooms	1.5	0.75	100%	0%	57	29	29	0
Remaining 50% of lodging units, residential units, and retail use analyzed using typical TRPA and ITE trip generation rates											
310 - Hotel	Hotel Rooms	37	occupied rooms	8.92	0.70	49%	51%	330	26	13	13
				Internal Capture			45%	149	12	6	6
				External Trips				182	14	7	7
230 - Residential Condos	Residential Condos	225	units	5.86	0.52	67%	33%	1319	117	78	39
				Internal Capture			39%	514	46	31	15
				External Trips				804	71	48	24
820 - Shopping Center	Commercial	25	ksf	42.94	3.75	48%	52%	1074	94	45	49
				Internal Capture			***	406	36	23	13
				External Trips				667	58	22	36
				Alternative Mode			12%	80	7	3	4
				External Vehicle Trips				587	51	19	32
				Pass-By			34%	200	17	7	11
				External Roadway Trips				387	34	13	21
Base Lodge		30	ksf	Winter Only							
				RAW Trip Generation				**2779**	**265**	**165**	**101**
SOUTH BASE											
210 - Single Family Residential	Residential Lots	16	units	10	1.01	63%	37%	160	16	10	6
				Internal Capture			39%	62	6	4	2
				External Trips				98	10	6	4
				RAW Trip Generation				**160**	**16**	**10**	**6**
MID MOUNTAIN											
Base Lodge		15	ksf	Winter Only							
ADDITIONAL RECREATION											
Outdoor Amphitheater		1500	seats	Special Events only							

***** Retail Internal Capture**		Daily	PM	PM In	PM Out
From					
Residential	23%	340	31	20	10
Lodging	20%	66	5	3	3
Total Retail Internal Capture		406	36	23	13

Alternative Modes/Shuttle/Transit Services				
Summer Dial-A-Ride	60	6	3	3
Summer Dial-A-Ride Trip Reduction	-165	-16	-8	-8
Water Taxi	-86	-16	-8	-8
Shuttle Service	32	2	1	1
Shuttle Service Trip Reduction	-59	-7	-4	-3
Total Alternative Mode Trip Reduction	-218	-31	-16	-15

Total RAW Trip Generation	2939	281	175	107
Internal Capture	-1131	-99	-63	-36
Total External Trips	1808	182	112	70
Alternative Mode Reduction	-218	-31	-16	-15
Total External Vehicle Trips	1590	151	96	55
Pass-By Trips	-200	-17	-7	-11
Total External Roadway Trips	**1390**	**134**	**89**	**45**

*** Based on the number of trips internalized by the residential and lodging units that go to the retail use

Alternative 6 (Summer)

ITE Land Use & Code	Project Land Use	Density	Measure	Daily Rate	Friday PM Peak Rate	Friday PM Peak In	Friday PM Peak Out	Daily Trips	Friday PM Peak Trips	Friday PM Peak In	Friday PM Peak Out
NORTH BASE											
*50% of lodging guests arrive on Friday **											
310 - Hotel	Hotel Rooms	25	occupied rooms	1.5	0.75	100%	0%	38	19	19	0
310 - Hotel	Condo/Hotel Rooms	13	occupied rooms	1.5	0.75	100%	0%	20	10	10	0
Remaining 50% of lodging units, residential units, and retail use analyzed using typical TRPA and ITE trip generation rates											
310 - Hotel	Hotel Rooms	25	occupied rooms	8.92	0.70	49%	51%	223	18	9	9
				Internal Capture			45%	100	8	4	4
				External Trips				123	10	5	5
310 - Hotel	Condo/Hotel Rooms	12	occupied rooms	8.92	0.70	49%	51%	107	8	4	4
				Internal Capture			45%	48	4	2	2
				External Trips				59	5	2	2
230 - Residential Condos	Residential Condos	145	units	5.86	0.52	67%	33%	850	75	51	25
				Internal Capture			39%	331	29	20	10
				External Trips				518	46	31	15
220 - Apartment	Employee Housing	12	units	6.72	0.62	65%	35%	81	7	5	3
				Internal Capture			52%	42	4	3	1
				External Trips				39	4	2	1
820 - Shopping Center	Commercial	25	ksf	42.94	3.75	48%	52%	1074	94	45	49
				Internal Capture			***	380	34	21	12
				External Trips				693	60	24	37
				Alternative Mode			12%	86	7	3	5
				External Vehicle Trips				607	53	21	32
				Pass-By			34%	206	18	7	11
				External Roadway Trips				401	35	14	21
Base Lodge		30	ksf	Winter Only							
				RAW Trip Generation				**2391**	**231**	**142**	**89**
SOUTH BASE											
230 - Residential Condos	Residential Condos	50	units	5.86	0.52	67%	33%	293	26	17	9
				Internal Capture			39%	114	10	7	3
				External Trips				179	16	11	5
210 - Single Family Residential	Residential Lots	14	units	10	1.01	63%	37%	140	14	9	5
				Internal Capture			39%	55	6	3	2
				External Trips				85	9	5	3
				RAW Trip Generation				**433**	**40**	**26**	**14**
MID MOUNTAIN											
Base Lodge		15	ksf	Winter Only							
ADDITIONAL RECREATION											
Outdoor Amphitheater		1500	seats	Special Events only							

***** Retail Internal Capture**		Daily	PM	PM In	PM Out
From					
Residential	23%	295	27	18	9
Lodging	20%	66	5	3	3
Emp. Apts.	24%	19	2	1	1
Total Retail Internal Capture		380	34	21	12

Alternative Modes/Shuttle/Transit Services				
Summer Dial-A-Ride	60	6	3	3
Summer Dial-A-Ride Trip Reduction	-165	-16	-8	-8
Water Taxi	-86	-16	-8	-8
Shuttle Service	32	2	1	1
Shuttle Service Trip Reduction	-59	-7	-4	-3
Total Alternative Mode Trip Reduction	-218	-31	-16	-15

Total RAW Trip Generation	2824	271	168	103
Internal Capture	-1071	-94	-60	-35
Total External Trips	1753	177	108	69
Alternative Mode Reduction	-218	-31	-16	-15
Total External Vehicle Trips	1535	146	92	54
Pass-By Trips	-206	-18	-7	-11
Total External Roadway Trips	**1328**	**128**	**85**	**43**

*** Based on the number of trips internalized by the residential and lodging units that go to the retail use

Alternatives 1 and 3 (Winter)

ITE Land Use & Code	Project Land Use	Density	Measure	Daily	Friday PM Peak			Daily	Friday PM Peak		
				Rate	Rate	In	Out	Trips	Trips	In	Out
NORTH BASE											
*50% of lodging guests arrive on Friday **											
310 - Hotel	Hotel Rooms	38	occupied rooms	1.5	0.75	100%	0%	57	29	29	0
310 - Hotel	*2-bedroom condo/hotel	30	occupied rooms	1.5	0.75	100%	0%	45	23	23	0
230 - Residential Condos	Penthouse Condos	15	rooms	1.5	0.75	100%	0%	23	11	11	0
265 - Timeshare	Fractional Ownership	10	units	1.5	0.75	100%	0%	15	8	8	0
Skier Parking Spaces	Ski Resort	400	spaces	2.00	0.45	0%	100%	800	180	0	180
Remaining 50% of lodging units, residential units, and retail use analyzed using typical TRPA and ITE trip generation rates											
310 - Hotel	Hotel Rooms	37	occupied rooms	8.92	0.70	49%	51%	330	26	13	13
				Internal Capture			55%	182	14	7	7
				External Trips				149	12	6	6
310 - Hotel	*2-bedroom condo/hotel	30	occupied rooms	8.92	0.70	49%	51%	268	21	10	11
				Internal Capture			55%	147	12	6	6
				External Trips				120	9	5	5
230 - Residential Condos	Penthouse Condos	15	rooms	5.86	0.52	67%	33%	88	8	5	3
				Internal Capture			55%	48	4	3	1
				External Trips				40	4	2	1
265 - Timeshare	Fractional Ownership	10	units	10.1	0.79	40%	60%	101	8	3	5
				Internal Capture			55%	56	4	2	3
				External Trips				45	4	1	2
230 - Residential Condos	Residential Condos & Townhomes	52	units	5.86	0.52	67%	33%	305	27	18	9
				Internal Capture			39%	119	11	7	3
				External Trips				186	16	11	5
220 - Apartment	Employee Housing	13	units	6.72	0.62	65%	35%	87	8	5	3
				Internal Capture			52%	45	4	3	1
				External Trips				42	4	3	1
820 - Shopping Center	Commercial	25	ksf	42.94	3.75	48%	52%	1074	94	45	49
				Internal Capture			***	382	33	20	13
				External Trips				692	61	25	36
				Alternative Mode			13%	89	8	3	5
				External Vehicle Trips				603	53	22	31
				Pass-By			34%	205	18	8	11
				External Roadway Trips				398	35	15	21
Restaurant	**Hotel Accessory	1.8	ksf								
Bar	**Hotel Accessory	1.26	ksf								
Meeting Space	**Hotel Accessory	3.005	ksf								
Fitness Center/Spa	**Hotel Accessory	10.59	ksf								
Base Lodge		30	ksf	Internal Trips Only							
							RAW Trip Generation	**3192**	**441**	**169**	**272**

SOUTH BASE											
230 - Residential Condos	Residential Condos	99	units	5.86	0.52	67%	33%	580	51	34	17
				Internal Capture			39%	226	20	13	7
				External Trips				354	31	21	10
							RAW Trip Generation	**580**	**51**	**34**	**17**

MID MOUNTAIN			
Base Lodge	15	ksf	Internal Trips Only

ADDITIONAL RECREATION				
Outdoor Amphitheater		1500	seats	Summer Only

*** Retail Internal Capture					
From		Daily	PM	PM In	PM Out
Residential	23%	204	18	12	6
Lodging	20%	157	13	6	6
Emp. Apts.	24%	21	2	1	1
Total Retail Internal Capture		382	33	20	13

Alternative Modes/Shuttle/Transit Services				
Winter Dial-A-Ride	125	20	10	10
Winter Dial-A-Ride Trip Reduction	-453	-110	-55	-55
Shuttle Service	32	2	1	1
Shuttle Service Trip Reduction	-59	-7	-4	-3
Total Alternative Mode Trip Reduction	-355	-95	-48	-47

Skier Drop Off/Pick Up										
Skiers	100	skiers	2	1	0.5	0.5	200	100	50	50

Total RAW Trip Generation	3972	593	254	339
Internal Capture	-1205	-102	-60	-42
Total External Trips	2767	491	194	297
Alternative Mode Reduction	-355	-95	-48	-47
Total External Vehicle Trips	2412	396	146	250
Pass-By Trips	-205	-18	-8	-11
Total External Roadway Trips	**2207**	**378**	**138**	**239**
Existing Homewood Trips	2535	472	115	357
Total Net New Project Trips	-328	-94	23	-118

*40 condo units, 20 with lock-offs
** Hotel definition includes accessory uses.
*** Based on local household information

Alternative 4 (Winter)

ITE Land Use & Code	Project Land Use	Density	Measure	Daily	Friday PM Peak			Daily	Friday PM Peak		
				Rate	Rate	In	Out	Trips	Trips	In	Out
NORTH BASE											
210 - Single Family Residential	Residential Lots	8	dwelling units	10	1.01	63%	37%	80	8	5	3
				Internal Capture			28%	22	2	1	1
				External Trips				58	6	4	2
820 - Shopping Center	Commercial	15	ksf	42.94	3.75	48%	52%	644	56	27	29
				Internal Capture			***	37	4	2	1
				External Trips				607	53	25	28
				Alternative Mode			5%	30	3	1	1
				External Vehicle Trips				577	50	23	26
				Pass-By			34%	196	17	8	9
				External Roadway Trips				381	33	15	17
				RAW Trip Generation				**724**	**64**	**32**	**32**
SOUTH BASE											
210 - Single Family Residential	Residential Lots	8	dwelling units	10	1.01	63%	37%	80	8	5	3
				Internal Capture			28%	22	2	1	1
				External Trips				58	6	4	2
				RAW Trip Generation				**80**	**8**	**5**	**3**

***** Retail Internal Capture**					
From		Daily	PM	PM In	PM Out
Residential	23%	37	4	2	1
Total Retail Internal Capture		37	4	2	1

Total RAW Trip Generation		804	72	37	35
Internal Capture		-82	-8	-5	-3
Total External Trips		723	64	32	32
Alternative Mode Reduction	5%	-36	-3	-2	-2
Total External Vehicle Trips		686	61	30	31
Pass-By Trips		-196	-17	-8	-9
Total External Roadway Trips		**490**	**44**	**22**	**22**
Existing Homewood Trips		2535	472	115	357
Total Net New Project Trips		-2045	-428	-93	-335

*** Based on the number of trips internalized by the residential units that go to the retail use

Alternative 5 (Winter)

ITE Land Use & Code	Project Land Use	Density	Measure	Daily	Friday PM Peak			Daily	Friday PM Peak		
				Rate	Rate	In	Out	Trips	Trips	In	Out
NORTH BASE											
*50% of lodging guests arrive on Friday **											
310 - Hotel	Hotel Rooms	38	occupied rooms	1.5	0.75	100%	0%	57	29	29	0
Skier Parking Spaces	Ski Resort	400	spaces	2	0.45	0%	100%	800	180	0	180
Remaining 50% of lodging units, residential units, and retail use analyzed using typical TRPA and ITE trip generation rates											
310 - Hotel	Hotel Rooms	37	occupied rooms	8.92	0.70	49%	51%	330	26	13	13
				Internal Capture			55%	182	14	7	7
				External Trips				149	12	6	6
230 - Residential Condos	Residential Condos	225	units	5.86	0.52	67%	33%	1319	117	78	39
				Internal Capture			39%	514	46	31	15
				External Trips				804	71	48	24
220 - Apartment	Employee Housing	12	units	6.72	0.62	65%	35%	81	7	5	3
				Internal Capture			52%	42	4	3	1
				External Trips				39	4	2	1
820 - Shopping Center	Commercial	25	ksf	42.94	3.75	48%	52%	1074	94	45	49
				Internal Capture			***	425	38	24	14
				External Trips				648	56	21	35
				Alternative Mode			13%	82	7	3	4
				External Vehicle Trips				566	49	18	31
				Pass-By			34%	192	17	6	10
				External Roadway Trips				373	32	12	20
Base Lodge		30	ksf	Internal Trips Only							
				RAW Trip Generation				**2860**	**273**	**169**	**103**
SOUTH BASE											
210 - Single Family Residential	Residential Lots	16	units	10	1.01	63%	37%	160	16	10	6
				Internal Capture			39%	62	6	4	2
				External Trips				98	10	6	4
				RAW Trip Generation				**160**	**16**	**10**	**6**
MID MOUNTAIN											
Base Lodge		15	ksf	Internal Trips Only							
ADDITIONAL RECREATION											
Outdoor Amphitheater		1500	seats	Summer Only							

*** Retail Internal Capture					
From		Daily	PM	PM In	PM Out
Residential	23%	340	31	20	10
Lodging	20%	66	5	3	3
Emp. Apts.	24%	19	2	1	1
Total Retail Internal Capture		425	38	24	14

Alternative Modes/Shuttle/Transit Services				
Winter Dial-A-Ride	125	20	10	10
Winter Dial-A-Ride Trip Reduction	-453	-110	-55	-55
Shuttle Service	32	2	1	1
Shuttle Service Trip Reduction	-59	-7	-4	-3
Total Alternative Mode Trip Reduction	-355	-95	-48	-47

Skier Drop Off/Pick Up										
Skiers	100	skiers	2	1	0.5	0.5	200	100	50	50

Total RAW Trip Generation	4020	569	230	339
Internal Capture	-1225	-108	-68	-40
Total External Trips	2794	461	161	300
Alternative Mode Reduction	-355	-95	-48	-47
Total External Vehicle Trips	2439	366	113	253
Pass-By Trips	-192	-17	-6	-10
Total External Roadway Trips	**2247**	**349**	**107**	**242**
Existing Homewood Trips	2535	472	115	357
Total Net New Project Trips	-288	-123	-8	-115

*** Based on the number of trips internalized by the residential and lodging units that go to the retail use

Alternative 6 (Winter)

ITE Land Use & Code	Project Land Use	Density	Measure	Daily Rate	Friday PM Peak Rate	Friday PM Peak In	Friday PM Peak Out	Daily Trips	Friday PM Peak Trips	Friday PM Peak In	Friday PM Peak Out
NORTH BASE											
*50% of lodging guests arrive on Friday **											
310 - Hotel	Hotel Rooms	25	occupied rooms	1.5	0.75	100%	0%	38	19	19	0
310 - Hotel	Condo/Hotel Rooms	13	occupied rooms	1.5	0.75	100%	0%	20	10	10	0
Skier Parking Spaces	Ski Resort	400	spaces	2	0.45	0%	100%	800	180	0	180
Remaining 50% of lodging units, residential units, and retail use analyzed using typical TRPA and ITE trip generation rates											
310 - Hotel	Hotel Rooms	25	occupied rooms	8.92	0.70	49%	51%	223	18	9	9
				Internal Capture			55%	123	10	5	5
				External Trips				100	8	4	4
310 - Hotel	Condo/Hotel Rooms	12	occupied rooms	8.92	0.70	49%	51%	107	8	4	4
				Internal Capture			55%	59	5	2	2
				External Trips				48	4	2	2
230 - Residential Condos	Residential Condos	145	units	5.86	0.52	67%	33%	850	75	51	25
				Internal Capture			39%	331	29	20	10
				External Trips				518	46	31	15
220 - Apartment	Employee Housing	12	units	6.72	0.62	65%	35%	81	7	5	3
				Internal Capture			52%	42	4	3	1
				External Trips				39	4	2	1
820 - Shopping Center	Commercial	25	ksf	42.94	3.75	48%	52%	1074	94	45	49
				Internal Capture			***	361	32	20	12
				External Trips				712	62	25	37
				Alternative Mode			13%	92	8	3	5
				External Vehicle Trips				620	54	22	32
				Pass-By			34%	211	18	7	11
				External Roadway Trips				409	36	14	21
Base Lodge		30	ksf	Internal Trips Only							
				RAW Trip Generation				**2391**	**231**	**142**	**89**
SOUTH BASE											
230 - Residential Condos	Residential Condos	50	units	5.86	0.52	67%	33%	293	26	17	9
				Internal Capture			39%	114	10	7	3
				External Trips				179	16	11	5
210 - Single Family Residential	Residential Lots	14	units	10	1.01	63%	37%	140	14	9	5
				Internal Capture			39%	55	6	3	2
				External Trips				85	9	5	3
				RAW Trip Generation				**433**	**40**	**26**	**14**
MID MOUNTAIN											
Base Lodge		15	ksf	Internal Trips Only							
ADDITIONAL RECREATION											
Outdoor Amphitheater		1500	seats	Summer Only							

*** Retail Internal Capture					
From		Daily	PM	PM In	PM Out
Residential	23%	295	27	18	9
Lodging	20%	66	5	3	3
Emp. Apts.	24%	19	2	1	1
Total Retail Internal Capture		361	32	20	12

Alternative Modes/Shuttle/Transit Services				
Winter Dial-A-Ride	125	20	10	10
Winter Dial-A-Ride Trip Reduction	-453	-110	-55	-55
Shuttle Service	32	2	1	1
Shuttle Service Trip Reduction	-59	-7	-4	-3
Total Alternative Mode Trip Reduction	-355	-95	-48	-47

Skier Drop Off/Pick Up										
Skiers	100	skiers	2	1	0.5	0.5	200	100	50	50

Total RAW Trip Generation	3824	551	218	333
Internal Capture	-1085	-95	-60	-35
Total External Trips	2739	456	158	298
Alternative Mode Reduction	-355	-95	-48	-47
Total External Vehicle Trips	2384	361	110	251
Pass-By Trips	-211	-18	-7	-11
Total External Roadway Trips	**2173**	**343**	**103**	**240**
Existing Homewood Trips	2535	472	115	357
Total Net New Project Trips	-362	-129	-12	-117

*** Based on the number of trips internalized by the residential and lodging units that go to the retail use

skier drop off/pick up
194 in ←
194 out →

TABLE 7: HMR Existing Winter Traffic Generation and VMT

			Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out
Trip Generation Analysis							
Observed Traffic Volume (12/30/06)				420	123	194	550
Total 2-Way Volume in Count Periods (8:15-10:00 AM, 2:15-5:00 PM)		2,347					
Ski Area Parking Count on Date of Count		789					
10th Highest Ski Area Parking Count		807					
Ratio		1.02					
Estimated Traffic Volume on Date of Peak Ski Area Parking Count		2,394		428	125	198	561
Ratio of Total Daily Traffic to Traffic During Count Period		1.79					
Total Daily Traffic on Peak Ski Day			4,281				
Traffic Generated by Other Land Uses in Count Area							
Trip Generation Rate [1]							
Permanently Occupied			*10.1*	*0.19*	*0.56*	*0.64*	*0.37*
Recreational Homes			*3.16*	*0.11*	*0.15*	*0.14*	*0.17*
Number of Residences	% of Total [2]						
Permanently Occupied	24%	14	141	3	8	9	5
Recreational Homes	76%	44	139	5	7	6	7
Total		58	280	8	15	15	12
Total Estimated Traffic Generation of Existing Ski Area			4,001	420	110	183	549

day skiers out
550 − 194 = 356 out →

$\frac{356}{789} = 0.45$

Vehicle-Miles of Travel Analysis		
Estimated Employee Vehicle-Trips		
Total Employees Onsite on Peak Day	235	
Percent Commuting by Non-Auto Modes	20%	
Average Vehicle Occupancy	1.26	
Total Employee Round-Trips	149	
Total Employee One-Way Vehicle-Trips	298	
Skier One-Way Vehicle-Trips	3,703	
Total		

	Average Trip Length in Miles [3]	Total VMT
Employee One-Way Vehicle-Trips	3.97	1,183
Skier One-Way Vehicle-Trips	6.23	23,068
Total		24,251

Source 1: US Census for Homewood block groups.
Source 2: ITE Trip Generation Manual, 7th Edition

HOMEWOOD MOUNTAIN RESORT PARKING STUDY

Prepared for

JMA VENTURES, LLC

Prepared by

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TRANSPORTATION CONSULTANTS, INC.

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Parking Study

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Chapter 1
Introduction

This engineering report documents the findings and conclusions of a parking assessment for the Homewood Mountain Resort (HMR) master plan development. The site is located on State Route (SR) 89 approximately 6 miles south of SR 28, along Lake Tahoe's West Shore in the eastern portion of Placer County, California. The purpose of this study is to determine the parking required to accommodate the proposed land uses, to compare these figures with proposed supply, and to identify management strategies that can address peak events (such as large amphitheater events).

Parking issues for the project site are regulated as part of the West Shore Area General Plan (adopted by the Placer County Board of Supervisors on October 19, 1998) and specifically by the *Standards and Guidelines for Signage, Parking and Design: Lake Tahoe Region of Placer County* included in this plan. This document includes the following guidance statement:

> *"Parking Demand: Placer County and TRPA shall adopt and maintain a parking demand table for the purpose of estimating the minimum and maximum parking demand of uses in the Region. In lieu of the parking demand table, an applicant may submit for TRPA approval a technically adequate parking analysis prepared pursuant to Section A (4)."*

This document is intended to serve as the parking analysis cited in the *Standards and Guidelines for Signage, Parking and Design: Lake Tahoe Region of Placer County.* Note that designated spaces for persons with disabilities are included in the figures presented in this document. The specific number and location of ADA spaces will be designated per the *Standards and Guidelines for Signage, Parking and Design: Lake Tahoe Region of Placer County.* It should also be noted that this document does not address the specific location of off-site employee parking (to be used on peak winter days), or the parking requirements for off-site employee housing.

PROPOSED PROJECT

Homewood Mountain Resort has long been an established ski area. In addition to winter skiing and snowboarding, the site is also currently used in summer for several types of special events. The base development consists of a North Base area (with access directly off of SR 89 between Fawn Street and Silver Street, as well as a South Base area (with access provided by Ski Bowl Way). The project would replace the existing base facilities and parking areas with the following:

- North Base – a total of 221 market rate hotel rooms/condo/fractional units (including the 20 lock-off units)[1], accessory uses to the hotel, 13 employee multifamily housing units, 15,000 square feet of community pedestrian-oriented retail floor area[2], an earthen area that can serve as an amphitheater with capacity for up to 1,500 attendees, and skier support services. A total of 770 parking spaces are proposed to be entitled, consisting of 270 spaces in a structure south of Fawn Street, 450 underground spaces beneath the hotel/residential uses north of Fawn Street, and 50 onsite surface spaces just north of Fawn Street.

- South Base – a total of 99 condo units served by 150 parking spaces, as well as 16 townhomes that would each have 2 garage and 2 driveway apron parking spaces. A total of 150 parking spaces are proposed to support the condo uses.

All skier access (other than for South Lodge residents) would be provided at the North Base. In addition, a new mid-mountain lodge would provide additional skier services, as well as a seasonal summer-use swimming pool open to the public.

As part of the proposed project, HMR would also operate a Dial-A-Ride transit program (during at least the ski season) serving the West Shore, with up to ten vehicles in operation at peak times. In addition, employee and skier shuttle services would be provided.

[1] As each lockoff unit requires a TAU, excluding the lockoff units this figure is 201.
[2] In addition, 10,000 is included in the project description for potential use in the mid-mountain lodge.

Chapter 2
Parking Analysis

EXISTING PARKING

Existing off-street parking at Homewood Mountain Resort consists of three major areas: the "North Lot" (on both sides of the North Lodge), the "Gravel Lot" south of Fawn Street between San Souci Terrace and Sacramento Avenue, and the "South Lot" around the existing South Base area. None of these parking areas are striped, and the parking capacity can vary substantially due to snow storage, driver behavior, and the ability of parking management staff to direct drivers. Existing parking capacity is best estimated by a review of daily parking counts conducted on an ongoing basis by Homewood staff. A review of data for the 2003-2004 and 2004-2005 ski seasons indicates that the maximum total number of vehicles parked on-site was 942. The top three parking counts were very similar, with the second-highest at 941 and the third-highest at 939. It can be concluded that 942 vehicles is the existing parking supply of the Resort.

In the past, skier parking has also occurred along nearby public streets, notably Tahoe Ski Bowl Way, SR 89, and Fawn Street. As elimination of on-street HMR parking is planned as part of the project, none of this onstreet parking is included in this analysis.

ANALYSIS OF PARKING SPACE NEEDS

Table 1 presents the analysis of parking demand for the proposed development. Note that this analysis focuses on a peak winter day (typically a Saturday), as this is a "worst case" condition in that (1) in other seasons parking used for day skiers in the winter is available for other uses, (2) total HMR employment is substantially lower when the ski area is not in operation, and (3) pedestrian and bicycle travel mode use is higher in the summer than the winter. It should also be noted that Table 1 reflects all parking demand generated by site land uses, including demand that is planned to be accommodated off site. Demand levels generated by the specific land uses were identified as follows:

- The hotel and condo/hotel land uses conservatively assumes that all lock-off rooms are locked off on a peak day. The base parking demand rate is drawn from the *Standards and Guidelines for Signage, Parking and Design: Lake Tahoe Region of Placer County* Parking Demand Table. The number of hotel employees is estimated based on the average of 0.9 employees per hotel room (per the Institute of Transportation Engineers *Trip Generation Manual*), and assuming that two-thirds of employees are on-site during the peak shift. Other factors were applied reflecting non-auto access as well as internal trips (which would not generate additional parking demand).

TABLE 1: Homewood Mountain Resort Parking Demand Analysis

Note: Comparison of Demand with Supply Shown in Table 2

Land Use		Unit	Parking Demand Rate	Reduction for Internal Trips	Reduction for Travel Via Non-Auto Modes[2]	% of Demand at Peak Time	Parking Demand: Employee Onsite	Employee Offsite	Guest/ Customer	Total
For Peak Parking Demand Period -- Winter Busy Saturday Evening for Lodging/Residential, Winter Daytime for Retail										
North Base										
1 BR Hotel Units	75	Units	1.00	0%	5%	100%	0	0	71	71
1 BR Condo Hotel Units[1]	20	Units	1.00	0%	5%	100%	0	0	19	19
2 BR Condo Hotel Units - No Lockoff	20	Units	1.25	0%	5%	100%	0	0	24	24
1 BR Lockoff Units[1]	20	Units	1.00	0%	5%	100%	0	0	19	19
Subtotal: Hotel/Condo Hotel/Lockoff	*135*	*Units*								
Hotel Employees	80	Employees	0.50	11%	0%	100%	0	36	0	36
Hotel Meeting/Display Area	4.5	KSF	4.00	50%	0%	100%	0	0	9	9
Hotel Retail	2.5	KSF	2.50	50%	5%	100%	0	0	3	3
Condominium & Fractional Units (In Hotel Structure and Freestanding)										
2 BR Units	22	Units	1.25	0%	5%	100%	0	0	26	26
3 BR Units	37	Units	1.50	0%	5%	100%	0	0	53	53
4 BR Units	27	Units	1.75	0%	5%	100%	0	0	45	45
Total	86	Units					0	0	124	124
Employee Housing										
2 BR Units	9	Units	1.50	0%	0%	100%	0	0	14	14
4 BR Units	4	Units	3.00	0%	0%	100%	0	0	12	12
Total	13	Units					0	0	26	26
Community Retail[4]										
Hardware	5.5	KSF	3.33	40%	5%	100%	0	3	7	10
Grocery Store	8.0	KSF	6.67	40%	5%	100%	0	5	25	30
Ice Cream Store	1.5	KSF	6.67	40%	5%	100%	0	2	4	6
Total	15.0	KSF					0	10	36	46
Ice Skating Pond										
Employees	2	Employees	1.00	14%	25%	100%	0	1	0	1
Skaters	5.0	KSF	5.00	50%	5%	100%	0	0	12	12
Total										13
Ski Area Employees Onsite at Peak	193	Employees	0.50	14%	25%	100%	0	62	0	62
Business Operational Spaces							10	0	0	10
Day Skier Parking							0	0	400	400
Total North Base							10	109	743	862
Subtotal: Lodging/Residential/Business Operations							10	36	269	315
Subtotal: Retail /Ice Skating							0	11	48	59
Subtotal: Employee Housing/Day Skier Parking/Ski Area Employees							0	62	426	488
South Base										
Condominiums										
1 BR Units	16	Units	1.00	0%	5%	100%	0	0	15	15
2 BR Units	38	Units	1.25	0%	5%	100%	0	0	45	45
3 BR Units	27	Units	1.50	0%	5%	100%	0	0	38	38
4 BR Units	18	Units	1.75	0%	5%	100%	0	0	30	30
Total	99	Units					0	0	128	128
Total Winter Required Parking							10	109	871	990
Summer Only Uses										
Miniature Golf Course	18	Holes	3	50%	5%	100%	0	0	26	26
Mid-Mountain Lodge/Pool										
Employees	15	Employees	1	14%	5%	100%	12	0	0	12
Pool Guests	1200	SF Pool Area	1/75 SF	50%	5%	100%	0	0	8	8
Total										20

1. 20 2 bedroom units with lock-off units assumed to 100% be locked, effectively resulting in 40 1 bedroom units.
2. Employee mode share reflects access mode to off-site parking. All ski area employee parking on peak days (other than business operational spaces) assumed to occur off-site. See text.
3. Excluding parking for 16 townhome sites, each of which will be provided with 2 garage spaces and 2 driveway spaces.
4. In addition, 10,000 sf of commercial allocation is reserved for mid-mountain lodge use. See text.

– For hotel guests, a 5 percent non-auto mode share is estimated, reflecting guests arriving by tour bus or by airport shuttle service such as the North Lake Tahoe Express. This non-auto mode share reflects access mode to/from the Tahoe Region, rather than access mode for all trips generated by the land use (including trips within the Tahoe Region). As a result, it is lower than the non-auto mode share applied to traffic generation in the HMR Draft Environmental Impact Report traffic analysis.

- 11 percent of hotel employees are estimated to be housed on-site, based on the ratio of employees to employee housing units and assuming that 25 percent of persons living in employee housing are hotel employees.

- The hotel meeting/display area and hotel retail parking needs are reduced by 50 percent to reflect employees housed on-site, employee non-auto travel mode, as well as that half (if not most) of attendees at meeting/display area events would consist of persons already staying on-site. Note that this assumes that this area would not be used by a "local" event (such as a service club meeting) on a day of peak hotel occupancy (though this does not preclude such use on an off-peak day when other parking demands would be lower).

- The fitness center will be available solely to HMR guests and residents, and therefore will not generate additional parking demand.

- The parking demand for the fractional/timeshare and resort condominium land uses cannot be based on the existing *Standards and Guidelines for Signage, Parking and Design: Lake Tahoe Region of Placer County* Parking Demand Table rates due to the specific characteristics of the proposed land uses:

  - Regarding fractional/timeshares, the Parking Demand Table identifies a rate equal to the Hotel rate (effectively 1 space per unit assuming negligible employees on-site during periods of peak guest parking demand). While this may have been appropriate in the past when fractional/timeshare units were very similar to single hotel rooms, it does not reflect the additional parking demand generated by more modern multi-bedroom fractional/timeshare units.

  - Regarding wholly-owned condominium units, the most applicable land use category in the Parking Demand Table is multiple family dwelling unit, which requires 0.5 spaces per bedroom plus 0.5 spaces per bed. For a two-bedroom unit with three beds, this would require 2.5 spaces per unit. While this may be applicable to permanently occupied residences, a large majority of HMR wholly-owned units are expected to be used as vacation residences. A rate reflecting second-home use is therefore more appropriate.

  - As the basis for defining a parking rate more applicable to multi-bedroom units in a resort area, available parking professional literature regarding observed parking demand specific to fractional/timeshare projects was reviewed. Data was provided from the following three sources of information:

  - A survey of parking demand was conducted for the Embassy Suites Resort in South Lake Tahoe, which consists of 400 two-room suites. A survey of parking spaces per occupied suite conducted between July 22 and July 31, 1996,

indicates that the maximum demand was approximately 0.94 spaces per occupied suite (which accommodated both guests and employees).

- The firm of DMJM Harris, Inc. conducted a study in the peak winter season of 2001-2002 that provides parking lot survey data from eleven mountain destination resorts in Colorado and Utah, as a part of the *Parking Study for Beaver Creek Landing at Avon* (2001). Excerpts from this study document are included as Appendix A. According to this study, the average number of parked vehicles over the surveyed properties at the peak time of demand per occupied dwelling unit was 0.86. It should be noted that many of the properties surveyed included multiple bedroom units, and still had a relatively modest observed parking demand:

  - The Beaver Run Resort and Conference Center in Breckenridge, Colorado consists of a total of 426 units, 121 of which contain at least two bedrooms, but still has a maximum observed parking demand rate of 1.01 vehicles per occupied unit.

  - The River Run project in Keystone, Colorado consists of 402 units, 164 of which contain at least two bedrooms, with a maximum observed parking demand rate of 1.09 per occupied unit.

  - The Silverado II project in Winter Park, Colorado consists solely of 72 two-bedroom units, with a maximum observed parking demand of 1.33.

  - The firm of Steven Miner Research and Appraisal conducted a survey of 3,262 members of Interval International (a major nationwide timeshare organization) in 1998. This study, entitled *The Automotive Parking Needs of Timeshare Resorts*, indicated that the average number of spaces needed by size of unit across the country was as follows:

Hotel Room/Efficiency/Studio	1.06 spaces per unit
One-Bedroom	1.16 spaces per unit
Two-Bedroom	1.40 spaces per unit
Three-Bedroom or larger	1.66 spaces per unit

  Properties in the West Coast states were found to generate parking slightly less than the national average.

- The following presents a review of existing fractional/timeshare/tourist accommodation parking requirements in other jurisdictions based on the number of bedrooms:

- Douglas County, Nevada adopted a parking requirement for the Roundhill Timeshare development in Roundhill, Nevada of 1.0 space for each one-bedroom timeshare unit and 1.25 spaces for each two-bedroom unit.

- The ski town of Breckenridge, Colorado requires that condominium hotel units with more than one bedroom provide 1.1 parking space per 1,000 square feet of floor area within the transit system service area or 1.5 spaces per dwelling unit outside the service area. In addition, condominium hotels with "divisible units," i.e., a lockoff unit with a separate entrance within a multi-unit structure, must provide 0.5 spaces for each divisible room.

- The City of Sedona, Arizona has a substantially lower parking requirement of 0.5 space per room within each lodging unit with no less than one space per unit.

- Other parking requirements based on the number of dwelling units are as follows:

  - The City of South Lake Tahoe requires 1.0 space per timeshare unit.

  - Jackson, Wyoming requires 1.5 parking spaces per timeshare unit.

  - Vail, Colorado requires 0.7 spaces per timeshare unit. In Vail, fractional fee club units (where there are no less than six and no more than ten owners as well as proximity to transit, restaurants, and recreation) share the same requirement of 0.7 per unit.

In summary, for many jurisdictions reviewed, a second bedroom in a lodging unit does not necessitate additional parking space requirements. However, this is misleading as the typical fractional/timeshare development is a hotel type of development, and probably largely reflects that parking codes have not adjusted to the shift from hotel-room type fractional/timeshare units to multiple-bedroom units. Parking requirements for multi-bedroom fractional/timeshare/tourist accommodation units, which more closely resemble the proposed Homewood Mountain Resort land uses, are based on the number of bedrooms.

Based on this review, the recommended parking rate for the HMR proposal is 1.00 space per fractional/timeshare unit plus 0.25 space per bedroom over one bedroom, for a total of 1.25 spaces per two-bedroom unit, 1.50 per three-bedroom unit, and 1.75 per four-bedroom unit. In particular, this rate is consistent with the typical rates observed in the study conducted by DMJM Harris, Inc. of other mountain resort developments and is also consistent with rates used in other Tahoe jurisdictions. It is also consistent with the parking rate applied for the Cal Neva redevelopment project (in Placer and Washoe Counties), as well as that applied to

the Northstar Northside project. These rates are also higher than the rate of 1.22 spaces per unit (the majority of which are 2 and 3 bedroom units) applied by Placer County to the Northstar Village project. Given that fractional/timeshare and condominium users are less likely to arrive by shuttle bus or tour bus, no reductions for non-auto travel are applied to these parking rates. (Non-auto travel by these guests or residents may reduce vehicle-trips within the area, but their vehicle would still require a parking space at HMR.)

- For the employee housing units, a rate of 1.5 spaces per 2-bedroom unit and 3.0 spaces per 4-bedroom unit is applied. Housing specifically provided for employees tends to generate lower parking needs, as a higher proportion of residents have either zero or one car in the household. There are several sources of information available for workforce housing in the greater Tahoe Region:

  - A parking survey was done by LSC Transportation Consultants, Inc. for the Lake Vista affordable housing apartment complex in the Tahoe Basin portion of Douglas County, Nevada. This survey indicated a parking demand rate of 0.67 spaces per bedroom.

  - A review of other existing workforce housing projects in the South Shore indicates the following parking supply rates:

    - Tahoe Pines Apartments – 40 spaces provided for 71 bedrooms in 28 units, or a rate of 0.56 spaces per bedroom.

    - Sierra Vista Apartments – 138 spaces provided for 146 bedrooms in 94 units, or a rate of 0.95 spaces per bedroom.

    - Sierra Gardens Apartments – 111 spaces provided for 146 bedrooms in 94 units, or a rate of 0.89 spaces per bedroom.

    While actual parking count information is not available, the individual property managers indicate that parking "spillover" is not an issue at any of these projects.

  - A recent study which analyzed parking rates for workforce housing in North Lake Tahoe is the *Vista Village Workforce Housing Project Draft EIS/EIR* (EDAW, 2007), which identified that a parking rate of 0.69 - 0.70 spaces per bedroom was deemed appropriate for Vista Village. This rate is also similar to workforce housing parking requirements for the Village at Mammoth (0.66 to 1.0 spaces per bedroom).

  Based on this information, it is appropriate to apply a rate of 0.75 spaces per bedroom, or 1.5 spaces per two-bedroom unit and 3.0 spaces per four-bedroom

unit. It should also be noted that these units are planned to be adjacent to day skier parking, providing more than adequate evening parking for guests of the employees housed on-site in the winter, and throughout the day in the summer.

- For the community retail land uses, rates of 1 space per 300 square feet (or 3.33 spaces per thousand square feet) are applied for the hardware store floor area, and 1 space per 150 square feet (or 6.67 spaces per thousand square feet) for the grocery store and ice cream parlor floor areas. These rates are drawn from the *Standards and Guidelines for Signage, Parking and Design: Lake Tahoe Region of Placer County* Parking Demand Table. Per the discussion of internal versus external traffic presented in Chapter 3, it is estimated that 40 percent of community retail customers will consist of persons already at HMR, either as guests/residents or as day skiers, and thus it is appropriate to reduce parking demand by 40 percent.[3]

- Ski area employee parking is based on an estimated 193 employees onsite at a peak time, calculated as 20 year-round employees plus 23 additional employees associated with the expansion plus 200 existing seasonal employees, 75 percent of which are on-site at the peak time. This figure is factored by an average vehicle occupancy of 2 employees per car, a 14 percent reduction for employees housed on-site (based on the capacity of the employee housing to the total ski area employment), and a 25 percent estimated non-auto mode split. This latter figure reflects the high level of ski area employee transit ridership currently observed in the North Tahoe area.

- The ice skating pond would generate parking need for both employees as well as skaters coming from off-site. Applying the parking demand rate identified in the *Standards and Guidelines for Signage, Parking and Design: Lake Tahoe Region of Placer County* Parking Demand Table, a 5 percent non-auto travel mode reduction for skaters and a 25 percent reduction for employees, a 14 percent reduction in employee parking reflecting those employees housed onsite, and that half of skaters would come from off-site, a total of 13 parking spaces would be required.

- A total of 10 parking spaces are added for operational uses, such as ski area and hotel management vehicles.

- Parking for a maximum of 400 day skier vehicles will be provided. No remote parking shuttles will be operated specifically for day skiers.

As shown in Table 1, total parking demand of the individual North Base uses (including all employees and day skiers) on a peak ski day is calculated to equal 862. Of this total,

[3] An additional 10,000 square feet of retail allocation is being requested for mid-mountain lodge uses. In winter, these uses will all be used by persons already considered elsewhere in this analysis as guests, residents, day skiers or employees and thus will not add to parking needs. Parking associated with summer use of the mid-mountain lodge is discussed below.

488 is generated by day skier parking, ski area employees and employee housing (400 by day skiers plus 62 for ski area employees plus 26 for employee housing), 315 by lodging/residential uses/operations, and 59 by the retail/skating uses. The South Base condominium uses generate a peak parking demand of 128 vehicles. Note that these numbers do not reflect any sharing of parking supply or off-site parking for employees and/or day skiers, as discussed below.

Peak Winter Parking Balance

The parking demand figures and proposed parking supply can be compared to identify the overall parking balance, as well as the need for off-site parking. This evaluation is presented in Table 2.

South Base

As shown in Table 2, the South Base area would have a peak parking demand of 128 spaces and a supply of 150 spaces, for a net positive parking balance of 22 spaces.

North Base

At the North Base area, peak demand would occur during the day, when day skiers are parking in the area. Overall parking balance was first evaluated assuming no offsite parking of ski area employees. During the day, some shared use of spaces needed at night for lodging/residential uses can occur, as guests/residents staying overnight will vacate spaces in order to ski at other areas. It is estimated that on a particular peak day, 70 percent of the groups staying in the 320 on-site units are skiing, 25 percent of those skiing choose to ski at another ski area in the region, and 10 percent will use public transit to travel to the off-site ski area. This results in 50 spaces that would be available for day skier or other daytime parking needs. This procedure assumes that only one vehicle per unit is used for this purpose (though a specific multi-bedroom unit may generate more than one parked vehicle) and that no spaces are made available during the ski day by turnover of rooms or by guests traveling for other purposes. Including consideration of this shared parking adjustment, at peak the North Base would generate an overall parking demand of 812 vehicles. Compared with the planned parking supply of 770 spaces, there would be a net parking deficit of 42 onsite spaces (again, assuming no offsite parking of ski area employees).

While it is only necessary to park 42 ski area employee vehicles offsite to achieve parking balance at the North Base, JMA has indicated that they prefer to require all ski area employees to park offsite, for ease of administration. This would result in a reduction in onsite parking demand of 62 vehicles, resulting in a net positive parking surplus for the North Base as a whole of 20 spaces. This study does not address the specific location of off-site ski area employee parking, which is indicated by JMA to be provided in the Tahoe City area. JMA has also indicated that employees living south of Tahoe City would be served by free shuttle bus service. This would reduce the required

number of employee parking spaces (depending on the proportion of employees living along the West Shore) and would also reduce traffic along the West Shore.

TABLE 2: Homewood Mountain Resort Parking Balance

For Winter Peak Capacity Ski Day

	North Base	South Base
Planned Number of Spaces (Note 1)		
Structure	270	--
Surface	50	--
Underground	450	150
Total	770	150
Peak Parking Demand		
Day Skiers	400	--
Employee Housing	26	--
Ski Employees	62	--
Retail/Skating Customers	48	--
Retail/Skating Employees	11	--
Lodging/Residential Guests	269	128
Operational	10	--
Lodging/Residential Employees	36	--
Shared Parking Adjustment: Day Skiers Using Spaces Resulting From HMR Overnight Guests Skiing Elsewhere	*-50*	
Total -- Peak Onsite Parking Needs (Without Ski Employees Parking Offsite)	812	128
Net Balance -- Without Offsite Ski Area Employee Parking	-42	22
Impact of Ski Area Employees Parking Offsite on Onsite Parking Demand	-62	--
Net Onsite Balance -- With Ski Area Employee Parking Offsite on Peak Days	20	22

North Base Parking Balance by Parking Area	Demand	Supply	Balance
PEAK DAYTIME			
Structure -- Peak Daytime			
Employee Housing	26		
Day Skier	244		
Total	270	270	0
Surface -- Peak Daytime or Evening			
Retail/Skating Customers	48	50	2
Underground -- Peak Daytime			
Lodging/Residential Guests & Operational	219		
Lodging/Residential Employees	36		
Operational	10		
Day Skiers	156		
Retail/Skating Employees	11		
Total	432	450	18
Underground -- Peak Night			
Lodging/Residential Guests & Operational	269		
Lodging/Residential Employees	36		
Operational	10		
Retail/Skating Employees	11		
Total	326	450	124

Note 1: Schematic Design Document dated 1/22/10 indicates the following number of spaces:

North Base Structure	272
North Base Surface Lot	47
North Base Underground	410
North Base Total	729
South Base Underground (and Total)	117

This parking analysis is based on the planned number of spaces, not the schematic design document number of spaces.

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Parking balance was also evaluated for each of the three parking areas within the North Base, as shown in the bottom portion of Table 2:

- During the peak daytime period, the 270 spaces in the above-ground structure would be used for the on-site employee housing (26 vehicles), with the remaining 244 spaces used for day skier parking.

- During any period, the 50 surface parking spaces would be used by a maximum of 48 retail/skating customers, resulting in a net positive parking balance of 2 spaces.

- During the peak daytime period, the 450 spaces in the underground parking facility would be used by lodging/residential guests (219 vehicles), lodging/residential employees (36 vehicles), the 156 day skier vehicles not accommodated in the parking structure, operational uses (10 vehicles) and the retail/skating employees (11 vehicles), for a total of 432 vehicles. This results in a net positive parking balance of 18 spaces.

- During the peak evening period, parking demand for the underground parking facility would consist of the full 269 vehicles generated by lodging/residential guests, lodging/residential employees (36 vehicles) and 10 operational vehicles, for a total of 315 vehicles and a net positive parking balance of 135 spaces.

In sum, parking demand would not exceed parking supply in any of the individual North Base parking areas at any time.

Chapter 3

Winter and Summer Parking Management Plan

Recommended Winter Parking Management

The project applicant has committed to eliminating the existing day skier parking occurring along SR 89 and along county roadways. Combined with the reduction in on-site parking availability, ensuring that on-street parking is eliminated during the ski season will require a parking management plan. It should be noted that no parking is currently legally allowed on Placer County roadways from November 1st through April 30th. However, parking is legal along SR 89.

The recommended plan is as follows:

- Signs should be posted stating "No parking" along the cleared sections of Fawn Street, Tahoe Ski Bowl Way, Silver Street, San Souci Terrace, and Sacramento Avenue, with a minimum of 2 signs per block face.

- "2 Hour Parking Only 8 AM – 4 PM December 1 – April 15" signs should be installed along SR 89 between McKinney Drive on the south and Madden Creek on the north. Signs should be located so that at least one sign is visible from all restricted parking spaces.

- Parking enforcement (by Placer County Sheriff's Department personnel or persons deputized by the Sheriff) should be provided as necessary to address periods of potential parking shortages. Reliance on CHP personnel to enforce parking restrictions is not expected to be sufficient.

- Surveys should be conducted of on-street parking in the Homewood area on peak ski days. Surveys should be conducted for a minimum of four days per year (selected to represent the days of greatest skier activity), from 8 AM to 1 PM. Using a minimum of two surveyors, driver destinations should be identified either through direct questioning or through observation. These surveyors should also record total parking counts along public roadways (for as far as necessary to encompass any observed on-street parking) on an hourly basis, as well as whether active parking enforcement is in effect. These surveys should be required until two years after completion of any new development phase of the Homewood Mountain Resort.

- An annual parking management report should be prepared and provided to Placer County by May 1 of each year that surveys are required. This report should present the collected data regarding observed on-street parking and should also identify any proposed changes in parking management for the next ski season.

- All costs associated with the surveys and parking management report should be the responsibility of Homewood Mountain Resort.

Recommended Summer Parking Management

In peak summer periods, the lack of skier and ski area employee parking demand will allow all parking exclusive of the amphitheater to be easily accommodated in the proposed parking areas, along with parking for the miniature golf course summer-only use and parking needs associated with the mid-mountain lodge uses. Parking demand and supply for the South Base area would remain identical to that shown in Table 2 (with a net surplus of 22 spaces). At the North Base, peak parking demand exclusive of amphitheater use is estimated as follows:

- Ski area parking (both day skiers and employees) was subtracted from the North Base totals shown in Table 1.

- In summer, the mid-mountain lodge would have 15 peak employees onsite. The associated pool would operate both as an amenity for HMR guests and residents, and would also be available to other residents of the West Shore area. Applying the parking demand rate identified in the *Standards and Guidelines for Signage, Parking and Design: Lake Tahoe Region of Placer County* Parking Demand Table, a 5 percent non-auto travel mode reduction, a 14 percent reduction in employee parking reflecting those employees housed onsite, and that half of pool users would come from off-site, a total of 20 parking spaces would be required.

- Parking demand for the miniature golf course was estimated to be 26 spaces, assuming an 18-hole course, the parking demand rate identified in the *Standards and Guidelines for Signage, Parking and Design: Lake Tahoe Region of Placer County* Parking Demand Table, a 5 percent non-auto travel mode reduction, and that half of golfers would come from off-site.

- No parking reduction was applied reflecting shared use of individual spaces.

In total, peak summer parking demand exclusive of the amphitheater use is estimated to equal 433 vehicles. Compared with the total of 770 proposed spaces, 337 spaces would remain unoccupied, and available for other uses such as boat trailer storage. Other than when the amphitheater is in use for large events, therefore, more than adequate parking will be available at both the North Base and the South Base areas, without any need for off-site parking.

With the proposed development, the North Base area could accommodate concert events with up to 1,500 attendees. HMR staff indicates that 3 to 5 relatively large events could occur over the course of a summer season. Parking demand associated with a maximum 1,500 person event can be estimated as follows:

- Attendees – Surveys conducted in 2007 of persons attending a concert event at Commons Beach in Tahoe City indicated that 22 percent arrived via non-auto modes, and that auto travelers had an average vehicle occupancy of 2.5. For HMR, the non-auto travel mode percentage would be relatively lower than in Tahoe City, due to the lower number of residents/lodging rooms within a convenient walk/bike distance, though it can be expected that some of the hotel guests would also attend a concert (perhaps as part of a package promotion). Applying a 10 percent non-auto mode split and the 2.5 persons per auto occupancy rate, a maximum 1,500-attendee event would generate 540 attendee parked vehicles.

- Event Operations Staff – A 1,500-attendee event requires on the order of 45 staff persons for ticket handling, lights and sound, security, and cleaning. At 95 percent of access via auto mode and 1.26 persons per vehicle (per TRPA regional travel model data for resident work trips), this generates an additional 34 parked vehicles.

- Performers – The number of performers varies greatly depending on the event, as does their travel mode and auto occupancy. Assuming 30 performers, 100 percent auto access and an average vehicle occupancy of 3.5 (per TRPA regional travel model data for external trips), this generates an additional 9 parked vehicles.[4]

- Event Truck – Some large concert events require a semi truck to transport stage and lighting gear. If required, a portion of the drop-off/short-term surface parking area just north of Fawn Street could be roped off for truck parking. A total of 7 auto spaces are estimated to be needed to accommodate this use.

In total, a maximum event would require approximately 590 parking spaces. Assuming no event parking in the South Base area, no on-street parking, and that no parking is used for boat trailer parking, 337 vehicles associated with a maximum amphitheater event could be parked in the North Base area, and the remaining 253 vehicles would need to be parked off-site.

[4] For some events, performers can be expected to arrive in a tour bus. When this occurs, parking spaces in the drop-off/short-term surface parking area just north of Fawn Street can be roped off for use as bus parking. As this would require less than the 9 spaces needed for an event where performers arrive in private cars, a group arriving by tour bus would not increase overall parking need.

APPENDIX A

Excerpts from
Parking Study for Beaver Creek Landing at Avon,
DMJM Harris, Inc., October 27, 2001

Executive Summary

The purpose of this study is to establish appropriate off-street parking requirements for the Beaver Creek Landing at Avon Project. This development is proposed on an 18.9-acre parcel at the base of Beaver Creek Resort overlooking the Eagle River west of Avon Road and just north of Hurd Lane.

The Beaver Creek Landing at Avon is a mixed-use development/skier portal consisting of residential, retail, conference, restaurant, and skier services. The development is designed to support destination skiers and conference attendees, providing them accommodations and services within easy access to the ski slopes and area activities. A state-of-the-art gondola is proposed as part of the development. Vail Resorts parking shuttles, Town of Avon busses and connecter buses from Vail, via I-70, will also serve the development. A surface parking lot will provide convenient vehicle drop-off and pick-up for transfer to buses or gondola. Underground parking will be provided for residents and guests of the hotel and condominiums.

THE TOWN OF AVON OFF-STREET PARKING REGULATIONS provides guidance for determining the number of required parking spaces based on land use. Reductions in parking requirements are permitted for mixed-use developments.

DMJM+Harris conducted a comparative analysis of 11 similar condominium and hotel developments at five resort locations in Colorado and Utah to determine statistically significant parking usage for the residential element of the developments. According to this field-survey, the actual number of parked vehicles per unit averages less than 1.0 during the peak period of the ski season.

DMJM+Harris also referenced the Institute of Transportation Engineers Parking Generation report to determine approximate parking requirements for commercial functions within the complex. The Federal Highway Administration and Federal Transit Administration report on Travel Demand Management programs, along with industry experts, were consulted to identify the approximate percentage of guests and employees that would use existing and proposed transit systems in lieu of driving.

The Beaver Creek Landing at Avon complex provides just over 1.0 space per occupied unit plus 395 surface lot parking spaces for skiers, employees, conference activities, summer users, and customers of retail and commercial activities. Based on our analysis, these parking spaces are adequate to meet the parking needs of residential and commercial functions at Beaver Creek Landing.

6.0 Institute of Transportation Engineers (ITE) Recommendations

The Institute of Transportation Engineers (ITE) recommends that adequate parking be provided to meet site-generated demands and be consistent with applicable local policies. *Traffic Access and Impact Studies for Site Development, a Recommended Practice*, states that in addition to affecting the convenience, the number of parking spaces and the design of parking facilities may have a bearing on the facility's efficiency and the user's safety. Inadequate parking capacity tends to lead to damage of parked cars and illegal parking. An overabundance of parking can result in inefficient use of funds and could encourage unsafe driving practices. Therefore, parking quantity should be viewed not only within the context of what is required by local ordinances, but also in the context of how the facility itself will function.

In the 2nd edition of ITE's *Parking Generation* manual, research shows an average parking rate of 0.81 parked vehicles per room for a convention hotel. This measure is for peak parking spaces occupied vs. rooms on a weekday. ITE researchers describe a convention hotel as a place of lodging providing sleeping accommodations, restaurants, lounges, and meeting and banquet rooms capable of handling conventions. These hotels often have retail and service shops within the facility much like the development proposed at Beaver Creek Landing.

For a movie theatre, ITE research indicates an average parking demand of 0.26 parked vehicles per seat. These averages are based on peak parking spaces occupied vs. Seats available in the theatre.

7.0 Field Survey of Comparable Projects

DMJM+Harris conducted a comparative analysis of 11 similar condominium and hotel developments at five resort locations to provide a statistically significant determination of residential parking usage during peak winter season. The goal was to determine the number of vehicles actually using guest-parking facilities at this critical time. This analysis is directly relevant to the Beaver Creek Landing project.

7.1 Selection of Analogue Developments for Surveys

Eleven developments in ski areas with characteristics similar to the proposed project were identified in Breckenridge, Keystone, Winter Park, and Steamboat Springs in Colorado, and Park City in Utah. Selection was based on a mixed-use development with as many of the following characteristics as possible for comparison:

- Location with respect to ski area – Base area and ski-in ski-out resorts were selected over off-site locations. All resorts are either within walking distance of the ski lifts or have shuttle services to the lifts.
- Condominium/hotel type units – Large developments with close to 500 units were preferred, but some smaller and some larger developments were included.
- Central Check-in
- Meeting facilities
- Restaurant facilities
- Ski-oriented retail

7.2 Survey Methods

On-line research was used to identify the appropriate type of resort. Interviews with on-site property management personnel were held to confirm details and collect data that was otherwise unavailable. DMJM+HARRIS personnel went to each location to count the parked cars. A survey was sent to each property manager. The survey requested information on the number and type of units, square feet of meeting/conference and commercial space, amount of available parking, and occupancy rates.

7.3 Survey Dates and Times

Parked vehicles were counted at all eleven developments during the peak skier period: December 27-30, 2000. Additional counts were taken January 13, 2001, Martin Luther King Weekend at three of the Colorado locations. The January counts were used to identify potential differences in vehicle usage during peak holiday ski periods when the resort may have more destination skiers as compared to a period when the resort may have a higher proportion of regional guests.

Parking counts were accomplished between 10:00 PM and 6:00 AM whenever possible. At Keystone vehicles were counted both at midday and after 10: 00 PM to determine how parking demand varies with the time of day. The difference between midday and late night counts was 12%. Counts taken between 6:00 AM and 10:00 PM were then increased by 12%.

7.4 Survey Results

The proposed Beaver Creek Landing at Avon project is a mixed-use development consisting of lodging, retail space, meeting rooms, restaurant, a theatre, and skier services. The developments surveyed range in size from 62 to 550 units, with guest parking spaces ranging from 72 to 700. The guest occupancy rate during the period of December 27-30, 2000 ranged from 40% to 98%. The developments surveyed have commercial space available in the facility, such as meeting/conference facilities, retail, general office, restaurants, recreation, and auditoriums. Although developments were not randomly selected, the types of resorts analyzed are relevant to this study and the sample size is adequate for an accurate depiction of the parking demand for this type of facility.

Table 3, Analysis of Similar Facilities, contains results from the data collection phase. Table 4 provides a Summary of Data Analysis Phase and Figure 2 shows Vehicles per Unit.

The average number of off-street parking spaces available per unit is 1.00 space per unit. The mean number of parked vehicles per unit is 0.72, while the average number of parked vehicles per unit is 0.82 between 12/26 and 12/30/00 and 0.92 on 1/13/01.

The highest number of parked vehicles per unit was identified at Silverado II resort in Winter Park. This resort has a mix of surface and underground garage parking areas. The surface parking is not restricted to guests only. With the shuttle service provided to the lifts at Winter Park from this facility, it is likely that some of the vehicles in the surface parking area belong to persons not staying at the development.

The lowest number of parked cars per unit occurs at Shadow Ridge Resort in Park City, Utah. Factors that could contribute to this anomaly include the time of day the counts were conducted and the free shuttle service offered from Salt Lake City Airport. If the highest and the lowest averages are discarded, the mean number of vehicles per unit is 0.74.

Table 3 – Analysis of Similar Facilities

ANALYSIS OF SIMILAR FACILITIES																	
RESORT	GUEST PARKING SPACES	PARKED VEHICLES		LODGING UNITS				GUEST OCCUPANCY		PARKING OCCUPANCY		COMMERCIAL (SQ FT)					
		12/27-30/00	1/13/01	Efficiency/Studio	1 Bdr +	2 Bdr +	Divisible Unit	12/27-30/00	1/13/01	12/27-30/00	1/13/01	Meeting/Conference (sq ft)	General Retail (sq ft)	General Office (sq ft)	Restaurant (sq ft)	Commercial Recreation (sq ft)	Auditorium/Theat (Seats)
Breckenridge																	
Beaver Run Resort & Conference Center	513	348	375	155	150	121		0.93	0.87	0.68	0.73	25,000	12,600	7,500	12,500		
River Mountain Lodge	160	120	120	30	30	60	60	0.97	0.97	0.75	0.75	1,200	2,200	0	1,400	0	0
Keystone Resort																	
River Run (six buildings)	392	321	368	86	142	164	0	0.98	0.86	0.82	0.94	0	63,000	0	20,000	0	0
Steamboat Springs																	
Steamboat Grand Resort Hotel & Conf	211	127	na	38	52	95	104	0.92	na	0.60	na	19,000	14,000	0	0	0	250
Sheraton Steamboat Resort	308	216	na	55	196	66	132	0.70	na	0.70	na	22,000	0	0	0	0	0
Winter Park																	
Iron Horse Resort (mixed surface/garage)	121	109	na	36	49	45	20	0.84	na	0.90	na	4,500	800	0	0	0	0
Silverado II (mixed surface/garage)	72	72	na	0	0	72	0	0.75	na	1.00	na	3,750	650	800	0	700	0
Park City																	
Silver King (mixed surface/garage)	61	52	na	19	27	16	0	0.90	na	0.85	na	3,600	0	0	0	0	0
Shadow Ridge	80	38	na	0	150	0	150	0.92	na	0.48	na	8,250	0	0	1,000	0	0
Yarrow Resort	145	41	na	24	149	8	40	0.40	na	0.28	na	7,830	1,000	0	0	0	0
The Lodges at Deer Valley	134	62	na	0	64	23	0	0.82	na	0.46	na	7,300	1,200	0	0	0	0

Table 4 – Summary of Data Analysis Phase

SUMMARY											
RESORT	GUEST PARKING SPACES	TOTAL # UNITS	SPACES PER UNIT	PARKED VEHICLES		GUEST OCCUPANCY RATE		VEHICLES PER OCCUPIED UNIT		PARKED VEHICLES PER UNIT	
				12/27-30/2000	1/13/01	12/27-30/00	1/13/01	12/27-30/00	1/13/01	12/27-30/00	1/13/01
Breckenridge											
Beaver Run Resort & Conference Center	513	426	1.2	348	375	0.93	0.87	0.88	1.01	0.82	0.88
River Mountain Lodge	160	120	1.3	120	120	0.97	0.97	1.03	1.03	1.00	1.00
Keystone Resort											
River Run (6 buildings)	392	392	1.0	321	368	0.98	0.86	0.84	1.09	0.82	0.94
Steamboat Springs											
Steamboat Grand Resort Hotel & Conf	211	185	1.1	127	na	0.92	na	0.75	na	0.69	na
Sheraton Steamboat Resort	308	317	1.0	216	na	0.70	na	0.97	na	0.68	na
Winter Park											
Iron Horse Resort (mixed surface/garage)	121	130	0.9	109	na	0.84	na	1.00	na	0.84	na
Silverado II (mixed surface/garage)	72	72	1.0	72	na	0.75	na	1.33	na	1.00	na
Park City											
Silver King (mixed surface/garage)	61	62	1.0	52	na	0.90	na	0.93	na	0.84	na
Shadow Ridge	80	150	0.5	38	na	0.92	na	0.28	na	0.25	na
Yarrow Resort	145	181	0.8	41	na	0.40	na	0.57	na	0.23	na
The Lodges at Deer Valley	134	87	1.5	62	na	0.82	na	0.87	na	0.71	na
MEAN	**199.73**	**192.91**	**1.04**	**136.91**	**287.67**	**0.83**	**0.90**	**0.86**	**1.04**	**0.72**	**0.94**
MEDIAN	**145.00**	**150.00**	**1.00**	**109.00**	**368.00**	**0.90**	**0.87**	**0.88**	**1.03**	**0.82**	**0.94**

Alternative 4 Parking

Land Use	Size	Units	Parking Demand Rate	Reduction for Internal Trips	Reduction for Travel Via Non-Auto Modes[1]	% of Demand at Peak Time	Employee Onsite	Employee Offsite	Guest/ Customer	Total
North Base										
Single Family Homes[2]	8	Units								
Community Retail										
Hardware	5.5	KSF	3.33	40%	5%	100%	0	3	7	10
Grocery Store	8	KSF	6.67	40%	5%	100%	0	5	25	30
Ice Cream Store	1.5	KSF	6.67	40%	5%	100%	0	2	4	6
Total	15	KSF					0	10	36	46
Total North Base							0	10	36	46
South Base										
Single Family Homes[2]	8	Units								
Total Winter Required Parking							**0**	**10**	**36**	**46**
Summer Only Uses										
Mid-Mountain Lodge/Pool										
Employees	15	Employees	1	14%	5%	100%	12	0	0	12
Pool Guests	1200	SF Pool Area	1/75 SF	50%	5%	100%	0	0	8	8
Total										20

Notes:

[1] Employee mode share reflects access mode to off-site parking. All ski area employee parking on peak days (other than business operational spaces) assumed to occur off-site.

[2] Each single family home will have a 2 car garage and 2 driveway spaces.

Alternative 5 Parking

Land Use	Size	Units	Parking Demand Rate	Reduction for Internal Trips	Reduction for Travel Via Non-Auto Modes[1]	% of Demand at Peak Time	Employee Onsite	Employee Offsite	Guest/ Customer	Total
North Base										
1 BR Hotel Units	75	Units	1.00	0%	5%	100%	0	0	71	71
Subtotal: Hotel	*75*	*Units*								
Hotel Employees	44	Employees	0.50	11%	0%	100%	0	20	0	20
Hotel Meeting/Display Area	4.5	KSF	4.00	50%	0%	100%	0	0	9	9
Hotel Retail	2.5	KSF	2.50	50%	5%	100%	0	0	3	3
Condominium										
1 BR Units	20	Units	1.00	0%	5%	100%	0	0	19	19
2 BR Units	72	Units	1.25	0%	5%	100%	0	0	86	86
3 BR Units	79	Units	1.50	0%	5%	100%	0	0	113	113
4 BR Units	54	Units	1.75	0%	5%	100%	0	0	90	90
Total	225	Units					0	0	307	307
Employee Housing										
2 BR Units	8	Units	1.50	0%	0%	100%	0	0	12	12
4 BR Units	4	Units	3.00	0%	0%	100%	0	0	12	12
Total	12	Units					0	0	24	24
Community Retail[2]										
Hardware	5.5	KSF	3.33	40%	5%	100%	0	3	7	10
Grocery Store	8	KSF	6.67	40%	5%	100%	0	5	25	30
Ice Cream Store	1.5	KSF	6.67	40%	5%	100%	0	2	4	6
Total	15	KSF					0	10	36	46
Ice Skating Pond										
Employees	2	Employees	1.00	14%	25%	100%	0	1	0	1
Skaters	5	KSF	5.00	50%	5%	100%	0	0	12	12
Total							0	1	12	13
Ski Area Employees Onsite at Peak	193	Employees	0.50	14%	25%	100%	0	62	0	62
Business Operational Spaces							10	0	0	10
Day Skier Parking							0	0	400	400
Total North Base							10	93	862	965
Subtotal: Lodging/Residential/Business Operations							10	20	390	420
Subtotal: Retail/Ice Skating							0	11	48	59
Subtotal: Employee Housing/Day Skier Parking/Ski Area Employees							0	62	424	486
South Base										
Single Family Homes[3]	16	Units								
Total Winter Required Parking							10	93	862	**965**
Summer Only Uses										
Mid-Mountain Lodge/Pool										
Employees	15	Employees	1	14%	5%	100%	12	0	0	12
Pool Guests	1200	SF Pool Area	1/75 SF	50%	5%	100%	0	0	8	8
Total										20

Notes:

[1] Employee mode share reflects access mode to off-site parking. All ski area employee parking on peak days (other than business operational spaces) assumed to occur off-site.

[2] In addition, 10,000 sf of commercial allocation is reserved for mid-mountain lodge use.

[3] Each single family home will have a 2 car garage and 2 driveway spaces.

Alternative 6 Parking

Land Use	Size	Units	Parking Demand Rate	Reduction for Internal Trips	Reduction for Travel Via Non-Auto Modes[1]	% of Demand at Peak Time	Employee Onsite	Employee Offsite	Guest/ Customer	Total
North Base										
1 BR Hotel Units	50	Units	1.00	0%	5%	100%	0	0	48	48
1 BR Condo-Hotel Units	25	Units	1.00	0%	5%	100%	0	0	24	24
Subtotal: Hotel	*75*	*Units*								
Hotel Employees	44	Employees	0.50	11%	0%	100%	0	20	0	20
Hotel Meeting/Display Area	4.5	KSF	4.00	50%	0%	100%	0	0	9	9
Hotel Retail	2.5	KSF	2.50	50%	5%	100%	0	0	3	3
Condominium										
1 BR Units	13	Units	1.00	0%	5%	100%	0	0	12	12
2 BR Units	46	Units	1.25	0%	5%	100%	0	0	55	55
3 BR Units	51	Units	1.50	0%	5%	100%	0	0	73	73
4 BR Units	35	Units	1.75	0%	5%	100%	0	0	58	58
Total	145	Units					0	0	198	198
Employee Housing										
2 BR Units	8	Units	1.50	0%	0%	100%	0	0	12	12
4 BR Units	4	Units	3.00	0%	0%	100%	0	0	12	12
Total	12	Units					0	0	24	24
Community Retail[2]										
Hardware	5.5	KSF	3.33	40%	5%	100%	0	3	7	10
Grocery Store	8	KSF	6.67	40%	5%	100%	0	5	25	30
Ice Cream Store	1.5	KSF	6.67	40%	5%	100%	0	2	4	6
Total	15	KSF					0	10	36	46
Ice Skating Pond										
Employees	2	Employees	1.00	14%	25%	100%	0	1	0	1
Skaters	5	KSF	5.00	50%	5%	100%	0	0	12	12
Total							0	1	12	13
Ski Area Employees Onsite at Peak	193	Employees	0.50	14%	25%	100%	0	62	0	62
Business Operational Spaces							10	0	0	10
Day Skier Parking							0	0	400	400
Total North Base							10	93	753	856
Subtotal: Lodging/Residential/Business Operations							10	20	281	311
Subtotal: Retail/Ice Skating							0	11	48	59
Subtotal: Employee Housing/Day Skier Parking/Ski Area Employees							0	62	424	486
South Base										
Condominium										
1 BR Units	5	Units	1.00	0%	5%	100%	0	0	5	5
2 BR Units	16	Units	1.25	0%	5%	100%	0	0	19	19
3 BR Units	17	Units	1.50	0%	5%	100%	0	0	24	24
4 BR Units	12	Units	1.75	0%	5%	100%	0	0	20	20
Total	50	Units					0	0	68	68
Single Family Homes[3]	14	Units								
Total Winter Required Parking							**10**	**93**	**753**	**856**
Summer Only Uses										
Mid-Mountain Lodge/Pool										
Employees	15	Employees	1	14%	5%	100%	12	0	0	12
Pool Guests	1200	SF Pool Area	1/75 SF	50%	5%	100%	0	0	8	8
Total										20

Notes:

[1] Employee mode share reflects access mode to off-site parking. All ski area employee parking on peak days (other than business operational spaces) assumed to occur off-site.

[2] In addition, 10,000 sf of commercial allocation is reserved for mid-mountain lodge use.

[3] Each single family home will have a 2 car garage and 2 driveway spaces.

Alternatives 1 and 3 - Summer

Residential Trip Length	4.42
Visitor Trip Length	7.77

	Daily Trips	Internal Capture	Alt. Mode	Pass-By	Total Ext. Trips	Residential Trips	Visitor Trips	VMT
Hotel	387	149	28		**210**	0%	100%	1,632
Condo/Hotel	313	120	23		**170**	0%	100%	1,324
Penthouse Condos	111	40	8		**63**	0%	100%	489
Timeshare	116	45	8		**63**	0%	100%	486
Residential Condos	885	345	64		**476**	100%	0%	2,104
Apartments (Employee)	87	34	6		**47**	100%	0%	206
Retail (Commercial)	1,074	382	78	208	**406**	85%	15%	2,000
Recreational	40	6	3		**31**	50%	50%	190
							Alternatives 1 and 3 VMT	8,431

Alternative 4 - Summer

Residential Trip Length	4.42
Visitor Trip Length	7.77

	Daily Trips	Internal Capture	Alt. Mode	Pass-By	Total Ext. Trips	Residential Trips	Visitor Trips	VMT
Residential Lots	160	44	7	0	**109**	100%	0%	481
Retail (Commercial)	644	37	29	196	**382**	85%	15%	1,881
							Alternative 4 VMT	2,362

Alternative 5 - Summer

Residential Trip Length	4.42
Visitor Trip Length	7.77

	Daily Trips	Internal Capture	Alt. Mode	Pass-By	Total Ext. Trips	Residential Trips	Visitor Trips	VMT
Hotel	387	149	29		**209**	0%	100%	1,626
Residential Condos	1,319	514	98		**707**	100%	0%	3,126
Residential Lots	160	62	12		**86**	100%	0%	381
Retail (Commercial)	1,074	406	80	200	**388**	85%	15%	1,912
							Alternative 5 VMT	7,045

Alternative 6 - Summer

Residential Trip Length	4.42
Visitor Trip Length	7.77

	Daily Trips	Internal Capture	Alt. Mode	Pass-By	Total Ext. Trips	Residential Trips	Visitor Trips	VMT
Hotel	261	100	19		**142**	0%	100%	1,102
Condo/Hotel	127	48	9		**70**	0%	100%	541
Residential Condos	1,143	445	84		**614**	100%	0%	2,713
Residential Lots	140	55	10		**75**	100%	0%	330
Employee Housing	81	42	6		**33**	100%	0%	146
Retail (Commercial)	1,074	380	89	206	**399**	85%	15%	1,964
							Alternative 6 VMT	6,796

Alternatives 1 and 3 - Winter

Residential Trip Length	4.42
Visitor Trip Length	7.77

	Daily Trips	Internal Capture	Alt. Mode	Pass-By	Total Ext. Trips	Residential Trips	Visitor Trips	VMT
Hotel	387	182	35		**170**	0%	100%	1,324
Condo/Hotel	313	147	28		**138**	0%	100%	1,073
Penthouse Condos	111	48	10		**53**	0%	100%	412
Timeshare	116	56	10		**50**	0%	100%	386
Residential Condos	885	345	79		**461**	100%	0%	2,037
Apartments (Employee)	87	45	8		**34**	100%	0%	151
Retail (Commercial)	1,074	382	96	205	**391**	85%	15%	1,925
Recreation (Skiers)	1,000	0	89		**911**	75%	25%	4,788
							Total VMT	12,096
							Existing HMR VMT	13,328
							Alternatives 1 and 3 VMT	**-1,232**

Alternative 4 - Winter

Residential Trip Length	4.42
Visitor Trip Length	7.77

	Daily Trips	Internal Capture	Alt. Mode	Pass-By	Total Ext. Trips	Residential Trips	Visitor Trips	VMT
Residential Lots	160	44	7	0	**109**	100%	0%	481
Retail (Commercial)	644	37	29	196	**382**	85%	15%	1,881
							Alternative 4 VMT	2,362
							Existing HMR VMT	13,328
							Alternative 4 VMT	**-10,966**

Alternative 5 - Winter

Residential Trip Length	4.42
Visitor Trip Length	7.77

	Daily Trips	Internal Capture	Alt. Mode	Pass-By	Total Ext. Trips	Residential Trips	Visitor Trips	VMT
Hotel	387	182	34		**171**	0%	100%	1,327
Residential Condos	1,319	514	116		**689**	100%	0%	3,043
Residential Lots	160	62	14		**84**	100%	0%	371
Apartments (Employee)	81	42	7		**32**	100%	0%	141
Retail (Commercial)	1,074	425	95	192	**362**	85%	15%	1,783
Recreation (Skiers)	1,000	0	88		**912**	75%	25%	4,793
							Alternative 5 VMT	11,458
							Existing HMR VMT	13,328
							Alternative 5 VMT	**-1,869**

Alternative 6 - Winter

Residential Trip Length	4.42
Visitor Trip Length	7.77

	Daily Trips	Internal Capture	Alt. Mode	Pass-By	Total Ext. Trips	Residential Trips	Visitor Trips	VMT
Hotel	261	123	22		**116**	0%	100%	901
Condo/Hotel	127	59	11		**57**	0%	100%	445
Residential Condos	1,143	445	97		**601**	100%	0%	2,657
Residential Lots	140	55	12		**73**	100%	0%	323
Employee Housing	81	42	7		**32**	100%	0%	142
Retail (Commercial)	1,074	361	122	210	**381**	85%	15%	1,875
Recreation (Skiers)	1,000	0	85		**915**	75%	25%	4,812
							Alternative 6 VMT	11,156
							Existing HMR VMT	13,328
							Alternative 6 VMT	**-2,172**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3291		3433	3473		1681	1523			1814	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (perm)	1770	3291		3433	3473		1681	1523			1814	1583
Volume (vph)	55	346	304	413	335	48	375	30	385	54	46	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	398	349	475	385	55	431	34	443	62	53	62
RTOR Reduction (vph)	0	177	0	0	12	0	0	303	0	0	0	46
Lane Group Flow (vph)	63	570	0	475	428	0	431	174	0	0	115	16
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.8	18.6		12.3	27.1		25.6	25.6			8.7	8.7
Effective Green, g (s)	3.8	18.6		12.3	27.1		25.6	25.6			8.7	8.7
Actuated g/C Ratio	0.05	0.23		0.15	0.33		0.32	0.32			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	83	754		520	1159		530	480			194	170
v/s Ratio Prot	0.04	c0.17		c0.14	0.12		c0.26	0.11			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.76	0.76		0.91	0.37		0.81	0.36			0.59	0.09
Uniform Delay, d1	38.2	29.2		33.9	20.6		25.6	21.5			34.6	32.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	32.1	4.3		20.5	0.2		12.8	2.1			4.8	0.2
Delay (s)	70.4	33.5		54.4	20.8		38.4	23.6			39.4	32.9
Level of Service	E	C		D	C		D	C			D	C
Approach Delay (s)		36.4			38.2			30.6			37.1	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	81.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	794	0	0	771	0
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	0	0	0	0	0	0	0	923	0	0	897	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	923	0	0	897	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								c0.50			0.48	
v/s Ratio Perm												
v/c Ratio								0.58			0.57	
Uniform Delay, d1								2.8			2.7	
Progression Factor								1.00			1.00	
Incremental Delay, d2								1.6			1.5	
Delay (s)								4.4			4.2	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			4.4			4.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	4.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	24	7	0	18	19	713	3	13	648	97
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	93	0	29	8	0	22	23	859	4	16	781	117
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1799	1779	839	1806	1836	861	898			863		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1799	1779	839	1806	1836	861	898			863		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	92	84	100	94	97			98		
cM capacity (veh/h)	56	78	366	54	72	355	756			780		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	93	29	30	886	913
Volume Left	93	0	8	23	16
Volume Right	0	29	22	4	117
cSH	56	366	139	756	780
Volume to Capacity	1.66	0.08	0.22	0.03	0.02
Queue Length 95th (ft)	216	6	20	2	2
Control Delay (s)	481.6	15.7	37.9	0.8	0.6
Lane LOS	F	C	E	A	A
Approach Delay (s)	370.9		37.9	0.8	0.6
Approach LOS	F		E		

Intersection Summary			
Average Delay	24.4		
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	553	26	7	592	8
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	3	0	3	10	0	13	3	700	33	9	749	10
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1520	1524	768	1510	1513	730	766			740		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1520	1524	768	1510	1513	730	766			740		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	89	100	97	100			99		
cM capacity (veh/h)	91	115	397	95	117	417	842			862		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	23	735	768
Volume Left	3	10	3	9
Volume Right	3	13	33	10
cSH	149	167	842	862
Volume to Capacity	0.03	0.14	0.00	0.01
Queue Length 95th (ft)	3	12	0	1
Control Delay (s)	30.1	30.0	0.1	0.3
Lane LOS	D	D	A	A
Approach Delay (s)	30.1	30.0	0.1	0.3
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	544	572	45
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	30	10	7	611	643	51
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1326	685	710			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1326	685	710			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	98	99			
cM capacity (veh/h)	166	442	876			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	40	618	693
Volume Left	30	7	0
Volume Right	10	0	51
cSH	196	876	1700
Volume to Capacity	0.21	0.01	0.41
Queue Length 95th (ft)	19	1	0
Control Delay (s)	28.0	0.2	0.0
Lane LOS	D	A	
Approach Delay (s)	28.0	0.2	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	517	2	4	523	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	2	7	8	1	5	3	562	2	4	568	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1158	1153	573	1159	1157	563	578			564		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1158	1153	573	1159	1157	563	578			564		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	99	99	95	99	99	100			100		
cM capacity (veh/h)	170	196	519	168	195	526	995			1007		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	14	567	583
Volume Left	4	8	3	4
Volume Right	7	5	2	10
cSH	265	231	995	1007
Volume to Capacity	0.05	0.06	0.00	0.00
Queue Length 95th (ft)	4	5	0	0
Control Delay (s)	19.3	21.6	0.1	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	19.3	21.6	0.1	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	519	528	8
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	4	1	1	618	629	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1254	633	638			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1254	633	638			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	190	480	946			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	618	638
Volume Left	4	1	0	0
Volume Right	1	0	0	10
cSH	223	946	1700	1700
Volume to Capacity	0.02	0.00	0.36	0.38
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	21.5	8.8	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	21.5	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	1	0	0	0	2	505	0	0	546	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	1	0	0	0	2	549	0	0	593	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1148	1148	595	1149	1150	549	597			549		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1148	1148	595	1149	1150	549	597			549		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	175	198	504	175	198	536	980			1021		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	0	551	597
Volume Left	0	0	2	0
Volume Right	1	0	0	3
cSH	504	1700	980	1021
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	12.2	0.0	0.1	0.0
Lane LOS	B	A	A	
Approach Delay (s)	12.2	0.0	0.1	0.0
Approach LOS	B	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	0	6	5	0	12	4	486	10	7	534	5
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	6	0	8	6	0	15	5	615	13	9	676	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1344	1335	679	1336	1332	622	682			628		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1344	1335	679	1336	1332	622	682			628		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	98	95	100	97	99			99		
cM capacity (veh/h)	123	151	452	127	152	487	911			954		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	6	8	6	15	633	691
Volume Left	6	0	6	0	5	9
Volume Right	0	8	0	15	13	6
cSH	123	452	127	487	911	954
Volume to Capacity	0.05	0.02	0.05	0.03	0.01	0.01
Queue Length 95th (ft)	4	1	4	2	0	1
Control Delay (s)	35.7	13.1	34.9	12.6	0.2	0.2
Lane LOS	E	B	D	B	A	A
Approach Delay (s)	23.4		19.2		0.2	0.2
Approach LOS	C		C			

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	0	5	3	0	5	1	509	1	2	553	5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	4	0	5	3	0	5	1	559	1	2	608	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1182	1177	610	1182	1180	560	613			560		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1182	1177	610	1182	1180	560	613			560		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	98	100	99	100			100		
cM capacity (veh/h)	164	190	494	164	190	528	966			1011		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	9	562	615
Volume Left	4	3	1	2
Volume Right	5	5	1	5
cSH	261	288	966	1011
Volume to Capacity	0.04	0.03	0.00	0.00
Queue Length 95th (ft)	3	2	0	0
Control Delay (s)	19.3	17.9	0.0	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	19.3	17.9	0.0	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	42	19	11	509	557	39
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	47	21	12	566	619	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1231	641	662			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1231	641	662			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	96	99			
cM capacity (veh/h)	193	475	926			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	68	578	662
Volume Left	47	12	0
Volume Right	21	0	43
cSH	237	926	1700
Volume to Capacity	0.29	0.01	0.39
Queue Length 95th (ft)	28	1	0
Control Delay (s)	26.1	0.4	0.0
Lane LOS	D	A	
Approach Delay (s)	26.1	0.4	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	566	37	13	409	16	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	602	39	14	435	17	12
Pedestrians	8			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	1			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			641		1093	628
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			641		1093	628
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		93	98
cM capacity (veh/h)			943		232	481

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	641	449	29
Volume Left	0	14	17
Volume Right	39	0	12
cSH	1700	943	294
Volume to Capacity	0.38	0.01	0.10
Queue Length 95th (ft)	0	1	8
Control Delay (s)	0.0	0.4	18.6
Lane LOS		A	C
Approach Delay (s)	0.0	0.4	18.6
Approach LOS			C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	0	2	6	0	4	3	426	0	1	573	13
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	0	2	7	0	4	3	473	0	1	637	14
Pedestrians		21			30			30			30	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1182	1177	695	1188	1184	533	672			503		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1182	1177	695	1188	1184	533	672			503		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	99	96	100	99	100			100		
cM capacity (veh/h)	153	182	424	150	180	520	902			1035		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	11	477	652
Volume Left	8	7	3	1
Volume Right	2	4	0	14
cSH	178	210	902	1035
Volume to Capacity	0.06	0.05	0.00	0.00
Queue Length 95th (ft)	4	4	0	0
Control Delay (s)	26.4	23.1	0.1	0.0
Lane LOS	D	C	A	A
Approach Delay (s)	26.4	23.1	0.1	0.0
Approach LOS	D	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.87			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3291		3433	3454		1681	1540			1814	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (perm)	1770	3291		3433	3454		1681	1540			1814	1583
Volume (vph)	55	260	228	310	251	48	281	30	289	54	46	54
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	289	253	344	279	53	312	33	321	60	51	60
RTOR Reduction (vph)	0	190	0	0	18	0	0	201	0	0	0	47
Lane Group Flow (vph)	61	352	0	344	314	0	287	178	0	0	111	13
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.8	14.2		10.5	20.9		25.9	25.9			8.2	8.2
Effective Green, g (s)	3.8	14.2		10.5	20.9		25.9	25.9			8.2	8.2
Actuated g/C Ratio	0.05	0.19		0.14	0.28		0.35	0.35			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	90	625		482	965		582	533			199	174
v/s Ratio Prot	0.03	c0.11		c0.10	0.09		c0.17	0.12			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.68	0.56		0.71	0.33		0.49	0.33			0.56	0.07
Uniform Delay, d1	34.9	27.5		30.7	21.4		19.3	18.1			31.6	29.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	18.4	1.2		5.0	0.2		3.0	1.7			3.4	0.2
Delay (s)	53.3	28.6		35.7	21.6		22.2	19.8			34.9	30.1
Level of Service	D	C		D	C		C	B			C	C
Approach Delay (s)		31.1			28.7			20.8			33.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	596	0	0	578	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	0	0	0	662	0	0	642	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	662	0	0	642	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								105.8			105.8	
Effective Green, g (s)								105.8			105.8	
Actuated g/C Ratio								0.87			0.87	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1621			1621	
v/s Ratio Prot								c0.36			0.34	
v/s Ratio Perm												
v/c Ratio								0.41			0.40	
Uniform Delay, d1								1.6			1.6	
Progression Factor								1.00			1.00	
Incremental Delay, d2								0.8			0.7	
Delay (s)								2.4			2.3	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			2.4			2.3	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	2.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	15.8
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	24	7	0	18	19	535	3	13	476	97
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	86	0	27	8	0	20	21	594	3	14	529	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1270	1252	583	1277	1304	596	637			598		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1270	1252	583	1277	1304	596	637			598		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	37	100	95	94	100	96	98			99		
cM capacity (veh/h)	135	166	512	132	154	503	947			979		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	86	27	28	619	651
Volume Left	86	0	8	21	14
Volume Right	0	27	20	3	108
cSH	135	512	282	947	979
Volume to Capacity	0.63	0.05	0.10	0.02	0.01
Queue Length 95th (ft)	84	4	8	2	1
Control Delay (s)	69.0	12.4	19.2	0.6	0.4
Lane LOS	F	B	C	A	A
Approach Delay (s)	55.5		19.2	0.6	0.4
Approach LOS	F		C		

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	445	26	7	454	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	0	2	9	0	11	2	494	29	8	504	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1063	1066	523	1054	1056	523	520			530		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1063	1066	523	1054	1056	523	520			530		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	95	100	98	100			99		
cM capacity (veh/h)	192	217	548	197	220	548	1040			1031		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	20	526	521
Volume Left	2	9	2	8
Volume Right	2	11	29	9
cSH	284	306	1040	1031
Volume to Capacity	0.02	0.07	0.00	0.01
Queue Length 95th (ft)	1	5	0	1
Control Delay (s)	17.9	17.6	0.1	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	17.9	17.6	0.1	0.2
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	438	429	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	30	10	7	487	477	50
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1035	519	544			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1035	519	544			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	88	98	99			
cM capacity (veh/h)	248	549	1011			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	40	493	527
Volume Left	30	7	0
Volume Right	10	0	50
cSH	288	1011	1700
Volume to Capacity	0.14	0.01	0.31
Queue Length 95th (ft)	12	0	0
Control Delay (s)	19.5	0.2	0.0
Lane LOS	C	A	
Approach Delay (s)	19.5	0.2	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	453	2	4	392	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	2	7	8	1	6	3	503	2	4	436	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	967	962	441	968	966	504	446			506		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	967	962	441	968	966	504	446			506		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	99	97	100	99	100			100		
cM capacity (veh/h)	229	254	617	228	253	567	1115			1059		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	14	509	450
Volume Left	4	8	3	4
Volume Right	7	6	2	10
cSH	343	299	1115	1059
Volume to Capacity	0.04	0.05	0.00	0.00
Queue Length 95th (ft)	3	4	0	0
Control Delay (s)	15.9	17.7	0.1	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	15.9	17.7	0.1	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	454	397	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	1	1	504	441	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	952	446	450			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	952	446	450			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	287	613	1110			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	4	1	504	450
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	331	1110	1700	1700
Volume to Capacity	0.01	0.00	0.30	0.26
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	16.0	8.2	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	16.0	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	0	5	0	0	0	6	469	0	0	410	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	0	6	0	0	0	7	521	0	0	456	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	993	993	459	999	997	521	462			521		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	993	993	459	999	997	521	462			521		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	100	100	100	99			100		
cM capacity (veh/h)	223	244	602	219	243	555	1099			1045		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	0	528	462
Volume Left	4	0	7	0
Volume Right	6	0	0	7
cSH	343	1700	1099	1045
Volume to Capacity	0.03	0.00	0.01	0.00
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	15.8	0.0	0.2	0.0
Lane LOS	C	A	A	
Approach Delay (s)	15.8	0.0	0.2	0.0
Approach LOS	C	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	80	0	48	5	0	12	19	400	10	7	381	29
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	89	0	53	6	0	13	21	444	11	8	423	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	961	953	439	1001	963	450	456			456		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	961	953	439	1001	963	450	456			456		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	61	100	91	97	100	98	98			99		
cM capacity (veh/h)	226	252	618	199	249	609	1105			1105		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	89	53	6	13	477	463
Volume Left	89	0	6	0	21	8
Volume Right	0	53	0	13	11	32
cSH	226	618	199	609	1105	1105
Volume to Capacity	0.39	0.09	0.03	0.02	0.02	0.01
Queue Length 95th (ft)	44	7	2	2	1	1
Control Delay (s)	30.8	11.4	23.7	11.0	0.6	0.2
Lane LOS	D	B	C	B	A	A
Approach Delay (s)	23.5		14.8		0.6	0.2
Approach LOS	C		B			

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	56	0	67	3	0	5	7	369	1	2	425	7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	62	0	74	3	0	6	8	410	1	2	472	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	912	907	476	981	911	411	480			411		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	912	907	476	981	911	411	480			411		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	75	100	87	98	100	99	99			100		
cM capacity (veh/h)	251	273	589	198	272	641	1082			1148		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	137	9	419	482
Volume Left	62	3	8	2
Volume Right	74	6	1	8
cSH	365	349	1082	1148
Volume to Capacity	0.37	0.03	0.01	0.00
Queue Length 95th (ft)	42	2	1	0
Control Delay (s)	20.7	15.6	0.2	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	20.7	15.6	0.2	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	101	59	22	313	438	72
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	112	66	24	348	487	80
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	923	527	567			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	923	527	567			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	62	88	98			
cM capacity (veh/h)	292	551	1005			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	178	372	567
Volume Left	112	24	0
Volume Right	66	0	80
cSH	353	1005	1700
Volume to Capacity	0.50	0.02	0.33
Queue Length 95th (ft)	68	2	0
Control Delay (s)	25.1	0.8	0.0
Lane LOS	D	A	
Approach Delay (s)	25.1	0.8	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.92		1.00	0.98		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (prot)	1770	3273		3433	3473		1681	1546			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (perm)	1770	3273		3433	3473		1681	1546			1811	1583
Volume (vph)	55	346	347	436	335	48	380	26	394	54	40	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	398	399	501	385	55	437	30	453	62	46	62
RTOR Reduction (vph)	0	202	0	0	12	0	0	154	0	0	0	50
Lane Group Flow (vph)	63	595	0	501	428	0	355	411	0	0	108	12
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.8	19.1		13.3	28.6		24.5	24.5			8.5	8.5
Effective Green, g (s)	3.8	19.1		13.3	28.6		24.5	24.5			8.5	8.5
Actuated g/C Ratio	0.05	0.23		0.16	0.35		0.30	0.30			0.10	0.10
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	83	768		561	1220		506	465			189	165
v/s Ratio Prot	0.04	c0.18		c0.15	0.12		0.21	c0.27			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.76	0.77		0.89	0.35		0.70	0.88			0.57	0.07
Uniform Delay, d1	38.3	29.1		33.4	19.5		25.2	27.1			34.7	32.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	32.1	4.9		16.5	0.2		7.9	20.9			4.1	0.2
Delay (s)	70.5	34.0		49.8	19.7		33.1	48.0			38.8	33.1
Level of Service	E	C		D	B		C	D			D	C
Approach Delay (s)		36.7			35.7			42.2			36.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	38.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	804	0	0	831	0
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	0	0	0	0	0	0	0	935	0	0	966	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	935	0	0	966	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								0.50			c0.52	
v/s Ratio Perm												
v/c Ratio								0.59			0.61	
Uniform Delay, d1								2.8			2.9	
Progression Factor								1.00			1.00	
Incremental Delay, d2								1.6			1.8	
Delay (s)								4.5			4.7	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			4.5			4.7	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	4.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	27	7	0	18	22	723	3	13	708	97
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	93	0	33	8	0	22	27	871	4	16	853	117
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1890	1870	911	1901	1927	873	970			875		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1890	1870	911	1901	1927	873	970			875		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	90	81	100	94	96			98		
cM capacity (veh/h)	48	68	332	45	63	350	711			772		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	93	33	30	901	986
Volume Left	93	0	8	27	16
Volume Right	0	33	22	4	117
cSH	48	332	121	711	772
Volume to Capacity	1.94	0.10	0.25	0.04	0.02
Queue Length 95th (ft)	233	8	23	3	2
Control Delay (s)	622.7	17.0	44.2	1.1	0.6
Lane LOS	F	C	E	A	A
Approach Delay (s)	465.4		44.2	1.1	0.6
Approach LOS	F		E		

Intersection Summary			
Average Delay	30.0		
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	561	26	7	648	8
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	3	0	3	10	0	13	3	710	33	9	820	10
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1601	1605	839	1591	1594	741	837			750		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1601	1605	839	1591	1594	741	837			750		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	88	100	97	100			99		
cM capacity (veh/h)	80	103	361	83	104	412	792			854		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	23	746	839
Volume Left	3	10	3	9
Volume Right	3	13	33	10
cSH	131	150	792	854
Volume to Capacity	0.04	0.15	0.00	0.01
Queue Length 95th (ft)	3	13	0	1
Control Delay (s)	33.5	33.3	0.1	0.3
Lane LOS	D	D	A	A
Approach Delay (s)	33.5	33.3	0.1	0.3
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	559	634	45
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	30	10	7	628	712	51
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1412	755	780			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1412	755	780			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	97	99			
cM capacity (veh/h)	147	403	825			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	40	635	763
Volume Left	30	7	0
Volume Right	10	0	51
cSH	174	825	1700
Volume to Capacity	0.23	0.01	0.45
Queue Length 95th (ft)	22	1	0
Control Delay (s)	31.8	0.2	0.0
Lane LOS	D	A	
Approach Delay (s)	31.8	0.2	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	536	2	4	590	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	2	7	8	1	5	3	583	2	4	641	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1251	1246	646	1253	1250	584	651			585		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1251	1246	646	1253	1250	584	651			585		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	99	99	95	99	99	100			100		
cM capacity (veh/h)	146	172	471	145	171	512	935			990		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	14	588	655
Volume Left	4	8	3	4
Volume Right	7	5	2	10
cSH	232	203	935	990
Volume to Capacity	0.06	0.07	0.00	0.00
Queue Length 95th (ft)	4	6	0	0
Control Delay (s)	21.4	24.0	0.1	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	21.4	24.0	0.1	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	538	595	8
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	4	1	1	640	708	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1356	713	718			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1356	713	718			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	164	432	883			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	640	718
Volume Left	4	1	0	0
Volume Right	1	0	0	10
cSH	194	883	1700	1700
Volume to Capacity	0.02	0.00	0.38	0.42
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	24.0	9.1	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	24.0	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	3	0	3	0	0	0	13	525	0	0	600	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	3	0	0	0	14	571	0	0	652	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1262	1262	664	1266	1274	571	675			571		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1262	1262	664	1266	1274	571	675			571		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	100	100	100	98			100		
cM capacity (veh/h)	145	167	461	143	165	521	916			1002		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	7	0	585	675
Volume Left	3	0	14	0
Volume Right	3	0	0	23
cSH	221	1700	916	1002
Volume to Capacity	0.03	0.00	0.02	0.00
Queue Length 95th (ft)	2	0	1	0
Control Delay (s)	21.8	0.0	0.4	0.0
Lane LOS	C	A	A	
Approach Delay (s)	21.8	0.0	0.4	0.0
Approach LOS	C	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	0	13	5	0	12	15	507	10	7	571	24
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	19	0	16	6	0	15	19	642	13	9	723	30
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1457	1448	738	1458	1457	648	753			654		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1457	1448	738	1458	1457	648	753			654		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	81	100	96	94	100	97	98			99		
cM capacity (veh/h)	102	127	418	101	126	470	857			933		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	19	16	6	15	673	762
Volume Left	19	0	6	0	19	9
Volume Right	0	16	0	15	13	30
cSH	102	418	101	470	857	933
Volume to Capacity	0.19	0.04	0.06	0.03	0.02	0.01
Queue Length 95th (ft)	16	3	5	2	2	1
Control Delay (s)	48.4	14.0	43.2	12.9	0.6	0.3
Lane LOS	E	B	E	B	A	A
Approach Delay (s)	32.4		21.8		0.6	0.3
Approach LOS	D		C			

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	16	0	19	3	0	5	20	529	1	2	564	38
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	18	0	21	3	0	5	22	581	1	2	620	42
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1276	1271	641	1292	1292	582	662			582		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1276	1271	641	1292	1292	582	662			582		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	100	96	97	100	99	98			100		
cM capacity (veh/h)	139	163	475	131	159	513	927			992		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	38	9	604	664
Volume Left	18	3	22	2
Volume Right	21	5	1	42
cSH	226	245	927	992
Volume to Capacity	0.17	0.04	0.02	0.00
Queue Length 95th (ft)	15	3	2	0
Control Delay (s)	24.2	20.2	0.6	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	24.2	20.2	0.6	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	47	23	19	544	570	53
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	52	26	21	604	633	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1309	663	692			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1309	663	692			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	70	94	98			
cM capacity (veh/h)	171	461	903			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	78	626	692
Volume Left	52	21	0
Volume Right	26	0	59
cSH	216	903	1700
Volume to Capacity	0.36	0.02	0.41
Queue Length 95th (ft)	39	2	0
Control Delay (s)	30.7	0.6	0.0
Lane LOS	D	A	
Approach Delay (s)	30.7	0.6	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	577	40	13	448	18	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	614	43	14	477	19	12
Pedestrians	8			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	1			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			656		1147	641
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			656		1147	641
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		91	98
cM capacity (veh/h)			931		215	472

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	656	490	31
Volume Left	0	14	19
Volume Right	43	0	12
cSH	1700	931	271
Volume to Capacity	0.39	0.01	0.11
Queue Length 95th (ft)	0	1	10
Control Delay (s)	0.0	0.4	20.0
Lane LOS		A	C
Approach Delay (s)	0.0	0.4	20.0
Approach LOS			C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	0	2	6	0	4	3	464	0	1	580	17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	10	0	2	7	0	4	3	516	0	1	644	19
Pedestrians		21			30			30			30	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1234	1229	705	1241	1239	576	684			546		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1234	1229	705	1241	1239	576	684			546		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	99	95	100	99	100			100		
cM capacity (veh/h)	141	169	418	138	167	492	893			998		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	11	519	664
Volume Left	10	7	3	1
Volume Right	2	4	0	19
cSH	160	194	893	998
Volume to Capacity	0.08	0.06	0.00	0.00
Queue Length 95th (ft)	6	5	0	0
Control Delay (s)	29.4	24.6	0.1	0.0
Lane LOS	D	C	A	A
Approach Delay (s)	29.4	24.6	0.1	0.0
Approach LOS	D	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	27	7	0	18	22	723	3	13	708	97
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	93	0	33	8	0	22	27	871	4	16	853	117
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1890	1870	911	1901	1927	873	970			875		
vC1, stage 1 conf vol	943	943										
vC2, stage 2 conf vol	948	928										
vCu, unblocked vol	1890	1870	911	1901	1927	873	970			875		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	54	100	90	81	100	94	96			98		
cM capacity (veh/h)	202	234	332	45	63	350	711			772		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	93	33	30	901	986
Volume Left	93	0	8	27	16
Volume Right	0	33	22	4	117
cSH	202	332	121	711	772
Volume to Capacity	0.46	0.10	0.25	0.04	0.02
Queue Length 95th (ft)	55	8	23	3	2
Control Delay (s)	37.2	17.0	44.2	1.1	0.6
Lane LOS	E	C	E	A	A
Approach Delay (s)	32.0		44.2	1.1	0.6
Approach LOS	D		E		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (prot)	1770	3291		3433	3473		1681	1545			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (perm)	1770	3291		3433	3473		1681	1545			1811	1583
Volume (vph)	55	346	304	415	335	48	374	26	385	54	41	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	398	349	477	385	55	430	30	443	62	47	62
RTOR Reduction (vph)	0	177	0	0	12	0	0	159	0	0	0	49
Lane Group Flow (vph)	63	570	0	477	428	0	354	390	0	0	109	13
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.8	18.6		13.1	27.9		24.6	24.6			8.5	8.5
Effective Green, g (s)	3.8	18.6		13.1	27.9		24.6	24.6			8.5	8.5
Actuated g/C Ratio	0.05	0.23		0.16	0.35		0.30	0.30			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	83	758		557	1199		512	470			191	167
v/s Ratio Prot	0.04	c0.17		c0.14	0.12		0.21	c0.25			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.76	0.75		0.86	0.36		0.69	0.83			0.57	0.08
Uniform Delay, d1	38.0	29.0		32.9	19.8		24.8	26.2			34.4	32.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	32.1	4.2		12.3	0.2		7.5	15.6			4.1	0.2
Delay (s)	70.2	33.2		45.2	19.9		32.2	41.8			38.5	32.8
Level of Service	E	C		D	B		C	D			D	C
Approach Delay (s)		36.1			33.1			38.0			36.4	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	35.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	789	0	0	768	0
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	0	0	0	0	0	0	0	917	0	0	893	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	917	0	0	893	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								c0.49			0.48	
v/s Ratio Perm												
v/c Ratio								0.58			0.57	
Uniform Delay, d1								2.8			2.7	
Progression Factor								1.00			1.00	
Incremental Delay, d2								1.6			1.5	
Delay (s)								4.3			4.2	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			4.3			4.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	4.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	26	7	0	18	22	708	3	13	645	97
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	93	0	31	8	0	22	27	853	4	16	777	117
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1796	1777	836	1806	1833	855	894			857		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1796	1777	836	1806	1833	855	894			857		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	91	84	100	94	97			98		
cM capacity (veh/h)	56	78	367	54	72	358	759			784		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	93	31	30	883	910
Volume Left	93	0	8	27	16
Volume Right	0	31	22	4	117
cSH	56	367	138	759	784
Volume to Capacity	1.66	0.09	0.22	0.03	0.02
Queue Length 95th (ft)	216	7	20	3	2
Control Delay (s)	480.9	15.7	38.1	1.0	0.6
Lane LOS	F	C	E	A	A
Approach Delay (s)	363.5		38.1	1.0	0.6
Approach LOS	F		E		

Intersection Summary			
Average Delay	24.5		
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	566	26	7	585	8
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	3	0	3	10	0	13	3	716	33	9	741	10
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1528	1532	760	1518	1520	747	758			756		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1528	1532	760	1518	1520	747	758			756		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	89	100	97	100			99		
cM capacity (veh/h)	90	114	401	94	116	408	849			849		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	23	752	759
Volume Left	3	10	3	9
Volume Right	3	13	33	10
cSH	147	164	849	849
Volume to Capacity	0.03	0.14	0.00	0.01
Queue Length 95th (ft)	3	12	0	1
Control Delay (s)	30.3	30.4	0.1	0.3
Lane LOS	D	D	A	A
Approach Delay (s)	30.3	30.4	0.1	0.3
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	540	570	45
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	30	10	7	607	640	51
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1319	683	708			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1319	683	708			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	98	99			
cM capacity (veh/h)	167	443	878			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	40	613	691
Volume Left	30	7	0
Volume Right	10	0	51
cSH	198	878	1700
Volume to Capacity	0.20	0.01	0.41
Queue Length 95th (ft)	19	1	0
Control Delay (s)	27.8	0.2	0.0
Lane LOS	D	A	
Approach Delay (s)	27.8	0.2	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	517	2	4	525	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	2	7	8	1	5	3	562	2	4	571	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1160	1155	576	1161	1159	563	580			564		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1160	1155	576	1161	1159	563	580			564		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	99	99	95	99	99	100			100		
cM capacity (veh/h)	169	195	517	168	194	526	994			1007		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	14	567	585
Volume Left	4	8	3	4
Volume Right	7	5	2	10
cSH	264	230	994	1007
Volume to Capacity	0.05	0.06	0.00	0.00
Queue Length 95th (ft)	4	5	0	0
Control Delay (s)	19.4	21.6	0.1	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	19.4	21.6	0.1	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	519	530	8
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	4	1	1	618	631	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1256	636	640			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1256	636	640			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	189	478	944			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	618	640
Volume Left	4	1	0	0
Volume Right	1	0	0	10
cSH	223	944	1700	1700
Volume to Capacity	0.02	0.00	0.36	0.38
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	21.5	8.8	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	21.5	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	1	0	0	0	2	510	0	0	551	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	1	0	0	0	2	554	0	0	599	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1159	1159	601	1160	1161	554	602			554		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1159	1159	601	1160	1161	554	602			554		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	172	195	501	172	195	532	975			1016		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	0	557	602
Volume Left	0	0	2	0
Volume Right	1	0	0	3
cSH	501	1700	975	1016
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	12.2	0.0	0.1	0.0
Lane LOS	B	A	A	
Approach Delay (s)	12.2	0.0	0.1	0.0
Approach LOS	B	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	11	0	13	5	0	12	11	485	10	7	534	10
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	14	0	16	6	0	15	14	614	13	9	676	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1363	1354	682	1365	1354	620	689			627		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1363	1354	682	1365	1354	620	689			627		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	100	96	95	100	97	98			99		
cM capacity (veh/h)	119	146	450	118	146	488	906			955		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	14	16	6	15	641	697
Volume Left	14	0	6	0	14	9
Volume Right	0	16	0	15	13	13
cSH	119	450	118	488	906	955
Volume to Capacity	0.12	0.04	0.05	0.03	0.02	0.01
Queue Length 95th (ft)	10	3	4	2	1	1
Control Delay (s)	39.3	13.3	37.3	12.6	0.4	0.2
Lane LOS	E	B	E	B	A	A
Approach Delay (s)	25.2		19.9		0.4	0.2
Approach LOS	D		C			

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	11	0	13	3	0	5	6	509	1	2	554	11
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	12	0	14	3	0	5	7	559	1	2	609	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1198	1193	615	1207	1198	560	621			560		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1198	1193	615	1207	1198	560	621			560		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	97	98	100	99	99			100		
cM capacity (veh/h)	160	185	491	155	184	528	960			1011		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	9	567	623
Volume Left	12	3	7	2
Volume Right	14	5	1	12
cSH	252	277	960	1011
Volume to Capacity	0.10	0.03	0.01	0.00
Queue Length 95th (ft)	9	2	1	0
Control Delay (s)	21.0	18.4	0.2	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	21.0	18.4	0.2	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	44	21	15	513	565	42
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	49	23	17	570	628	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1254	651	674			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1254	651	674			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	95	98			
cM capacity (veh/h)	186	468	917			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	72	587	674
Volume Left	49	17	0
Volume Right	23	0	47
cSH	231	917	1700
Volume to Capacity	0.31	0.02	0.40
Queue Length 95th (ft)	32	1	0
Control Delay (s)	27.5	0.5	0.0
Lane LOS	D	A	
Approach Delay (s)	27.5	0.5	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	571	40	13	411	18	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	607	43	14	437	19	12
Pedestrians	8			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	1			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			650		1102	635
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			650		1102	635
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		92	98
cM capacity (veh/h)			936		229	476

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	650	451	31
Volume Left	0	14	19
Volume Right	43	0	12
cSH	1700	936	285
Volume to Capacity	0.38	0.01	0.11
Queue Length 95th (ft)	0	1	9
Control Delay (s)	0.0	0.4	19.1
Lane LOS		A	C
Approach Delay (s)	0.0	0.4	19.1
Approach LOS			C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	0	2	6	0	4	3	428	0	1	574	16
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	0	2	7	0	4	3	476	0	1	638	18
Pedestrians		21			30			30			30	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1187	1182	698	1193	1191	536	677			506		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1187	1182	698	1193	1191	536	677			506		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	99	96	100	99	100			100		
cM capacity (veh/h)	151	181	422	149	179	518	899			1033		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	11	11	479	657
Volume Left	9	7	3	1
Volume Right	2	4	0	18
cSH	174	209	899	1033
Volume to Capacity	0.06	0.05	0.00	0.00
Queue Length 95th (ft)	5	4	0	0
Control Delay (s)	27.1	23.2	0.1	0.0
Lane LOS	D	C	A	A
Approach Delay (s)	27.1	23.2	0.1	0.0
Approach LOS	D	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	26	7	0	18	22	708	3	13	645	97
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	93	0	31	8	0	22	27	853	4	16	777	117
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1796	1777	836	1806	1833	855	894			857		
vC1, stage 1 conf vol	867	867										
vC2, stage 2 conf vol	930	910										
vCu, unblocked vol	1796	1777	836	1806	1833	855	894			857		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	57	100	91	84	100	94	97			98		
cM capacity (veh/h)	215	248	367	54	72	358	759			784		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	93	31	30	883	910
Volume Left	93	0	8	27	16
Volume Right	0	31	22	4	117
cSH	215	367	138	759	784
Volume to Capacity	0.43	0.09	0.22	0.03	0.02
Queue Length 95th (ft)	50	7	20	3	2
Control Delay (s)	33.9	15.7	38.1	1.0	0.6
Lane LOS	D	C	E	A	A
Approach Delay (s)	29.3		38.1	1.0	0.6
Approach LOS	D		E		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (prot)	1770	3282		3433	3473		1681	1546			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (perm)	1770	3282		3433	3473		1681	1546			1811	1583
Volume (vph)	55	346	326	433	335	48	379	27	393	54	40	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	398	375	498	385	55	436	31	452	62	46	62
RTOR Reduction (vph)	0	190	0	0	12	0	0	155	0	0	0	50
Lane Group Flow (vph)	63	583	0	498	428	0	356	408	0	0	108	12
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.8	18.9		13.3	28.4		24.5	24.5			8.5	8.5
Effective Green, g (s)	3.8	18.9		13.3	28.4		24.5	24.5			8.5	8.5
Actuated g/C Ratio	0.05	0.23		0.16	0.35		0.30	0.30			0.10	0.10
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	83	764		562	1215		507	466			190	166
v/s Ratio Prot	0.04	c0.18		c0.15	0.12		0.21	c0.26			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.76	0.76		0.89	0.35		0.70	0.88			0.57	0.07
Uniform Delay, d1	38.2	29.1		33.2	19.6		25.1	26.9			34.6	32.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	32.1	4.5		15.5	0.2		7.9	20.0			3.9	0.2
Delay (s)	70.4	33.6		48.7	19.8		33.0	46.9			38.5	33.0
Level of Service	E	C		D	B		C	D			D	C
Approach Delay (s)		36.4			35.1			41.5			36.5	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	37.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	81.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	803	0	0	807	0
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	0	0	0	0	0	0	0	934	0	0	938	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	934	0	0	938	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								0.50			c0.50	
v/s Ratio Perm												
v/c Ratio								0.59			0.59	
Uniform Delay, d1								2.8			2.8	
Progression Factor								1.00			1.00	
Incremental Delay, d2								1.6			1.7	
Delay (s)								4.4			4.5	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			4.4			4.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	4.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	25	7	0	18	22	723	3	13	684	97
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	93	0	30	8	0	22	27	871	4	16	824	117
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1861	1842	883	1870	1898	873	941			875		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1861	1842	883	1870	1898	873	941			875		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	91	83	100	94	96			98		
cM capacity (veh/h)	50	71	345	48	65	350	729			772		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	93	30	30	901	957
Volume Left	93	0	8	27	16
Volume Right	0	30	22	4	117
cSH	50	345	127	729	772
Volume to Capacity	1.85	0.09	0.24	0.04	0.02
Queue Length 95th (ft)	228	7	22	3	2
Control Delay (s)	576.7	16.4	41.9	1.0	0.6
Lane LOS	F	C	E	A	A
Approach Delay (s)	439.4		41.9	1.0	0.6
Approach LOS	F		E		

Intersection Summary			
Average Delay	28.2		
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	561	26	7	622	8
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	3	0	3	10	0	13	3	710	33	9	787	10
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1568	1572	806	1558	1561	741	804			750		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1568	1572	806	1558	1561	741	804			750		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	88	100	97	100			99		
cM capacity (veh/h)	85	107	377	88	109	412	815			854		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	23	746	806
Volume Left	3	10	3	9
Volume Right	3	13	33	10
cSH	138	156	815	854
Volume to Capacity	0.04	0.15	0.00	0.01
Queue Length 95th (ft)	3	12	0	1
Control Delay (s)	32.1	31.9	0.1	0.3
Lane LOS	D	D	A	A
Approach Delay (s)	32.1	31.9	0.1	0.3
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	561	609	45
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	30	10	7	630	684	51
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1386	727	752			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1386	727	752			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	80	98	99			
cM capacity (veh/h)	152	418	846			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	40	637	735
Volume Left	30	7	0
Volume Right	10	0	51
cSH	181	846	1700
Volume to Capacity	0.22	0.01	0.43
Queue Length 95th (ft)	21	1	0
Control Delay (s)	30.5	0.2	0.0
Lane LOS	D	A	
Approach Delay (s)	30.5	0.2	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	537	2	4	565	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	2	7	8	1	5	3	584	2	4	614	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1225	1220	619	1227	1224	585	624			586		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1225	1220	619	1227	1224	585	624			586		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	99	99	95	99	99	100			100		
cM capacity (veh/h)	152	179	489	151	178	511	957			989		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	14	589	628
Volume Left	4	8	3	4
Volume Right	7	5	2	10
cSH	241	210	957	989
Volume to Capacity	0.05	0.07	0.00	0.00
Queue Length 95th (ft)	4	5	0	0
Control Delay (s)	20.8	23.3	0.1	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	20.8	23.3	0.1	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	539	570	8
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	4	1	1	642	679	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1327	683	688			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1327	683	688			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	171	449	906			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	642	688
Volume Left	4	1	0	0
Volume Right	1	0	0	10
cSH	202	906	1700	1700
Volume to Capacity	0.02	0.00	0.38	0.40
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	23.2	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	23.2	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	0	8	0	0	0	14	522	0	0	576	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	0	9	0	0	0	15	567	0	0	626	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1235	1235	637	1243	1246	567	648			567		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1235	1235	637	1243	1246	567	648			567		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	98	100	100	100	98			100		
cM capacity (veh/h)	151	174	477	147	171	523	938			1005		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	16	0	583	648
Volume Left	8	0	15	0
Volume Right	9	0	0	22
cSH	238	1700	938	1005
Volume to Capacity	0.07	0.00	0.02	0.00
Queue Length 95th (ft)	5	0	1	0
Control Delay (s)	21.2	0.0	0.4	0.0
Lane LOS	C	A	A	
Approach Delay (s)	21.2	0.0	0.4	0.0
Approach LOS	C	A		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	14	0	14	5	0	12	16	506	10	7	548	24
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	18	0	18	6	0	15	20	641	13	9	694	30
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1429	1420	709	1432	1429	647	724			653		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1429	1420	709	1432	1429	647	724			653		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	83	100	96	94	100	97	98			99		
cM capacity (veh/h)	106	132	434	105	130	471	879			934		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	18	18	6	15	673	733
Volume Left	18	0	6	0	20	9
Volume Right	0	18	0	15	13	30
cSH	106	434	105	471	879	934
Volume to Capacity	0.17	0.04	0.06	0.03	0.02	0.01
Queue Length 95th (ft)	14	3	5	2	2	1
Control Delay (s)	45.6	13.6	41.6	12.9	0.6	0.3
Lane LOS	E	B	E	B	A	A
Approach Delay (s)	29.6		21.3		0.6	0.3
Approach LOS	D		C			

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	16	0	17	3	0	5	13	529	1	2	555	25
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	18	0	19	3	0	5	14	581	1	2	610	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1244	1239	624	1257	1252	582	637			582		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1244	1239	624	1257	1252	582	637			582		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	100	96	98	100	99	98			100		
cM capacity (veh/h)	147	172	486	140	169	513	946			992		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	9	597	640
Volume Left	18	3	14	2
Volume Right	19	5	1	27
cSH	230	257	946	992
Volume to Capacity	0.16	0.03	0.02	0.00
Queue Length 95th (ft)	14	3	1	0
Control Delay (s)	23.6	19.5	0.4	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	23.6	19.5	0.4	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	44	21	13	541	571	41
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	49	23	14	601	634	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1287	657	680			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1287	657	680			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	73	95	98			
cM capacity (veh/h)	178	465	912			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	72	616	680
Volume Left	49	14	0
Volume Right	23	0	46
cSH	223	912	1700
Volume to Capacity	0.32	0.02	0.40
Queue Length 95th (ft)	34	1	0
Control Delay (s)	28.8	0.4	0.0
Lane LOS	D	A	
Approach Delay (s)	28.8	0.4	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	577	41	13	435	17	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	614	44	14	463	18	12
Pedestrians	8			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	1			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			657		1134	642
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			657		1134	642
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		92	98
cM capacity (veh/h)			930		219	472

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	657	477	30
Volume Left	0	14	18
Volume Right	44	0	12
cSH	1700	930	278
Volume to Capacity	0.39	0.01	0.11
Queue Length 95th (ft)	0	1	9
Control Delay (s)	0.0	0.4	19.5
Lane LOS		A	C
Approach Delay (s)	0.0	0.4	19.5
Approach LOS			C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	0	2	6	0	4	3	452	0	1	580	17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	0	2	7	0	4	3	502	0	1	644	19
Pedestrians		21			30			30			30	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1220	1216	705	1227	1225	562	684			532		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1220	1216	705	1227	1225	562	684			532		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	99	95	100	99	100			100		
cM capacity (veh/h)	144	173	418	141	170	500	893			1009		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	11	11	506	664
Volume Left	9	7	3	1
Volume Right	2	4	0	19
cSH	165	198	893	1009
Volume to Capacity	0.07	0.06	0.00	0.00
Queue Length 95th (ft)	5	4	0	0
Control Delay (s)	28.4	24.2	0.1	0.0
Lane LOS	D	C	A	A
Approach Delay (s)	28.4	24.2	0.1	0.0
Approach LOS	D	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	25	7	0	18	22	723	3	13	684	97
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	93	0	30	8	0	22	27	871	4	16	824	117
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1861	1842	883	1870	1898	873	941			875		
vC1, stage 1 conf vol	914	914										
vC2, stage 2 conf vol	948	928										
vCu, unblocked vol	1861	1842	883	1870	1898	873	941			875		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	55	100	91	83	100	94	96			98		
cM capacity (veh/h)	205	238	345	48	65	350	729			772		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	93	30	30	901	957
Volume Left	93	0	8	27	16
Volume Right	0	30	22	4	117
cSH	205	345	127	729	772
Volume to Capacity	0.45	0.09	0.24	0.04	0.02
Queue Length 95th (ft)	54	7	22	3	2
Control Delay (s)	36.2	16.4	41.9	1.0	0.6
Lane LOS	E	C	E	A	A
Approach Delay (s)	31.4		41.9	1.0	0.6
Approach LOS	D		E		

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (prot)	1770	3283		3433	3473		1681	1543			1810	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (perm)	1770	3283		3433	3473		1681	1543			1810	1583
Volume (vph)	55	346	323	425	335	48	379	27	390	54	39	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	398	371	489	385	55	436	31	448	62	45	62
RTOR Reduction (vph)	0	188	0	0	12	0	0	170	0	0	0	50
Lane Group Flow (vph)	63	581	0	489	428	0	367	378	0	0	107	12
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.8	18.8		13.3	28.3		24.5	24.5			8.4	8.4
Effective Green, g (s)	3.8	18.8		13.3	28.3		24.5	24.5			8.4	8.4
Actuated g/C Ratio	0.05	0.23		0.16	0.35		0.30	0.30			0.10	0.10
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	83	762		564	1213		508	467			188	164
v/s Ratio Prot	0.04	c0.18		c0.14	0.12		0.22	c0.24			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.76	0.76		0.87	0.35		0.72	0.81			0.57	0.07
Uniform Delay, d1	38.1	29.0		33.0	19.6		25.2	26.1			34.6	32.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	32.1	4.5		13.2	0.2		8.6	14.0			3.9	0.2
Delay (s)	70.3	33.5		46.2	19.7		33.8	40.1			38.5	33.0
Level of Service	E	C		D	B		C	D			D	C
Approach Delay (s)		36.3			33.7			37.6			36.5	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	35.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	800	0	0	795	0
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	0	0	0	0	0	0	0	930	0	0	924	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	930	0	0	924	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								c0.50			0.50	
v/s Ratio Perm												
v/c Ratio								0.59			0.59	
Uniform Delay, d1								2.8			2.8	
Progression Factor								1.00			1.00	
Incremental Delay, d2								1.6			1.6	
Delay (s)								4.4			4.4	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			4.4			4.4	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	4.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	26	7	0	18	21	719	3	13	672	97
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	93	0	31	8	0	22	25	866	4	16	810	117
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1840	1820	868	1849	1877	868	927			870		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1840	1820	868	1849	1877	868	927			870		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	91	83	100	94	97			98		
cM capacity (veh/h)	52	73	352	50	68	352	738			775		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	93	31	30	895	942
Volume Left	93	0	8	25	16
Volume Right	0	31	22	4	117
cSH	52	352	130	738	775
Volume to Capacity	1.78	0.09	0.23	0.03	0.02
Queue Length 95th (ft)	224	7	21	3	2
Control Delay (s)	542.4	16.2	40.7	1.0	0.6
Lane LOS	F	C	E	A	A
Approach Delay (s)	409.6		40.7	1.0	0.6
Approach LOS	F		E		

Intersection Summary			
Average Delay	26.9		
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	558	26	7	624	8
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	3	0	3	10	0	13	3	706	33	9	790	10
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1567	1571	809	1557	1560	737	807			746		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1567	1571	809	1557	1560	737	807			746		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	89	100	97	100			99		
cM capacity (veh/h)	85	108	376	88	109	414	813			857		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	23	742	809
Volume Left	3	10	3	9
Volume Right	3	13	33	10
cSH	138	157	813	857
Volume to Capacity	0.04	0.15	0.00	0.01
Queue Length 95th (ft)	3	12	0	1
Control Delay (s)	32.0	31.8	0.1	0.3
Lane LOS	D	D	A	A
Approach Delay (s)	32.0	31.8	0.1	0.3
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	557	611	45
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	30	10	7	626	687	51
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1384	729	754			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1384	729	754			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	80	98	99			
cM capacity (veh/h)	153	417	844			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	40	633	737
Volume Left	30	7	0
Volume Right	10	0	51
cSH	181	844	1700
Volume to Capacity	0.22	0.01	0.43
Queue Length 95th (ft)	21	1	0
Control Delay (s)	30.5	0.2	0.0
Lane LOS	D	A	
Approach Delay (s)	30.5	0.2	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	533	2	4	563	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	2	7	8	1	5	3	579	2	4	612	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1218	1214	617	1220	1217	580	622			582		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1218	1214	617	1220	1217	580	622			582		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	99	99	95	99	99	100			100		
cM capacity (veh/h)	154	180	490	152	179	514	959			993		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	14	585	626
Volume Left	4	8	3	4
Volume Right	7	5	2	10
cSH	243	212	959	993
Volume to Capacity	0.05	0.07	0.00	0.00
Queue Length 95th (ft)	4	5	0	0
Control Delay (s)	20.6	23.2	0.1	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	20.6	23.2	0.1	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	535	568	8
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	4	1	1	637	676	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1320	681	686			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1320	681	686			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	173	450	908			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	637	686
Volume Left	4	1	0	0
Volume Right	1	0	0	10
cSH	204	908	1700	1700
Volume to Capacity	0.02	0.00	0.37	0.40
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	23.0	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	23.0	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	0	0	0	8	520	0	0	578	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	2	0	0	0	9	565	0	0	628	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1218	1218	636	1221	1226	565	643			565		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1218	1218	636	1221	1226	565	643			565		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	99			100		
cM capacity (veh/h)	156	179	478	155	177	524	941			1007		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	0	574	643
Volume Left	2	0	9	0
Volume Right	2	0	0	15
cSH	235	1700	941	1007
Volume to Capacity	0.02	0.00	0.01	0.00
Queue Length 95th (ft)	1	0	1	0
Control Delay (s)	20.6	0.0	0.3	0.0
Lane LOS	C	A	A	
Approach Delay (s)	20.6	0.0	0.3	0.0
Approach LOS	C	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	0	9	5	0	12	12	505	10	7	555	18
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	10	0	11	6	0	15	15	639	13	9	703	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1423	1414	714	1419	1419	646	725			652		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1423	1414	714	1419	1419	646	725			652		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	97	94	100	97	98			99		
cM capacity (veh/h)	108	134	431	109	133	472	878			935		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	10	11	6	15	667	734
Volume Left	10	0	6	0	15	9
Volume Right	0	11	0	15	13	23
cSH	108	431	109	472	878	935
Volume to Capacity	0.09	0.03	0.06	0.03	0.02	0.01
Queue Length 95th (ft)	8	2	5	2	1	1
Control Delay (s)	41.9	13.6	40.0	12.9	0.5	0.3
Lane LOS	E	B	E	B	A	A
Approach Delay (s)	26.9		20.9		0.5	0.3
Approach LOS	D		C			

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	24	0	22	3	0	5	18	516	1	2	554	28
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	26	0	24	3	0	5	20	567	1	2	609	31
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1241	1236	624	1260	1251	568	640			568		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1241	1236	624	1260	1251	568	640			568		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	82	100	95	98	100	99	98			100		
cM capacity (veh/h)	147	172	485	137	168	523	945			1004		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	51	9	588	642
Volume Left	26	3	20	2
Volume Right	24	5	1	31
cSH	221	255	945	1004
Volume to Capacity	0.23	0.03	0.02	0.00
Queue Length 95th (ft)	21	3	2	0
Control Delay (s)	26.0	19.6	0.6	0.1
Lane LOS	D	C	A	A
Approach Delay (s)	26.0	19.6	0.6	0.1
Approach LOS	D	C		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	46	23	17	529	567	47
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	51	26	19	588	630	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1282	656	682			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1282	656	682			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	71	95	98			
cM capacity (veh/h)	179	465	911			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	77	607	682
Volume Left	51	19	0
Volume Right	26	0	52
cSH	225	911	1700
Volume to Capacity	0.34	0.02	0.40
Queue Length 95th (ft)	36	2	0
Control Delay (s)	29.1	0.6	0.0
Lane LOS	D	A	
Approach Delay (s)	29.1	0.6	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	578	41	13	434	18	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	615	44	14	462	19	12
Pedestrians	8			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	1			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			659		1134	643
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			659		1134	643
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		91	98
cM capacity (veh/h)			929		219	471

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	659	476	31
Volume Left	0	14	19
Volume Right	44	0	12
cSH	1700	929	275
Volume to Capacity	0.39	0.01	0.11
Queue Length 95th (ft)	0	1	9
Control Delay (s)	0.0	0.4	19.7
Lane LOS		A	C
Approach Delay (s)	0.0	0.4	19.7
Approach LOS			C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	0	2	6	0	4	3	451	0	1	581	17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	0	2	7	0	4	3	501	0	1	646	19
Pedestrians		21			30			30			30	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1220	1216	706	1227	1225	561	685			531		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1220	1216	706	1227	1225	561	685			531		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	99	95	100	99	100			100		
cM capacity (veh/h)	144	173	418	141	170	501	892			1010		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	11	504	666
Volume Left	8	7	3	1
Volume Right	2	4	0	19
cSH	168	198	892	1010
Volume to Capacity	0.06	0.06	0.00	0.00
Queue Length 95th (ft)	5	4	0	0
Control Delay (s)	27.8	24.2	0.1	0.0
Lane LOS	D	C	A	A
Approach Delay (s)	27.8	24.2	0.1	0.0
Approach LOS	D	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	26	7	0	18	21	719	3	13	672	97
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	93	0	31	8	0	22	25	866	4	16	810	117
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1840	1820	868	1849	1877	868	927			870		
vC1, stage 1 conf vol	899	899										
vC2, stage 2 conf vol	940	920										
vCu, unblocked vol	1840	1820	868	1849	1877	868	927			870		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	56	100	91	83	100	94	97			98		
cM capacity (veh/h)	209	242	352	50	68	352	738			775		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	93	31	30	895	942
Volume Left	93	0	8	25	16
Volume Right	0	31	22	4	117
cSH	209	352	130	738	775
Volume to Capacity	0.44	0.09	0.23	0.03	0.02
Queue Length 95th (ft)	52	7	21	3	2
Control Delay (s)	35.4	16.2	40.7	1.0	0.6
Lane LOS	E	C	E	A	A
Approach Delay (s)	30.5		40.7	1.0	0.6
Approach LOS	D		E		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.92		1.00	0.98		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3271		3433	3454		1681	1544			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (perm)	1770	3271		3433	3454		1681	1544			1811	1583
Volume (vph)	55	260	266	321	251	48	265	26	260	54	40	54
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	289	296	357	279	53	294	29	289	60	44	60
RTOR Reduction (vph)	0	219	0	0	18	0	0	169	0	0	0	50
Lane Group Flow (vph)	61	366	0	357	314	0	261	182	0	0	104	10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.7	14.2		11.5	22.0		24.9	24.9			7.9	7.9
Effective Green, g (s)	3.7	14.2		11.5	22.0		24.9	24.9			7.9	7.9
Actuated g/C Ratio	0.05	0.19		0.15	0.30		0.33	0.33			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	88	623		530	1020		562	516			192	168
v/s Ratio Prot	0.03	c0.11		c0.10	0.09		c0.16	0.12			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.69	0.59		0.67	0.31		0.46	0.35			0.54	0.06
Uniform Delay, d1	34.8	27.5		29.7	20.3		19.5	18.7			31.6	30.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	21.0	1.4		3.4	0.2		2.7	1.9			3.1	0.1
Delay (s)	55.9	28.9		33.1	20.5		22.3	20.6			34.7	30.1
Level of Service	E	C		C	C		C	C			C	C
Approach Delay (s)		31.4			27.0			21.3			33.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	547	0	0	621	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	0	0	0	608	0	0	690	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	608	0	0	690	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								0.33			c0.37	
v/s Ratio Perm												
v/c Ratio								0.39			0.44	
Uniform Delay, d1								2.1			2.2	
Progression Factor								1.00			1.00	
Incremental Delay, d2								0.7			0.9	
Delay (s)								2.8			3.1	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			2.8			3.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	3.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	17	7	0	18	34	496	3	13	519	97
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	86	0	19	8	0	20	38	551	3	14	577	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1308	1289	631	1307	1342	553	684			554		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1308	1289	631	1307	1342	553	684			554		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	32	100	96	94	100	96	96			99		
cM capacity (veh/h)	126	155	481	126	144	533	909			1016		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	86	19	28	592	699
Volume Left	86	0	8	38	14
Volume Right	0	19	20	3	108
cSH	126	481	280	909	1016
Volume to Capacity	0.68	0.04	0.10	0.04	0.01
Queue Length 95th (ft)	92	3	8	3	1
Control Delay (s)	79.7	12.8	19.3	1.1	0.4
Lane LOS	F	B	C	A	A
Approach Delay (s)	67.6		19.3	1.1	0.4
Approach LOS	F		C		

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	406	26	7	480	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	0	2	9	0	11	2	451	29	8	533	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1048	1052	552	1040	1042	480	549			487		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1048	1052	552	1040	1042	480	549			487		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	96	100	98	100			99		
cM capacity (veh/h)	196	222	527	202	225	579	1014			1070		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	20	482	550
Volume Left	2	9	2	8
Volume Right	2	11	29	9
cSH	286	316	1014	1070
Volume to Capacity	0.02	0.06	0.00	0.01
Queue Length 95th (ft)	1	5	0	1
Control Delay (s)	17.8	17.1	0.1	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	17.8	17.1	0.1	0.2
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	395	452	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	30	10	7	439	502	50
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1012	544	569			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1012	544	569			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	88	98	99			
cM capacity (veh/h)	256	531	989			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	40	446	552
Volume Left	30	7	0
Volume Right	10	0	50
cSH	294	989	1700
Volume to Capacity	0.14	0.01	0.32
Queue Length 95th (ft)	12	1	0
Control Delay (s)	19.2	0.2	0.0
Lane LOS	C	A	
Approach Delay (s)	19.2	0.2	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	419	2	4	420	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	2	7	8	1	6	3	466	2	4	467	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	960	955	472	962	959	467	477			468		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	960	955	472	962	959	467	477			468		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	99	97	100	99	100			100		
cM capacity (veh/h)	232	257	592	230	255	596	1086			1094		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	14	471	481
Volume Left	4	8	3	4
Volume Right	7	6	2	10
cSH	341	304	1086	1094
Volume to Capacity	0.04	0.05	0.00	0.00
Queue Length 95th (ft)	3	4	0	0
Control Delay (s)	16.0	17.4	0.1	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	16.0	17.4	0.1	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	420	425	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	1	1	467	472	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	946	477	481			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	946	477	481			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	290	588	1081			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	4	1	467	481
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	332	1081	1700	1700
Volume to Capacity	0.01	0.00	0.27	0.28
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	16.0	8.3	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	16.0	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	0	1	0	0	0	6	442	0	0	430	19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	0	1	0	0	0	7	491	0	0	478	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	993	993	488	994	1003	491	499			491		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	993	993	488	994	1003	491	499			491		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	99			100		
cM capacity (veh/h)	223	244	580	223	240	577	1065			1072		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	2	0	498	499
Volume Left	1	0	7	0
Volume Right	1	0	0	21
cSH	322	1700	1065	1072
Volume to Capacity	0.01	0.00	0.01	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	16.2	0.0	0.2	0.0
Lane LOS	C	A	A	
Approach Delay (s)	16.2	0.0	0.2	0.0
Approach LOS	C	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	22	0	11	5	0	12	8	431	10	7	404	22
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	0	12	6	0	13	9	479	11	8	449	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	992	984	461	991	991	484	473			490		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	992	984	461	991	991	484	473			490		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	98	97	100	98	99			99		
cM capacity (veh/h)	217	244	600	218	242	582	1089			1073		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	24	12	6	13	499	481
Volume Left	24	0	6	0	9	8
Volume Right	0	12	0	13	11	24
cSH	217	600	218	582	1089	1073
Volume to Capacity	0.11	0.02	0.03	0.02	0.01	0.01
Queue Length 95th (ft)	9	2	2	2	1	1
Control Delay (s)	23.7	11.1	22.0	11.3	0.2	0.2
Lane LOS	C	B	C	B	A	A
Approach Delay (s)	19.5		14.5		0.2	0.2
Approach LOS	C		B			

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	164	0	66	3	0	5	23	281	1	2	344	74
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	182	0	73	3	0	6	26	312	1	2	382	82
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	797	792	423	865	833	313	464			313		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	797	792	423	865	833	313	464			313		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	39	100	88	99	100	99	98			100		
cM capacity (veh/h)	296	313	631	237	297	727	1097			1247		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	256	9	339	467
Volume Left	182	3	26	2
Volume Right	73	6	1	82
cSH	349	410	1097	1247
Volume to Capacity	0.73	0.02	0.02	0.00
Queue Length 95th (ft)	139	2	2	0
Control Delay (s)	38.8	14.0	0.9	0.1
Lane LOS	E	B	A	A
Approach Delay (s)	38.8	14.0	0.9	0.1
Approach LOS	E	B		

Intersection Summary			
Average Delay	9.7		
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	33	15	11	310	388	42
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	37	17	12	344	431	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	823	454	478			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	823	454	478			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	97	99			
cM capacity (veh/h)	339	606	1084			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	53	357	478
Volume Left	37	12	0
Volume Right	17	0	47
cSH	393	1084	1700
Volume to Capacity	0.14	0.01	0.28
Queue Length 95th (ft)	12	1	0
Control Delay (s)	15.6	0.4	0.0
Lane LOS	C	A	
Approach Delay (s)	15.6	0.4	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	17	7	0	18	34	496	3	13	519	97
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	86	0	19	8	0	20	38	551	3	14	577	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1308	1289	631	1307	1342	553	684			554		
vC1, stage 1 conf vol	659	659										
vC2, stage 2 conf vol	648	630										
vCu, unblocked vol	1308	1289	631	1307	1342	553	684			554		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	100	96	94	100	96	96			99		
cM capacity (veh/h)	318	341	481	126	144	533	909			1016		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	86	19	28	592	699
Volume Left	86	0	8	38	14
Volume Right	0	19	20	3	108
cSH	318	481	280	909	1016
Volume to Capacity	0.27	0.04	0.10	0.04	0.01
Queue Length 95th (ft)	27	3	8	3	1
Control Delay (s)	20.4	12.8	19.3	1.1	0.4
Lane LOS	C	B	C	A	A
Approach Delay (s)	19.0		19.3	1.1	0.4
Approach LOS	C		C		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (prot)	1770	3295		3433	3454		1681	1548			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (perm)	1770	3295		3433	3454		1681	1548			1811	1583
Volume (vph)	55	260	221	294	251	48	255	26	235	54	41	54
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	289	246	327	279	53	283	29	261	60	46	60
RTOR Reduction (vph)	0	183	0	0	17	0	0	150	0	0	0	49
Lane Group Flow (vph)	61	352	0	327	315	0	249	174	0	0	106	11
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.2	14.7		10.8	22.3		24.9	24.9			7.9	7.9
Effective Green, g (s)	3.2	14.7		10.8	22.3		24.9	24.9			7.9	7.9
Actuated g/C Ratio	0.04	0.20		0.15	0.30		0.34	0.34			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	76	652		499	1037		563	519			193	168
v/s Ratio Prot	0.03	c0.11		c0.10	0.09		c0.15	0.11			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.80	0.54		0.66	0.30		0.44	0.33			0.55	0.06
Uniform Delay, d1	35.2	26.8		30.0	20.0		19.3	18.5			31.5	29.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	43.8	0.9		3.1	0.2		2.5	1.7			3.2	0.2
Delay (s)	79.1	27.7		33.1	20.2		21.8	20.2			34.7	30.0
Level of Service	E	C		C	C		C	C			C	C
Approach Delay (s)		32.9			26.6			20.9			33.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	512	0	0	550	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	0	0	0	569	0	0	611	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	569	0	0	611	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								105.8			105.8	
Effective Green, g (s)								105.8			105.8	
Actuated g/C Ratio								0.87			0.87	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1621			1621	
v/s Ratio Prot								0.31			c0.33	
v/s Ratio Perm												
v/c Ratio								0.35			0.38	
Uniform Delay, d1								1.5			1.5	
Progression Factor								1.00			1.00	
Incremental Delay, d2								0.6			0.7	
Delay (s)								2.1			2.2	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			2.1			2.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	2.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	15.8
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	11	7	0	18	7	461	3	13	448	97
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	86	0	12	8	0	20	8	512	3	14	498	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1130	1112	552	1122	1164	514	606			516		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1130	1112	552	1122	1164	514	606			516		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	50	100	98	96	100	96	99			99		
cM capacity (veh/h)	172	204	534	176	190	561	972			1050		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	86	12	28	523	620
Volume Left	86	0	8	8	14
Volume Right	0	12	20	3	108
cSH	172	534	348	972	1050
Volume to Capacity	0.50	0.02	0.08	0.01	0.01
Queue Length 95th (ft)	61	2	6	1	1
Control Delay (s)	45.2	11.9	16.2	0.2	0.4
Lane LOS	E	B	C	A	A
Approach Delay (s)	41.1		16.2	0.2	0.4
Approach LOS	E		C		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	329	26	7	397	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	0	2	9	0	11	2	366	29	8	441	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	871	874	460	862	864	394	457			401		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	871	874	460	862	864	394	457			401		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	97	100	98	100			99		
cM capacity (veh/h)	260	282	595	267	286	647	1097			1150		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	20	397	458
Volume Left	2	9	2	8
Volume Right	2	11	29	9
cSH	362	396	1097	1150
Volume to Capacity	0.01	0.05	0.00	0.01
Queue Length 95th (ft)	1	4	0	1
Control Delay (s)	15.1	14.6	0.1	0.2
Lane LOS	C	B	A	A
Approach Delay (s)	15.1	14.6	0.1	0.2
Approach LOS	C	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	266	362	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	30	10	7	296	402	50
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	769	444	469			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	769	444	469			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	98	99			
cM capacity (veh/h)	357	605	1077			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	40	302	452
Volume Left	30	7	0
Volume Right	10	0	50
cSH	398	1077	1700
Volume to Capacity	0.10	0.01	0.27
Queue Length 95th (ft)	8	0	0
Control Delay (s)	15.1	0.2	0.0
Lane LOS	C	A	
Approach Delay (s)	15.1	0.2	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	253	2	4	320	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	2	7	8	1	6	3	281	2	4	356	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	664	659	361	666	663	282	366			283		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	664	659	361	666	663	282	366			283		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	98	100	99	100			100		
cM capacity (veh/h)	368	381	684	366	379	757	1193			1279		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	14	287	370
Volume Left	4	8	3	4
Volume Right	7	6	2	10
cSH	482	458	1193	1279
Volume to Capacity	0.03	0.03	0.00	0.00
Queue Length 95th (ft)	2	2	0	0
Control Delay (s)	12.7	13.1	0.1	0.1
Lane LOS	B	B	A	A
Approach Delay (s)	12.7	13.1	0.1	0.1
Approach LOS	B	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	254	325	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	1	1	282	361	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	650	366	370			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	650	366	370			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	433	680	1189			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	4	1	282	370
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	477	1189	1700	1700
Volume to Capacity	0.01	0.00	0.17	0.22
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	12.6	8.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.6	0.0		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	1	0	0	0	2	277	0	0	345	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	1	0	0	0	2	308	0	0	383	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	697	697	384	698	698	308	386			308		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	697	697	384	698	698	308	386			308		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	355	364	663	354	364	732	1173			1253		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	0	310	386
Volume Left	0	0	2	0
Volume Right	1	0	0	2
cSH	663	1700	1173	1253
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	10.4	0.0	0.1	0.0
Lane LOS	B	A	A	
Approach Delay (s)	10.4	0.0	0.1	0.0
Approach LOS	B	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	0	12	5	0	12	11	274	10	7	333	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	0	13	6	0	13	12	304	11	8	370	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	738	730	374	738	729	310	379			316		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	738	730	374	738	729	310	379			316		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	98	98	100	98	99			99		
cM capacity (veh/h)	324	343	672	323	344	730	1180			1245		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	11	13	6	13	328	387
Volume Left	11	0	6	0	12	8
Volume Right	0	13	0	13	11	9
cSH	324	672	323	730	1180	1245
Volume to Capacity	0.03	0.02	0.02	0.02	0.01	0.01
Queue Length 95th (ft)	3	2	1	1	1	0
Control Delay (s)	16.5	10.5	16.3	10.0	0.4	0.2
Lane LOS	C	B	C	B	A	A
Approach Delay (s)	13.2		11.9		0.4	0.2
Approach LOS	B		B			

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	0	13	3	0	5	7	282	1	2	339	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	10	0	14	3	0	6	8	313	1	2	377	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	721	716	382	730	721	314	387			314		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	721	716	382	730	721	314	387			314		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	98	99	100	99	99			100		
cM capacity (veh/h)	338	353	666	328	351	726	1172			1246		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	24	9	322	389
Volume Left	10	3	8	2
Volume Right	14	6	1	10
cSH	476	499	1172	1246
Volume to Capacity	0.05	0.02	0.01	0.00
Queue Length 95th (ft)	4	1	1	0
Control Delay (s)	13.0	12.3	0.3	0.1
Lane LOS	B	B	A	A
Approach Delay (s)	13.0	12.3	0.3	0.1
Approach LOS	B	B		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	35	14	9	293	337	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	16	10	326	374	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	739	394	413			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	739	394	413			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	98	99			
cM capacity (veh/h)	381	655	1146			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	54	336	413
Volume Left	39	10	0
Volume Right	16	0	39
cSH	433	1146	1700
Volume to Capacity	0.13	0.01	0.24
Queue Length 95th (ft)	11	1	0
Control Delay (s)	14.5	0.3	0.0
Lane LOS	B	A	
Approach Delay (s)	14.5	0.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3283		3433	3454		1681	1545			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (perm)	1770	3283		3433	3454		1681	1545			1811	1583
Volume (vph)	55	260	242	315	251	48	267	27	263	54	40	54
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	289	269	350	279	53	297	30	292	60	44	60
RTOR Reduction (vph)	0	202	0	0	18	0	0	165	0	0	0	50
Lane Group Flow (vph)	61	356	0	350	314	0	263	191	0	0	104	10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.8	14.2		10.6	21.0		25.8	25.8			7.9	7.9
Effective Green, g (s)	3.8	14.2		10.6	21.0		25.8	25.8			7.9	7.9
Actuated g/C Ratio	0.05	0.19		0.14	0.28		0.35	0.35			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	90	626		488	974		582	535			192	168
v/s Ratio Prot	0.03	c0.11		c0.10	0.09		c0.16	0.12			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.68	0.57		0.72	0.32		0.45	0.36			0.54	0.06
Uniform Delay, d1	34.7	27.4		30.5	21.1		18.9	18.2			31.6	30.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	18.4	1.2		5.0	0.2		2.5	1.9			3.1	0.1
Delay (s)	53.1	28.6		35.5	21.3		21.4	20.0			34.7	30.1
Level of Service	D	C		D	C		C	C			C	C
Approach Delay (s)		31.0			28.6			20.6			33.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	553	0	0	591	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	0	0	0	614	0	0	657	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	614	0	0	657	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								105.8			105.8	
Effective Green, g (s)								105.8			105.8	
Actuated g/C Ratio								0.87			0.87	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1621			1621	
v/s Ratio Prot								0.33			c0.35	
v/s Ratio Perm												
v/c Ratio								0.38			0.41	
Uniform Delay, d1								1.5			1.6	
Progression Factor								1.00			1.00	
Incremental Delay, d2								0.7			0.8	
Delay (s)								2.2			2.3	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			2.2			2.3	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	2.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	15.8
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	16	7	0	18	38	502	3	13	489	97
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	86	0	18	8	0	20	42	558	3	14	543	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1290	1272	597	1288	1324	559	651			561		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1290	1272	597	1288	1324	559	651			561		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	34	100	96	94	100	96	95			99		
cM capacity (veh/h)	129	158	503	130	147	528	935			1010		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	86	18	28	603	666
Volume Left	86	0	8	42	14
Volume Right	0	18	20	3	108
cSH	129	503	284	935	1010
Volume to Capacity	0.66	0.04	0.10	0.05	0.01
Queue Length 95th (ft)	89	3	8	4	1
Control Delay (s)	75.7	12.4	19.0	1.2	0.4
Lane LOS	F	B	C	A	A
Approach Delay (s)	64.9		19.0	1.2	0.4
Approach LOS	F		C		

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	416	26	7	442	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	0	2	9	0	11	2	462	29	8	491	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1017	1021	510	1008	1011	491	507			498		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1017	1021	510	1008	1011	491	507			498		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	96	100	98	100			99		
cM capacity (veh/h)	206	231	557	212	235	571	1052			1060		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	20	493	508
Volume Left	2	9	2	8
Volume Right	2	11	29	9
cSH	301	326	1052	1060
Volume to Capacity	0.01	0.06	0.00	0.01
Queue Length 95th (ft)	1	5	0	1
Control Delay (s)	17.2	16.8	0.1	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	17.2	16.8	0.1	0.2
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	406	412	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	30	10	7	451	458	50
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	980	500	525			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	980	500	525			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	98	99			
cM capacity (veh/h)	268	563	1027			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	40	458	508
Volume Left	30	7	0
Volume Right	10	0	50
cSH	308	1027	1700
Volume to Capacity	0.13	0.01	0.30
Queue Length 95th (ft)	11	0	0
Control Delay (s)	18.4	0.2	0.0
Lane LOS	C	A	
Approach Delay (s)	18.4	0.2	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	428	2	4	390	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	2	7	8	1	6	3	476	2	4	433	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	937	932	438	938	936	477	443			478		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	937	932	438	938	936	477	443			478		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	99	97	100	99	100			100		
cM capacity (veh/h)	241	265	618	239	263	588	1117			1084		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	14	481	448
Volume Left	4	8	3	4
Volume Right	7	6	2	10
cSH	354	313	1117	1084
Volume to Capacity	0.04	0.05	0.00	0.00
Queue Length 95th (ft)	3	4	0	0
Control Delay (s)	15.6	17.1	0.1	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	15.6	17.1	0.1	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	429	395	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	1	1	477	439	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	922	443	448			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	922	443	448			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	300	614	1113			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	4	1	477	448
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	344	1113	1700	1700
Volume to Capacity	0.01	0.00	0.28	0.26
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	15.6	8.2	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.6	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	0	2	0	0	0	5	451	0	0	405	14
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	0	2	0	0	0	6	501	0	0	450	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	970	970	458	972	978	501	466			501		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	970	970	458	972	978	501	466			501		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	99			100		
cM capacity (veh/h)	232	252	603	230	249	570	1096			1063		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	0	507	466
Volume Left	1	0	6	0
Volume Right	2	0	0	16
cSH	393	1700	1096	1063
Volume to Capacity	0.01	0.00	0.01	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	14.2	0.0	0.2	0.0
Lane LOS	B	A	A	
Approach Delay (s)	14.2	0.0	0.2	0.0
Approach LOS	B	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	28	0	15	5	0	12	14	433	10	7	362	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	31	0	17	6	0	13	16	481	11	8	402	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	971	963	424	974	980	487	447			492		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	971	963	424	974	980	487	447			492		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	97	97	100	98	99			99		
cM capacity (veh/h)	223	250	630	221	244	581	1114			1071		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	31	17	6	13	508	454
Volume Left	31	0	6	0	16	8
Volume Right	0	17	0	13	11	44
cSH	223	630	221	581	1114	1071
Volume to Capacity	0.14	0.03	0.03	0.02	0.01	0.01
Queue Length 95th (ft)	12	2	2	2	1	1
Control Delay (s)	23.7	10.9	21.7	11.3	0.4	0.2
Lane LOS	C	B	C	B	A	A
Approach Delay (s)	19.2		14.4		0.4	0.2
Approach LOS	C		B			

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	161	0	59	3	0	5	12	292	1	2	340	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	179	0	66	3	0	6	13	324	1	2	378	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	762	757	400	822	778	325	422			326		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	762	757	400	822	778	325	422			326		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	43	100	90	99	100	99	99			100		
cM capacity (veh/h)	316	332	650	261	323	716	1137			1234		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	244	9	339	424
Volume Left	179	3	13	2
Volume Right	66	6	1	44
cSH	366	433	1137	1234
Volume to Capacity	0.67	0.02	0.01	0.00
Queue Length 95th (ft)	115	2	1	0
Control Delay (s)	32.4	13.5	0.4	0.1
Lane LOS	D	B	A	A
Approach Delay (s)	32.4	13.5	0.4	0.1
Approach LOS	D	B		

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	35	15	9	309	385	34
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	17	10	343	428	38
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	810	447	466			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	810	447	466			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	97	99			
cM capacity (veh/h)	346	612	1096			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	56	353	466
Volume Left	39	10	0
Volume Right	17	0	38
cSH	398	1096	1700
Volume to Capacity	0.14	0.01	0.27
Queue Length 95th (ft)	12	1	0
Control Delay (s)	15.5	0.3	0.0
Lane LOS	C	A	
Approach Delay (s)	15.5	0.3	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	16	7	0	18	38	502	3	13	489	97
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	86	0	18	8	0	20	42	558	3	14	543	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1290	1272	597	1288	1324	559	651			561		
vC1, stage 1 conf vol	626	626										
vC2, stage 2 conf vol	664	646										
vCu, unblocked vol	1290	1272	597	1288	1324	559	651			561		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	100	96	94	100	96	95			99		
cM capacity (veh/h)	320	344	503	130	147	528	935			1010		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	86	18	28	603	666
Volume Left	86	0	8	42	14
Volume Right	0	18	20	3	108
cSH	320	503	284	935	1010
Volume to Capacity	0.27	0.04	0.10	0.05	0.01
Queue Length 95th (ft)	26	3	8	4	1
Control Delay (s)	20.3	12.4	19.0	1.2	0.4
Lane LOS	C	B	C	A	A
Approach Delay (s)	18.9		19.0	1.2	0.4
Approach LOS	C		C		

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3284		3433	3454		1681	1545			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (perm)	1770	3284		3433	3454		1681	1545			1811	1583
Volume (vph)	55	260	240	311	251	48	265	27	259	54	40	54
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	289	267	346	279	53	294	30	288	60	44	60
RTOR Reduction (vph)	0	201	0	0	18	0	0	165	0	0	0	50
Lane Group Flow (vph)	61	355	0	346	314	0	261	186	0	0	104	10
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.8	14.1		10.6	20.9		25.8	25.8			7.9	7.9
Effective Green, g (s)	3.8	14.1		10.6	20.9		25.8	25.8			7.9	7.9
Actuated g/C Ratio	0.05	0.19		0.14	0.28		0.35	0.35			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	90	622		489	970		583	536			192	168
v/s Ratio Prot	0.03	c0.11		c0.10	0.09		c0.16	0.12			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.68	0.57		0.71	0.32		0.45	0.35			0.54	0.06
Uniform Delay, d1	34.7	27.4		30.4	21.2		18.8	18.0			31.5	29.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	18.4	1.3		4.6	0.2		2.5	1.8			3.1	0.1
Delay (s)	53.1	28.7		35.1	21.4		21.3	19.8			34.6	30.1
Level of Service	D	C		D	C		C	B			C	C
Approach Delay (s)		31.1			28.4			20.4			33.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	74.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	547	0	0	585	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	0	0	0	608	0	0	650	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	608	0	0	650	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								105.8			105.8	
Effective Green, g (s)								105.8			105.8	
Actuated g/C Ratio								0.87			0.87	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1621			1621	
v/s Ratio Prot								0.33			c0.35	
v/s Ratio Perm												
v/c Ratio								0.38			0.40	
Uniform Delay, d1								1.5			1.6	
Progression Factor								1.00			1.00	
Incremental Delay, d2								0.7			0.7	
Delay (s)								2.2			2.3	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			2.2			2.3	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	2.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	15.8
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	18	7	0	18	39	496	3	13	483	97
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	86	0	20	8	0	20	43	551	3	14	537	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1279	1261	591	1279	1313	553	644			554		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1279	1261	591	1279	1313	553	644			554		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	35	100	96	94	100	96	95			99		
cM capacity (veh/h)	131	160	507	131	149	533	941			1016		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	86	20	28	598	659
Volume Left	86	0	8	43	14
Volume Right	0	20	20	3	108
cSH	131	507	287	941	1016
Volume to Capacity	0.65	0.04	0.10	0.05	0.01
Queue Length 95th (ft)	87	3	8	4	1
Control Delay (s)	73.2	12.4	18.9	1.2	0.4
Lane LOS	F	B	C	A	A
Approach Delay (s)	61.7		18.9	1.2	0.4
Approach LOS	F		C		

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	411	26	7	445	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	0	2	9	0	11	2	457	29	8	494	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1015	1018	513	1006	1008	485	510			493		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1015	1018	513	1006	1008	485	510			493		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	96	100	98	100			99		
cM capacity (veh/h)	207	232	555	213	235	575	1049			1065		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	20	488	511
Volume Left	2	9	2	8
Volume Right	2	11	29	9
cSH	301	327	1049	1065
Volume to Capacity	0.01	0.06	0.00	0.01
Queue Length 95th (ft)	1	5	0	1
Control Delay (s)	17.1	16.7	0.1	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	17.1	16.7	0.1	0.2
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	400	415	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	30	10	7	444	461	50
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	977	503	528			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	977	503	528			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	98	99			
cM capacity (veh/h)	269	560	1024			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	40	451	511
Volume Left	30	7	0
Volume Right	10	0	50
cSH	309	1024	1700
Volume to Capacity	0.13	0.01	0.30
Queue Length 95th (ft)	11	0	0
Control Delay (s)	18.4	0.2	0.0
Lane LOS	C	A	
Approach Delay (s)	18.4	0.2	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	420	2	4	383	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	2	7	8	1	6	3	467	2	4	426	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	920	915	431	922	919	468	436			469		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	920	915	431	922	919	468	436			469		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	99	97	100	99	100			100		
cM capacity (veh/h)	247	271	625	245	269	595	1124			1093		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	14	472	440
Volume Left	4	8	3	4
Volume Right	7	6	2	10
cSH	362	320	1124	1093
Volume to Capacity	0.04	0.05	0.00	0.00
Queue Length 95th (ft)	3	4	0	0
Control Delay (s)	15.3	16.8	0.1	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	15.3	16.8	0.1	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	421	388	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	1	1	468	431	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	906	436	440			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	906	436	440			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	306	621	1120			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	4	1	468	440
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	351	1120	1700	1700
Volume to Capacity	0.01	0.00	0.28	0.26
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	15.4	8.2	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.4	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	32.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	0	1	0	0	0	4	444	0	0	402	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	0	1	0	0	0	4	493	0	0	447	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	954	954	452	956	960	493	458			493		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	954	954	452	956	960	493	458			493		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	238	258	607	237	256	576	1103			1070		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	2	0	498	458
Volume Left	1	0	4	0
Volume Right	1	0	0	11
cSH	342	1700	1103	1070
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	15.6	0.0	0.1	0.0
Lane LOS	C	A	A	
Approach Delay (s)	15.6	0.0	0.1	0.0
Approach LOS	C	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	23	0	11	5	0	12	12	430	10	7	366	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	26	0	12	6	0	13	13	478	11	8	407	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	963	956	424	962	968	483	442			489		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	963	956	424	962	968	483	442			489		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	98	98	100	98	99			99		
cM capacity (veh/h)	226	253	630	227	249	583	1118			1074		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	26	12	6	13	502	450
Volume Left	26	0	6	0	13	8
Volume Right	0	12	0	13	11	36
cSH	226	630	227	583	1118	1074
Volume to Capacity	0.11	0.02	0.02	0.02	0.01	0.01
Queue Length 95th (ft)	9	1	2	2	1	1
Control Delay (s)	22.9	10.8	21.2	11.3	0.4	0.2
Lane LOS	C	B	C	B	A	A
Approach Delay (s)	19.0		14.2		0.4	0.2
Approach LOS	C		B			

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	163	0	65	3	0	5	16	285	1	2	338	42
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	181	0	72	3	0	6	18	317	1	2	376	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	762	757	399	828	779	317	422			318		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	762	757	399	828	779	317	422			318		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	43	100	89	99	100	99	98			100		
cM capacity (veh/h)	315	331	651	254	321	723	1137			1242		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	253	9	336	424
Volume Left	181	3	18	2
Volume Right	72	6	1	47
cSH	369	428	1137	1242
Volume to Capacity	0.69	0.02	0.02	0.00
Queue Length 95th (ft)	122	2	1	0
Control Delay (s)	33.5	13.6	0.6	0.1
Lane LOS	D	B	A	A
Approach Delay (s)	33.5	13.6	0.6	0.1
Approach LOS	D	B		

Intersection Summary			
Average Delay	8.6		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	33	14	10	308	388	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	37	16	11	342	431	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	815	451	470			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	815	451	470			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	97	99			
cM capacity (veh/h)	343	609	1092			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	52	353	470
Volume Left	37	11	0
Volume Right	16	0	39
cSH	395	1092	1700
Volume to Capacity	0.13	0.01	0.28
Queue Length 95th (ft)	11	1	0
Control Delay (s)	15.5	0.4	0.0
Lane LOS	C	A	
Approach Delay (s)	15.5	0.4	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	77	0	18	7	0	18	39	496	3	13	483	97
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	86	0	20	8	0	20	43	551	3	14	537	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1279	1261	591	1279	1313	553	644			554		
vC1, stage 1 conf vol	619	619										
vC2, stage 2 conf vol	659	641										
vCu, unblocked vol	1279	1261	591	1279	1313	553	644			554		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	100	96	94	100	96	95			99		
cM capacity (veh/h)	323	346	507	131	149	533	941			1016		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	86	20	28	598	659
Volume Left	86	0	8	43	14
Volume Right	0	20	20	3	108
cSH	323	507	287	941	1016
Volume to Capacity	0.27	0.04	0.10	0.05	0.01
Queue Length 95th (ft)	26	3	8	4	1
Control Delay (s)	20.1	12.4	18.9	1.2	0.4
Lane LOS	C	B	C	A	A
Approach Delay (s)	18.7		18.9	1.2	0.4
Approach LOS	C		C		

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: Existing Summer Conditions **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	272	Yes		115	--	
	T	305	272	--		89	--	
	R	305	272	--		89	--	
SB	L	224	199	--		82	--	
	T	224	199	--		82	--	
	R	25	66	Yes		38	Yes	
EB	L	200	139	--		48	--	
	T	169	187	Yes		103	--	
	R	169	187	Yes		93	--	
WB	L	150	202	Yes		142	--	
	T	450	417	--		166	--	
	R	450	211	--		76	--	

Intersection: 2: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	578	--		232	--	
SB	T	51	125	Yes		110	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: Existing Summer Plus Alternatives 1 and 3 **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	312	Yes		117	--	
	T	289	312	Yes		99	--	
	R	289	312	Yes		99	--	
SB	L	224	180	--		74	--	
	T	224	180	--		74	--	
	R	25	73	Yes		39	Yes	
EB	L	200	115	--		44	--	
	T	170	213	Yes		106	--	
	R	170	213	Yes		97	--	
WB	L	150	194	Yes		133	--	
	T	416	388	--		157	--	
	R	416	192	--		74	--	

Intersection: 2: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	686	--		238	--	
SB	T	70	144	Yes		125	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: Existing Summer Plus Alternative 4 **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	334	Yes		117	--	
	T	296	334	Yes		97	--	
	R	296	334	Yes		97	--	
SB	L	224	160	--		74	--	
	T	224	160	--		74	--	
	R	25	72	Yes		38	Yes	
EB	L	200	145	--		46	--	
	T	170	198	Yes		103	--	
	R	170	197	Yes		90	--	
WB	L	150	194	Yes		129	--	
	T	420	383	--		136	--	
	R	420	165	--		67	--	

Intersection: 41: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	545	--		204	--	
SB	T	64	137	Yes		115	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: Existing Summer Plus Alternative 5 **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	273	Yes		117	--	
	T	285	273	--		94	--	
	R	285	273	--		94	--	
SB	L	223	177	--		78	--	
	T	223	177	--		78	--	
	R	25	65	Yes		37	Yes	
EB	L	200	144	--		44	--	
	T	169	202	Yes		107	--	
	R	169	202	Yes		92	--	
WB	L	150	198	Yes		139	--	
	T	400	404	Yes		149	--	
	R	400	164	--		70	--	

Intersection: 41: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	521	--		212	--	
SB	T	70	145	Yes		129	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: Existing Summer Plus Alternative 6 **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	328	Yes		120	--	
	T	285	328	Yes		111	--	
	R	285	328	Yes		111	--	
SB	L	223	160	--		74	--	
	T	223	160	--		74	--	
	R	25	77	Yes		36	Yes	
EB	L	200	117	--		44	--	
	T	169	201	Yes		99	--	
	R	169	201	Yes		88	--	
WB	L	150	198	Yes		128	--	
	T	400	381	--		140	--	
	R	400	172	--		62	--	

Intersection: 41: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	482	--		211	--	
SB	T	70	145	Yes		124	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: Existing Winter Conditions **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	147	Yes		91	--	
	T	280	144	--		55	--	
	R	280	144	--		55	--	
SB	L	224	175	--		78	--	
	T	224	175	--		78	--	
	R	25	62	Yes		36	Yes	
EB	L	200	112	--		42	--	
	T	170	146	--		77	--	
	R	170	134	--		65	--	
WB	L	150	163	Yes		96	--	
	T	416	166	--		88	--	
	R	416	130	--		50	--	

Intersection: 41: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	382	--		163	--	
SB	T	79	153	Yes		119	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: Existing Winter Plus Alternatives 1 and 3 **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	146	Yes		89	--	
	T	307	140	--		49	--	
	R	307	140	--		49	--	
SB	L	224	173	--		73	--	
	T	224	173	--		73	--	
	R	25	66	Yes		38	Yes	
EB	L	200	104	--		42	--	
	T	170	144	--		78	--	
	R	170	135	--		67	--	
WB	L	150	174	Yes		95	--	
	T	428	189	--		89	--	
	R	428	141	--		49	--	

Intersection: 2: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	344	--		120	--	
SB	T	53	126	Yes		104	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: Existing Winter Plus Alternative 4 **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	174	Yes		87	--	
	T	304	174	--		50	--	
	R	304	174	--		50	--	
SB	L	224	164	--		72	--	
	T	224	164	--		72	--	
	R	25	71	Yes		38	Yes	
EB	L	200	106	--		42	--	
	T	169	144	--		74	--	
	R	169	132	--		62	--	
WB	L	150	170	Yes		90	--	
	T	420	190	--		87	--	
	R	420	120	--		48	--	

Intersection: 41: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	314	--		126	--	
SB	T	52	126	Yes		101	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: Existing Winter Plus Alternative 5 **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	149	Yes		87	--	
	T	316	149	--		46	--	
	R	316	149	--		46	--	
SB	L	224	180	--		74	--	
	T	224	180	--		74	--	
	R	25	67	Yes		36	Yes	
EB	L	200	113	--		41	--	
	T	170	150	--		75	--	
	R	170	141	--		64	--	
WB	L	150	173	Yes		92	--	
	T	402	199	--		87	--	
	R	402	136	--		47	--	

Intersection: 41: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	331	--		137	--	
SB	T	44	118	Yes		95	Yes	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3296		3433	3482		1681	1528			1814	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (perm)	1770	3296		3433	3482		1681	1528			1814	1583
Volume (vph)	55	412	350	467	407	49	440	34	443	56	47	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	474	402	537	468	56	506	39	509	64	54	62
RTOR Reduction (vph)	0	137	0	0	8	0	0	293	0	0	0	36
Lane Group Flow (vph)	63	739	0	537	516	0	489	272	0	0	118	26
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	6.9	24.9		17.0	35.0		37.0	37.0			11.9	11.9
Effective Green, g (s)	6.9	24.9		17.0	35.0		37.0	37.0			11.9	11.9
Actuated g/C Ratio	0.06	0.23		0.16	0.33		0.35	0.35			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	114	768		546	1141		582	529			202	176
v/s Ratio Prot	0.04	c0.22		c0.16	0.15		c0.29	0.18			c0.07	
v/s Ratio Perm												0.02
v/c Ratio	0.55	0.96		0.98	0.45		0.84	0.51			0.58	0.15
Uniform Delay, d1	48.5	40.5		44.8	28.3		32.2	27.8			45.1	42.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	5.7	23.4		34.1	0.3		13.7	3.5			4.3	0.4
Delay (s)	54.1	63.9		78.8	28.6		45.8	31.3			49.4	43.3
Level of Service	D	E		E	C		D	C			D	D
Approach Delay (s)		63.2			54.0			38.0			47.3	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM Average Control Delay	51.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	106.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	924	0	0	878	0
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	0	0	0	1062	0	0	1009	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	1062	0	0	1009	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								c0.57			0.54	
v/s Ratio Perm												
v/c Ratio								0.67			0.64	
Uniform Delay, d1								3.3			3.1	
Progression Factor								1.00			1.00	
Incremental Delay, d2								2.3			2.0	
Delay (s)								5.6			5.1	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			5.6			5.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	25	7	0	18	19	822	3	13	760	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	29	8	0	21	22	945	3	15	874	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1971	1952	930	1979	2007	947	987			948		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1971	1952	930	1979	2007	947	987			948		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	91	80	100	93	97			98		
cM capacity (veh/h)	42	61	324	40	56	317	700			724		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	29	29	970	1002
Volume Left	91	0	8	22	15
Volume Right	0	29	21	3	114
cSH	42	324	109	700	724
Volume to Capacity	2.16	0.09	0.26	0.03	0.02
Queue Length 95th (ft)	241	7	25	2	2
Control Delay (s)	741.6	17.2	49.6	0.9	0.6
Lane LOS	F	C	E	A	A
Approach Delay (s)	567.5		49.6	0.9	0.6
Approach LOS	F		E		

Intersection Summary			
Average Delay	33.4		
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	625	26	7	672	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	9	0	11	2	718	30	8	772	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1557	1560	791	1547	1550	747	789			755		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1557	1560	791	1547	1550	747	789			755		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	90	100	97	100			99		
cM capacity (veh/h)	86	109	385	90	111	408	826			850		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	21	751	790
Volume Left	2	9	2	8
Volume Right	2	11	30	9
cSH	141	158	826	850
Volume to Capacity	0.03	0.13	0.00	0.01
Queue Length 95th (ft)	3	11	0	1
Control Delay (s)	31.3	31.1	0.1	0.3
Lane LOS	D	D	A	A
Approach Delay (s)	31.3	31.1	0.1	0.3
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	613	649	45
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	31	10	7	705	746	52
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1523	789	815			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1523	789	815			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	75	97	99			
cM capacity (veh/h)	125	385	801			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	41	711	798
Volume Left	31	7	0
Volume Right	10	0	52
cSH	151	801	1700
Volume to Capacity	0.27	0.01	0.47
Queue Length 95th (ft)	26	1	0
Control Delay (s)	37.6	0.2	0.0
Lane LOS	E	A	
Approach Delay (s)	37.6	0.2	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	564	2	4	570	9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	2	7	8	1	6	3	648	2	5	655	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1332	1327	660	1334	1331	649	666			651		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1332	1327	660	1334	1331	649	666			651		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	99	99	94	99	99	100			100		
cM capacity (veh/h)	128	154	463	127	153	469	924			936		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	15	654	670
Volume Left	5	8	3	5
Volume Right	7	6	2	10
cSH	210	179	924	936
Volume to Capacity	0.07	0.08	0.00	0.00
Queue Length 95th (ft)	5	7	0	0
Control Delay (s)	23.4	26.9	0.1	0.1
Lane LOS	C	D	A	A
Approach Delay (s)	23.4	26.9	0.1	0.1
Approach LOS	C	D		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	566	576	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	1	1	651	662	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1320	667	671			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1320	667	671			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	173	459	919			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	651	671
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	205	919	1700	1700
Volume to Capacity	0.02	0.00	0.38	0.39
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	23.0	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	23.0	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	1	0	0	0	2	551	0	0	595	3
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	1	0	0	0	2	633	0	0	684	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1324	1324	686	1325	1325	633	687			633		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1324	1324	686	1325	1325	633	687			633		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	133	156	448	132	155	480	907			950		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	0	636	687
Volume Left	0	0	2	0
Volume Right	1	0	0	3
cSH	448	1700	907	950
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	13.1	0.0	0.1	0.0
Lane LOS	B	A	A	
Approach Delay (s)	13.1	0.0	0.1	0.0
Approach LOS	B	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	0	6	5	0	12	4	530	10	7	582	5
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	6	0	7	6	0	14	5	609	11	8	669	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1326	1318	672	1319	1315	615	675			621		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1326	1318	672	1319	1315	615	675			621		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	98	96	100	97	99			99		
cM capacity (veh/h)	128	155	456	131	156	491	917			960		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	6	7	6	14	625	683
Volume Left	6	0	6	0	5	8
Volume Right	0	7	0	14	11	6
cSH	128	456	131	491	917	960
Volume to Capacity	0.05	0.02	0.04	0.03	0.01	0.01
Queue Length 95th (ft)	4	1	3	2	0	1
Control Delay (s)	34.5	13.0	33.8	12.5	0.1	0.2
Lane LOS	D	B	D	B	A	A
Approach Delay (s)	22.8		18.8		0.1	0.2
Approach LOS	C		C			

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	0	5	3	0	5	1	555	1	2	603	5
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	0	6	3	0	6	1	638	1	2	693	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1347	1342	696	1347	1344	639	699			639		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1347	1342	696	1347	1344	639	699			639		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	99	97	100	99	100			100		
cM capacity (veh/h)	126	152	442	126	151	476	898			945		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	9	640	701
Volume Left	5	3	1	2
Volume Right	6	6	1	6
cSH	209	233	898	945
Volume to Capacity	0.05	0.04	0.00	0.00
Queue Length 95th (ft)	4	3	0	0
Control Delay (s)	23.1	21.1	0.0	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	23.1	21.1	0.0	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	42	19	11	555	607	39
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	48	22	13	638	698	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1383	720	743			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1383	720	743			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	69	95	99			
cM capacity (veh/h)	156	428	865			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	70	651	743
Volume Left	48	13	0
Volume Right	22	0	45
cSH	195	865	1700
Volume to Capacity	0.36	0.01	0.44
Queue Length 95th (ft)	38	1	0
Control Delay (s)	33.6	0.4	0.0
Lane LOS	D	A	
Approach Delay (s)	33.6	0.4	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	617	37	13	446	16	11
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	709	43	15	513	18	13
Pedestrians	8			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	1			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			752		1281	736
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			752		1281	736
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		90	97
cM capacity (veh/h)			858		178	417

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	752	528	31
Volume Left	0	15	18
Volume Right	43	0	13
cSH	1700	858	232
Volume to Capacity	0.44	0.02	0.13
Queue Length 95th (ft)	0	1	11
Control Delay (s)	0.0	0.5	22.9
Lane LOS		A	C
Approach Delay (s)	0.0	0.5	22.9
Approach LOS			C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	0	2	6	0	4	3	464	0	1	625	13
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	8	0	2	7	0	5	3	533	0	1	718	15
Pedestrians		21			30			30			30	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1324	1319	777	1331	1327	593	754			563		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1324	1319	777	1331	1327	593	754			563		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	99	94	100	99	100			100		
cM capacity (veh/h)	122	150	380	120	148	480	841			983		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	11	537	734
Volume Left	8	7	3	1
Volume Right	2	5	0	15
cSH	143	171	841	983
Volume to Capacity	0.07	0.07	0.00	0.00
Queue Length 95th (ft)	6	5	0	0
Control Delay (s)	32.1	27.5	0.1	0.0
Lane LOS	D	D	A	A
Approach Delay (s)	32.1	27.5	0.1	0.0
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.87			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3295		3433	3468		1681	1540			1814	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (perm)	1770	3295		3433	3468		1681	1540			1814	1583
Volume (vph)	55	314	268	354	313	49	338	34	335	56	47	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	361	308	407	360	56	389	39	385	64	54	62
RTOR Reduction (vph)	0	170	0	0	14	0	0	207	0	0	0	45
Lane Group Flow (vph)	63	499	0	407	402	0	358	248	0	0	118	17
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.7	17.0		13.2	26.5		26.9	26.9			8.7	8.7
Effective Green, g (s)	3.7	17.0		13.2	26.5		26.9	26.9			8.7	8.7
Actuated g/C Ratio	0.05	0.21		0.16	0.32		0.33	0.33			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	80	685		554	1123		553	506			193	168
v/s Ratio Prot	0.04	c0.15		c0.12	0.12		c0.21	0.16			c0.07	
v/s Ratio Perm												0.01
v/c Ratio	0.79	0.73		0.73	0.36		0.65	0.49			0.61	0.10
Uniform Delay, d1	38.7	30.3		32.6	21.1		23.4	22.0			34.9	33.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	38.7	3.9		5.0	0.2		5.8	3.4			5.6	0.3
Delay (s)	77.4	34.1		37.7	21.3		29.2	25.3			40.6	33.3
Level of Service	E	C		D	C		C	C			D	C
Approach Delay (s)		37.9			29.4			27.0			38.1	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	81.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	704	0	0	666	0
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	0	0	0	809	0	0	766	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	809	0	0	766	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								c0.43			0.41	
v/s Ratio Perm												
v/c Ratio								0.51			0.49	
Uniform Delay, d1								2.5			2.4	
Progression Factor								1.00			1.00	
Incremental Delay, d2								1.2			1.1	
Delay (s)								3.7			3.4	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			3.7			3.4	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	3.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	25	7	0	18	19	625	3	13	572	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	29	8	0	21	22	718	3	15	657	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1529	1510	714	1537	1565	720	771			722		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1529	1510	714	1537	1565	720	771			722		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	93	91	100	95	97			98		
cM capacity (veh/h)	88	115	431	85	107	428	844			880		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	29	29	744	786
Volume Left	91	0	8	22	15
Volume Right	0	29	21	3	114
cSH	88	431	202	844	880
Volume to Capacity	1.03	0.07	0.14	0.03	0.02
Queue Length 95th (ft)	150	5	12	2	1
Control Delay (s)	189.8	13.9	25.8	0.7	0.5
Lane LOS	F	B	D	A	A
Approach Delay (s)	147.5		25.8	0.7	0.5
Approach LOS	F		D		

Intersection Summary			
Average Delay	11.5		
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	506	26	7	521	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	9	0	11	2	582	30	8	599	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1246	1250	617	1237	1239	611	615			618		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1246	1250	617	1237	1239	611	615			618		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	94	100	98	100			99		
cM capacity (veh/h)	143	169	484	148	171	488	959			956		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	21	614	616
Volume Left	2	9	2	8
Volume Right	2	11	30	9
cSH	220	241	959	956
Volume to Capacity	0.02	0.09	0.00	0.01
Queue Length 95th (ft)	2	7	0	1
Control Delay (s)	21.7	21.3	0.1	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	21.7	21.3	0.1	0.2
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	498	492	45
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	31	10	7	572	566	52
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1211	608	634			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1211	608	634			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	84	98	99			
cM capacity (veh/h)	195	488	935			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	41	579	617
Volume Left	31	7	0
Volume Right	10	0	52
cSH	229	935	1700
Volume to Capacity	0.18	0.01	0.36
Queue Length 95th (ft)	16	1	0
Control Delay (s)	24.2	0.2	0.0
Lane LOS	C	A	
Approach Delay (s)	24.2	0.2	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	494	2	4	428	9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	2	7	8	1	6	3	568	2	5	492	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1089	1083	497	1090	1087	569	502			570		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1089	1083	497	1090	1087	569	502			570		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	99	96	99	99	100			100		
cM capacity (veh/h)	189	215	573	188	214	522	1062			1002		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	15	574	507
Volume Left	5	8	3	5
Volume Right	7	6	2	10
cSH	293	252	1062	1002
Volume to Capacity	0.05	0.06	0.00	0.00
Queue Length 95th (ft)	4	5	0	0
Control Delay (s)	17.9	20.2	0.1	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	17.9	20.2	0.1	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	495	433	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	1	1	569	498	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1074	502	507			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1074	502	507			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	243	569	1058			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	569	507
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	284	1058	1700	1700
Volume to Capacity	0.02	0.00	0.33	0.30
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	17.9	8.4	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.9	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	0	5	0	0	0	6	511	0	0	446	6
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	0	6	0	0	0	7	587	0	0	513	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1117	1117	516	1123	1121	587	520			587		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1117	1117	516	1123	1121	587	520			587		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	100	100	100	99			100		
cM capacity (veh/h)	184	206	559	180	205	509	1047			988		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	0	594	520
Volume Left	5	0	7	0
Volume Right	6	0	0	7
cSH	293	1700	1047	988
Volume to Capacity	0.04	0.00	0.01	0.00
Queue Length 95th (ft)	3	0	0	0
Control Delay (s)	17.7	0.0	0.2	0.0
Lane LOS	C	A	A	
Approach Delay (s)	17.7	0.0	0.2	0.0
Approach LOS	C	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	80	0	48	5	0	12	19	436	10	7	415	29
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	92	0	55	6	0	14	22	501	11	8	477	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1074	1066	494	1116	1077	507	510			513		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1074	1066	494	1116	1077	507	510			513		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	51	100	90	96	100	98	98			99		
cM capacity (veh/h)	189	216	576	164	213	566	1055			1053		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	92	55	6	14	534	518
Volume Left	92	0	6	0	22	8
Volume Right	0	55	0	14	11	33
cSH	189	576	164	566	1055	1053
Volume to Capacity	0.49	0.10	0.04	0.02	0.02	0.01
Queue Length 95th (ft)	60	8	3	2	2	1
Control Delay (s)	41.0	11.9	27.8	11.5	0.6	0.2
Lane LOS	E	B	D	B	A	A
Approach Delay (s)	30.1		16.3		0.6	0.2
Approach LOS	D		C			

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	56	0	67	3	0	5	7	402	1	2	463	7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	64	0	77	3	0	6	8	462	1	2	532	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1025	1020	536	1097	1024	463	540			463		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1025	1020	536	1097	1024	463	540			463		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	69	100	86	98	100	99	99			100		
cM capacity (veh/h)	210	234	544	162	233	599	1028			1098		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	141	9	471	543
Volume Left	64	3	8	2
Volume Right	77	6	1	8
cSH	315	298	1028	1098
Volume to Capacity	0.45	0.03	0.01	0.00
Queue Length 95th (ft)	55	2	1	0
Control Delay (s)	25.4	17.4	0.2	0.1
Lane LOS	D	C	A	A
Approach Delay (s)	25.4	17.4	0.2	0.1
Approach LOS	D	C		

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	101	59	22	341	477	72
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	116	68	25	392	548	83
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1032	590	631			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1032	590	631			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	54	87	97			
cM capacity (veh/h)	251	508	951			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	184	417	631
Volume Left	116	25	0
Volume Right	68	0	83
cSH	309	951	1700
Volume to Capacity	0.60	0.03	0.37
Queue Length 95th (ft)	90	2	0
Control Delay (s)	32.5	0.8	0.0
Lane LOS	D	A	
Approach Delay (s)	32.5	0.8	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3280		3433	3482		1681	1526			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (perm)	1770	3280		3433	3482		1681	1526			1811	1583
Volume (vph)	55	412	393	490	407	49	445	30	452	56	41	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	474	452	563	468	56	511	34	520	64	47	62
RTOR Reduction (vph)	0	155	0	0	8	0	0	322	0	0	0	38
Lane Group Flow (vph)	63	771	0	563	516	0	493	250	0	0	111	24
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	6.8	25.8		18.0	37.0		35.0	35.0			11.6	11.6
Effective Green, g (s)	6.8	25.8		18.0	37.0		35.0	35.0			11.6	11.6
Actuated g/C Ratio	0.06	0.24		0.17	0.35		0.33	0.33			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	113	795		581	1211		553	502			197	173
v/s Ratio Prot	0.04	c0.24		c0.16	0.15		c0.29	0.16			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.56	0.97		0.97	0.43		0.89	0.50			0.56	0.14
Uniform Delay, d1	48.3	39.9		43.9	26.6		33.9	28.6			45.0	42.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	5.8	24.7		29.3	0.2		19.2	3.5			3.7	0.4
Delay (s)	54.2	64.7		73.2	26.8		53.1	32.1			48.7	43.2
Level of Service	D	E		E	C		D	C			D	D
Approach Delay (s)		64.0			50.8			41.8			46.7	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM Average Control Delay	51.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	106.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	934	0	0	938	0
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	0	0	0	1074	0	0	1078	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	1074	0	0	1078	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								0.58			c0.58	
v/s Ratio Perm												
v/c Ratio								0.68			0.68	
Uniform Delay, d1								3.3			3.3	
Progression Factor								1.00			1.00	
Incremental Delay, d2								2.4			2.4	
Delay (s)								5.7			5.7	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			5.7			5.7	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	28	7	0	18	22	832	3	13	820	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	32	8	0	21	25	956	3	15	943	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2059	2040	999	2070	2095	958	1056			960		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2059	2040	999	2070	2095	958	1056			960		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	89	76	100	93	96			98		
cM capacity (veh/h)	36	53	295	34	49	312	659			717		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	32	29	985	1071
Volume Left	91	0	8	25	15
Volume Right	0	32	21	3	114
cSH	36	295	95	659	717
Volume to Capacity	2.51	0.11	0.30	0.04	0.02
Queue Length 95th (ft)	254	9	29	3	2
Control Delay (s)	922.6	18.7	58.9	1.2	0.7
Lane LOS	F	C	F	A	A
Approach Delay (s)	686.1		58.9	1.2	0.7
Approach LOS	F		F		

Intersection Summary			
Average Delay	39.8		
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	633	26	7	728	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	9	0	11	2	728	30	8	837	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1630	1634	855	1621	1623	757	853			764		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1630	1634	855	1621	1623	757	853			764		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	88	100	97	100			99		
cM capacity (veh/h)	77	99	354	80	100	403	782			844		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	21	760	854
Volume Left	2	9	2	8
Volume Right	2	11	30	9
cSH	126	144	782	844
Volume to Capacity	0.04	0.14	0.00	0.01
Queue Length 95th (ft)	3	12	0	1
Control Delay (s)	34.6	34.2	0.1	0.3
Lane LOS	D	D	A	A
Approach Delay (s)	34.6	34.2	0.1	0.3
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	628	711	45
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	31	10	7	722	817	52
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1612	860	886			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1612	860	886			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	72	97	99			
cM capacity (veh/h)	111	350	753			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	41	729	869
Volume Left	31	7	0
Volume Right	10	0	52
cSH	133	753	1700
Volume to Capacity	0.31	0.01	0.51
Queue Length 95th (ft)	30	1	0
Control Delay (s)	43.7	0.2	0.0
Lane LOS	E	A	
Approach Delay (s)	43.7	0.2	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	583	2	4	637	9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	2	7	8	1	6	3	670	2	5	732	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1431	1426	737	1433	1430	671	743			672		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1431	1426	737	1433	1430	671	743			672		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	98	98	93	99	99	100			99		
cM capacity (veh/h)	109	134	418	108	133	456	865			918		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	15	676	747
Volume Left	5	8	3	5
Volume Right	7	6	2	10
cSH	182	156	865	918
Volume to Capacity	0.08	0.10	0.00	0.01
Queue Length 95th (ft)	6	8	0	0
Control Delay (s)	26.4	30.5	0.1	0.1
Lane LOS	D	D	A	A
Approach Delay (s)	26.4	30.5	0.1	0.1
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	585	643	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	1	1	672	739	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1418	744	748			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1418	744	748			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	151	415	860			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	672	748
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	179	860	1700	1700
Volume to Capacity	0.03	0.00	0.40	0.44
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	25.6	9.2	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	25.6	0.0		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	3	0	3	0	0	0	13	571	0	0	649	21
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	0	3	0	0	0	15	656	0	0	746	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1444	1444	758	1448	1456	656	770			656		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1444	1444	758	1448	1456	656	770			656		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	100	100	100	98			100		
cM capacity (veh/h)	108	130	407	107	127	465	844			931		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	7	0	671	770
Volume Left	3	0	15	0
Volume Right	3	0	0	24
cSH	171	1700	844	931
Volume to Capacity	0.04	0.00	0.02	0.00
Queue Length 95th (ft)	3	0	1	0
Control Delay (s)	26.9	0.0	0.5	0.0
Lane LOS	D	A	A	
Approach Delay (s)	26.9	0.0	0.5	0.0
Approach LOS	D	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	0	13	5	0	12	15	551	10	7	619	24
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	17	0	15	6	0	14	17	633	11	8	711	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1429	1421	725	1430	1429	639	739			645		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1429	1421	725	1430	1429	639	739			645		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	100	96	95	100	97	98			99		
cM capacity (veh/h)	107	132	425	106	131	476	867			940		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	17	15	6	14	662	747
Volume Left	17	0	6	0	17	8
Volume Right	0	15	0	14	11	28
cSH	107	425	106	476	867	940
Volume to Capacity	0.16	0.04	0.05	0.03	0.02	0.01
Queue Length 95th (ft)	14	3	4	2	2	1
Control Delay (s)	45.0	13.8	40.9	12.8	0.5	0.2
Lane LOS	E	B	E	B	A	A
Approach Delay (s)	30.5		21.1		0.5	0.2
Approach LOS	D		C			

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	16	0	19	3	0	5	20	575	1	2	614	38
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	18	0	22	3	0	6	23	661	1	2	706	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1445	1440	728	1461	1461	661	749			662		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1445	1440	728	1461	1461	661	749			662		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	83	100	95	97	100	99	97			100		
cM capacity (veh/h)	106	129	424	99	125	462	860			926		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	40	9	685	752
Volume Left	18	3	23	2
Volume Right	22	6	1	44
cSH	178	195	860	926
Volume to Capacity	0.23	0.05	0.03	0.00
Queue Length 95th (ft)	21	4	2	0
Control Delay (s)	30.9	24.4	0.7	0.1
Lane LOS	D	C	A	A
Approach Delay (s)	30.9	24.4	0.7	0.1
Approach LOS	D	C		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	47	23	19	590	620	53
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	54	26	22	678	713	61
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1465	743	774			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1465	743	774			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	61	94	97			
cM capacity (veh/h)	138	415	842			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	80	700	774
Volume Left	54	22	0
Volume Right	26	0	61
cSH	176	842	1700
Volume to Capacity	0.46	0.03	0.46
Queue Length 95th (ft)	53	2	0
Control Delay (s)	41.5	0.7	0.0
Lane LOS	E	A	
Approach Delay (s)	41.5	0.7	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	628	40	13	485	18	11
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	722	46	15	557	21	13
Pedestrians	8			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	1			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			768		1340	751
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			768		1340	751
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		87	97
cM capacity (veh/h)			846		164	409

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	768	572	33
Volume Left	0	15	21
Volume Right	46	0	13
cSH	1700	846	212
Volume to Capacity	0.45	0.02	0.16
Queue Length 95th (ft)	0	1	14
Control Delay (s)	0.0	0.5	25.1
Lane LOS		A	D
Approach Delay (s)	0.0	0.5	25.1
Approach LOS			D

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	0	2	6	0	4	3	502	0	1	632	17
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	10	0	2	7	0	5	3	577	0	1	726	20
Pedestrians		21			30			30			30	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1378	1373	787	1385	1383	637	767			607		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1378	1373	787	1385	1383	637	767			607		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	99	94	100	99	100			100		
cM capacity (veh/h)	112	139	375	110	137	454	832			947		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	11	580	747
Volume Left	10	7	3	1
Volume Right	2	5	0	20
cSH	128	158	832	947
Volume to Capacity	0.10	0.07	0.00	0.00
Queue Length 95th (ft)	8	6	0	0
Control Delay (s)	36.2	29.6	0.1	0.0
Lane LOS	E	D	A	A
Approach Delay (s)	36.2	29.6	0.1	0.0
Approach LOS	E	D		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	28	7	0	18	22	832	3	13	820	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	32	8	0	21	25	956	3	15	943	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2059	2040	999	2070	2095	958	1056			960		
vC1, stage 1 conf vol	1029	1029										
vC2, stage 2 conf vol	1029	1010										
vCu, unblocked vol	2059	2040	999	2070	2095	958	1056			960		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	49	100	89	76	100	93	96			98		
cM capacity (veh/h)	178	211	295	34	49	312	659			717		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	32	29	985	1071
Volume Left	91	0	8	25	15
Volume Right	0	32	21	3	114
cSH	178	295	95	659	717
Volume to Capacity	0.51	0.11	0.30	0.04	0.02
Queue Length 95th (ft)	63	9	29	3	2
Control Delay (s)	44.7	18.7	58.9	1.2	0.7
Lane LOS	E	C	F	A	A
Approach Delay (s)	37.9		58.9	1.2	0.7
Approach LOS	E		F		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3296		3433	3482		1681	1527			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (perm)	1770	3296		3433	3482		1681	1527			1811	1583
Volume (vph)	55	412	350	469	407	49	439	30	443	56	42	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	474	402	539	468	56	505	34	509	64	48	62
RTOR Reduction (vph)	0	137	0	0	8	0	0	303	0	0	0	37
Lane Group Flow (vph)	63	739	0	539	516	0	485	260	0	0	112	25
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	6.8	24.8		17.0	35.0		37.0	37.0			11.6	11.6
Effective Green, g (s)	6.8	24.8		17.0	35.0		37.0	37.0			11.6	11.6
Actuated g/C Ratio	0.06	0.23		0.16	0.33		0.35	0.35			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	113	768		549	1145		585	531			197	173
v/s Ratio Prot	0.04	c0.22		c0.16	0.15		c0.29	0.17			c0.06	
v/s Ratio Perm												0.02
v/c Ratio	0.56	0.96		0.98	0.45		0.83	0.49			0.57	0.14
Uniform Delay, d1	48.3	40.3		44.5	28.1		31.8	27.3			45.0	42.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	5.8	23.4		33.6	0.3		12.8	3.2			3.7	0.4
Delay (s)	54.2	63.7		78.1	28.4		44.6	30.5			48.8	43.3
Level of Service	D	E		E	C		D	C			D	D
Approach Delay (s)		63.1			53.6			37.0			46.8	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM Average Control Delay	50.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	106.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	919	0	0	875	0
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	0	0	0	1056	0	0	1006	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	1056	0	0	1006	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								c0.57			0.54	
v/s Ratio Perm												
v/c Ratio								0.67			0.64	
Uniform Delay, d1								3.2			3.0	
Progression Factor								1.00			1.00	
Incremental Delay, d2								2.3			2.0	
Delay (s)								5.5			5.0	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			5.5			5.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	27	7	0	18	22	817	3	13	757	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	31	8	0	21	25	939	3	15	870	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1969	1950	927	1979	2005	941	984			943		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1969	1950	927	1979	2005	941	984			943		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	90	80	100	94	96			98		
cM capacity (veh/h)	42	61	325	40	56	319	702			728		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	31	29	968	999
Volume Left	91	0	8	25	15
Volume Right	0	31	21	3	114
cSH	42	325	108	702	728
Volume to Capacity	2.16	0.10	0.27	0.04	0.02
Queue Length 95th (ft)	241	8	25	3	2
Control Delay (s)	741.0	17.2	50.0	1.1	0.6
Lane LOS	F	C	F	A	A
Approach Delay (s)	556.6		50.0	1.1	0.6
Approach LOS	F		F		

Intersection Summary			
Average Delay	33.5		
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	638	26	7	665	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	9	0	11	2	733	30	8	764	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1563	1567	783	1554	1557	762	781			770		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1563	1567	783	1554	1557	762	781			770		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	90	100	97	100			99		
cM capacity (veh/h)	85	108	389	89	110	400	832			839		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	21	766	782
Volume Left	2	9	2	8
Volume Right	2	11	30	9
cSH	140	156	832	839
Volume to Capacity	0.03	0.13	0.00	0.01
Queue Length 95th (ft)	3	11	0	1
Control Delay (s)	31.6	31.5	0.1	0.3
Lane LOS	D	D	A	A
Approach Delay (s)	31.6	31.5	0.1	0.3
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	609	647	45
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	31	10	7	700	744	52
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1516	787	812			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1516	787	812			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	75	97	99			
cM capacity (veh/h)	127	386	803			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	41	707	795
Volume Left	31	7	0
Volume Right	10	0	52
cSH	152	803	1700
Volume to Capacity	0.27	0.01	0.47
Queue Length 95th (ft)	26	1	0
Control Delay (s)	37.3	0.2	0.0
Lane LOS	E	A	
Approach Delay (s)	37.3	0.2	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	564	2	4	572	9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	2	7	8	1	6	3	648	2	5	657	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1334	1329	663	1336	1333	649	668			651		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1334	1329	663	1336	1333	649	668			651		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	99	99	94	99	99	100			100		
cM capacity (veh/h)	128	153	461	126	153	469	922			936		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	15	654	672
Volume Left	5	8	3	5
Volume Right	7	6	2	10
cSH	209	179	922	936
Volume to Capacity	0.07	0.08	0.00	0.00
Queue Length 95th (ft)	5	7	0	0
Control Delay (s)	23.4	27.0	0.1	0.1
Lane LOS	C	D	A	A
Approach Delay (s)	23.4	27.0	0.1	0.1
Approach LOS	C	D		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	566	578	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	1	1	651	664	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1322	669	674			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1322	669	674			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	172	458	917			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	651	674
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	204	917	1700	1700
Volume to Capacity	0.02	0.00	0.38	0.40
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	23.0	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	23.0	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	1	0	0	0	2	556	0	0	600	3
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	1	0	0	0	2	639	0	0	690	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1335	1335	691	1336	1337	639	693			639		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1335	1335	691	1336	1337	639	693			639		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	130	153	444	130	153	476	902			945		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	0	641	693
Volume Left	0	0	2	0
Volume Right	1	0	0	3
cSH	444	1700	902	945
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	13.1	0.0	0.1	0.0
Lane LOS	B	A	A	
Approach Delay (s)	13.1	0.0	0.1	0.0
Approach LOS	B	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	11	0	13	5	0	12	11	529	10	7	582	10
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	13	0	15	6	0	14	13	608	11	8	669	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1344	1336	675	1345	1336	614	680			620		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1344	1336	675	1345	1336	614	680			620		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	100	97	95	100	97	99			99		
cM capacity (veh/h)	123	150	454	122	150	492	912			961		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	13	15	6	14	632	689
Volume Left	13	0	6	0	13	8
Volume Right	0	15	0	14	11	11
cSH	123	454	122	492	912	961
Volume to Capacity	0.10	0.03	0.05	0.03	0.01	0.01
Queue Length 95th (ft)	8	3	4	2	1	1
Control Delay (s)	37.5	13.2	35.9	12.5	0.4	0.2
Lane LOS	E	B	E	B	A	A
Approach Delay (s)	24.4		19.4		0.4	0.2
Approach LOS	C		C			

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	0	13	3	0	5	6	555	1	2	604	11
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	11	0	15	3	0	6	7	638	1	2	694	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1363	1358	701	1372	1364	639	707			639		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1363	1358	701	1372	1364	639	707			639		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	97	97	100	99	99			100		
cM capacity (veh/h)	122	147	439	118	146	476	892			945		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	9	646	709
Volume Left	11	3	7	2
Volume Right	15	6	1	13
cSH	207	223	892	945
Volume to Capacity	0.13	0.04	0.01	0.00
Queue Length 95th (ft)	11	3	1	0
Control Delay (s)	25.0	21.9	0.2	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	25.0	21.9	0.2	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	44	21	15	559	615	42
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	51	24	17	643	707	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1408	731	755			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1408	731	755			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	66	94	98			
cM capacity (veh/h)	150	422	855			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	75	660	755
Volume Left	51	17	0
Volume Right	24	0	48
cSH	189	855	1700
Volume to Capacity	0.39	0.02	0.44
Queue Length 95th (ft)	44	2	0
Control Delay (s)	35.9	0.5	0.0
Lane LOS	E	A	
Approach Delay (s)	35.9	0.5	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	622	40	13	448	18	11
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	715	46	15	515	21	13
Pedestrians	8			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	1			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			761		1291	744
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			761		1291	744
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		88	97
cM capacity (veh/h)			851		176	413

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	761	530	33
Volume Left	0	15	21
Volume Right	46	0	13
cSH	1700	851	225
Volume to Capacity	0.45	0.02	0.15
Queue Length 95th (ft)	0	1	13
Control Delay (s)	0.0	0.5	23.8
Lane LOS		A	C
Approach Delay (s)	0.0	0.5	23.8
Approach LOS			C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	0	2	6	0	4	3	466	0	1	626	16
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	9	0	2	7	0	5	3	536	0	1	720	18
Pedestrians		21			30			30			30	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1329	1325	780	1336	1334	596	759			566		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1329	1325	780	1336	1334	596	759			566		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	99	94	100	99	100			100		
cM capacity (veh/h)	121	148	379	119	147	479	838			981		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	11	11	539	739
Volume Left	9	7	3	1
Volume Right	2	5	0	18
cSH	140	170	838	981
Volume to Capacity	0.08	0.07	0.00	0.00
Queue Length 95th (ft)	7	5	0	0
Control Delay (s)	33.1	27.7	0.1	0.0
Lane LOS	D	D	A	A
Approach Delay (s)	33.1	27.7	0.1	0.0
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.86			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3287		3433	3482		1681	1528			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (perm)	1770	3287		3433	3482		1681	1528			1811	1583
Volume (vph)	55	412	372	487	407	49	444	31	451	56	41	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	474	428	560	468	56	510	36	518	64	47	62
RTOR Reduction (vph)	0	139	0	0	7	0	0	278	0	0	0	37
Lane Group Flow (vph)	63	763	0	560	517	0	489	297	0	0	111	25
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	6.9	26.9		18.0	38.0		37.0	37.0			11.9	11.9
Effective Green, g (s)	6.9	26.9		18.0	38.0		37.0	37.0			11.9	11.9
Actuated g/C Ratio	0.06	0.24		0.16	0.35		0.34	0.34			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	111	805		563	1205		566	515			196	172
v/s Ratio Prot	0.04	c0.23		c0.16	0.15		c0.29	0.19			c0.06	
v/s Ratio Perm												0.02
v/c Ratio	0.57	0.95		0.99	0.43		0.86	0.58			0.57	0.15
Uniform Delay, d1	50.0	40.8		45.9	27.6		34.0	30.0			46.5	44.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	6.5	19.9		36.3	0.2		16.0	4.7			3.7	0.4
Delay (s)	56.5	60.7		82.2	27.8		50.1	34.6			50.2	44.8
Level of Service	E	E		F	C		D	C			D	D
Approach Delay (s)		60.4			55.9			41.7			48.3	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM Average Control Delay	52.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	109.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	933	0	0	914	0
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	0	0	0	1072	0	0	1051	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	1072	0	0	1051	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								c0.58			0.56	
v/s Ratio Perm												
v/c Ratio								0.68			0.67	
Uniform Delay, d1								3.3			3.2	
Progression Factor								1.00			1.00	
Incremental Delay, d2								2.4			2.2	
Delay (s)								5.7			5.5	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			5.7			5.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	26	7	0	18	22	832	3	13	796	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	30	8	0	21	25	956	3	15	915	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2031	2012	972	2040	2067	958	1029			960		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2031	2012	972	2040	2067	958	1029			960		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	90	78	100	93	96			98		
cM capacity (veh/h)	38	55	306	36	51	312	675			717		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	30	29	985	1044
Volume Left	91	0	8	25	15
Volume Right	0	30	21	3	114
cSH	38	306	99	675	717
Volume to Capacity	2.40	0.10	0.29	0.04	0.02
Queue Length 95th (ft)	250	8	27	3	2
Control Delay (s)	864.1	18.0	55.4	1.2	0.7
Lane LOS	F	C	F	A	A
Approach Delay (s)	654.6		55.4	1.2	0.7
Approach LOS	F		F		

Intersection Summary			
Average Delay	37.8		
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	633	26	7	702	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	9	0	11	2	728	30	8	807	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1600	1604	825	1591	1593	757	823			764		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1600	1604	825	1591	1593	757	823			764		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	89	100	97	100			99		
cM capacity (veh/h)	81	103	368	84	104	403	802			844		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	21	760	824
Volume Left	2	9	2	8
Volume Right	2	11	30	9
cSH	132	149	802	844
Volume to Capacity	0.03	0.14	0.00	0.01
Queue Length 95th (ft)	3	12	0	1
Control Delay (s)	33.2	32.9	0.1	0.3
Lane LOS	D	D	A	A
Approach Delay (s)	33.2	32.9	0.1	0.3
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	630	686	45
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	31	10	7	724	789	52
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1585	831	857			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1585	831	857			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	73	97	99			
cM capacity (veh/h)	115	364	772			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	41	731	840
Volume Left	31	7	0
Volume Right	10	0	52
cSH	139	772	1700
Volume to Capacity	0.30	0.01	0.49
Queue Length 95th (ft)	29	1	0
Control Delay (s)	41.7	0.2	0.0
Lane LOS	E	A	
Approach Delay (s)	41.7	0.2	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	584	2	4	612	9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	2	7	8	1	6	3	671	2	5	703	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1403	1398	709	1405	1402	672	714			674		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1403	1398	709	1405	1402	672	714			674		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	98	98	93	99	99	100			99		
cM capacity (veh/h)	114	139	434	113	139	456	886			917		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	15	677	718
Volume Left	5	8	3	5
Volume Right	7	6	2	10
cSH	190	162	886	917
Volume to Capacity	0.07	0.09	0.00	0.01
Queue Length 95th (ft)	6	7	0	0
Control Delay (s)	25.4	29.5	0.1	0.1
Lane LOS	D	D	A	A
Approach Delay (s)	25.4	29.5	0.1	0.1
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	586	618	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	1	1	674	710	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1391	715	720			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1391	715	720			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	156	431	882			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	674	720
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	186	882	1700	1700
Volume to Capacity	0.02	0.00	0.40	0.42
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	24.8	9.1	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	24.8	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	0	8	0	0	0	14	568	0	0	625	20
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	8	0	9	0	0	0	16	653	0	0	718	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1415	1415	730	1424	1426	653	741			653		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1415	1415	730	1424	1426	653	741			653		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	98	100	100	100	98			100		
cM capacity (veh/h)	113	135	422	109	133	467	866			934		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	17	0	669	741
Volume Left	8	0	16	0
Volume Right	9	0	0	23
cSH	186	1700	866	934
Volume to Capacity	0.09	0.00	0.02	0.00
Queue Length 95th (ft)	8	0	1	0
Control Delay (s)	26.3	0.0	0.5	0.0
Lane LOS	D	A	A	
Approach Delay (s)	26.3	0.0	0.5	0.0
Approach LOS	D	A		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	14	0	14	5	0	12	16	550	10	7	596	24
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	16	0	16	6	0	14	18	632	11	8	685	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1403	1395	699	1406	1403	638	713			644		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1403	1395	699	1406	1403	638	713			644		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	96	95	100	97	98			99		
cM capacity (veh/h)	111	137	440	110	136	477	887			941		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	16	16	6	14	662	721
Volume Left	16	0	6	0	18	8
Volume Right	0	16	0	14	11	28
cSH	111	440	110	477	887	941
Volume to Capacity	0.14	0.04	0.05	0.03	0.02	0.01
Queue Length 95th (ft)	12	3	4	2	2	1
Control Delay (s)	42.8	13.5	39.5	12.8	0.6	0.2
Lane LOS	E	B	E	B	A	A
Approach Delay (s)	28.1		20.6		0.6	0.2
Approach LOS	D		C			

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	16	0	17	3	0	5	13	575	1	2	605	25
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	18	0	20	3	0	6	15	661	1	2	695	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1411	1406	710	1425	1420	661	724			662		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1411	1406	710	1425	1420	661	724			662		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	100	95	97	100	99	98			100		
cM capacity (veh/h)	113	136	434	106	134	462	878			926		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	38	9	677	726
Volume Left	18	3	15	2
Volume Right	20	6	1	29
cSH	182	205	878	926
Volume to Capacity	0.21	0.04	0.02	0.00
Queue Length 95th (ft)	19	4	1	0
Control Delay (s)	29.9	23.4	0.5	0.1
Lane LOS	D	C	A	A
Approach Delay (s)	29.9	23.4	0.5	0.1
Approach LOS	D	C		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	44	21	13	587	621	41
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	51	24	15	675	714	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1442	737	761			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1442	737	761			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	65	94	98			
cM capacity (veh/h)	143	418	851			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	75	690	761
Volume Left	51	15	0
Volume Right	24	0	47
cSH	182	851	1700
Volume to Capacity	0.41	0.02	0.45
Queue Length 95th (ft)	46	1	0
Control Delay (s)	37.9	0.5	0.0
Lane LOS	E	A	
Approach Delay (s)	37.9	0.5	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	628	41	13	472	17	11
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	722	47	15	543	20	13
Pedestrians	8			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	1			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			769		1326	751
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			769		1326	751
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		88	97
cM capacity (veh/h)			845		167	408

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	769	557	32
Volume Left	0	15	20
Volume Right	47	0	13
cSH	1700	845	218
Volume to Capacity	0.45	0.02	0.15
Queue Length 95th (ft)	0	1	13
Control Delay (s)	0.0	0.5	24.4
Lane LOS		A	C
Approach Delay (s)	0.0	0.5	24.4
Approach LOS			C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	0	2	6	0	4	3	490	0	1	632	17
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	9	0	2	7	0	5	3	563	0	1	726	20
Pedestrians		21			30			30			30	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1364	1360	787	1371	1369	623	767			593		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1364	1360	787	1371	1369	623	767			593		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	99	94	100	99	100			100		
cM capacity (veh/h)	114	141	375	112	140	462	832			958		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	11	11	567	747
Volume Left	9	7	3	1
Volume Right	2	5	0	20
cSH	132	161	832	958
Volume to Capacity	0.09	0.07	0.00	0.00
Queue Length 95th (ft)	7	6	0	0
Control Delay (s)	34.7	29.0	0.1	0.0
Lane LOS	D	D	A	A
Approach Delay (s)	34.7	29.0	0.1	0.0
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	26	7	0	18	22	832	3	13	796	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	30	8	0	21	25	956	3	15	915	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2031	2012	972	2040	2067	958	1029			960		
vC1, stage 1 conf vol	1002	1002										
vC2, stage 2 conf vol	1029	1010										
vCu, unblocked vol	2031	2012	972	2040	2067	958	1029			960		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	50	100	90	78	100	93	96			98		
cM capacity (veh/h)	181	214	306	36	51	312	675			717		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	30	29	985	1044
Volume Left	91	0	8	25	15
Volume Right	0	30	21	3	114
cSH	181	306	99	675	717
Volume to Capacity	0.50	0.10	0.29	0.04	0.02
Queue Length 95th (ft)	62	8	27	3	2
Control Delay (s)	43.4	18.0	55.4	1.2	0.7
Lane LOS	E	C	F	A	A
Approach Delay (s)	37.1		55.4	1.2	0.7
Approach LOS	E		F		

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.87			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3289		3433	3482		1681	1531			1810	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (perm)	1770	3289		3433	3482		1681	1531			1810	1583
Volume (vph)	55	412	369	479	407	49	444	31	448	56	40	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	474	424	551	468	56	510	36	515	64	46	62
RTOR Reduction (vph)	0	137	0	0	7	0	0	225	0	0	0	37
Lane Group Flow (vph)	63	761	0	551	517	0	476	360	0	0	110	25
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	6.9	26.9		18.0	38.0		37.0	37.0			11.9	11.9
Effective Green, g (s)	6.9	26.9		18.0	38.0		37.0	37.0			11.9	11.9
Actuated g/C Ratio	0.06	0.24		0.16	0.35		0.34	0.34			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	111	806		563	1205		566	516			196	172
v/s Ratio Prot	0.04	c0.23		c0.16	0.15		c0.28	0.23			c0.06	
v/s Ratio Perm												0.02
v/c Ratio	0.57	0.94		0.98	0.43		0.84	0.70			0.56	0.14
Uniform Delay, d1	50.0	40.7		45.7	27.6		33.7	31.5			46.5	44.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	6.5	19.2		32.1	0.2		14.1	7.6			3.6	0.4
Delay (s)	56.5	59.9		77.8	27.8		47.7	39.1			50.1	44.7
Level of Service	E	E		E	C		D	D			D	D
Approach Delay (s)		59.7			53.5			43.0			48.2	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM Average Control Delay	51.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	109.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	930	0	0	902	0
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	0	0	0	1069	0	0	1037	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	1069	0	0	1037	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								c0.57			0.56	
v/s Ratio Perm												
v/c Ratio								0.68			0.66	
Uniform Delay, d1								3.3			3.2	
Progression Factor								1.00			1.00	
Incremental Delay, d2								2.4			2.2	
Delay (s)								5.6			5.3	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			5.6			5.3	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	27	7	0	18	21	828	3	13	784	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	31	8	0	21	24	952	3	15	901	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2010	1991	958	2021	2047	953	1015			955		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2010	1991	958	2021	2047	953	1015			955		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	90	78	100	93	96			98		
cM capacity (veh/h)	39	57	312	37	53	314	683			720		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	31	29	979	1030
Volume Left	91	0	8	24	15
Volume Right	0	31	21	3	114
cSH	39	312	102	683	720
Volume to Capacity	2.31	0.10	0.28	0.04	0.02
Queue Length 95th (ft)	247	8	26	3	2
Control Delay (s)	820.1	17.8	53.7	1.1	0.7
Lane LOS	F	C	F	A	A
Approach Delay (s)	615.7		53.7	1.1	0.7
Approach LOS	F		F		

Intersection Summary			
Average Delay	36.3		
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	630	26	7	704	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	9	0	11	2	724	30	8	809	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1599	1603	828	1590	1592	753	825			761		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1599	1603	828	1590	1592	753	825			761		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	89	100	97	100			99		
cM capacity (veh/h)	81	103	367	84	105	405	800			846		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	21	756	826
Volume Left	2	9	2	8
Volume Right	2	11	30	9
cSH	132	150	800	846
Volume to Capacity	0.03	0.14	0.00	0.01
Queue Length 95th (ft)	3	12	0	1
Control Delay (s)	33.2	32.9	0.1	0.3
Lane LOS	D	D	A	A
Approach Delay (s)	33.2	32.9	0.1	0.3
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	626	688	45
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	31	10	7	720	791	52
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1583	834	860			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1583	834	860			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	73	97	99			
cM capacity (veh/h)	115	363	771			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	41	726	843
Volume Left	31	7	0
Volume Right	10	0	52
cSH	139	771	1700
Volume to Capacity	0.30	0.01	0.50
Queue Length 95th (ft)	29	1	0
Control Delay (s)	41.6	0.2	0.0
Lane LOS	E	A	
Approach Delay (s)	41.6	0.2	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	580	2	4	610	9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	2	7	8	1	6	3	667	2	5	701	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1397	1391	706	1398	1395	668	711			669		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1397	1391	706	1398	1395	668	711			669		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	98	98	93	99	99	100			100		
cM capacity (veh/h)	115	141	436	114	140	458	888			921		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	15	672	716
Volume Left	5	8	3	5
Volume Right	7	6	2	10
cSH	192	164	888	921
Volume to Capacity	0.07	0.09	0.00	0.00
Queue Length 95th (ft)	6	7	0	0
Control Delay (s)	25.2	29.2	0.1	0.1
Lane LOS	D	D	A	A
Approach Delay (s)	25.2	29.2	0.1	0.1
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	582	616	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	1	1	669	708	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1384	713	717			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1384	713	717			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	158	432	884			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	669	717
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	188	884	1700	1700
Volume to Capacity	0.02	0.00	0.39	0.42
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	24.7	9.1	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	24.7	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	0	0	0	8	566	0	0	627	14
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	0	0	0	9	651	0	0	721	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1398	1398	729	1400	1406	651	737			651		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1398	1398	729	1400	1406	651	737			651		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	100	100	100	99			100		
cM capacity (veh/h)	117	139	423	116	138	469	869			936		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	0	660	737
Volume Left	2	0	9	0
Volume Right	2	0	0	16
cSH	184	1700	869	936
Volume to Capacity	0.03	0.00	0.01	0.00
Queue Length 95th (ft)	2	0	1	0
Control Delay (s)	25.1	0.0	0.3	0.0
Lane LOS	D	A	A	
Approach Delay (s)	25.1	0.0	0.3	0.0
Approach LOS	D	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	0	9	5	0	12	12	549	10	7	603	18
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	9	0	10	6	0	14	14	631	11	8	693	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1398	1390	703	1394	1394	637	714			643		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1398	1390	703	1394	1394	637	714			643		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	98	95	100	97	98			99		
cM capacity (veh/h)	113	139	437	114	138	477	886			942		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	9	10	6	14	656	722
Volume Left	9	0	6	0	14	8
Volume Right	0	10	0	14	11	21
cSH	113	437	114	477	886	942
Volume to Capacity	0.08	0.02	0.05	0.03	0.02	0.01
Queue Length 95th (ft)	7	2	4	2	1	1
Control Delay (s)	39.7	13.4	38.3	12.8	0.4	0.2
Lane LOS	E	B	E	B	A	A
Approach Delay (s)	25.8		20.3		0.4	0.2
Approach LOS	D		C			

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	24	0	22	3	0	5	18	562	1	2	604	28
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	28	0	25	3	0	6	21	646	1	2	694	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1409	1403	710	1428	1419	647	726			647		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1409	1403	710	1428	1419	647	726			647		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	75	100	94	97	100	99	98			100		
cM capacity (veh/h)	113	136	433	104	133	471	877			938		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	53	9	668	729
Volume Left	28	3	21	2
Volume Right	25	6	1	32
cSH	174	203	877	938
Volume to Capacity	0.30	0.05	0.02	0.00
Queue Length 95th (ft)	30	4	2	0
Control Delay (s)	34.4	23.6	0.6	0.1
Lane LOS	D	C	A	A
Approach Delay (s)	34.4	23.6	0.6	0.1
Approach LOS	D	C		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	46	23	17	575	617	47
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	53	26	20	661	709	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1436	736	763			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1436	736	763			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	63	94	98			
cM capacity (veh/h)	144	419	849			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	79	680	763
Volume Left	53	20	0
Volume Right	26	0	54
cSH	184	849	1700
Volume to Capacity	0.43	0.02	0.45
Queue Length 95th (ft)	49	2	0
Control Delay (s)	38.6	0.6	0.0
Lane LOS	E	A	
Approach Delay (s)	38.6	0.6	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	629	41	13	471	18	11
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	723	47	15	541	21	13
Pedestrians	8			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	4.0			4.0		
Percent Blockage	1			0		
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			770		1326	753
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			770		1326	753
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		88	97
cM capacity (veh/h)			844		167	408

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	770	556	33
Volume Left	0	15	21
Volume Right	47	0	13
cSH	1700	844	216
Volume to Capacity	0.45	0.02	0.15
Queue Length 95th (ft)	0	1	13
Control Delay (s)	0.0	0.5	24.7
Lane LOS		A	C
Approach Delay (s)	0.0	0.5	24.7
Approach LOS			C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	0	2	6	0	4	3	489	0	1	633	17
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	8	0	2	7	0	5	3	562	0	1	728	20
Pedestrians		21			30			30			30	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		2			2			2			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1364	1360	788	1371	1369	622	768			592		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1364	1360	788	1371	1369	622	768			592		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	99	94	100	99	100			100		
cM capacity (veh/h)	114	141	375	112	140	463	831			959		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	11	566	748
Volume Left	8	7	3	1
Volume Right	2	5	0	20
cSH	135	161	831	959
Volume to Capacity	0.08	0.07	0.00	0.00
Queue Length 95th (ft)	6	6	0	0
Control Delay (s)	33.9	29.0	0.1	0.0
Lane LOS	D	D	A	A
Approach Delay (s)	33.9	29.0	0.1	0.0
Approach LOS	D	D		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	27	7	0	18	21	828	3	13	784	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	31	8	0	21	24	952	3	15	901	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2010	1991	958	2021	2047	953	1015			955		
vC1, stage 1 conf vol	988	988										
vC2, stage 2 conf vol	1022	1003										
vCu, unblocked vol	2010	1991	958	2021	2047	953	1015			955		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	51	100	90	78	100	93	96			98		
cM capacity (veh/h)	184	217	312	37	53	314	683			720		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	31	29	979	1030
Volume Left	91	0	8	24	15
Volume Right	0	31	21	3	114
cSH	184	312	102	683	720
Volume to Capacity	0.49	0.10	0.28	0.04	0.02
Queue Length 95th (ft)	61	8	26	3	2
Control Delay (s)	42.3	17.8	53.7	1.1	0.7
Lane LOS	E	C	F	A	A
Approach Delay (s)	36.1		53.7	1.1	0.7
Approach LOS	E		F		

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (prot)	1770	3277		3433	3468		1681	1545			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (perm)	1770	3277		3433	3468		1681	1545			1811	1583
Volume (vph)	55	314	306	365	313	49	322	30	306	56	41	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	361	352	420	360	56	370	34	352	64	47	62
RTOR Reduction (vph)	0	199	0	0	13	0	0	167	0	0	0	48
Lane Group Flow (vph)	63	514	0	420	403	0	325	264	0	0	111	14
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.7	17.3		12.3	25.9		24.8	24.8			8.4	8.4
Effective Green, g (s)	3.7	17.3		12.3	25.9		24.8	24.8			8.4	8.4
Actuated g/C Ratio	0.05	0.22		0.16	0.33		0.31	0.31			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	83	719		536	1140		529	486			193	169
v/s Ratio Prot	0.04	c0.16		c0.12	0.12		c0.19	0.17			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.76	0.71		0.78	0.35		0.61	0.54			0.58	0.08
Uniform Delay, d1	37.1	28.5		32.0	20.1		22.9	22.3			33.5	31.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	32.1	3.4		7.4	0.2		5.3	4.3			4.1	0.2
Delay (s)	69.3	31.9		39.3	20.3		28.2	26.7			37.6	31.9
Level of Service	E	C		D	C		C	C			D	C
Approach Delay (s)		34.9			29.9			27.3			35.6	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	78.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	655	0	0	709	0
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	0	0	0	753	0	0	815	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	753	0	0	815	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								0.40			c0.44	
v/s Ratio Perm												
v/c Ratio								0.48			0.52	
Uniform Delay, d1								2.4			2.5	
Progression Factor								1.00			1.00	
Incremental Delay, d2								1.0			1.2	
Delay (s)								3.4			3.7	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			3.4			3.7	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	18	7	0	18	34	586	3	13	615	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	21	8	0	21	39	674	3	15	707	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1568	1549	764	1568	1604	675	821			677		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1568	1549	764	1568	1604	675	821			677		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	95	90	100	95	95			98		
cM capacity (veh/h)	82	107	404	81	99	454	808			915		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	21	29	716	836
Volume Left	91	0	8	39	15
Volume Right	0	21	21	3	114
cSH	82	404	199	808	915
Volume to Capacity	1.11	0.05	0.14	0.05	0.02
Queue Length 95th (ft)	161	4	12	4	1
Control Delay (s)	224.5	14.4	26.2	1.3	0.4
Lane LOS	F	B	D	A	A
Approach Delay (s)	185.5		26.2	1.3	0.4
Approach LOS	F		D		

Intersection Summary			
Average Delay	13.4		
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	467	26	7	547	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	9	0	11	2	537	30	8	629	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1231	1235	647	1222	1224	566	645			574		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1231	1235	647	1222	1224	566	645			574		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	94	100	98	100			99		
cM capacity (veh/h)	146	173	465	151	175	518	935			993		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	21	569	646
Volume Left	2	9	2	8
Volume Right	2	11	30	9
cSH	223	249	935	993
Volume to Capacity	0.02	0.08	0.00	0.01
Queue Length 95th (ft)	2	7	0	1
Control Delay (s)	21.5	20.7	0.1	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	21.5	20.7	0.1	0.2
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	455	515	45
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	31	10	7	523	592	52
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1188	635	661			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1188	635	661			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	98	99			
cM capacity (veh/h)	201	472	914			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	41	530	644
Volume Left	31	7	0
Volume Right	10	0	52
cSH	234	914	1700
Volume to Capacity	0.18	0.01	0.38
Queue Length 95th (ft)	16	1	0
Control Delay (s)	23.6	0.2	0.0
Lane LOS	C	A	
Approach Delay (s)	23.6	0.2	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	460	2	4	456	9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	2	7	8	1	6	3	529	2	5	524	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1082	1076	529	1083	1080	530	534			531		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1082	1076	529	1083	1080	530	534			531		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	99	96	99	99	100			100		
cM capacity (veh/h)	191	217	549	190	216	549	1033			1036		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	15	534	539
Volume Left	5	8	3	5
Volume Right	7	6	2	10
cSH	292	257	1033	1036
Volume to Capacity	0.05	0.06	0.00	0.00
Queue Length 95th (ft)	4	5	0	0
Control Delay (s)	17.9	19.9	0.1	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	17.9	19.9	0.1	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	461	461	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	1	1	530	530	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1067	534	539			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1067	534	539			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	246	546	1029			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	530	539
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	285	1029	1700	1700
Volume to Capacity	0.02	0.00	0.31	0.32
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	17.8	8.5	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.8	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	0	1	0	0	0	6	484	0	0	466	19
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	1	0	1	0	0	0	7	556	0	0	536	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1117	1117	547	1118	1128	556	557			556		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1117	1117	547	1118	1128	556	557			556		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	99			100		
cM capacity (veh/h)	184	206	537	183	203	530	1013			1014		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	2	0	563	557
Volume Left	1	0	7	0
Volume Right	1	0	0	22
cSH	274	1700	1013	1014
Volume to Capacity	0.01	0.00	0.01	0.00
Queue Length 95th (ft)	1	0	1	0
Control Delay (s)	18.3	0.0	0.2	0.0
Lane LOS	C	A	A	
Approach Delay (s)	18.3	0.0	0.2	0.0
Approach LOS	C	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	22	0	11	5	0	12	8	467	10	7	438	22
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	25	0	13	6	0	14	9	537	11	8	503	25
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1107	1099	516	1106	1106	543	529			548		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1107	1099	516	1106	1106	543	529			548		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	98	97	100	97	99			99		
cM capacity (veh/h)	180	209	559	181	207	540	1038			1021		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	25	13	6	14	557	537
Volume Left	25	0	6	0	9	8
Volume Right	0	13	0	14	11	25
cSH	180	559	181	540	1038	1021
Volume to Capacity	0.14	0.02	0.03	0.03	0.01	0.01
Queue Length 95th (ft)	12	2	2	2	1	1
Control Delay (s)	28.2	11.6	25.5	11.8	0.2	0.2
Lane LOS	D	B	D	B	A	A
Approach Delay (s)	22.6		15.9		0.2	0.2
Approach LOS	C		C			

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	164	0	66	3	0	5	23	314	1	2	382	74
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	189	0	76	3	0	6	26	361	1	2	439	85
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	906	901	482	976	943	361	524			362		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	906	901	482	976	943	361	524			362		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	24	100	87	98	100	99	97			100		
cM capacity (veh/h)	249	270	585	196	255	683	1042			1197		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	264	9	389	526
Volume Left	189	3	26	2
Volume Right	76	6	1	85
cSH	299	354	1042	1197
Volume to Capacity	0.89	0.03	0.03	0.00
Queue Length 95th (ft)	201	2	2	0
Control Delay (s)	65.2	15.4	0.8	0.1
Lane LOS	F	C	A	A
Approach Delay (s)	65.2	15.4	0.8	0.1
Approach LOS	F	C		

Intersection Summary			
Average Delay	14.9		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	33	15	11	338	427	42
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	38	17	13	389	491	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	929	515	539			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	929	515	539			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	97	99			
cM capacity (veh/h)	294	560	1029			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	55	401	539
Volume Left	38	13	0
Volume Right	17	0	48
cSH	345	1029	1700
Volume to Capacity	0.16	0.01	0.32
Queue Length 95th (ft)	14	1	0
Control Delay (s)	17.4	0.4	0.0
Lane LOS	C	A	
Approach Delay (s)	17.4	0.4	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	18	7	0	18	34	586	3	13	615	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	21	8	0	21	39	674	3	15	707	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1568	1549	764	1568	1604	675	821			677		
vC1, stage 1 conf vol	794	794										
vC2, stage 2 conf vol	774	755										
vCu, unblocked vol	1568	1549	764	1568	1604	675	821			677		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	65	100	95	90	100	95	95			98		
cM capacity (veh/h)	259	287	404	81	99	454	808			915		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	21	29	716	836
Volume Left	91	0	8	39	15
Volume Right	0	21	21	3	114
cSH	259	404	199	808	915
Volume to Capacity	0.35	0.05	0.14	0.05	0.02
Queue Length 95th (ft)	38	4	12	4	1
Control Delay (s)	26.3	14.4	26.2	1.3	0.4
Lane LOS	D	B	D	A	A
Approach Delay (s)	24.1		26.2	1.3	0.4
Approach LOS	C		D		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	164	0	66	3	0	5	23	314	1	2	382	74
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	189	0	76	3	0	6	26	361	1	2	439	85
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	906	901	482	976	943	361	524			362		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	906	901	482	976	943	361	524			362		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	24	100	87	98	100	99	97			100		
cM capacity (veh/h)	249	270	585	196	255	683	1042			1197		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	189	76	9	389	526
Volume Left	189	0	3	26	2
Volume Right	0	76	6	1	85
cSH	249	585	354	1042	1197
Volume to Capacity	0.76	0.13	0.03	0.03	0.00
Queue Length 95th (ft)	136	11	2	2	0
Control Delay (s)	53.5	12.1	15.4	0.8	0.1
Lane LOS	F	B	C	A	A
Approach Delay (s)	41.6		15.4	0.8	0.1
Approach LOS	E		C		

Intersection Summary			
Average Delay	9.7		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (prot)	1770	3298		3433	3468		1681	1548			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (perm)	1770	3298		3433	3468		1681	1548			1811	1583
Volume (vph)	55	314	261	338	313	49	312	30	281	56	42	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	361	300	389	360	56	359	34	323	64	48	62
RTOR Reduction (vph)	0	173	0	0	14	0	0	148	0	0	0	48
Lane Group Flow (vph)	63	488	0	389	402	0	312	256	0	0	112	14
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.7	16.9		11.5	24.7		24.8	24.8			8.4	8.4
Effective Green, g (s)	3.7	16.9		11.5	24.7		24.8	24.8			8.4	8.4
Actuated g/C Ratio	0.05	0.22		0.15	0.32		0.32	0.32			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	84	718		509	1104		537	495			196	171
v/s Ratio Prot	0.04	c0.15		c0.11	0.12		c0.19	0.17			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.75	0.68		0.76	0.36		0.58	0.52			0.57	0.08
Uniform Delay, d1	36.5	27.9		31.7	20.4		22.1	21.5			32.9	31.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	30.8	2.6		6.7	0.2		4.5	3.8			4.0	0.2
Delay (s)	67.3	30.4		38.5	20.6		26.6	25.3			36.9	31.3
Level of Service	E	C		D	C		C	C			D	C
Approach Delay (s)		33.6			29.2			25.9			34.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	77.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	620	0	0	638	0
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	0	0	0	713	0	0	733	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	713	0	0	733	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								0.38			c0.39	
v/s Ratio Perm												
v/c Ratio								0.45			0.46	
Uniform Delay, d1								2.3			2.3	
Progression Factor								1.00			1.00	
Incremental Delay, d2								0.9			1.0	
Delay (s)								3.2			3.3	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			3.2			3.3	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	3.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	12	7	0	18	7	551	3	13	544	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	14	8	0	21	8	633	3	15	625	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1384	1365	682	1377	1420	635	739			637		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1384	1365	682	1377	1420	635	739			637		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	20	100	97	93	100	96	99			98		
cM capacity (veh/h)	113	144	450	116	133	478	867			947		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	14	29	645	754
Volume Left	91	0	8	8	15
Volume Right	0	14	21	3	114
cSH	113	450	255	867	947
Volume to Capacity	0.80	0.03	0.11	0.01	0.02
Queue Length 95th (ft)	115	2	9	1	1
Control Delay (s)	107.8	13.3	20.9	0.2	0.4
Lane LOS	F	B	C	A	A
Approach Delay (s)	95.3		20.9	0.2	0.4
Approach LOS	F		C		

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	390	26	7	464	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	9	0	11	2	448	30	8	533	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1047	1051	552	1038	1040	477	550			485		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1047	1051	552	1038	1040	477	550			485		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	95	100	98	100			99		
cM capacity (veh/h)	196	222	527	202	225	581	1014			1071		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	21	480	551
Volume Left	2	9	2	8
Volume Right	2	11	30	9
cSH	286	317	1014	1071
Volume to Capacity	0.02	0.07	0.00	0.01
Queue Length 95th (ft)	1	5	0	1
Control Delay (s)	17.8	17.1	0.1	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	17.8	17.1	0.1	0.2
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	325	425	45
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	31	10	7	374	489	52
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	935	531	557			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	935	531	557			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	98	99			
cM capacity (veh/h)	285	540	999			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	41	380	540
Volume Left	31	7	0
Volume Right	10	0	52
cSH	323	999	1700
Volume to Capacity	0.13	0.01	0.32
Queue Length 95th (ft)	11	1	0
Control Delay (s)	17.8	0.2	0.0
Lane LOS	C	A	
Approach Delay (s)	17.8	0.2	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	294	2	4	356	9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	2	7	8	1	6	3	338	2	5	409	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	776	771	414	778	775	339	420			340		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	776	771	414	778	775	339	420			340		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	97	100	99	100			100		
cM capacity (veh/h)	310	329	638	307	327	703	1140			1219		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	15	344	424
Volume Left	5	8	3	5
Volume Right	7	6	2	10
cSH	422	394	1140	1219
Volume to Capacity	0.03	0.04	0.00	0.00
Queue Length 95th (ft)	3	3	0	0
Control Delay (s)	13.8	14.5	0.1	0.1
Lane LOS	B	B	A	A
Approach Delay (s)	13.8	14.5	0.1	0.1
Approach LOS	B	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	295	361	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	1	1	339	415	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	761	420	424			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	761	420	424			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	373	634	1135			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	339	424
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	416	1135	1700	1700
Volume to Capacity	0.01	0.00	0.20	0.25
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	13.8	8.2	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.8	0.0		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	1	0	0	0	2	319	0	0	381	2
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	1	0	0	0	2	367	0	0	438	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	810	810	439	811	811	367	440			367		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	810	810	439	811	811	367	440			367		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	298	313	618	297	313	679	1120			1192		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	0	369	440
Volume Left	0	0	2	0
Volume Right	1	0	0	2
cSH	618	1700	1120	1192
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	10.8	0.0	0.1	0.0
Lane LOS	B	A	A	
Approach Delay (s)	10.8	0.0	0.1	0.0
Approach LOS	B	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	30.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	0	12	5	0	12	11	310	10	7	367	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	11	0	14	6	0	14	13	356	11	8	422	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	844	836	426	844	834	362	431			368		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	844	836	426	844	834	362	431			368		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	98	98	100	98	99			99		
cM capacity (veh/h)	274	298	628	273	298	683	1128			1191		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	11	14	6	14	380	439
Volume Left	11	0	6	0	13	8
Volume Right	0	14	0	14	11	9
cSH	274	628	273	683	1128	1191
Volume to Capacity	0.04	0.02	0.02	0.02	0.01	0.01
Queue Length 95th (ft)	3	2	2	2	1	1
Control Delay (s)	18.7	10.9	18.5	10.4	0.4	0.2
Lane LOS	C	B	C	B	A	A
Approach Delay (s)	14.4		12.8		0.4	0.2
Approach LOS	B		B			

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	0	13	3	0	5	7	315	1	2	377	9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	10	0	15	3	0	6	8	362	1	2	433	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	828	822	439	837	827	363	444			363		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	828	822	439	837	827	363	444			363		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	98	99	100	99	99			100		
cM capacity (veh/h)	286	306	618	277	304	682	1116			1195		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	25	9	371	446
Volume Left	10	3	8	2
Volume Right	15	6	1	10
cSH	419	441	1116	1195
Volume to Capacity	0.06	0.02	0.01	0.00
Queue Length 95th (ft)	5	2	1	0
Control Delay (s)	14.1	13.3	0.3	0.1
Lane LOS	B	B	A	A
Approach Delay (s)	14.1	13.3	0.3	0.1
Approach LOS	B	B		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	35	14	9	321	376	35
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	40	16	10	369	432	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	842	452	472			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	842	452	472			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	88	97	99			
cM capacity (veh/h)	331	607	1089			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	56	379	472
Volume Left	40	10	0
Volume Right	16	0	40
cSH	381	1089	1700
Volume to Capacity	0.15	0.01	0.28
Queue Length 95th (ft)	13	1	0
Control Delay (s)	16.1	0.3	0.0
Lane LOS	C	A	
Approach Delay (s)	16.1	0.3	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (prot)	1770	3288		3433	3468		1681	1546			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (perm)	1770	3288		3433	3468		1681	1546			1811	1583
Volume (vph)	55	314	282	359	313	49	324	31	309	56	41	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	361	324	413	360	56	372	36	355	64	47	62
RTOR Reduction (vph)	0	184	0	0	13	0	0	164	0	0	0	48
Lane Group Flow (vph)	63	501	0	413	403	0	327	272	0	0	111	14
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.7	17.1		12.3	25.7		24.8	24.8			8.4	8.4
Effective Green, g (s)	3.7	17.1		12.3	25.7		24.8	24.8			8.4	8.4
Actuated g/C Ratio	0.05	0.22		0.16	0.33		0.32	0.32			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	83	715		537	1134		530	488			194	169
v/s Ratio Prot	0.04	c0.15		c0.12	0.12		c0.19	0.18			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.76	0.70		0.77	0.35		0.62	0.56			0.57	0.08
Uniform Delay, d1	37.0	28.4		31.8	20.1		22.9	22.3			33.4	31.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	32.1	3.1		6.6	0.2		5.3	4.6			4.0	0.2
Delay (s)	69.2	31.5		38.3	20.3		28.2	26.9			37.4	31.8
Level of Service	E	C		D	C		C	C			D	C
Approach Delay (s)		34.7			29.3			27.4			35.4	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	661	0	0	679	0
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	0	0	0	760	0	0	780	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	760	0	0	780	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								0.41			c0.42	
v/s Ratio Perm												
v/c Ratio								0.48			0.49	
Uniform Delay, d1								2.4			2.4	
Progression Factor								1.00			1.00	
Incremental Delay, d2								1.1			1.1	
Delay (s)								3.4			3.5	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			3.4			3.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	17	7	0	18	38	592	3	13	585	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	20	8	0	21	44	680	3	15	672	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1549	1530	729	1548	1586	682	786			684		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1549	1530	729	1548	1586	682	786			684		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	95	90	100	95	95			98		
cM capacity (veh/h)	84	109	423	84	101	450	833			909		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	20	29	728	801
Volume Left	91	0	8	44	15
Volume Right	0	20	21	3	114
cSH	84	423	203	833	909
Volume to Capacity	1.08	0.05	0.14	0.05	0.02
Queue Length 95th (ft)	157	4	12	4	1
Control Delay (s)	212.4	13.9	25.7	1.4	0.4
Lane LOS	F	B	D	A	A
Approach Delay (s)	177.2		25.7	1.4	0.4
Approach LOS	F		D		

Intersection Summary			
Average Delay	13.0		
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	477	26	7	509	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	9	0	11	2	548	30	8	585	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1199	1203	604	1190	1192	577	601			585		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1199	1203	604	1190	1192	577	601			585		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	94	100	98	100			99		
cM capacity (veh/h)	154	180	493	159	183	510	970			984		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	21	580	602
Volume Left	2	9	2	8
Volume Right	2	11	30	9
cSH	235	258	970	984
Volume to Capacity	0.02	0.08	0.00	0.01
Queue Length 95th (ft)	1	6	0	1
Control Delay (s)	20.6	20.2	0.1	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	20.6	20.2	0.1	0.2
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	466	475	45
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	31	10	7	536	546	52
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1154	589	615			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1154	589	615			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	98	99			
cM capacity (veh/h)	210	501	951			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	41	543	598
Volume Left	31	7	0
Volume Right	10	0	52
cSH	246	951	1700
Volume to Capacity	0.17	0.01	0.35
Queue Length 95th (ft)	15	1	0
Control Delay (s)	22.6	0.2	0.0
Lane LOS	C	A	
Approach Delay (s)	22.6	0.2	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	469	2	4	426	9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	2	7	8	1	6	3	539	2	5	490	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1057	1052	495	1059	1056	540	500			541		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1057	1052	495	1059	1056	540	500			541		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	99	96	99	99	100			100		
cM capacity (veh/h)	199	225	575	197	223	542	1064			1027		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	15	545	505
Volume Left	5	8	3	5
Volume Right	7	6	2	10
cSH	304	264	1064	1027
Volume to Capacity	0.05	0.06	0.00	0.00
Queue Length 95th (ft)	4	4	0	0
Control Delay (s)	17.4	19.4	0.1	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	17.4	19.4	0.1	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	470	431	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	1	1	540	495	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1043	500	505			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1043	500	505			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	254	571	1060			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	540	505
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	295	1060	1700	1700
Volume to Capacity	0.02	0.00	0.32	0.30
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	17.4	8.4	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.4	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	0	2	0	0	0	5	493	0	0	441	14
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	1	0	2	0	0	0	6	567	0	0	507	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1093	1093	515	1095	1101	567	523			567		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1093	1093	515	1095	1101	567	523			567		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	99			100		
cM capacity (veh/h)	191	213	560	189	211	523	1044			1005		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	0	572	523
Volume Left	1	0	6	0
Volume Right	2	0	0	16
cSH	340	1700	1044	1005
Volume to Capacity	0.01	0.00	0.01	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	15.7	0.0	0.2	0.0
Lane LOS	C	A	A	
Approach Delay (s)	15.7	0.0	0.2	0.0
Approach LOS	C	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	28	0	15	5	0	12	14	469	10	7	396	40
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	32	0	17	6	0	14	16	539	11	8	455	46
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1085	1077	478	1089	1094	545	501			551		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1085	1077	478	1089	1094	545	501			551		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	83	100	97	97	100	97	98			99		
cM capacity (veh/h)	186	214	587	184	209	538	1063			1019		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	32	17	6	14	567	509
Volume Left	32	0	6	0	16	8
Volume Right	0	17	0	14	11	46
cSH	186	587	184	538	1063	1019
Volume to Capacity	0.17	0.03	0.03	0.03	0.02	0.01
Queue Length 95th (ft)	15	2	2	2	1	1
Control Delay (s)	28.4	11.3	25.2	11.9	0.4	0.2
Lane LOS	D	B	D	B	A	A
Approach Delay (s)	22.4		15.8		0.4	0.2
Approach LOS	C		C			

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	161	0	59	3	0	5	12	325	1	2	378	40
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	185	0	68	3	0	6	14	374	1	2	434	46
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	870	864	457	932	887	374	480			375		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	870	864	457	932	887	374	480			375		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	31	100	89	98	100	99	99			100		
cM capacity (veh/h)	267	288	603	217	279	672	1082			1184		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	253	9	389	483
Volume Left	185	3	14	2
Volume Right	68	6	1	46
cSH	314	376	1082	1184
Volume to Capacity	0.81	0.02	0.01	0.00
Queue Length 95th (ft)	166	2	1	0
Control Delay (s)	50.8	14.8	0.4	0.1
Lane LOS	F	B	A	A
Approach Delay (s)	50.8	14.8	0.4	0.1
Approach LOS	F	B		

Intersection Summary			
Average Delay	11.6		
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	35	15	9	337	424	34
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	40	17	10	387	487	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	915	507	526			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	915	507	526			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	97	99			
cM capacity (veh/h)	300	566	1040			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	57	398	526
Volume Left	40	10	0
Volume Right	17	0	39
cSH	349	1040	1700
Volume to Capacity	0.16	0.01	0.31
Queue Length 95th (ft)	15	1	0
Control Delay (s)	17.3	0.3	0.0
Lane LOS	C	A	
Approach Delay (s)	17.3	0.3	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	17	7	0	18	38	592	3	13	585	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	20	8	0	21	44	680	3	15	672	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1549	1530	729	1548	1586	682	786			684		
vC1, stage 1 conf vol	759	759										
vC2, stage 2 conf vol	790	771										
vCu, unblocked vol	1549	1530	729	1548	1586	682	786			684		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	65	100	95	90	100	95	95			98		
cM capacity (veh/h)	260	289	423	84	101	450	833			909		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	20	29	728	801
Volume Left	91	0	8	44	15
Volume Right	0	20	21	3	114
cSH	260	423	203	833	909
Volume to Capacity	0.35	0.05	0.14	0.05	0.02
Queue Length 95th (ft)	38	4	12	4	1
Control Delay (s)	26.1	13.9	25.7	1.4	0.4
Lane LOS	D	B	D	A	A
Approach Delay (s)	23.9		25.7	1.4	0.4
Approach LOS	C		D		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	161	0	59	3	0	5	12	325	1	2	378	40
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	185	0	68	3	0	6	14	374	1	2	434	46
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	870	864	457	932	887	374	480			375		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	870	864	457	932	887	374	480			375		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	31	100	89	98	100	99	99			100		
cM capacity (veh/h)	267	288	603	217	279	672	1082			1184		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	185	68	9	389	483
Volume Left	185	0	3	14	2
Volume Right	0	68	6	1	46
cSH	267	603	376	1082	1184
Volume to Capacity	0.69	0.11	0.02	0.01	0.00
Queue Length 95th (ft)	117	9	2	1	0
Control Delay (s)	44.3	11.7	14.8	0.4	0.1
Lane LOS	E	B	B	A	A
Approach Delay (s)	35.5		14.8	0.4	0.1
Approach LOS	E		B		

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		0.95	0.95			1.00	1.00
Frt	1.00	0.93		1.00	0.98		1.00	0.88			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (prot)	1770	3289		3433	3468		1681	1546			1811	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.99			0.97	1.00
Satd. Flow (perm)	1770	3289		3433	3468		1681	1546			1811	1583
Volume (vph)	55	314	280	355	313	49	322	31	305	56	41	54
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	361	322	408	360	56	370	36	351	64	47	62
RTOR Reduction (vph)	0	182	0	0	13	0	0	162	0	0	0	48
Lane Group Flow (vph)	63	501	0	408	403	0	325	270	0	0	111	14
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases												6
Actuated Green, G (s)	3.7	17.1		12.3	25.7		24.8	24.8			8.4	8.4
Effective Green, g (s)	3.7	17.1		12.3	25.7		24.8	24.8			8.4	8.4
Actuated g/C Ratio	0.05	0.22		0.16	0.33		0.32	0.32			0.11	0.11
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	83	716		537	1134		530	488			194	169
v/s Ratio Prot	0.04	c0.15		c0.12	0.12		c0.19	0.17			c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.76	0.70		0.76	0.35		0.61	0.55			0.57	0.08
Uniform Delay, d1	37.0	28.4		31.7	20.1		22.8	22.3			33.4	31.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	32.1	3.0		6.1	0.2		5.2	4.5			4.0	0.2
Delay (s)	69.2	31.4		37.9	20.3		28.1	26.8			37.4	31.8
Level of Service	E	C		D	C		C	C			D	C
Approach Delay (s)		34.6			29.0			27.3			35.4	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)								4.0			4.0	
Lane Util. Factor								1.00			1.00	
Frt								1.00			1.00	
Flt Protected								1.00			1.00	
Satd. Flow (prot)								1863			1863	
Flt Permitted								1.00			1.00	
Satd. Flow (perm)								1863			1863	
Volume (vph)	0	0	0	0	0	0	0	655	0	0	673	0
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	0	0	0	753	0	0	774	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	753	0	0	774	0
Turn Type												
Protected Phases		4			8			2			6	
Permitted Phases												
Actuated Green, G (s)								102.4			102.4	
Effective Green, g (s)								102.4			102.4	
Actuated g/C Ratio								0.85			0.85	
Clearance Time (s)								4.0			4.0	
Vehicle Extension (s)								3.0			3.0	
Lane Grp Cap (vph)								1579			1579	
v/s Ratio Prot								0.40			c0.42	
v/s Ratio Perm												
v/c Ratio								0.48			0.49	
Uniform Delay, d1								2.4			2.4	
Progression Factor								1.00			1.00	
Incremental Delay, d2								1.0			1.1	
Delay (s)								3.4			3.5	
Level of Service								A			A	
Approach Delay (s)		0.0			0.0			3.4			3.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	3.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	18.4
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	19	7	0	18	39	586	3	13	579	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	22	8	0	21	45	674	3	15	666	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1538	1519	722	1539	1574	675	779			677		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1538	1519	722	1539	1574	675	779			677		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	95	91	100	95	95			98		
cM capacity (veh/h)	85	111	427	85	102	454	838			915		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	22	29	722	794
Volume Left	91	0	8	45	15
Volume Right	0	22	21	3	114
cSH	85	427	204	838	915
Volume to Capacity	1.06	0.05	0.14	0.05	0.02
Queue Length 95th (ft)	155	4	12	4	1
Control Delay (s)	204.1	13.9	25.5	1.4	0.4
Lane LOS	F	B	D	A	A
Approach Delay (s)	167.3		25.5	1.4	0.4
Approach LOS	F		D		

Intersection Summary			
Average Delay	12.6		
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	0	2	8	0	10	2	472	26	7	512	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	2	9	0	11	2	543	30	8	589	9
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1197	1200	607	1188	1190	571	605			579		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1197	1200	607	1188	1190	571	605			579		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	94	100	98	100			99		
cM capacity (veh/h)	155	181	491	160	184	514	967			989		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	21	575	606
Volume Left	2	9	2	8
Volume Right	2	11	30	9
cSH	235	259	967	989
Volume to Capacity	0.02	0.08	0.00	0.01
Queue Length 95th (ft)	1	6	0	1
Control Delay (s)	20.6	20.1	0.1	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	20.6	20.1	0.1	0.2
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	9	6	460	478	45
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	31	10	7	529	549	52
Pedestrians	17				16	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	1				1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1151	592	618			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1151	592	618			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	98	99			
cM capacity (veh/h)	211	499	948			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	41	536	601
Volume Left	31	7	0
Volume Right	10	0	52
cSH	247	948	1700
Volume to Capacity	0.17	0.01	0.35
Queue Length 95th (ft)	15	1	0
Control Delay (s)	22.5	0.2	0.0
Lane LOS	C	A	
Approach Delay (s)	22.5	0.2	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	2	6	7	1	5	3	461	2	4	419	9
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	5	2	7	8	1	6	3	530	2	5	482	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1040	1035	487	1042	1039	531	492			532		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1040	1035	487	1042	1039	531	492			532		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	99	96	99	99	100			100		
cM capacity (veh/h)	204	230	581	203	229	548	1071			1035		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	15	536	497
Volume Left	5	8	3	5
Volume Right	7	6	2	10
cSH	311	271	1071	1035
Volume to Capacity	0.04	0.06	0.00	0.00
Queue Length 95th (ft)	3	4	0	0
Control Delay (s)	17.1	19.1	0.1	0.1
Lane LOS	C	C	A	A
Approach Delay (s)	17.1	19.1	0.1	0.1
Approach LOS	C	C		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	1	462	424	8
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	3	1	1	531	487	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1025	492	497			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1025	492	497			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	260	577	1067			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	5	1	531	497
Volume Left	3	1	0	0
Volume Right	1	0	0	9
cSH	301	1067	1700	1700
Volume to Capacity	0.02	0.00	0.31	0.29
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	17.1	8.4	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.1	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	0	1	0	0	0	4	486	0	0	438	10
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	1	0	1	0	0	0	5	559	0	0	503	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1077	1077	509	1078	1083	559	515			559		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1077	1077	509	1078	1083	559	515			559		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	100			100		
cM capacity (veh/h)	196	218	564	195	216	529	1051			1012		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	2	0	563	515
Volume Left	1	0	5	0
Volume Right	1	0	0	11
cSH	291	1700	1051	1012
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	17.5	0.0	0.1	0.0
Lane LOS	C	A	A	
Approach Delay (s)	17.5	0.0	0.1	0.0
Approach LOS	C	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	23	0	11	5	0	12	12	466	10	7	400	32
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	26	0	13	6	0	14	14	536	11	8	460	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1077	1069	478	1076	1082	541	497			547		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1077	1069	478	1076	1082	541	497			547		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	98	97	100	97	99			99		
cM capacity (veh/h)	189	217	587	190	213	541	1067			1022		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	26	13	6	14	561	505
Volume Left	26	0	6	0	14	8
Volume Right	0	13	0	14	11	37
cSH	189	587	190	541	1067	1022
Volume to Capacity	0.14	0.02	0.03	0.03	0.01	0.01
Queue Length 95th (ft)	12	2	2	2	1	1
Control Delay (s)	27.2	11.3	24.6	11.8	0.4	0.2
Lane LOS	D	B	C	B	A	A
Approach Delay (s)	22.0		15.6		0.4	0.2
Approach LOS	C		C			

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	163	0	65	3	0	5	16	318	1	2	376	42
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	187	0	75	3	0	6	18	366	1	2	432	48
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	870	864	456	939	888	366	480			367		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	870	864	456	939	888	366	480			367		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	30	100	88	98	100	99	98			100		
cM capacity (veh/h)	266	286	604	211	277	679	1082			1192		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	262	9	385	483
Volume Left	187	3	18	2
Volume Right	75	6	1	48
cSH	316	371	1082	1192
Volume to Capacity	0.83	0.02	0.02	0.00
Queue Length 95th (ft)	177	2	1	0
Control Delay (s)	53.5	15.0	0.6	0.1
Lane LOS	F	B	A	A
Approach Delay (s)	53.5	15.0	0.6	0.1
Approach LOS	F	B		

Intersection Summary			
Average Delay	12.6		
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	33	14	10	336	427	35
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	38	16	11	386	491	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	920	511	531			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	920	511	531			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	97	99			
cM capacity (veh/h)	297	563	1036			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	54	398	531
Volume Left	38	11	0
Volume Right	16	0	40
cSH	346	1036	1700
Volume to Capacity	0.16	0.01	0.31
Queue Length 95th (ft)	14	1	0
Control Delay (s)	17.3	0.4	0.0
Lane LOS	C	A	
Approach Delay (s)	17.3	0.4	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	79	0	19	7	0	18	39	586	3	13	579	99
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	91	0	22	8	0	21	45	674	3	15	666	114
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1538	1519	722	1539	1574	675	779			677		
vC1, stage 1 conf vol	752	752										
vC2, stage 2 conf vol	786	767										
vCu, unblocked vol	1538	1519	722	1539	1574	675	779			677		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5										
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	65	100	95	91	100	95	95			98		
cM capacity (veh/h)	262	291	427	85	102	454	838			915		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	91	22	29	722	794
Volume Left	91	0	8	45	15
Volume Right	0	22	21	3	114
cSH	262	427	204	838	915
Volume to Capacity	0.35	0.05	0.14	0.05	0.02
Queue Length 95th (ft)	37	4	12	4	1
Control Delay (s)	25.9	13.9	25.5	1.4	0.4
Lane LOS	D	B	D	A	A
Approach Delay (s)	23.5		25.5	1.4	0.4
Approach LOS	C		D		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	163	0	65	3	0	5	16	318	1	2	376	42
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	187	0	75	3	0	6	18	366	1	2	432	48
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	870	864	456	939	888	366	480			367		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	870	864	456	939	888	366	480			367		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	30	100	88	98	100	99	98			100		
cM capacity (veh/h)	266	286	604	211	277	679	1082			1192		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	187	75	9	385	483
Volume Left	187	0	3	18	2
Volume Right	0	75	6	1	48
cSH	266	604	371	1082	1192
Volume to Capacity	0.70	0.12	0.02	0.02	0.00
Queue Length 95th (ft)	120	11	2	1	0
Control Delay (s)	45.4	11.8	15.0	0.6	0.1
Lane LOS	E	B	B	A	A
Approach Delay (s)	35.8		15.0	0.6	0.1
Approach LOS	E		B		

Intersection Summary			
Average Delay	8.6		
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: 2030 Summer Conditions **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	296	Yes		146	Yes	
	T	222	296	Yes		146	--	
	R	222	296	Yes		146	--	
SB	L	223	219	--		103	--	
	T	223	219	--		103	--	
	R	25	63	Yes		37	Yes	
EB	L	200	148	--		53	--	
	T	170	245	Yes		186	Yes	
	R	170	245	Yes		186	Yes	
WB	L	150	212	Yes		177	Yes	
	T	404	478	Yes		365	--	
	R	404	420	Yes		158	--	

Intersection: 2: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	882	--		306	--	
SB	T	136	210	Yes		164	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS
Scenario: 2030 Summer Plus Alternatives 1 and 3
TOD: Fri PM Peak **Analysis Period:** 15 Minutes

HCM: 2000
PHF: 1
# of Runs: 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	296	Yes		162	Yes	
	T	222	296	Yes		162	--	
	R	222	296	Yes		162	--	
SB	L	223	208	--		98	--	
	T	223	208	--		98	--	
	R	25	66	Yes		37	Yes	
EB	L	200	161	--		63	--	
	T	170	251	Yes		179	Yes	
	R	170	251	Yes		179	Yes	
WB	L	150	215	Yes		186	Yes	
	T	404	478	Yes		439	Yes	
	R	404	439	Yes		159	--	

Intersection: 2: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	1084	--		387	--	
SB	T	136	210	Yes		178	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: 2030 Summer Plus Alternative 4 **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	294	Yes		137	Yes	
	T	222	294	Yes		137	--	
	R	222	294	Yes		137	--	
SB	L	223	211	--		91	--	
	T	223	211	--		91	--	
	R	25	64	Yes		37	Yes	
EB	L	200	145	--		62	--	
	T	170	243	Yes		183	Yes	
	R	170	243	Yes		183	Yes	
WB	L	150	204	Yes		175	Yes	
	T	404	476	Yes		340	--	
	R	404	445	Yes		156	--	

Intersection: 2: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	763	--		278	--	
SB	T	136	210	Yes		168	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: 2030 Summer Plus Alternative 5 **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	295	Yes		150	Yes	
	T	222	295	Yes		150	--	
	R	222	295	Yes		150	--	
SB	L	223	196	--		95	--	
	T	223	196	--		95	--	
	R	25	68	Yes		37	Yes	
EB	L	200	145	--		59	--	
	T	170	245	Yes		176	Yes	
	R	170	245	Yes		176	Yes	
WB	L	150	204	Yes		178	Yes	
	T	404	463	Yes		400	--	
	R	404	437	Yes		145	--	

Intersection: 2: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	878	--		327	--	
SB	T	136	211	Yes		166	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: Cumulative Summer Plus Alternative 6 **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	297	Yes		167	Yes	
	T	222	297	Yes		167	--	
	R	222	297	Yes		167	--	
SB	L	223	199	--		93	--	
	T	223	199	--		93	--	
	R	25	76	Yes		37	Yes	
EB	L	200	161	--		68	--	
	T	170	246	Yes		195	Yes	
	R	170	246	Yes		195	Yes	
WB	L	150	211	Yes		178	Yes	
	T	404	476	Yes		362	--	
	R	404	463	Yes		150	--	

Intersection: 2: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	919	--		395	--	
SB	T	136	210	Yes		172	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: 2030 Cumulative Conditions Winter **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	229	Yes		106	--	
	T	222	229	Yes		70	--	
	R	222	229	Yes		70	--	
SB	L	224	190	--		79	--	
	T	224	190	--		79	--	
	R	25	72	Yes		37	Yes	
EB	L	200	114	--		40	--	
	T	170	197	Yes		98	--	
	R	170	197	Yes		98	--	
WB	L	150	184	Yes		119	--	
	T	416	249	--		106	--	
	R	416	141	--		59	--	

Intersection: 41: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	457	--		182	--	
SB	T	136	209	Yes		137	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: 2030 Winter Plus Alternatives 1 and 3 **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	212	Yes		99	--	
	T	307	212	--		70	--	
	R	307	212	--		70	--	
SB	L	224	173	--		74	--	
	T	224	173	--		74	--	
	R	25	73	Yes		36	Yes	
EB	L	200	122	--		43	--	
	T	170	210	Yes		97	--	
	R	170	210	Yes		88	--	
WB	L	150	191	Yes		109	--	
	T	428	290	--		110	--	
	R	428	152	--		63	--	

Intersection: 2: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	451	--		160	--	
SB	T	53	128	Yes		110	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: 2030 Plus Alternative 4 Conditions Winter **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	188	Yes		103	--	
	T	222	188	--		66	--	
	R	222	188	--		66	--	
SB	L	224	192	--		80	--	
	T	224	192	--		80	--	
	R	25	67	Yes		37	Yes	
EB	L	200	121	--		40	--	
	T	170	216	Yes		103	--	
	R	170	216	Yes		103	--	
WB	L	150	183	Yes		112	--	
	T	416	244	--		103	--	
	R	416	151	--		61	--	

Intersection: 41: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	447	--		169	--	
SB	T	136	210	Yes		145	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: 2030 Winter Plus Alternative 5 **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	283	Yes		103	--	
	T	316	283	--		74	--	
	R	316	283	--		74	--	
SB	L	224	164	--		73	--	
	T	224	164	--		73	--	
	R	25	70	Yes		37	Yes	
EB	L	200	114	--		43	--	
	T	170	181	Yes		93	--	
	R	170	177	Yes		79	--	
WB	L	150	190	Yes		108	--	
	T	402	273	--		110	--	
	R	402	157	--		64	--	

Intersection: 41: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	460	--		186	--	
SB	T	44	117	Yes		102	Yes	

SIMTRAFFIC QUEUING REPORT

Project: Homewood EIR/EIS **HCM:** 2000
Scenario: 2030 Winter Plus Alternative 6 **PHF:** 1
TOD: Fri PM Peak **Analysis Period:** 15 Minutes **# of Runs:** 10

Intersection: 1: SR 28 & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	L	125	205	Yes		99	--	
	T	316	205	--		67	--	
	R	316	205	--		67	--	
SB	L	224	194	--		73	--	
	T	224	194	--		73	--	
	R	25	69	Yes		38	Yes	
EB	L	200	108	--		40	--	
	T	170	169	--		92	--	
	R	170	169	--		80	--	
WB	L	150	197	Yes		117	--	
	T	402	324	--		124	--	
	R	402	178	--		66	--	

Intersection: 41: Pedestrian Crossing & SR 89 **Type:** Signalized

Approach	Movement	Storage Length	Maximum Queue (ft)			Average Queue (ft)		
			Avg	> Storage	Std Dev	Avg	> Storage	Std Dev
NB	T	2754	411	--		170	--	
SB	T	44	117	Yes		101	Yes	

FEHR & PEERS
TRANSPORTATION CONSULTANTS

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Pla	89	0.0 to 13.8		45

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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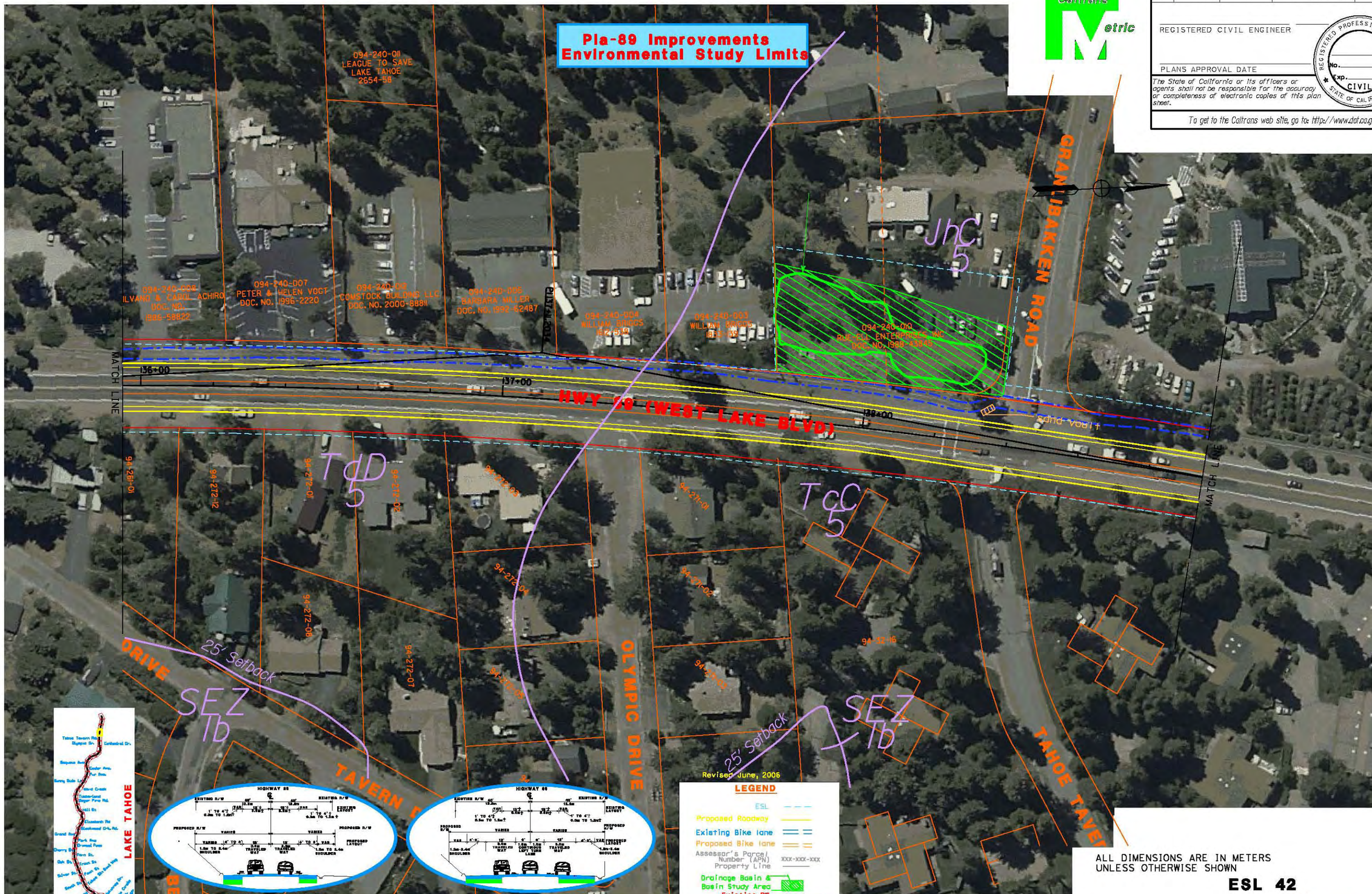

ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN

ESL 42

SCALE 1:500

PRELIMINARY PLANS
SUBJECT TO REVISION

DATE	REVISED BY	DATE REVISED

CALCULATED/DESIGNED BY

CHECKED BY

PROJECT ENGINEER

00

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
OFFICE OF DESIGN, SOUTH
DESIGN BRANCH 00

Caltrans

$DATE $USER $REQUEST $TIME

LAST REVISION 00-00-00 | DATE PLOTTED => $DATE | TIME PLOTTED => $TIME

RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => $USER
DGN FILE => $REQUEST

CU 00000

EA 2A9200

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Pla	89	0.0 to 13.8		45

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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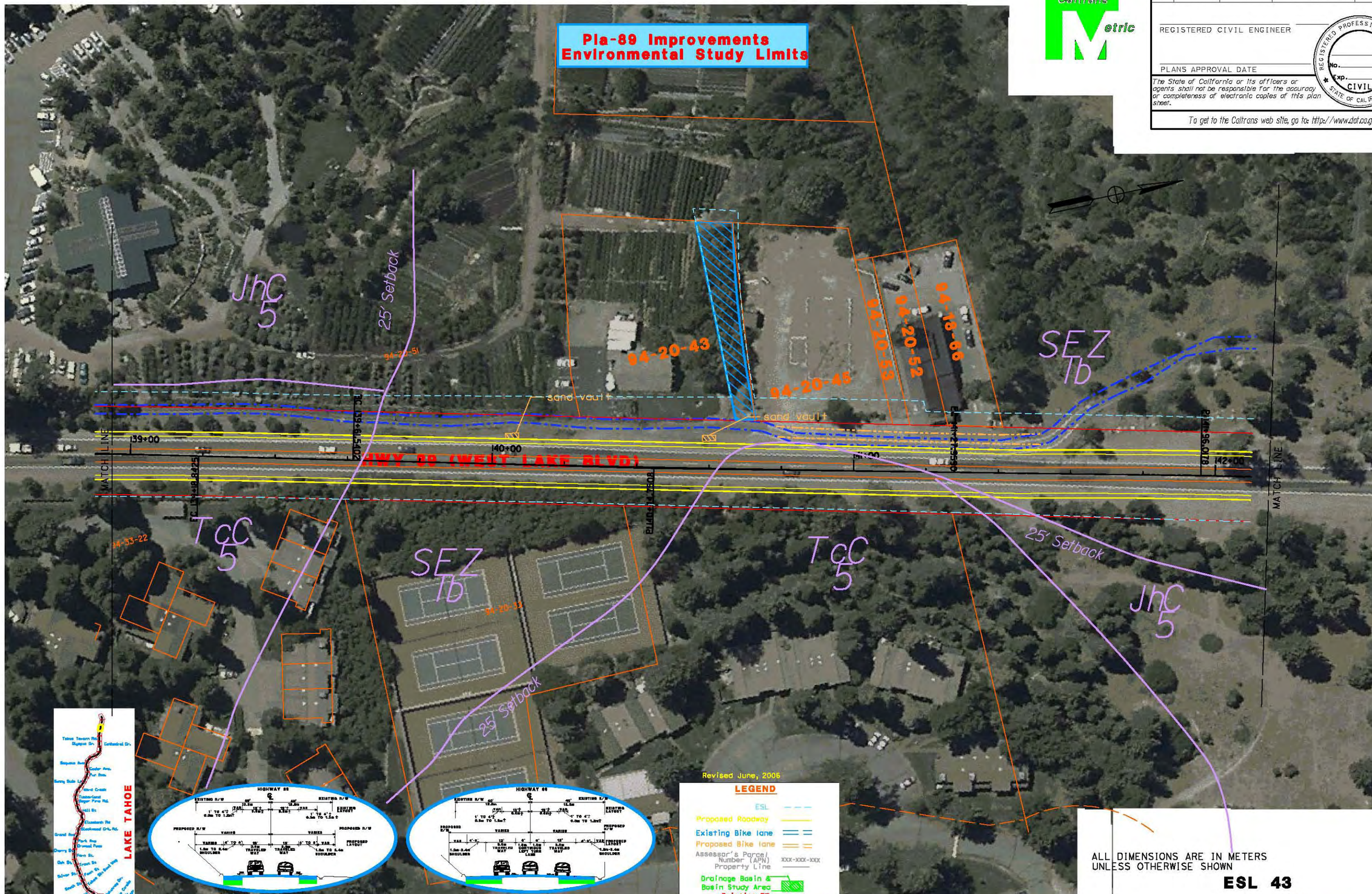

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ESL 43

SCALE 1:500

PRELIMINARY PLANS SUBJECT TO REVISION

DATE	REVISED BY	DATE REVISED
CALCULATED/ DESIGNED BY		
CHECKED BY		

PROJECT ENGINEER 00

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
OFFICE OF DESIGN, SOUTH
DESIGN BRANCH 00

Caltrans

$REQUEST $USER $DATE $TIME

LAST REVISION DATE PLOTTED => $DATE
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RELATIVE BORDER SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME => $USER
DGN FILE => $REQUEST

CU 00000

EA 2A9200

Alternative 1

Phase	Equipment	Number	Horsepower	Load Factor	Hours of Operation
Phase 1a					
Site Grading	Grader	1	174	0.61	6
	Rubber Tired Dozer	1	357	0.59	6
	Tractor/Loader/Backhoe	1	108	0.55	7
	Water Truck	1	189	0.5	8
Building Construction	Crane	1	399	0.43	6
	Forklift	2	145	0.3	6
	Generator Set	1	145	0.3	8
	Tractor/Loader/Backhoe	1	108	0.55	8
	Welder	3	45	0.45	8
Paving	Cement & Motor Mixer	4	10	0.56	6
	Paver	1	100	0.62	7
	Paving Equipment	2	104	0.53	6
	Roller	1	95	0.56	7
	Tractor/Loader/Backhoe	1	108	0.55	7
Phase 1b and 1c					
Site Grading	Grader	1	174	0.61	6
	Rubber Tired Dozer	1	357	0.59	6
	Tractor/Loader/Backhoe	1	108	0.55	7
	Water Truck	1	189	0.5	8
Building Construction	Crane	1	399	0.43	4
	Forklift	2	145	0.3	6
	Tractor/Loader/Backhoe	1	108	0.55	8
Paving	Cement & Motor Mixer	4	10	0.56	6
	Paver	1	100	0.62	7
	Roller	1	95	0.56	7
	Tractor/Loader/Backhoe	1	108	0.55	7
Phase 2a					
Site Grading	Grader	1	174	0.61	6
	Rubber Tired Dozer	1	357	0.59	6
	Tractor/Loader/Backhoe	1	108	0.55	7
	Water Truck	1	189	0.5	8
Building Construction	Crane	1	399	0.43	4
	Forklift	2	145	0.3	6
	Tractor/Loader/Backhoe	1	108	0.55	8
Paving	Cement & Motor Mixer	4	10	0.56	6
	Paver	1	100	0.62	7
	Roller	1	95	0.56	7
	Tractor/Loader/Backhoe	1	108	0.55	7
Phase 2b					
Site Grading	Grader	1	174	0.61	6
	Rubber Tired Dozer	1	357	0.59	6
	Tractor/Loader/Backhoe	1	108	0.55	7
	Water Truck	1	189	0.5	8
Building Construction	Crane	1	399	0.43	6
	Forklift	2	145	0.3	6
	Generator Set	1	145	0.3	6
	Tractor/Loader/Backhoe	1	108	0.55	8
	Welder	3	45	0.45	8

Paving	Cement & Motor Mixer	4	10	0.56	6
	Paver	1	100	0.62	7
	Paving Equipment	2	104	0.53	8
	Roller	1	95	0.56	7
	Tractor/Loader/Backhoe	1	108	0.55	7

Notes
Source: URBEMIS2007; Tirman pers. comm. (B)

Alternative 4

Phase	Equipment	Number	Horsepower	Load Factor	Hours of Operation
Phase 1a					
Site Grading	Grader	1	174	0.61	6
	Rubber Tired Dozer	1	357	0.59	6
	Tractor/Loader/Backhoe	1	108	0.55	7
	Water Truck	1	189	0.5	8

Notes
Source: URBEMIS2007; Tirman pers. comm. (B)

Alternative 5

Phase	Equipment	Number	Horsepower	Load Factor	Hours of Operation
Phase 1a					
Site Grading	Grader	1	174	0.61	6
	Rubber Tired Dozer	1	357	0.59	6
	Tractor/Loader/Backhoe	1	108	0.55	7
	Water Truck	1	189	0.5	8
Building Construction	Crane	1	399	0.43	6
	Forklift	2	145	0.3	6
	Generator Set	1	145	0.3	8
	Tractor/Loader/Backhoe	1	108	0.55	8
	Welder	3	45	0.45	8
Paving	Cement & Motor Mixer	4	10	0.56	6
	Paver	1	100	0.62	7
	Paving Equipment	1	104	0.53	8
	Roller	1	95	0.56	7
	Tractor/Loader/Backhoe	1	108	0.55	7
Phase 1b and 1c					
Site Grading	Grader	1	174	0.61	6
	Rubber Tired Dozer	1	357	0.59	6
	Tractor/Loader/Backhoe	1	108	0.55	7
	Water Truck	1	189	0.5	8
Paving	Cement & Motor Mixer	4	10	0.56	6
	Paver	1	100	0.62	7
	Paving Equipment	2	104	0.53	6
	Roller	1	95	0.56	7
	Tractor/Loader/Backhoe	1	108	0.55	7
Building Construction	Crane	1	399	0.43	6
	Forklift	2	145	0.3	6
	Generator Set	1	145	0.3	8
	Tractor/Loader/Backhoe	1	108	0.55	8
	Welder	3	45	0.45	8

Phase 2a					
Site Grading	Grader	1	174	0.61	6
	Rubber Tired Dozer	1	357	0.59	6
	Tractor/Loader/Backhoe	1	108	0.55	7
	Water Truck	1	189	0.5	8
Building Construction	Crane	1	399	0.43	4
	Forklift	2	145	0.3	6
	Tractor/Loader/Backhoe	1	108	0.55	8
Paving	Cement & Motor Mixer	4	10	0.56	6
	Paver	1	100	0.62	7
	Roller	1	95	0.56	7
	Tractor/Loader/Backhoe	1	108	0.55	7
Phase 2b[1]					
Site Grading	Grader	1	174	0.61	6
	Rubber Tired Dozer	1	357	0.59	6
	Tractor/Loader/Backhoe	1	108	0.55	7
	Water Truck	1	189	0.5	8

Notes
[1] No land to be paved or finished as this phase entails the grading of roadways leading to the 8 residential lots (Appendix A)
Source: URBEMIS2007; Tirman pers. comm. (B)

Alternative 6

Phase	Equipment	Number	Horsepower	Load Factor	Hours of Operation
Phase 1a					
Site Grading	Grader	1	174	0.61	6
	Rubber Tired Dozer	1	357	0.59	6
	Tractor/Loader/Backhoe	1	108	0.55	7
	Water Truck	1	189	0.5	8
Building Construction	Crane	1	399	0.43	6
	Forklift	2	145	0.3	6
	Generator Set	1	145	0.3	8
	Tractor/Loader/Backhoe	1	108	0.55	8
	Welder	3	45	0.45	8
Paving	Cement & Motor Mixer	4	10	0.56	6
	Paver	1	100	0.62	7
	Paving Equipment	1	104	0.53	8
	Roller	1	95	0.56	7
	Tractor/Loader/Backhoe	1	108	0.55	7
Phase 1b and 1c					
Site Grading	Grader	1	174	0.61	6
	Rubber Tired Dozer	1	357	0.59	6
	Tractor/Loader/Backhoe	1	108	0.55	7
	Water Truck	1	189	0.5	8
Paving	Cement & Motor Mixer	4	10	0.56	6
	Paver	1	100	0.62	7
	Paving Equipment	1	104	0.53	8
	Roller	1	95	0.56	7
	Tractor/Loader/Backhoe	1	108	0.55	7
Building Construction	Crane	1	399	0.43	6
	Forklift	2	145	0.3	6

	Generator Set	1	145	0.3	8
	Tractor/Loader/Backhoe	1	108	0.55	8
	Welder	3	45	0.45	8
Phase 2a					
Site Grading	Grader	1	174	0.61	6
	Rubber Tired Dozer	1	357	0.59	6
	Tractor/Loader/Backhoe	1	108	0.55	7
	Water Truck	1	189	0.5	8
Building Construction	Crane	1	399	0.43	4
	Forklift	2	145	0.3	6
	Tractor/Loader/Backhoe	1	108	0.55	8
Paving	Cement & Motor Mixer	4	10	0.56	6
	Paver	1	100	0.62	7
	Roller	1	95	0.56	7
	Tractor/Loader/Backhoe	1	108	0.55	7
Phase 2b					
Site Grading	Grader	1	174	0.61	6
	Rubber Tired Dozer	1	357	0.59	6
	Tractor/Loader/Backhoe	1	108	0.55	7
	Water Truck	1	189	0.5	8
Building Construction	Crane	1	399	0.43	4
	Forklift	2	145	0.3	6
	Tractor/Loader/Backhoe	1	108	0.55	8
Paving	Cement & Motor Mixer	4	10	0.56	6
	Paver	1	100	0.62	7
	Roller	1	95	0.56	7
	Tractor/Loader/Backhoe	1	108	0.55	7

Notes
Source: URBEMIS2007

Alternative 1					
Phase	**Land Under Construction**	**Total Acres Distrubed[1]**	**Maximum Daily Acreage Disturbed[2]**	**Total Cut/Fill Material[3]**	**Time Frame**
Phase 1a					
Site Grading		14.1	3.52	159, 200 CY (1,040 CY per day)	May 15, 2011-October 15, 2011
Building Construction	48,000 sf Lodge[4] 135 Hotel Units[5] 13 Workforce Apartments 30,000 sf Skier Services 25,000 sf Commercial 1 acre parking structure Water tanks (56,000 sf) 30 Penthouse condos				October 16, 2011- December 21, 2013
Paving					November 21, 2013-Decebmer 21, 2013
Exterior Coatings					August 10, 2013-December 21, 2013
Phase 1b and 1c					
Site Grading		3.5	0.88	2,000 CY (22 CY per day)	May 15, 2014-August 15, 2014
Building Construction	56 Residences/Condos [6]				August 16, 2014- December 21, 2016
Paving					November 21, 2016-Decebmer 21, 2016
Exterior Coatings					August 10, 2016-December 21, 2016
Phase 2a					
Site Grading		3.21	0.8	28,000 CY (304 CY per day)	May 15, 2017-August 15, 2017
Building Construction	South Residential Building [7] 2,000 sf Skier Services				August 16, 2017- December 21, 2018
Paving					November 21, 2018-Decebmer 21, 2018
Exterior Coatings					August 10, 2018-December 21, 2018
Phase 2b					
Site Grading		4.06	1.02	14,500 CY (157 CY per day)	May 15, 2019-August 15, 2019
Building Construction	North Residential Building[8] 16 Townhomes				August 16, 2019- December 21, 2020
Paving					November 21, 2020-Decebmer 21, 2020
Exterior Coatings					August 10, 2020-December 21, 2020

Notes
[1] URBEMIS default value based on land-use inputs
[2] URBEMIS default value unless otherwise noted
[3] Statistics provided by JMA Ventures, LLC
[4] Includes mid-mountain lodge (15,000 sf), gondola terminal (18,000 sf) and maintenance facility (15,000 sf)
[5] Includes 75 hotel rooms and 60 condo/hotel units
[6] Includes 36 residential condos and 20 fractional condos
[7] Includes 50 residential condo units
[8] Includes 49 residential condo units
Source: URBEMIS2007; Tirman pers. comm (B)

Alternative 3					
Phase	**Land Under Construction**	**Total Acres Distrubed[1]**	**Maximum Daily Acreage Disturbed[2]**	**Total Cut/Fill Material[3]**	**Time Frame**
Phase 1a					
Site Grading		14.1	3.52	300,000 CY (3,297 CY per day)	May 15, 2011-August 15, 2011
Building Construction	48,000 sf Lodge[4] 135 Hotel Units[5] 13 Workforce Apartments 30,000 sf Skier Services 25,000 sf Commercial 1 acre parking structure Water tanks (56,000 sf) 30 Penthouse condos				August 16, 2011- December 21, 2013
Paving					November 21, 2013-Decebmer 21, 2013
Exterior Coatings					August 10, 2013-December 21, 2013
Phase 1b and 1c					
Site Grading		3.5	0.88	2,200 CY (24 CY per day)	May 15, 2014-August 15, 2014
Building Construction	56 Residences/Condos [6]				August 16, 2014- December 21, 2016
Paving					November 21, 2016-Decebmer 21, 2016
Exterior Coatings					August 10, 2016-December 21, 2016
Phase 2a					
Site Grading		3.21	0.8	35,000 CY (385 CY per day)	May 15, 2017-August 15, 2017
Building Construction	South Residential Building [7] 2,000 sf Skier Services				August 16, 2017- December 21, 2018
Paving					November 21, 2018-Decebmer 21, 2018
Exterior Coatings					August 10, 2018-December 21, 2018
Phase 2b					
Site Grading		4.06	1.02	18,000 CY (198 CY per day)	May 15, 2019-August 15, 2019
Building Construction	North Residential Building[8] 16 Townhomes				August 16, 2019- December 21, 2020
Paving					November 21, 2020-Decebmer 21, 2020
Exterior Coatings					August 10, 2020-December 21, 2020

Notes
[1] URBEMIS default value based on land-use inputs
[2] URBEMIS default value unless otherwise noted
[3] Statistics provided by JMA Ventures, LLC
[4] Includes mid-mountain lodge (15,000 sf), gondola terminal (18,000 sf) and maintenance facility (15,000 sf)
[5] Includes 75 hotel rooms and 60 condo/hotel units
[6] Includes 36 residential condos and 20 fractional condos
[7] Includes 50 residential condo units
[8] Includes 49 residential condo units
Source: URBEMIS2007; Tirman pers. comm (B)

Alternative 4					
Phase	Land Under Construction	Total Acres Distrubed[1]	Maximum Daily Acreage Disturbed[1]	Total Cut/Fill Material	Time Frame
Phase 1					
Site Grading	16 Residential Lots	5.17	1.3	N/A	May 15, 2011- October 15, 2011

Notes
[1] Assumes that 225,00 sf will be graded for the roadways leading to the lots. No re-grading is assumed for the commercial lot as it would be sold in its current form
[2] Assumes that 0.25% of the total acres distrubed will be disturbed daily
Source: URBEMIS2007; Tirman pers. comm (B)

Alternative 5					
Phase	Land Under Construction	Total Acres Distrubed[1]	Maximum Daily Acreage Disturbed[2]	Total Cut/Fill Material[3]	Time Frame
Phase 1a					
Site Grading		9.73	2.43	249,000 CY (2,736 CY per day)	May 15, 2011-August 15, 2011
Building Construction	48,000 sf Lodge[4] 75 Hotel Units 12 Workforce apartments 30,000 sf Skier Services 25,000 sf Commercial 0.7 acre parking structure Water tanks (56,000 sf)				August 16, 2011- December 21, 2013
Paving					November 21, 2013-Decebmer 21, 2013
Exterior Coatings					August 10, 2013-December 21, 2013
Phase 1b and 1c					
Site Grading		14.06	3.52	2,100 CY (24 CY per day)	May 15, 2014-August 15, 2014
Building Construction	225 Residential Condos				August 16, 2014- December 21, 2016
Paving					November 21, 2016-Decebmer 21, 2016
Exterior Coatings					August 10, 2016-December 21, 2016
Phase 2a					
Site Grading	8 Residential Lots	0.64 (5)	0.16	N/A	May 15, 2017-August 15, 2017
Building Construction	2,000 sf Skier Services				August 16, 2017- December 21, 2018
Paving					November 21, 2018-Decebmer 21, 2018
Exterior Coatings					August 10, 2018-December 21, 2018
Phase 2b					
Site Grading	8 Residential Lots	0.55 (5)	0.14	N/A	May 15, 2019-August 15, 2019

Notes
[1] URBEMIS default value based on land-use inputs
[2] URBEMIS default value unless otherwise noted
[3] Statistics provided by JMA Ventures, LLC
[4] Includes mid-mountain lodge (15,000 sf), gondola terminal (18,000 sf) and maintenance facility (15,000 sf)
[5] Assumes 12,000 sf will be graded for the roadways leading to the lots.
Source: URBEMIS2007; Tirman pers. comm (B)

Alternative 6					
Phase	Land Under Construction	Total Acres Distrubed[1]	Maximum Daily Acreage Disturbed[2]	Total Cut/Fill Material[3]	Time Frame
Phase 1a					
Site Grading		10.48	2.62	249,000 CY (2,736 CY per day)	May 15, 2011-August 15, 2011
Building Construction	48,000 sf Lodge[4] 75 Hotel Units[5] 12 Workforce apartments 20,000 sf Skier Services 25,000 sf Commercial 0.7 acre parking structure Water tanks (56,000 sf)				August 16, 2011- December 21, 2013
Paving					November 21, 2013-Decebmer 21, 2013
Exterior Coatings					August 10, 2013-December 21, 2013
Phase 1b and 1c					
Site Grading		9.06	2.26	2,100 CY (24 CY per day)	May 15, 2014-August 15, 2014
Building Construction	145 Residential Condos				August 16, 2014- December 21, 2016
Paving					November 21, 2016-Decebmer 21, 2016
Exterior Coatings					August 10, 2016-December 21, 2016
Phase 2a					
Site Grading	7 Residential Lots	0.64 (6)	0.16	N/A	May 15, 2017-August 15, 2017
Building Construction	2,000 sf Skier Services				August 16, 2017- December 21, 2018
Paving					November 21, 2018-Decebmer 21, 2018
Exterior Coatings					August 10, 2018-December 21, 2018
Phase 2b					
Site Grading	7 Residential Lots				May 15, 2019-August 15, 2019
Building Construction	Residential Building[7]	3.67 (6)	0.92	10,000 CY (109 CY per day)	August 16, 2019- December 21, 2020
Paving					November 21, 2020-Decebmer 21, 2020
Exterior Coatings					August 10, 2020-December 21, 2020

Notes
[1] URBEMIS default value based on land-use inputs
[2] URBEMIS default value unless otherwise noted
[3] Statistics provided by JMA Ventures, LLC
[4] Includes mid-mountain lodge (15,000 sf), gondola terminal (18,000 sf) and maintenance facility (15,000 sf)
[5] Includes 50 hotel rooms and 25 condo/hotel units
[6] Assumes 12,000 sf will be graded for the roadways leading to the lots.
[7] Includes 50 residential condo units
Source: URBEMIS2007; Tirman pers. comm (B)

Construction Outputs by Year

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 1 Phase 1.urb924

Project Name: Alternative 1 Construction Phase 1a

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	4.97	23.54	46.47	0.03	367.37	1.34	368.55	76.72	1.23	77.80	4,422.01
2012 TOTALS (lbs/day unmitigated)	4.59	20.26	43.57	0.03	0.13	1.22	1.35	0.05	1.12	1.16	4,423.31
2013 TOTALS (lbs/day unmitigated)	73.75	35.39	55.34	0.03	0.15	2.45	2.60	0.05	2.24	2.30	6,342.48

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/16/2011-8/15/2011 Active Days: 66	2.89	23.54	13.60	0.00	**367.37**	1.17	**368.55**	**76.72**	1.08	**77.80**	2,349.16
Fine Grading 05/15/2011-08/15/2011	2.89	23.54	13.60	0.00	367.37	1.17	368.55	76.72	1.08	77.80	2,349.16
Fine Grading Dust	0.00	0.00	0.00	0.00	367.37	0.00	367.37	76.72	0.00	76.72	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.06	0.10	1.65	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.85
Time Slice 8/16/2011-12/30/2011 Active Days: 99	4.97	21.69	46.47	0.03	0.13	1.34	1.47	0.05	1.23	1.27	4,422.01
Building 08/16/2011-12/21/2013	4.97	21.69	46.47	0.03	0.13	1.34	1.47	0.05	1.23	1.27	4,422.01
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.34	4.06	3.67	0.01	0.03	0.15	0.18	0.01	0.14	0.15	822.81
Building Worker Trips	1.24	1.96	31.95	0.02	0.10	0.06	0.15	0.04	0.05	0.08	1,978.00
Time Slice 1/2/2012-12/31/2012 Active Days: 261	4.59	20.26	43.57	0.03	0.13	1.22	1.35	0.05	1.12	1.16	4,423.31
Building 08/16/2011-12/21/2013	4.59	20.26	43.57	0.03	0.13	1.22	1.35	0.05	1.12	1.16	4,423.31
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.31	3.63	3.39	0.01	0.03	0.13	0.16	0.01	0.12	0.13	822.95
Building Worker Trips	1.14	1.81	29.66	0.02	0.10	0.05	0.15	0.04	0.04	0.08	1,979.17
Time Slice 1/1/2013-8/9/2013 Active Days: 159	4.21	18.79	40.75	0.03	0.13	1.10	1.23	0.05	1.01	1.05	4,424.62
Building 08/16/2011-12/21/2013	4.21	18.79	40.75	0.03	0.13	1.10	1.23	0.05	1.01	1.05	4,424.62
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.29	3.21	3.13	0.01	0.03	0.12	0.15	0.01	0.11	0.12	823.08
Building Worker Trips	1.04	1.67	27.42	0.02	0.10	0.05	0.15	0.04	0.04	0.08	1,980.35

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Time Slice 8/12/2013-11/20/2013 Active Days: 73	70.66	18.86	41.85	0.03	0.13	1.10	1.24	0.05	1.01	1.06	4,503.65
Building 08/16/2011-12/21/2013	4.21	18.79	40.75	0.03	0.13	1.10	1.23	0.05	1.01	1.05	4,424.62
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.29	3.21	3.13	0.01	0.03	0.12	0.15	0.01	0.11	0.12	823.08
Building Worker Trips	1.04	1.67	27.42	0.02	0.10	0.05	0.15	0.04	0.04	0.08	1,980.35
Coating 08/10/2013-12/21/2013	66.45	0.07	1.09	0.00	0.00	0.00	0.01	0.00	0.00	0.00	79.03
Architectural Coating	66.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.09	0.00	0.00	0.00	0.01	0.00	0.00	0.00	79.03
Time Slice 11/21/2013-12/20/2013 Active Days: 22	**73.75**	**35.39**	**55.34**	**0.03**	0.15	**2.45**	2.60	0.05	**2.24**	2.30	**6,342.48**
Asphalt 11/21/2013-12/21/2013	3.09	16.54	13.49	0.00	0.02	1.34	1.36	0.01	1.23	1.24	1,838.83
Paving Off-Gas	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.36	9.98	0.00	0.00	1.30	1.30	0.00	1.20	1.20	1,418.44
Paving On Road Diesel	0.07	0.98	0.34	0.00	0.01	0.04	0.04	0.00	0.03	0.04	190.96
Paving Worker Trips	0.12	0.19	3.18	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.43
Building 08/16/2011-12/21/2013	4.21	18.79	40.75	0.03	0.13	1.10	1.23	0.05	1.01	1.05	4,424.62
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.29	3.21	3.13	0.01	0.03	0.12	0.15	0.01	0.11	0.12	823.08
Building Worker Trips	1.04	1.67	27.42	0.02	0.10	0.05	0.15	0.04	0.04	0.08	1,980.35
Coating 08/10/2013-12/21/2013	66.45	0.07	1.09	0.00	0.00	0.00	0.01	0.00	0.00	0.00	79.03
Architectural Coating	66.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.09	0.00	0.00	0.00	0.01	0.00	0.00	0.00	79.03

Phase Assumptions

Phase: Fine Grading 5/15/2011 - 8/15/2011 - Default Fine Site Grading Description

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Total Acres Disturbed: 14.1

Maximum Daily Acreage Disturbed: 3.52

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2815 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2013 - 12/21/2013 - Default Paving Description

Acres to be Paved: 3.52

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2011 - 12/21/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2013 - 12/21/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 1 Phase 1b.urb924

Project Name: Alternative 1 Construction Phase 1b and 1c

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2014 TOTALS (lbs/day unmitigated)	2.46	19.16	12.04	0.01	11.40	0.89	12.29	2.38	0.82	3.20	2,349.34
2015 TOTALS (lbs/day unmitigated)	1.06	6.98	9.80	0.01	0.03	0.38	0.41	0.01	0.35	0.36	1,512.50
2016 TOTALS (lbs/day unmitigated)	16.83	14.92	18.10	0.01	0.04	0.96	1.00	0.01	0.88	0.90	2,733.40

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/15/2014-8/15/2014 Active Days: 67	2.46	**19.16**	12.04	0.00	**11.40**	0.89	**12.29**	**2.38**	0.82	**3.20**	2,349.34
Fine Grading 05/15/2014-08/15/2014	2.46	19.16	12.04	0.00	11.40	0.89	12.29	2.38	0.82	3.20	2,349.34
Fine Grading Dust	0.00	0.00	0.00	0.00	11.40	0.00	11.40	2.38	0.00	2.38	0.00
Fine Grading Off Road Diesel	2.41	19.08	10.74	0.00	0.00	0.89	0.89	0.00	0.82	0.82	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.30	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.03
Time Slice 8/18/2014-12/31/2014 Active Days: 98	1.15	7.72	10.37	0.01	0.03	0.41	0.43	0.01	0.37	0.38	1,512.26
Building 08/16/2014-12/21/2016	1.15	7.72	10.37	0.01	0.03	0.41	0.43	0.01	0.37	0.38	1,512.26
Building Off Road Diesel	0.88	6.70	4.39	0.00	0.00	0.37	0.37	0.00	0.34	0.34	893.39
Building Vendor Trips	0.07	0.71	0.73	0.00	0.01	0.03	0.03	0.00	0.02	0.03	207.51
Building Worker Trips	0.20	0.32	5.25	0.00	0.02	0.01	0.03	0.01	0.01	0.02	411.37
Time Slice 1/1/2015-12/31/2015 Active Days: 261	1.06	6.98	9.80	0.01	0.03	0.38	0.41	0.01	0.35	0.36	1,512.50
Building 08/16/2014-12/21/2016	1.06	6.98	9.80	0.01	0.03	0.38	0.41	0.01	0.35	0.36	1,512.50
Building Off Road Diesel	0.83	6.06	4.31	0.00	0.00	0.35	0.35	0.00	0.32	0.32	893.39
Building Vendor Trips	0.06	0.62	0.67	0.00	0.01	0.02	0.03	0.00	0.02	0.02	207.53
Building Worker Trips	0.18	0.29	4.82	0.00	0.02	0.01	0.03	0.01	0.01	0.02	411.58
Time Slice 1/1/2016-8/9/2016 Active Days: 158	0.98	6.31	9.30	0.01	0.03	0.32	0.35	0.01	0.29	0.30	1,512.70
Building 08/16/2014-12/21/2016	0.98	6.31	9.30	0.01	0.03	0.32	0.35	0.01	0.29	0.30	1,512.70
Building Off Road Diesel	0.77	5.49	4.26	0.00	0.00	0.29	0.29	0.00	0.27	0.27	893.39
Building Vendor Trips	0.05	0.54	0.62	0.00	0.01	0.02	0.03	0.00	0.02	0.02	207.55
Building Worker Trips	0.16	0.27	4.42	0.00	0.02	0.01	0.03	0.01	0.01	0.02	411.76

11/20/2009 2:38:14 PM

Time Slice 8/10/2016-11/18/2016 Active Days: 73	15.33	6.32	9.48	0.01	0.03	0.32	0.35	0.01	0.29	0.30	1,529.79
Building 08/16/2014-12/21/2016	0.98	6.31	9.30	0.01	0.03	0.32	0.35	0.01	0.29	0.30	1,512.70
Building Off Road Diesel	0.77	5.49	4.26	0.00	0.00	0.29	0.29	0.00	0.27	0.27	893.39
Building Vendor Trips	0.05	0.54	0.62	0.00	0.01	0.02	0.03	0.00	0.02	0.02	207.55
Building Worker Trips	0.16	0.27	4.42	0.00	0.02	0.01	0.03	0.01	0.01	0.02	411.76
Coating 08/10/2016-12/21/2016	14.35	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.09
Architectural Coating	14.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.09
Time Slice 11/21/2016-12/21/2016 Active Days: 23	**16.83**	14.92	**18.10**	**0.01**	0.04	**0.96**	1.00	0.01	**0.88**	0.90	**2,733.40**
Asphalt 11/21/2016-12/21/2016	1.50	8.60	8.62	0.00	0.01	0.64	0.65	0.00	0.59	0.59	1,203.61
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.32	8.33	6.64	0.00	0.00	0.63	0.63	0.00	0.58	0.58	979.23
Paving On Road Diesel	0.01	0.16	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	45.66
Paving Worker Trips	0.07	0.12	1.92	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.72
Building 08/16/2014-12/21/2016	0.98	6.31	9.30	0.01	0.03	0.32	0.35	0.01	0.29	0.30	1,512.70
Building Off Road Diesel	0.77	5.49	4.26	0.00	0.00	0.29	0.29	0.00	0.27	0.27	893.39
Building Vendor Trips	0.05	0.54	0.62	0.00	0.01	0.02	0.03	0.00	0.02	0.02	207.55
Building Worker Trips	0.16	0.27	4.42	0.00	0.02	0.01	0.03	0.01	0.01	0.02	411.76
Coating 08/10/2016-12/21/2016	14.35	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.09
Architectural Coating	14.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.09

Phase Assumptions

Phase: Fine Grading 5/15/2014 - 8/15/2014 - Default Fine Site Grading Description

11/20/2009 2:38:14 PM

Total Acres Disturbed: 3.5

Maximum Daily Acreage Disturbed: 0.88

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 22 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2016 - 12/21/2016 - Default Paving Description

Acres to be Paved: 0.88

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2014 - 12/21/2016 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2016 - 12/21/2016 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

1/19/2011 5:04:00 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 1 Phase 2a.urb924

Project Name: Alternative 1 Phase 2a

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2017 TOTALS (lbs/day unmitigated)	2.06	14.75	10.81	0.01	43.88	0.68	44.56	9.16	0.62	9.79	2,349.48
2018 TOTALS (lbs/day unmitigated)	15.39	12.57	16.44	0.01	0.04	0.78	0.82	0.01	0.71	0.73	2,678.38

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/15/2017-8/15/2017 Active Days: 67	2.06	**14.75**	10.81	0.00	43.88	0.68	44.56	9.16	0.62	9.79	2,349.48
Fine Grading 05/15/2017-08/15/2017	2.06	14.75	10.81	0.00	43.88	0.68	44.56	9.16	0.62	9.79	2,349.48
Fine Grading Dust	0.00	0.00	0.00	0.00	43.87	0.00	43.87	9.16	0.00	9.16	0.00
Fine Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.06	1.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.17
Time Slice 8/16/2017-12/29/2017 Active Days: 98	0.89	5.63	8.48	0.01	0.03	0.28	0.31	0.01	0.26	0.27	1,462.82
Building 08/16/2017-12/21/2018	0.89	5.63	8.48	0.01	0.03	0.28	0.31	0.01	0.26	0.27	1,462.82
Building Off Road Diesel	0.71	4.97	4.22	0.00	0.00	0.26	0.26	0.00	0.24	0.24	893.39
Building Vendor Trips	0.04	0.44	0.52	0.00	0.01	0.02	0.02	0.00	0.02	0.02	188.56
Building Worker Trips	0.14	0.23	3.75	0.00	0.02	0.01	0.03	0.01	0.01	0.01	380.88
Time Slice 1/1/2018-8/9/2018 Active Days: 159	0.82	5.06	8.07	0.01	0.03	0.25	0.27	0.01	0.23	0.23	1,462.98
Building 08/16/2017-12/21/2018	0.82	5.06	8.07	0.01	0.03	0.25	0.27	0.01	0.23	0.23	1,462.98
Building Off Road Diesel	0.65	4.47	4.16	0.00	0.00	0.22	0.22	0.00	0.20	0.20	893.39
Building Vendor Trips	0.04	0.39	0.48	0.00	0.01	0.01	0.02	0.00	0.01	0.02	188.57
Building Worker Trips	0.12	0.20	3.43	0.00	0.02	0.01	0.03	0.01	0.01	0.01	381.02

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Time Slice 8/10/2018-11/20/2018 Active Days: 73	14.07	5.07	8.21	0.01	0.03	0.25	0.27	0.01	0.23	0.23	1,478.78
Building 08/16/2017-12/21/2018	0.82	5.06	8.07	0.01	0.03	0.25	0.27	0.01	0.23	0.23	1,462.98
Building Off Road Diesel	0.65	4.47	4.16	0.00	0.00	0.22	0.22	0.00	0.20	0.20	893.39
Building Vendor Trips	0.04	0.39	0.48	0.00	0.01	0.01	0.02	0.00	0.01	0.02	188.57
Building Worker Trips	0.12	0.20	3.43	0.00	0.02	0.01	0.03	0.01	0.01	0.01	381.02
Coating 08/10/2018-12/21/2018	13.25	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.80
Architectural Coating	13.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.80
Time Slice 11/21/2018-12/21/2018 Active Days: 23	**15.39**	12.57	**16.44**	**0.01**	0.04	**0.78**	0.82	0.01	**0.71**	0.73	**2,678.38**
Asphalt 11/21/2018-12/21/2018	1.32	7.50	8.23	0.00	0.01	0.53	0.54	0.00	0.49	0.49	1,199.60
Paving Off-Gas	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.16	7.29	6.58	0.00	0.00	0.52	0.52	0.00	0.48	0.48	979.23
Paving On Road Diesel	0.01	0.11	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	41.51
Paving Worker Trips	0.06	0.10	1.61	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.86
Building 08/16/2017-12/21/2018	0.82	5.06	8.07	0.01	0.03	0.25	0.27	0.01	0.23	0.23	1,462.98
Building Off Road Diesel	0.65	4.47	4.16	0.00	0.00	0.22	0.22	0.00	0.20	0.20	893.39
Building Vendor Trips	0.04	0.39	0.48	0.00	0.01	0.01	0.02	0.00	0.01	0.02	188.57
Building Worker Trips	0.12	0.20	3.43	0.00	0.02	0.01	0.03	0.01	0.01	0.01	381.02
Coating 08/10/2018-12/21/2018	13.25	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.80
Architectural Coating	13.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.80

Phase Assumptions

Phase: Fine Grading 5/15/2017 - 8/15/2017 - Default Fine Site Grading Description

1/19/2011 5:04:00 PM

Total Acres Disturbed: 3.21

Maximum Daily Acreage Disturbed: 0.8

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 304 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2018 - 12/21/2018 - Type Your Description Here

Acres to be Paved: 0.8

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2017 - 12/21/2018 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2018 - 12/21/2018 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

1/19/2011 5:06:24 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 1 Phase 2b.urb924

Project Name: Alternative 1 Phase 2b

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2019 TOTALS (lbs/day unmitigated)	1.81	12.29	13.36	0.01	28.73	0.54	29.27	6.00	0.50	6.50	2,349.56
2020 TOTALS (lbs/day unmitigated)	19.85	17.89	23.06	0.01	0.05	1.05	1.09	0.02	0.96	0.98	3,892.67

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/15/2019-8/15/2019 Active Days: 67	1.79	12.29	10.19	0.00	**28.73**	0.54	**29.27**	**6.00**	0.50	**6.50**	2,349.56
Fine Grading 05/15/2019-08/15/2019	1.79	12.29	10.19	0.00	28.73	0.54	29.27	6.00	0.50	6.50	2,349.56
Fine Grading Dust	0.00	0.00	0.00	0.00	28.73	0.00	28.73	6.00	0.00	6.00	0.00
Fine Grading Off Road Diesel	1.76	12.24	9.35	0.00	0.00	0.54	0.54	0.00	0.50	0.50	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.84	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.25
Time Slice 8/16/2019-12/31/2019 Active Days: 98	1.81	9.64	13.36	0.01	0.03	0.48	0.51	0.01	0.44	0.45	2,340.66
Building 08/16/2019-12/21/2020	1.81	9.64	13.36	0.01	0.03	0.48	0.51	0.01	0.44	0.45	2,340.66
Building Off Road Diesel	1.62	8.96	8.86	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.05	0.45	0.57	0.00	0.01	0.02	0.03	0.00	0.02	0.02	240.95
Building Worker Trips	0.14	0.23	3.92	0.00	0.02	0.01	0.04	0.01	0.01	0.02	478.51
Time Slice 1/1/2020-8/7/2020 Active Days: 158	1.63	8.97	12.81	0.01	0.03	0.42	0.45	0.01	0.39	0.40	2,340.86
Building 08/16/2019-12/21/2020	1.63	8.97	12.81	0.01	0.03	0.42	0.45	0.01	0.39	0.40	2,340.86
Building Off Road Diesel	1.46	8.36	8.72	0.00	0.00	0.39	0.39	0.00	0.36	0.36	1,621.20
Building Vendor Trips	0.05	0.40	0.54	0.00	0.01	0.02	0.02	0.00	0.01	0.02	240.96
Building Worker Trips	0.12	0.21	3.55	0.00	0.02	0.01	0.04	0.01	0.01	0.02	478.70

1/19/2011 5:06:24 PM

Time Slice 8/10/2020-11/20/2020 Active Days: 75	18.28	8.98	12.95	0.01	0.03	0.42	0.46	0.01	0.39	0.40	2,360.73
Building 08/16/2019-12/21/2020	1.63	8.97	12.81	0.01	0.03	0.42	0.45	0.01	0.39	0.40	2,340.86
Building Off Road Diesel	1.46	8.36	8.72	0.00	0.00	0.39	0.39	0.00	0.36	0.36	1,621.20
Building Vendor Trips	0.05	0.40	0.54	0.00	0.01	0.02	0.02	0.00	0.01	0.02	240.96
Building Worker Trips	0.12	0.21	3.55	0.00	0.02	0.01	0.04	0.01	0.01	0.02	478.70
Coating 08/10/2020-12/21/2020	16.65	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.87
Architectural Coating	16.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.87
Time Slice 11/23/2020-12/21/2020 Active Days: 21	**19.85**	**17.89**	**23.06**	**0.01**	0.05	**1.05**	1.09	0.02	**0.96**	0.98	**3,892.67**
Asphalt 11/21/2020-12/21/2020	1.57	8.91	10.10	0.00	0.01	0.63	0.64	0.00	0.58	0.58	1,531.95
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.38	8.70	8.54	0.00	0.00	0.62	0.62	0.00	0.57	0.57	1,272.04
Paving On Road Diesel	0.01	0.12	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	55.34
Paving Worker Trips	0.05	0.09	1.52	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.57
Building 08/16/2019-12/21/2020	1.63	8.97	12.81	0.01	0.03	0.42	0.45	0.01	0.39	0.40	2,340.86
Building Off Road Diesel	1.46	8.36	8.72	0.00	0.00	0.39	0.39	0.00	0.36	0.36	1,621.20
Building Vendor Trips	0.05	0.40	0.54	0.00	0.01	0.02	0.02	0.00	0.01	0.02	240.96
Building Worker Trips	0.12	0.21	3.55	0.00	0.02	0.01	0.04	0.01	0.01	0.02	478.70
Coating 08/10/2020-12/21/2020	16.65	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.87
Architectural Coating	16.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.87

Phase Assumptions

Phase: Fine Grading 5/15/2019 - 8/15/2019 - Default Fine Site Grading Description

1/19/2011 5:06:24 PM

Total Acres Disturbed: 4.06

Maximum Daily Acreage Disturbed: 1.02

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 157 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2020 - 12/21/2020 - Type Your Description Here

Acres to be Paved: 1.02

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2019 - 12/21/2020 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2020 - 12/21/2020 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

1/19/2011 5:06:24 PM

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

11/20/2009 3:07:52 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 3 Phase 1.urb924

Project Name: Alternative 3 Construction Phase 1a

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	4.97	23.54	46.47	0.03	424.25	1.34	425.43	88.60	1.23	89.68	4,422.01
2012 TOTALS (lbs/day unmitigated)	4.59	20.26	43.57	0.03	0.13	1.22	1.35	0.05	1.12	1.16	4,423.31
2013 TOTALS (lbs/day unmitigated)	73.75	35.39	55.34	0.03	0.15	2.45	2.60	0.05	2.24	2.30	6,342.48

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/16/2011-8/15/2011 Active Days: 66	2.89	23.54	13.60	0.00	**424.25**	1.17	**425.43**	**88.60**	1.08	**89.68**	2,349.16
Fine Grading 05/15/2011-08/15/2011	2.89	23.54	13.60	0.00	424.25	1.17	425.43	88.60	1.08	89.68	2,349.16
Fine Grading Dust	0.00	0.00	0.00	0.00	424.25	0.00	424.25	88.60	0.00	88.60	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.06	0.10	1.65	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.85
Time Slice 8/16/2011-12/30/2011 Active Days: 99	4.97	21.69	46.47	0.03	0.13	1.34	1.47	0.05	1.23	1.27	4,422.01
Building 08/16/2011-12/21/2013	4.97	21.69	46.47	0.03	0.13	1.34	1.47	0.05	1.23	1.27	4,422.01
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.34	4.06	3.67	0.01	0.03	0.15	0.18	0.01	0.14	0.15	822.81
Building Worker Trips	1.24	1.96	31.95	0.02	0.10	0.06	0.15	0.04	0.05	0.08	1,978.00
Time Slice 1/2/2012-12/31/2012 Active Days: 261	4.59	20.26	43.57	0.03	0.13	1.22	1.35	0.05	1.12	1.16	4,423.31
Building 08/16/2011-12/21/2013	4.59	20.26	43.57	0.03	0.13	1.22	1.35	0.05	1.12	1.16	4,423.31
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.31	3.63	3.39	0.01	0.03	0.13	0.16	0.01	0.12	0.13	822.95
Building Worker Trips	1.14	1.81	29.66	0.02	0.10	0.05	0.15	0.04	0.04	0.08	1,979.17
Time Slice 1/1/2013-8/9/2013 Active Days: 159	4.21	18.79	40.75	0.03	0.13	1.10	1.23	0.05	1.01	1.05	4,424.62
Building 08/16/2011-12/21/2013	4.21	18.79	40.75	0.03	0.13	1.10	1.23	0.05	1.01	1.05	4,424.62
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.29	3.21	3.13	0.01	0.03	0.12	0.15	0.01	0.11	0.12	823.08
Building Worker Trips	1.04	1.67	27.42	0.02	0.10	0.05	0.15	0.04	0.04	0.08	1,980.35

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Time Slice 8/12/2013-11/20/2013 Active Days: 73	70.66	18.86	41.85	0.03	0.13	1.10	1.24	0.05	1.01	1.06	4,503.65
Building 08/16/2011-12/21/2013	4.21	18.79	40.75	0.03	0.13	1.10	1.23	0.05	1.01	1.05	4,424.62
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.29	3.21	3.13	0.01	0.03	0.12	0.15	0.01	0.11	0.12	823.08
Building Worker Trips	1.04	1.67	27.42	0.02	0.10	0.05	0.15	0.04	0.04	0.08	1,980.35
Coating 08/10/2013-12/21/2013	66.45	0.07	1.09	0.00	0.00	0.00	0.01	0.00	0.00	0.00	79.03
Architectural Coating	66.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.09	0.00	0.00	0.00	0.01	0.00	0.00	0.00	79.03
Time Slice 11/21/2013-12/20/2013 Active Days: 22	**73.75**	**35.39**	**55.34**	**0.03**	0.15	**2.45**	2.60	0.05	**2.24**	2.30	**6,342.48**
Asphalt 11/21/2013-12/21/2013	3.09	16.54	13.49	0.00	0.02	1.34	1.36	0.01	1.23	1.24	1,838.83
Paving Off-Gas	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.36	9.98	0.00	0.00	1.30	1.30	0.00	1.20	1.20	1,418.44
Paving On Road Diesel	0.07	0.98	0.34	0.00	0.01	0.04	0.04	0.00	0.03	0.04	190.96
Paving Worker Trips	0.12	0.19	3.18	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.43
Building 08/16/2011-12/21/2013	4.21	18.79	40.75	0.03	0.13	1.10	1.23	0.05	1.01	1.05	4,424.62
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.29	3.21	3.13	0.01	0.03	0.12	0.15	0.01	0.11	0.12	823.08
Building Worker Trips	1.04	1.67	27.42	0.02	0.10	0.05	0.15	0.04	0.04	0.08	1,980.35
Coating 08/10/2013-12/21/2013	66.45	0.07	1.09	0.00	0.00	0.00	0.01	0.00	0.00	0.00	79.03
Architectural Coating	66.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.09	0.00	0.00	0.00	0.01	0.00	0.00	0.00	79.03

Phase Assumptions

Phase: Fine Grading 5/15/2011 - 8/15/2011 - Default Fine Site Grading Description

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Total Acres Disturbed: 14.1

Maximum Daily Acreage Disturbed: 3.52

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 3297 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2013 - 12/21/2013 - Default Paving Description

Acres to be Paved: 3.52

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2011 - 12/21/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2013 - 12/21/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 3 Phase 1b.urb924

Project Name: Alternative 3 Construction Phase 1b and 1c

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2014 TOTALS (lbs/day unmitigated)	2.46	19.16	12.04	0.01	11.64	0.89	12.53	2.43	0.82	3.25	2,349.34
2015 TOTALS (lbs/day unmitigated)	1.06	6.98	9.80	0.01	0.03	0.38	0.41	0.01	0.35	0.36	1,512.50
2016 TOTALS (lbs/day unmitigated)	16.83	14.92	18.10	0.01	0.04	0.96	1.00	0.01	0.88	0.90	2,733.40

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/15/2014-8/15/2014 Active Days: 67	2.46	**19.16**	12.04	0.00	**11.64**	0.89	**12.53**	**2.43**	0.82	**3.25**	2,349.34
Fine Grading 05/15/2014-08/15/2014	2.46	19.16	12.04	0.00	11.64	0.89	12.53	2.43	0.82	3.25	2,349.34
Fine Grading Dust	0.00	0.00	0.00	0.00	11.63	0.00	11.63	2.43	0.00	2.43	0.00
Fine Grading Off Road Diesel	2.41	19.08	10.74	0.00	0.00	0.89	0.89	0.00	0.82	0.82	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.30	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.03
Time Slice 8/18/2014-12/31/2014 Active Days: 98	1.15	7.72	10.37	0.01	0.03	0.41	0.43	0.01	0.37	0.38	1,512.26
Building 08/16/2014-12/21/2016	1.15	7.72	10.37	0.01	0.03	0.41	0.43	0.01	0.37	0.38	1,512.26
Building Off Road Diesel	0.88	6.70	4.39	0.00	0.00	0.37	0.37	0.00	0.34	0.34	893.39
Building Vendor Trips	0.07	0.71	0.73	0.00	0.01	0.03	0.03	0.00	0.02	0.03	207.51
Building Worker Trips	0.20	0.32	5.25	0.00	0.02	0.01	0.03	0.01	0.01	0.02	411.37
Time Slice 1/1/2015-12/31/2015 Active Days: 261	1.06	6.98	9.80	0.01	0.03	0.38	0.41	0.01	0.35	0.36	1,512.50
Building 08/16/2014-12/21/2016	1.06	6.98	9.80	0.01	0.03	0.38	0.41	0.01	0.35	0.36	1,512.50
Building Off Road Diesel	0.83	6.06	4.31	0.00	0.00	0.35	0.35	0.00	0.32	0.32	893.39
Building Vendor Trips	0.06	0.62	0.67	0.00	0.01	0.02	0.03	0.00	0.02	0.02	207.53
Building Worker Trips	0.18	0.29	4.82	0.00	0.02	0.01	0.03	0.01	0.01	0.02	411.58
Time Slice 1/1/2016-8/9/2016 Active Days: 158	0.98	6.31	9.30	0.01	0.03	0.32	0.35	0.01	0.29	0.30	1,512.70
Building 08/16/2014-12/21/2016	0.98	6.31	9.30	0.01	0.03	0.32	0.35	0.01	0.29	0.30	1,512.70
Building Off Road Diesel	0.77	5.49	4.26	0.00	0.00	0.29	0.29	0.00	0.27	0.27	893.39
Building Vendor Trips	0.05	0.54	0.62	0.00	0.01	0.02	0.03	0.00	0.02	0.02	207.55
Building Worker Trips	0.16	0.27	4.42	0.00	0.02	0.01	0.03	0.01	0.01	0.02	411.76

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Time Slice 8/10/2016-11/18/2016 Active Days: 73	15.33	6.32	9.48	0.01	0.03	0.32	0.35	0.01	0.29	0.30	1,529.79
Building 08/16/2014-12/21/2016	0.98	6.31	9.30	0.01	0.03	0.32	0.35	0.01	0.29	0.30	1,512.70
Building Off Road Diesel	0.77	5.49	4.26	0.00	0.00	0.29	0.29	0.00	0.27	0.27	893.39
Building Vendor Trips	0.05	0.54	0.62	0.00	0.01	0.02	0.03	0.00	0.02	0.02	207.55
Building Worker Trips	0.16	0.27	4.42	0.00	0.02	0.01	0.03	0.01	0.01	0.02	411.76
Coating 08/10/2016-12/21/2016	14.35	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.09
Architectural Coating	14.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.09
Time Slice 11/21/2016-12/21/2016 Active Days: 23	**16.83**	14.92	**18.10**	**0.01**	0.04	**0.96**	1.00	0.01	**0.88**	0.90	**2,733.40**
Asphalt 11/21/2016-12/21/2016	1.50	8.60	8.62	0.00	0.01	0.64	0.65	0.00	0.59	0.59	1,203.61
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.32	8.33	6.64	0.00	0.00	0.63	0.63	0.00	0.58	0.58	979.23
Paving On Road Diesel	0.01	0.16	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	45.66
Paving Worker Trips	0.07	0.12	1.92	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.72
Building 08/16/2014-12/21/2016	0.98	6.31	9.30	0.01	0.03	0.32	0.35	0.01	0.29	0.30	1,512.70
Building Off Road Diesel	0.77	5.49	4.26	0.00	0.00	0.29	0.29	0.00	0.27	0.27	893.39
Building Vendor Trips	0.05	0.54	0.62	0.00	0.01	0.02	0.03	0.00	0.02	0.02	207.55
Building Worker Trips	0.16	0.27	4.42	0.00	0.02	0.01	0.03	0.01	0.01	0.02	411.76
Coating 08/10/2016-12/21/2016	14.35	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.09
Architectural Coating	14.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.09

Phase Assumptions

Phase: Fine Grading 5/15/2014 - 8/15/2014 - Default Fine Site Grading Description

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Total Acres Disturbed: 3.5

Maximum Daily Acreage Disturbed: 0.88

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 24 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2016 - 12/21/2016 - Default Paving Description

Acres to be Paved: 0.88

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2014 - 12/21/2016 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2016 - 12/21/2016 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 3 Phase 2a.urb924

Project Name: Alternative 3 Phase 2a

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2017 TOTALS (lbs/day unmitigated)	2.06	14.75	10.81	0.01	53.43	0.68	54.11	11.16	0.62	11.78	2,349.48
2018 TOTALS (lbs/day unmitigated)	15.39	12.57	16.44	0.01	0.04	0.78	0.82	0.01	0.71	0.73	2,678.38

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/15/2017-8/15/2017 Active Days: 67	2.06	**14.75**	10.81	0.00	**53.43**	0.68	**54.11**	**11.16**	0.62	**11.78**	2,349.48
Fine Grading 05/15/2017-08/15/2017	2.06	14.75	10.81	0.00	53.43	0.68	54.11	11.16	0.62	11.78	2,349.48
Fine Grading Dust	0.00	0.00	0.00	0.00	53.43	0.00	53.43	11.16	0.00	11.16	0.00
Fine Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.06	1.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.17
Time Slice 8/16/2017-12/29/2017 Active Days: 98	0.89	5.63	8.48	0.01	0.03	0.28	0.31	0.01	0.26	0.27	1,462.82
Building 08/16/2017-12/21/2018	0.89	5.63	8.48	0.01	0.03	0.28	0.31	0.01	0.26	0.27	1,462.82
Building Off Road Diesel	0.71	4.97	4.22	0.00	0.00	0.26	0.26	0.00	0.24	0.24	893.39
Building Vendor Trips	0.04	0.44	0.52	0.00	0.01	0.02	0.02	0.00	0.02	0.02	188.56
Building Worker Trips	0.14	0.23	3.75	0.00	0.02	0.01	0.03	0.01	0.01	0.01	380.88
Time Slice 1/1/2018-8/9/2018 Active Days: 159	0.82	5.06	8.07	0.01	0.03	0.25	0.27	0.01	0.23	0.23	1,462.98
Building 08/16/2017-12/21/2018	0.82	5.06	8.07	0.01	0.03	0.25	0.27	0.01	0.23	0.23	1,462.98
Building Off Road Diesel	0.65	4.47	4.16	0.00	0.00	0.22	0.22	0.00	0.20	0.20	893.39
Building Vendor Trips	0.04	0.39	0.48	0.00	0.01	0.01	0.02	0.00	0.01	0.02	188.57
Building Worker Trips	0.12	0.20	3.43	0.00	0.02	0.01	0.03	0.01	0.01	0.01	381.02

11/20/2009 3:08:52 PM

Time Slice 8/10/2018-11/20/2018 Active Days: 73	14.07	5.07	8.21	0.01	0.03	0.25	0.27	0.01	0.23	0.23	1,478.78
Building 08/16/2017-12/21/2018	0.82	5.06	8.07	0.01	0.03	0.25	0.27	0.01	0.23	0.23	1,462.98
Building Off Road Diesel	0.65	4.47	4.16	0.00	0.00	0.22	0.22	0.00	0.20	0.20	893.39
Building Vendor Trips	0.04	0.39	0.48	0.00	0.01	0.01	0.02	0.00	0.01	0.02	188.57
Building Worker Trips	0.12	0.20	3.43	0.00	0.02	0.01	0.03	0.01	0.01	0.01	381.02
Coating 08/10/2018-12/21/2018	13.25	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.80
Architectural Coating	13.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.80
Time Slice 11/21/2018-12/21/2018 Active Days: 23	**15.39**	12.57	**16.44**	**0.01**	0.04	**0.78**	0.82	0.01	**0.71**	0.73	**2,678.38**
Asphalt 11/21/2018-12/21/2018	1.32	7.50	8.23	0.00	0.01	0.53	0.54	0.00	0.49	0.49	1,199.60
Paving Off-Gas	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.16	7.29	6.58	0.00	0.00	0.52	0.52	0.00	0.48	0.48	979.23
Paving On Road Diesel	0.01	0.11	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	41.51
Paving Worker Trips	0.06	0.10	1.61	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.86
Building 08/16/2017-12/21/2018	0.82	5.06	8.07	0.01	0.03	0.25	0.27	0.01	0.23	0.23	1,462.98
Building Off Road Diesel	0.65	4.47	4.16	0.00	0.00	0.22	0.22	0.00	0.20	0.20	893.39
Building Vendor Trips	0.04	0.39	0.48	0.00	0.01	0.01	0.02	0.00	0.01	0.02	188.57
Building Worker Trips	0.12	0.20	3.43	0.00	0.02	0.01	0.03	0.01	0.01	0.01	381.02
Coating 08/10/2018-12/21/2018	13.25	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.80
Architectural Coating	13.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.80

Phase Assumptions

Phase: Fine Grading 5/15/2017 - 8/15/2017 - Default Fine Site Grading Description

11/20/2009 3:08:52 PM

Total Acres Disturbed: 3.21

Maximum Daily Acreage Disturbed: 0.8

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 385 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2018 - 12/21/2018 - Type Your Description Here

Acres to be Paved: 0.8

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2017 - 12/21/2018 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2018 - 12/21/2018 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

11/20/2009 3:10:55 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 3 Phase 2b.urb924

Project Name: Alternative 3 Phase 2b

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2019 TOTALS (lbs/day unmitigated)	1.81	12.29	13.36	0.01	33.57	0.54	34.11	7.01	0.50	7.51	2,349.56
2020 TOTALS (lbs/day unmitigated)	19.85	17.89	23.06	0.01	0.05	1.05	1.09	0.02	0.96	0.98	3,892.67

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

11/20/2009 3:10:55 PM

Time Slice 5/15/2019-8/15/2019 Active Days: 67	1.79	12.29	10.19	0.00	**33.57**	0.54	**34.11**	**7.01**	0.50	**7.51**	2,349.56
Fine Grading 05/15/2019-08/15/2019	1.79	12.29	10.19	0.00	33.57	0.54	34.11	7.01	0.50	7.51	2,349.56
Fine Grading Dust	0.00	0.00	0.00	0.00	33.56	0.00	33.56	7.01	0.00	7.01	0.00
Fine Grading Off Road Diesel	1.76	12.24	9.35	0.00	0.00	0.54	0.54	0.00	0.50	0.50	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.84	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.25
Time Slice 8/16/2019-12/31/2019 Active Days: 98	1.81	9.64	13.36	0.01	0.03	0.48	0.51	0.01	0.44	0.45	2,340.66
Building 08/16/2019-12/21/2020	1.81	9.64	13.36	0.01	0.03	0.48	0.51	0.01	0.44	0.45	2,340.66
Building Off Road Diesel	1.62	8.96	8.86	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.05	0.45	0.57	0.00	0.01	0.02	0.03	0.00	0.02	0.02	240.95
Building Worker Trips	0.14	0.23	3.92	0.00	0.02	0.01	0.04	0.01	0.01	0.02	478.51
Time Slice 1/1/2020-8/7/2020 Active Days: 158	1.63	8.97	12.81	0.01	0.03	0.42	0.45	0.01	0.39	0.40	2,340.86
Building 08/16/2019-12/21/2020	1.63	8.97	12.81	0.01	0.03	0.42	0.45	0.01	0.39	0.40	2,340.86
Building Off Road Diesel	1.46	8.36	8.72	0.00	0.00	0.39	0.39	0.00	0.36	0.36	1,621.20
Building Vendor Trips	0.05	0.40	0.54	0.00	0.01	0.02	0.02	0.00	0.01	0.02	240.96
Building Worker Trips	0.12	0.21	3.55	0.00	0.02	0.01	0.04	0.01	0.01	0.02	478.70

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Time Slice 8/10/2020-11/20/2020 Active Days: 75	18.28	8.98	12.95	0.01	0.03	0.42	0.46	0.01	0.39	0.40	2,360.73
Building 08/16/2019-12/21/2020	1.63	8.97	12.81	0.01	0.03	0.42	0.45	0.01	0.39	0.40	2,340.86
Building Off Road Diesel	1.46	8.36	8.72	0.00	0.00	0.39	0.39	0.00	0.36	0.36	1,621.20
Building Vendor Trips	0.05	0.40	0.54	0.00	0.01	0.02	0.02	0.00	0.01	0.02	240.96
Building Worker Trips	0.12	0.21	3.55	0.00	0.02	0.01	0.04	0.01	0.01	0.02	478.70
Coating 08/10/2020-12/21/2020	16.65	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.87
Architectural Coating	16.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.87
Time Slice 11/23/2020-12/21/2020 Active Days: 21	**19.85**	**17.89**	**23.06**	**0.01**	0.05	**1.05**	1.09	0.02	**0.96**	0.98	**3,892.67**
Asphalt 11/21/2020-12/21/2020	1.57	8.91	10.10	0.00	0.01	0.63	0.64	0.00	0.58	0.58	1,531.95
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.38	8.70	8.54	0.00	0.00	0.62	0.62	0.00	0.57	0.57	1,272.04
Paving On Road Diesel	0.01	0.12	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	55.34
Paving Worker Trips	0.05	0.09	1.52	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.57
Building 08/16/2019-12/21/2020	1.63	8.97	12.81	0.01	0.03	0.42	0.45	0.01	0.39	0.40	2,340.86
Building Off Road Diesel	1.46	8.36	8.72	0.00	0.00	0.39	0.39	0.00	0.36	0.36	1,621.20
Building Vendor Trips	0.05	0.40	0.54	0.00	0.01	0.02	0.02	0.00	0.01	0.02	240.96
Building Worker Trips	0.12	0.21	3.55	0.00	0.02	0.01	0.04	0.01	0.01	0.02	478.70
Coating 08/10/2020-12/21/2020	16.65	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.87
Architectural Coating	16.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.87

Phase Assumptions

Phase: Fine Grading 5/15/2019 - 8/15/2019 - Default Fine Site Grading Description

11/20/2009 3:10:55 PM

Total Acres Disturbed: 4.06

Maximum Daily Acreage Disturbed: 1.02

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 198 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2020 - 12/21/2020 - Type Your Description Here

Acres to be Paved: 1.02

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2019 - 12/21/2020 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2020 - 12/21/2020 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 4 Phase 1.urb924

Project Name: Alternative 4 Phase 1

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	2.89	23.54	13.60	0.00	26.00	1.17	27.18	5.43	1.08	6.51	2,349.16

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

11/20/2009 3:19:38 PM

Time Slice 5/16/2011-10/14/2011 Active Days: 110	**2.89**	**23.54**	**13.60**	**0.00**	**26.00**	**1.17**	**27.18**	**5.43**	**1.08**	**6.51**	**2,349.16**
Fine Grading 05/15/2011-10/15/2011	2.89	23.54	13.60	0.00	26.00	1.17	27.18	5.43	1.08	6.51	2,349.16
Fine Grading Dust	0.00	0.00	0.00	0.00	26.00	0.00	26.00	5.43	0.00	5.43	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.06	0.10	1.65	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.85

Phase Assumptions

Phase: Fine Grading 5/15/2011 - 10/15/2011 - Default Fine Site Grading Description

Total Acres Disturbed: 5.17

Maximum Daily Acreage Disturbed: 1.3

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

9/1/2010 2:03:21 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 5 Phase 1a.urb924

Project Name: Alternative 5 Phase 1a

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	4.57	23.54	37.62	0.02	349.05	1.28	350.23	72.90	1.17	73.98	3,690.63
2012 TOTALS (lbs/day unmitigated)	4.22	18.70	35.36	0.02	0.09	1.17	1.26	0.03	1.07	1.10	3,691.61
2013 TOTALS (lbs/day unmitigated)	56.88	31.94	45.98	0.02	0.11	2.23	2.34	0.04	2.05	2.09	5,370.59

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

9/1/2010 2:03:21 PM

Time Slice 5/16/2011-8/15/2011 Active Days: 66	2.89	23.54	13.60	0.00	**349.05**	1.17	**350.23**	**72.90**	1.08	**73.98**	2,349.16
Fine Grading 05/15/2011-08/15/2011	2.89	23.54	13.60	0.00	349.05	1.17	350.23	72.90	1.08	73.98	2,349.16
Fine Grading Dust	0.00	0.00	0.00	0.00	349.05	0.00	349.05	72.90	0.00	72.90	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.06	0.10	1.65	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.85
Time Slice 8/16/2011-12/30/2011 Active Days: 99	4.57	19.96	37.62	0.02	0.09	1.28	1.38	0.03	1.17	1.21	3,690.63
Building 08/16/2011-12/21/2013	4.57	19.96	37.62	0.02	0.09	1.28	1.38	0.03	1.17	1.21	3,690.63
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.24	2.80	2.56	0.01	0.02	0.10	0.12	0.01	0.09	0.10	570.20
Building Worker Trips	0.94	1.49	24.22	0.01	0.07	0.04	0.12	0.03	0.03	0.06	1,499.24
Time Slice 1/2/2012-12/31/2012 Active Days: 261	4.22	18.70	35.36	0.02	0.09	1.17	1.26	0.03	1.07	1.10	3,691.61
Building 08/16/2011-12/21/2013	4.22	18.70	35.36	0.02	0.09	1.17	1.26	0.03	1.07	1.10	3,691.61
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.22	2.51	2.36	0.01	0.02	0.09	0.11	0.01	0.08	0.09	570.29
Building Worker Trips	0.87	1.37	22.48	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,500.12
Time Slice 1/1/2013-8/9/2013 Active Days: 159	3.87	17.39	33.17	0.02	0.09	1.05	1.15	0.03	0.96	1.00	3,692.60
Building 08/16/2011-12/21/2013	3.87	17.39	33.17	0.02	0.09	1.05	1.15	0.03	0.96	1.00	3,692.60
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.20	2.22	2.18	0.01	0.02	0.08	0.10	0.01	0.07	0.08	570.39
Building Worker Trips	0.79	1.27	20.78	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,501.02

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Time Slice 8/12/2013-11/20/2013 Active Days: 73	54.22	17.44	34.00	0.02	0.10	1.05	1.15	0.03	0.96	1.00	3,752.48
Building 08/16/2011-12/21/2013	3.87	17.39	33.17	0.02	0.09	1.05	1.15	0.03	0.96	1.00	3,692.60
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.20	2.22	2.18	0.01	0.02	0.08	0.10	0.01	0.07	0.08	570.39
Building Worker Trips	0.79	1.27	20.78	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,501.02
Coating 08/10/2013-12/21/2013	50.35	0.05	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.88
Architectural Coating	50.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.88
Time Slice 11/21/2013-12/20/2013 Active Days: 22	**56.88**	**31.94**	**45.98**	**0.02**	0.11	**2.23**	2.34	0.04	**2.05**	2.09	**5,370.59**
Asphalt 11/21/2013-12/21/2013	2.66	14.50	11.99	0.00	0.01	1.18	1.19	0.01	1.08	1.09	1,618.11
Paving Off-Gas	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.19	13.60	8.91	0.00	0.00	1.15	1.15	0.00	1.05	1.05	1,272.04
Paving On Road Diesel	0.05	0.73	0.25	0.00	0.00	0.03	0.03	0.00	0.02	0.03	142.14
Paving Worker Trips	0.11	0.17	2.82	0.00	0.01	0.01	0.02	0.00	0.00	0.01	203.93
Building 08/16/2011-12/21/2013	3.87	17.39	33.17	0.02	0.09	1.05	1.15	0.03	0.96	1.00	3,692.60
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.20	2.22	2.18	0.01	0.02	0.08	0.10	0.01	0.07	0.08	570.39
Building Worker Trips	0.79	1.27	20.78	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,501.02
Coating 08/10/2013-12/21/2013	50.35	0.05	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.88
Architectural Coating	50.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.88

Phase Assumptions

Phase: Fine Grading 5/15/2011 - 8/15/2011 - Default Fine Site Grading Description

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Total Acres Disturbed: 10.48

Maximum Daily Acreage Disturbed: 2.62

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2736 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2013 - 12/21/2013 - Type Your Description Here

Acres to be Paved: 2.62

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2011 - 12/21/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2013 - 12/21/2013 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

11/20/2009 3:20:36 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 5 Phase 1b.urb924

Project Name: Alternative 5 Phase 1b

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2014 TOTALS (lbs/day unmitigated)	3.69	19.16	33.89	0.02	37.92	0.97	38.81	7.92	0.89	8.74	4,107.75
2015 TOTALS (lbs/day unmitigated)	3.36	15.70	31.67	0.02	0.11	0.90	1.01	0.04	0.82	0.86	4,108.70
2016 TOTALS (lbs/day unmitigated)	63.28	28.04	42.85	0.03	0.13	1.84	1.97	0.05	1.69	1.73	6,009.06

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/15/2014-8/15/2014 Active Days: 67	2.46	19.16	12.04	0.00	**37.92**	0.89	**38.81**	**7.92**	0.82	**8.74**	2,349.34
Fine Grading 05/15/2014-08/15/2014	2.46	19.16	12.04	0.00	37.92	0.89	38.81	7.92	0.82	8.74	2,349.34
Fine Grading Dust	0.00	0.00	0.00	0.00	37.91	0.00	37.91	7.92	0.00	7.92	0.00
Fine Grading Off Road Diesel	2.41	19.08	10.74	0.00	0.00	0.89	0.89	0.00	0.82	0.82	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.30	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.03
Time Slice 8/18/2014-12/31/2014 Active Days: 98	3.69	17.10	33.89	0.02	0.11	0.97	1.09	0.04	0.89	0.93	4,107.75
Building 08/16/2014-12/21/2016	3.69	17.10	33.89	0.02	0.11	0.97	1.09	0.04	0.89	0.93	4,107.75
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.26	2.85	2.92	0.01	0.03	0.11	0.14	0.01	0.10	0.11	833.74
Building Worker Trips	0.79	1.28	21.08	0.02	0.08	0.04	0.13	0.03	0.04	0.06	1,652.82
Time Slice 1/1/2015-12/31/2015 Active Days: 261	3.36	15.70	31.67	0.02	0.11	0.90	1.01	0.04	0.82	0.86	4,108.70
Building 08/16/2014-12/21/2016	3.36	15.70	31.67	0.02	0.11	0.90	1.01	0.04	0.82	0.86	4,108.70
Building Off Road Diesel	2.40	12.04	9.62	0.00	0.00	0.76	0.76	0.00	0.70	0.70	1,621.20
Building Vendor Trips	0.24	2.49	2.69	0.01	0.03	0.09	0.12	0.01	0.08	0.10	833.84
Building Worker Trips	0.72	1.17	19.37	0.02	0.08	0.04	0.13	0.03	0.04	0.06	1,653.66
Time Slice 1/1/2016-8/9/2016 Active Days: 158	3.05	14.45	29.66	0.02	0.11	0.80	0.91	0.04	0.73	0.77	4,109.52
Building 08/16/2014-12/21/2016	3.05	14.45	29.66	0.02	0.11	0.80	0.91	0.04	0.73	0.77	4,109.52
Building Off Road Diesel	2.19	11.19	9.40	0.00	0.00	0.67	0.67	0.00	0.62	0.62	1,621.20
Building Vendor Trips	0.22	2.19	2.48	0.01	0.03	0.08	0.11	0.01	0.07	0.09	833.91
Building Worker Trips	0.65	1.07	17.78	0.02	0.08	0.04	0.13	0.03	0.04	0.06	1,654.41

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Time Slice 8/10/2016-11/18/2016 Active Days: 73	60.69	14.50	30.39	0.02	0.11	0.80	0.92	0.04	0.73	0.77	4,178.18
Building 08/16/2014-12/21/2016	3.05	14.45	29.66	0.02	0.11	0.80	0.91	0.04	0.73	0.77	4,109.52
Building Off Road Diesel	2.19	11.19	9.40	0.00	0.00	0.67	0.67	0.00	0.62	0.62	1,621.20
Building Vendor Trips	0.22	2.19	2.48	0.01	0.03	0.08	0.11	0.01	0.07	0.09	833.91
Building Worker Trips	0.65	1.07	17.78	0.02	0.08	0.04	0.13	0.03	0.04	0.06	1,654.41
Coating 08/10/2016-12/21/2016	57.64	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	68.66
Architectural Coating	57.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	68.66
Time Slice 11/21/2016-12/21/2016 Active Days: 23	**63.28**	**28.04**	**42.85**	**0.03**	0.13	**1.84**	1.97	0.05	**1.69**	1.73	**6,009.06**
Asphalt 11/21/2016-12/21/2016	2.59	13.54	12.46	0.00	0.02	1.04	1.06	0.01	0.95	0.96	1,830.88
Paving Off-Gas	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.05	12.77	9.76	0.00	0.00	1.01	1.01	0.00	0.93	0.93	1,418.44
Paving On Road Diesel	0.05	0.62	0.23	0.00	0.01	0.02	0.03	0.00	0.02	0.02	182.66
Paving Worker Trips	0.09	0.15	2.47	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.78
Building 08/16/2014-12/21/2016	3.05	14.45	29.66	0.02	0.11	0.80	0.91	0.04	0.73	0.77	4,109.52
Building Off Road Diesel	2.19	11.19	9.40	0.00	0.00	0.67	0.67	0.00	0.62	0.62	1,621.20
Building Vendor Trips	0.22	2.19	2.48	0.01	0.03	0.08	0.11	0.01	0.07	0.09	833.91
Building Worker Trips	0.65	1.07	17.78	0.02	0.08	0.04	0.13	0.03	0.04	0.06	1,654.41
Coating 08/10/2016-12/21/2016	57.64	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	68.66
Architectural Coating	57.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	68.66

Phase Assumptions

Phase: Fine Grading 5/15/2014 - 8/15/2014 - Default Fine Site Grading Description

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Total Acres Disturbed: 14.06

Maximum Daily Acreage Disturbed: 3.52

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 23 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2016 - 12/21/2016 - Type Your Description Here

Acres to be Paved: 3.52

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2014 - 12/21/2016 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2016 - 12/21/2016 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

11/20/2009 3:20:59 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 5 Phase 2a.urb924

Project Name: Alternative 5 Phase 2a

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2017 TOTALS (lbs/day unmitigated)	2.06	14.75	10.81	0.00	3.20	0.68	3.88	0.67	0.62	1.29	2,349.48
2018 TOTALS (lbs/day unmitigated)	2.32	11.87	12.48	0.00	0.01	0.75	0.76	0.00	0.69	0.69	2,069.36

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/15/2017-8/15/2017 Active Days: 67	2.06	**14.75**	10.81	0.00	**3.20**	0.68	**3.88**	**0.67**	0.62	**1.29**	**2,349.48**
Fine Grading 05/15/2017-08/15/2017	2.06	14.75	10.81	0.00	3.20	0.68	3.88	0.67	0.62	1.29	2,349.48
Fine Grading Dust	0.00	0.00	0.00	0.00	3.20	0.00	3.20	0.67	0.00	0.67	0.00
Fine Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.06	1.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.17
Time Slice 8/16/2017-12/29/2017 Active Days: 98	0.72	4.98	4.35	0.00	0.00	0.26	0.26	0.00	0.24	0.24	909.70
Building 08/16/2017-12/21/2018	0.72	4.98	4.35	0.00	0.00	0.26	0.26	0.00	0.24	0.24	909.70
Building Off Road Diesel	0.71	4.97	4.22	0.00	0.00	0.26	0.26	0.00	0.24	0.24	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23
Building Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.08
Time Slice 1/1/2018-8/9/2018 Active Days: 159	0.66	4.48	4.29	0.00	0.00	0.22	0.22	0.00	0.20	0.20	909.70
Building 08/16/2017-12/21/2018	0.66	4.48	4.29	0.00	0.00	0.22	0.22	0.00	0.20	0.20	909.70
Building Off Road Diesel	0.65	4.47	4.16	0.00	0.00	0.22	0.22	0.00	0.20	0.20	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23
Building Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.08

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Time Slice 8/10/2018-11/20/2018 Active Days: 73	1.10	4.48	4.29	0.00	0.00	0.22	0.22	0.00	0.20	0.20	910.23
Building 08/16/2017-12/21/2018	0.66	4.48	4.29	0.00	0.00	0.22	0.22	0.00	0.20	0.20	909.70
Building Off Road Diesel	0.65	4.47	4.16	0.00	0.00	0.22	0.22	0.00	0.20	0.20	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23
Building Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.08
Coating 08/10/2018-12/21/2018	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53
Architectural Coating	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53
Time Slice 11/21/2018-12/21/2018 Active Days: 23	**2.32**	11.87	**12.48**	**0.00**	0.01	**0.75**	0.76	0.00	**0.69**	0.69	2,069.36
Asphalt 11/21/2018-12/21/2018	1.22	7.39	8.19	0.00	0.01	0.53	0.54	0.00	0.49	0.49	1,159.12
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.16	7.29	6.58	0.00	0.00	0.52	0.52	0.00	0.48	0.48	979.23
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.04
Paving Worker Trips	0.06	0.10	1.61	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.86
Building 08/16/2017-12/21/2018	0.66	4.48	4.29	0.00	0.00	0.22	0.22	0.00	0.20	0.20	909.70
Building Off Road Diesel	0.65	4.47	4.16	0.00	0.00	0.22	0.22	0.00	0.20	0.20	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23
Building Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.08
Coating 08/10/2018-12/21/2018	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53
Architectural Coating	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53

Phase Assumptions

Phase: Fine Grading 5/15/2017 - 8/15/2017 - Default Fine Site Grading Description

11/20/2009 3:20:59 PM

Total Acres Disturbed: 0.64

Maximum Daily Acreage Disturbed: 0.16

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2018 - 12/21/2018 - Type Your Description Here

Acres to be Paved: 0.02

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2017 - 12/21/2018 - Type Your Description Here

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2018 - 12/21/2018 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

11/20/2009 3:21:31 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 5 Phase 2b.urb924

Project Name: Alternative 5 Phase 2b

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2019 TOTALS (lbs/day unmitigated)	1.79	12.29	10.19	0.00	2.80	0.54	3.35	0.59	0.50	1.09	2,349.56

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

11/20/2009 3:21:31 PM

Time Slice 5/15/2019-8/15/2019 Active Days: 67	**1.79**	**12.29**	**10.19**	**0.00**	**2.80**	**0.54**	**3.35**	**0.59**	**0.50**	**1.09**	**2,349.56**
Fine Grading 05/15/2019-08/15/2019	1.79	12.29	10.19	0.00	2.80	0.54	3.35	0.59	0.50	1.09	2,349.56
Fine Grading Dust	0.00	0.00	0.00	0.00	2.80	0.00	2.80	0.58	0.00	0.58	0.00
Fine Grading Off Road Diesel	1.76	12.24	9.35	0.00	0.00	0.54	0.54	0.00	0.50	0.50	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.84	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.25

Phase Assumptions

Phase: Fine Grading 5/15/2019 - 8/15/2019 - Default Fine Site Grading Description

Total Acres Disturbed: 0.55

Maximum Daily Acreage Disturbed: 0.14

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

9/1/2010 12:23:53 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Alternative 6 Phase 1a.urb924

Project Name: Alternative 6 Phase 1a

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	4.52	23.54	36.49	0.02	347.85	1.28	349.03	72.65	1.17	73.73	3,609.31
2012 TOTALS (lbs/day unmitigated)	4.17	18.57	34.32	0.02	0.09	1.17	1.26	0.03	1.07	1.10	3,610.24
2013 TOTALS (lbs/day unmitigated)	54.59	31.79	44.97	0.02	0.11	2.23	2.34	0.04	2.04	2.08	5,280.02

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/16/2011-8/15/2011 Active Days: 66	2.89	23.54	13.60	0.00	**347.85**	1.17	**349.03**	**72.65**	1.08	**73.73**	2,349.16
Fine Grading 05/15/2011-08/15/2011	2.89	23.54	13.60	0.00	347.85	1.17	349.03	72.65	1.08	73.73	2,349.16
Fine Grading Dust	0.00	0.00	0.00	0.00	347.85	0.00	347.85	72.64	0.00	72.64	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.06	0.10	1.65	0.00	0.00	0.00	0.01	0.00	0.00	0.00	101.85
Time Slice 8/16/2011-12/30/2011 Active Days: 99	4.52	19.82	36.49	0.02	0.09	1.28	1.37	0.03	1.17	1.20	3,609.31
Building 08/16/2011-12/21/2013	4.52	19.82	36.49	0.02	0.09	1.28	1.37	0.03	1.17	1.20	3,609.31
Building Off Road Diesel	3.39	15.67	10.85	0.00	0.00	1.14	1.14	0.00	1.05	1.05	1,621.20
Building Vendor Trips	0.23	2.73	2.48	0.01	0.02	0.10	0.12	0.01	0.09	0.10	554.06
Building Worker Trips	0.90	1.42	23.16	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,434.05
Time Slice 1/2/2012-12/31/2012 Active Days: 261	4.17	18.57	34.32	0.02	0.09	1.17	1.26	0.03	1.07	1.10	3,610.24
Building 08/16/2011-12/21/2013	4.17	18.57	34.32	0.02	0.09	1.17	1.26	0.03	1.07	1.10	3,610.24
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.21	2.44	2.29	0.01	0.02	0.09	0.11	0.01	0.08	0.09	554.15
Building Worker Trips	0.83	1.31	21.51	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,434.90
Time Slice 1/1/2013-8/9/2013 Active Days: 159	3.83	17.28	32.20	0.02	0.09	1.05	1.14	0.03	0.96	0.99	3,611.19
Building 08/16/2011-12/21/2013	3.83	17.28	32.20	0.02	0.09	1.05	1.14	0.03	0.96	0.99	3,611.19
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.19	2.16	2.11	0.01	0.02	0.08	0.10	0.01	0.07	0.08	554.24
Building Worker Trips	0.76	1.21	19.88	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,435.76

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Time Slice 8/12/2013-11/20/2013 Active Days: 73	51.95	17.32	32.99	0.02	0.09	1.05	1.14	0.03	0.96	0.99	3,668.42
Building 08/16/2011-12/21/2013	3.83	17.28	32.20	0.02	0.09	1.05	1.14	0.03	0.96	0.99	3,611.19
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.19	2.16	2.11	0.01	0.02	0.08	0.10	0.01	0.07	0.08	554.24
Building Worker Trips	0.76	1.21	19.88	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,435.76
Coating 08/10/2013-12/21/2013	48.12	0.05	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.23
Architectural Coating	48.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.23
Time Slice 11/21/2013-12/20/2013 Active Days: 22	**54.59**	**31.79**	**44.97**	**0.02**	0.11	**2.23**	2.34	0.04	**2.04**	2.08	**5,280.02**
Asphalt 11/21/2013-12/21/2013	2.65	14.47	11.98	0.00	0.01	1.18	1.19	0.01	1.08	1.09	1,611.60
Paving Off-Gas	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.19	13.60	8.91	0.00	0.00	1.15	1.15	0.00	1.05	1.05	1,272.04
Paving On Road Diesel	0.05	0.70	0.24	0.00	0.00	0.03	0.03	0.00	0.02	0.02	135.63
Paving Worker Trips	0.11	0.17	2.82	0.00	0.01	0.01	0.02	0.00	0.00	0.01	203.93
Building 08/16/2011-12/21/2013	3.83	17.28	32.20	0.02	0.09	1.05	1.14	0.03	0.96	0.99	3,611.19
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.19	2.16	2.11	0.01	0.02	0.08	0.10	0.01	0.07	0.08	554.24
Building Worker Trips	0.76	1.21	19.88	0.01	0.07	0.04	0.11	0.03	0.03	0.06	1,435.76
Coating 08/10/2013-12/21/2013	48.12	0.05	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.23
Architectural Coating	48.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.23

Phase Assumptions

Phase: Fine Grading 5/15/2011 - 8/15/2011 - Default Fine Site Grading Description

9/1/2010 12:23:53 PM

Total Acres Disturbed: 10.02

Maximum Daily Acreage Disturbed: 2.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2736 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2013 - 12/21/2013 - Type Your Description Here

Acres to be Paved: 2.5

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2011 - 12/21/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2013 - 12/21/2013 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

9/1/2010 12:23:53 PM

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

9/1/2010 1:20:58 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA) \URBEMIS\Construction\Alternative 6\Alternative 6 Phase 1b.urb924

Project Name: Alternative 6 Phase 1b

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2014 TOTALS (lbs/day unmitigated)	3.31	19.16	25.36	0.02	25.32	0.92	26.21	5.29	0.84	6.11	3,223.64
2015 TOTALS (lbs/day unmitigated)	3.02	14.40	23.83	0.02	0.07	0.85	0.92	0.03	0.78	0.81	3,224.25
2016 TOTALS (lbs/day unmitigated)	42.06	25.14	33.99	0.02	0.09	1.66	1.75	0.03	1.52	1.55	4,862.59

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/15/2014-8/15/2014 Active Days: 67	2.46	19.16	12.04	0.00	**25.32**	0.89	**26.21**	**5.29**	0.82	**6.11**	2,349.34
Fine Grading 05/15/2014-08/15/2014	2.46	19.16	12.04	0.00	25.32	0.89	26.21	5.29	0.82	6.11	2,349.34
Fine Grading Dust	0.00	0.00	0.00	0.00	25.31	0.00	25.31	5.29	0.00	5.29	0.00
Fine Grading Off Road Diesel	2.41	19.08	10.74	0.00	0.00	0.89	0.89	0.00	0.82	0.82	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.30	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.03
Time Slice 8/18/2014-12/31/2014 Active Days: 98	3.31	15.63	25.36	0.02	0.07	0.92	0.99	0.03	0.84	0.87	3,223.64
Building 08/16/2014-12/21/2016	3.31	15.63	25.36	0.02	0.07	0.92	0.99	0.03	0.84	0.87	3,223.64
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.17	1.83	1.88	0.00	0.02	0.07	0.09	0.01	0.06	0.07	537.30
Building Worker Trips	0.51	0.82	13.58	0.01	0.05	0.03	0.08	0.02	0.02	0.04	1,065.15
Time Slice 1/1/2015-12/31/2015 Active Days: 261	3.02	14.40	23.83	0.02	0.07	0.85	0.92	0.03	0.78	0.81	3,224.25
Building 08/16/2014-12/21/2016	3.02	14.40	23.83	0.02	0.07	0.85	0.92	0.03	0.78	0.81	3,224.25
Building Off Road Diesel	2.40	12.04	9.62	0.00	0.00	0.76	0.76	0.00	0.70	0.70	1,621.20
Building Vendor Trips	0.15	1.61	1.73	0.00	0.02	0.06	0.08	0.01	0.05	0.06	537.36
Building Worker Trips	0.46	0.76	12.48	0.01	0.05	0.03	0.08	0.02	0.02	0.04	1,065.69
Time Slice 1/1/2016-8/9/2016 Active Days: 158	2.74	13.29	22.45	0.02	0.07	0.76	0.83	0.03	0.69	0.72	3,224.78
Building 08/16/2014-12/21/2016	2.74	13.29	22.45	0.02	0.07	0.76	0.83	0.03	0.69	0.72	3,224.78
Building Off Road Diesel	2.19	11.19	9.40	0.00	0.00	0.67	0.67	0.00	0.62	0.62	1,621.20
Building Vendor Trips	0.14	1.41	1.60	0.00	0.02	0.05	0.07	0.01	0.05	0.05	537.41
Building Worker Trips	0.42	0.69	11.46	0.01	0.05	0.03	0.08	0.02	0.02	0.04	1,066.18

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Time Slice 8/10/2016-11/18/2016 Active Days: 73	39.89	13.32	22.93	0.02	0.07	0.76	0.83	0.03	0.69	0.72	3,269.03
Building 08/16/2014-12/21/2016	2.74	13.29	22.45	0.02	0.07	0.76	0.83	0.03	0.69	0.72	3,224.78
Building Off Road Diesel	2.19	11.19	9.40	0.00	0.00	0.67	0.67	0.00	0.62	0.62	1,621.20
Building Vendor Trips	0.14	1.41	1.60	0.00	0.02	0.05	0.07	0.01	0.05	0.05	537.41
Building Worker Trips	0.42	0.69	11.46	0.01	0.05	0.03	0.08	0.02	0.02	0.04	1,066.18
Coating 08/10/2016-12/21/2016	37.15	0.03	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.25
Architectural Coating	37.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.25
Time Slice 11/21/2016-12/21/2016 Active Days: 23	**42.06**	**25.14**	**33.99**	**0.02**	0.09	**1.66**	1.75	0.03	**1.52**	1.55	**4,862.59**
Asphalt 11/21/2016-12/21/2016	2.17	11.82	11.06	0.00	0.01	0.90	0.92	0.00	0.83	0.84	1,593.56
Paving Off-Gas	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.80	11.29	8.72	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,272.04
Paving On Road Diesel	0.03	0.40	0.15	0.00	0.00	0.01	0.02	0.00	0.01	0.01	117.28
Paving Worker Trips	0.08	0.13	2.19	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.25
Building 08/16/2014-12/21/2016	2.74	13.29	22.45	0.02	0.07	0.76	0.83	0.03	0.69	0.72	3,224.78
Building Off Road Diesel	2.19	11.19	9.40	0.00	0.00	0.67	0.67	0.00	0.62	0.62	1,621.20
Building Vendor Trips	0.14	1.41	1.60	0.00	0.02	0.05	0.07	0.01	0.05	0.05	537.41
Building Worker Trips	0.42	0.69	11.46	0.01	0.05	0.03	0.08	0.02	0.02	0.04	1,066.18
Coating 08/10/2016-12/21/2016	37.15	0.03	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.25
Architectural Coating	37.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.03	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.25

Phase Assumptions

Phase: Fine Grading 5/15/2014 - 8/15/2014 - Default Fine Site Grading Description

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Total Acres Disturbed: 9.06

Maximum Daily Acreage Disturbed: 2.26

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 23 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2016 - 12/21/2016 - Type Your Description Here

Acres to be Paved: 2.26

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2014 - 12/21/2016 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2016 - 12/21/2016 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

9/1/2010 12:34:12 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Alternative 6\Alternative 6 Phase 2a.urb924

Project Name: Alternative 6 Phase 2a

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2017 TOTALS (lbs/day unmitigated)	2.06	14.75	10.81	0.00	3.20	0.68	3.88	0.67	0.62	1.29	2,349.48
2018 TOTALS (lbs/day unmitigated)	2.32	11.87	12.48	0.00	0.01	0.75	0.76	0.00	0.69	0.69	2,069.36

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/15/2017-8/15/2017 Active Days: 67	2.06	**14.75**	10.81	0.00	**3.20**	0.68	**3.88**	**0.67**	0.62	**1.29**	**2,349.48**
Fine Grading 05/15/2017-08/15/2017	2.06	14.75	10.81	0.00	3.20	0.68	3.88	0.67	0.62	1.29	2,349.48
Fine Grading Dust	0.00	0.00	0.00	0.00	3.20	0.00	3.20	0.67	0.00	0.67	0.00
Fine Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.04	0.06	1.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.17
Time Slice 8/16/2017-12/29/2017 Active Days: 98	0.72	4.98	4.35	0.00	0.00	0.26	0.26	0.00	0.24	0.24	909.70
Building 08/16/2017-12/21/2018	0.72	4.98	4.35	0.00	0.00	0.26	0.26	0.00	0.24	0.24	909.70
Building Off Road Diesel	0.71	4.97	4.22	0.00	0.00	0.26	0.26	0.00	0.24	0.24	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23
Building Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.08
Time Slice 1/1/2018-8/9/2018 Active Days: 159	0.66	4.48	4.29	0.00	0.00	0.22	0.22	0.00	0.20	0.20	909.70
Building 08/16/2017-12/21/2018	0.66	4.48	4.29	0.00	0.00	0.22	0.22	0.00	0.20	0.20	909.70
Building Off Road Diesel	0.65	4.47	4.16	0.00	0.00	0.22	0.22	0.00	0.20	0.20	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23
Building Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.08

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Time Slice 8/10/2018-11/20/2018 Active Days: 73	1.10	4.48	4.29	0.00	0.00	0.22	0.22	0.00	0.20	0.20	910.23
Building 08/16/2017-12/21/2018	0.66	4.48	4.29	0.00	0.00	0.22	0.22	0.00	0.20	0.20	909.70
Building Off Road Diesel	0.65	4.47	4.16	0.00	0.00	0.22	0.22	0.00	0.20	0.20	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23
Building Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.08
Coating 08/10/2018-12/21/2018	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53
Architectural Coating	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53
Time Slice 11/21/2018-12/21/2018 Active Days: 23	**2.32**	11.87	**12.48**	**0.00**	0.01	**0.75**	0.76	0.00	**0.69**	0.69	2,069.36
Asphalt 11/21/2018-12/21/2018	1.22	7.39	8.19	0.00	0.01	0.53	0.54	0.00	0.49	0.49	1,159.12
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.16	7.29	6.58	0.00	0.00	0.52	0.52	0.00	0.48	0.48	979.23
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.04
Paving Worker Trips	0.06	0.10	1.61	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.86
Building 08/16/2017-12/21/2018	0.66	4.48	4.29	0.00	0.00	0.22	0.22	0.00	0.20	0.20	909.70
Building Off Road Diesel	0.65	4.47	4.16	0.00	0.00	0.22	0.22	0.00	0.20	0.20	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23
Building Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.08
Coating 08/10/2018-12/21/2018	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53
Architectural Coating	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53

Phase Assumptions

Phase: Fine Grading 5/15/2017 - 8/15/2017 - Default Fine Site Grading Description

9/1/2010 12:34:12 PM

Total Acres Disturbed: 0.64

Maximum Daily Acreage Disturbed: 0.16

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2018 - 12/21/2018 - Type Your Description Here

Acres to be Paved: 0.02

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2017 - 12/21/2018 - Type Your Description Here

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2018 - 12/21/2018 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Alternative 6\Alternative 6 Phase 2b.urb924

Project Name: Alternative 6 Phase 2b

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2019 TOTALS (lbs/day unmitigated)	1.79	12.29	10.19	0.01	22.07	0.54	22.61	4.61	0.50	5.11	2,349.56
2020 TOTALS (lbs/day unmitigated)	14.66	10.68	15.24	0.01	0.04	0.63	0.66	0.01	0.57	0.59	2,662.80

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/15/2019-8/15/2019 Active Days: 67	1.79	**12.29**	10.19	0.00	**22.07**	0.54	**22.61**	**4.61**	0.50	**5.11**	2,349.56
Fine Grading 05/15/2019-08/15/2019	1.79	12.29	10.19	0.00	22.07	0.54	22.61	4.61	0.50	5.11	2,349.56
Fine Grading Dust	0.00	0.00	0.00	0.00	22.06	0.00	22.06	4.61	0.00	4.61	0.00
Fine Grading Off Road Diesel	1.76	12.24	9.35	0.00	0.00	0.54	0.54	0.00	0.50	0.50	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.84	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.25
Time Slice 8/16/2019-12/31/2019 Active Days: 98	0.76	4.54	7.59	0.01	0.02	0.21	0.24	0.01	0.19	0.20	1,446.82
Building 08/16/2019-12/21/2020	0.76	4.54	7.59	0.01	0.02	0.21	0.24	0.01	0.19	0.20	1,446.82
Building Off Road Diesel	0.62	4.01	4.13	0.00	0.00	0.19	0.19	0.00	0.17	0.17	893.39
Building Vendor Trips	0.04	0.34	0.44	0.00	0.01	0.01	0.02	0.00	0.01	0.01	185.35
Building Worker Trips	0.11	0.18	3.02	0.00	0.02	0.01	0.03	0.01	0.01	0.01	368.09
Time Slice 1/1/2020-8/7/2020 Active Days: 158	0.70	4.10	7.25	0.01	0.02	0.19	0.21	0.01	0.17	0.18	1,446.97
Building 08/16/2019-12/21/2020	0.70	4.10	7.25	0.01	0.02	0.19	0.21	0.01	0.17	0.18	1,446.97
Building Off Road Diesel	0.57	3.63	4.10	0.00	0.00	0.16	0.16	0.00	0.15	0.15	893.39
Building Vendor Trips	0.03	0.31	0.41	0.00	0.01	0.01	0.02	0.00	0.01	0.01	185.36
Building Worker Trips	0.09	0.16	2.73	0.00	0.02	0.01	0.03	0.01	0.01	0.01	368.23

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Time Slice 8/10/2020-11/20/2020 Active Days: 75	13.51	4.11	7.36	0.01	0.03	0.19	0.21	0.01	0.17	0.18	1,462.26
Building 08/16/2019-12/21/2020	0.70	4.10	7.25	0.01	0.02	0.19	0.21	0.01	0.17	0.18	1,446.97
Building Off Road Diesel	0.57	3.63	4.10	0.00	0.00	0.16	0.16	0.00	0.15	0.15	893.39
Building Vendor Trips	0.03	0.31	0.41	0.00	0.01	0.01	0.02	0.00	0.01	0.01	185.36
Building Worker Trips	0.09	0.16	2.73	0.00	0.02	0.01	0.03	0.01	0.01	0.01	368.23
Coating 08/10/2020-12/21/2020	12.81	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.28
Architectural Coating	12.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.28
Time Slice 11/23/2020-12/21/2020 Active Days: 21	**14.66**	10.68	**15.24**	**0.01**	0.04	**0.63**	0.66	0.01	**0.57**	0.59	**2,662.80**
Asphalt 11/21/2020-12/21/2020	1.15	6.57	7.88	0.00	0.01	0.44	0.45	0.00	0.41	0.41	1,200.54
Paving Off-Gas	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.01	6.40	6.52	0.00	0.00	0.43	0.43	0.00	0.40	0.40	979.23
Paving On Road Diesel	0.01	0.09	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.32
Paving Worker Trips	0.05	0.08	1.33	0.00	0.01	0.00	0.01	0.00	0.00	0.01	179.00
Building 08/16/2019-12/21/2020	0.70	4.10	7.25	0.01	0.02	0.19	0.21	0.01	0.17	0.18	1,446.97
Building Off Road Diesel	0.57	3.63	4.10	0.00	0.00	0.16	0.16	0.00	0.15	0.15	893.39
Building Vendor Trips	0.03	0.31	0.41	0.00	0.01	0.01	0.02	0.00	0.01	0.01	185.36
Building Worker Trips	0.09	0.16	2.73	0.00	0.02	0.01	0.03	0.01	0.01	0.01	368.23
Coating 08/10/2020-12/21/2020	12.81	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.28
Architectural Coating	12.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.28

Phase Assumptions

Phase: Fine Grading 5/15/2019 - 8/15/2019 - Default Fine Site Grading Description

9/1/2010 12:59:37 PM

Total Acres Disturbed: 3.67

Maximum Daily Acreage Disturbed: 0.92

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 109 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 11/21/2020 - 12/21/2020 - Type Your Description Here

Acres to be Paved: 0.78

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 8/16/2019 - 12/21/2020 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/10/2020 - 12/21/2020 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Air Quality Transportation Outputs (2021)

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Urbemis 2007 Version 9.2.4

Detail Report for Winter Operational Unmitigated Emissions (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\URBEMIS\Operational\Existing and Alternative 2 Winter\Existing Opertional Emissions.urb924

Project Name: Existing Operations

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Winter Pounds Per Day, Unmitigated)

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Moutain Resort	13.67	17.15	130.49	0.12	23.07	4.39	11,849.22
TOTALS (lbs/day, unmitigated)	13.67	17.15	130.49	0.12	23.07	4.39	11,849.22

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Moutain Resort		100.90	1000 sq ft	25.13	2,535.62	13,438.77
					2,535.62	13,438.77

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	4.0	4.0	4.0	4.0	5.0	5.3
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						

11/17/2009 12:59:16 PM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Moutain Resort				0.0	0.0	100.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Home-based work rural trip length changed from 16.8 miles to 4 miles

Home-based shop rural trip length changed from 7.1 miles to 4 miles

Home-based other rural trip length changed from 7.9 miles to 4 miles

Commercial-based commute rural trip length changed from 14.7 miles to 4 miles

Commercial-based non-work rural trip length changed from 6.6 miles to 5 miles

Commercial-based customer rural trip length changed from 6.6 miles to 5.3 miles

11/17/2009 8:44:01 AM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\URBEMIS\Operational\Alternative 1 and 3 Summer Operations 2014.urb924

Project Name: Alternative 1 Summer Operations 2014

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	0.31	0.18	1.97	0.00	0.35	0.07	211.59
Condo/townhouse general	3.68	2.04	21.86	0.02	3.87	0.74	2,344.17
Hotel	2.13	1.56	15.14	0.02	3.24	0.62	1,899.93
Strip mall	2.43	2.29	22.26	0.03	4.77	0.91	2,794.21
Hotel Peak	1.12	0.49	4.71	0.01	1.01	0.19	591.58
Townhouse Peak	0.41	0.18	1.72	0.00	0.37	0.07	215.83
Golf Course	0.27	0.16	1.57	0.00	0.34	0.06	197.64
Timeshare	0.35	0.27	2.59	0.00	0.56	0.11	325.41
TOTALS (lbs/day, unmitigated)	10.70	7.17	71.82	0.08	14.51	2.77	8,580.36

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments low rise	0.81	3.55	dwelling units	13.00	46.15	203.06
Condo/townhouse general	10.38	3.08	dwelling units	166.00	511.28	2,249.63
Hotel		4.27	rooms	67.00	286.09	1,888.19
Strip mall		16.83	1000 sq ft	25.00	420.75	2,776.95
Hotel Peak		1.31	unknown	68.00	89.08	587.93
Townhouse Peak		1.30	unknown	25.00	32.50	214.50
Golf Course		2.48	unknown	12.00	29.76	196.42
Timeshare		4.90	unknown	10.00	49.00	323.40
					1,464.61	8,440.08

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	4.4	4.4	4.4	6.0	6.0	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				0.0	0.0	100.0
Strip mall				0.0	0.0	100.0
Hotel Peak				0.0	0.0	100.0
Townhouse Peak				0.0	0.0	100.0
Golf Course				0.0	0.0	100.0
Timeshare				0.0	0.0	100.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Home-based work rural trip length changed from 16.8 miles to 4.4 miles

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Operational Changes to Defaults

Home-based shop rural trip length changed from 7.1 miles to 4.4 miles

Home-based other rural trip length changed from 7.9 miles to 4.4 miles

Commercial-based commute rural trip length changed from 14.7 miles to 6 miles

Commercial-based non-work rural trip length changed from 6.6 miles to 6 miles

1/4/2011 8:53:13 AM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\URBEMIS\Operational_Revised Winter Traffic 12-2010\Alt 1 and 3\Alternative 1 and 3 Winter 2021.urb924

Project Name: Alternative 1 Winter Operations 2021

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	12.35	15.42	118.24	0.10	20.77	3.96	10,715.02

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	12.35	15.42	118.24	0.10	20.77	3.96	10,715.02

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	0.17	0.20	1.66	0.00	0.24	0.05	129.28
Condo/townhouse general	2.33	2.69	22.89	0.02	3.33	0.64	1,781.02
Hotel	1.37	1.74	13.01	0.01	2.39	0.45	1,222.34
Strip mall	2.47	3.15	23.52	0.02	4.32	0.82	2,210.62
Hotel Peak	0.52	0.66	4.92	0.00	0.90	0.17	462.53
Townhouse Peak	0.19	0.24	1.81	0.00	0.33	0.06	170.05
Parking	4.06	5.16	38.60	0.04	7.09	1.35	3,627.68
Skier Drop Off	1.01	1.29	9.65	0.01	1.77	0.34	906.92
Timeshare	0.23	0.29	2.18	0.00	0.40	0.08	204.58
TOTALS (lbs/day, unmitigated)	12.35	15.42	118.24	0.10	20.77	3.96	10,715.02

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments low rise	0.81	2.79	dwelling units	13.00	36.27	140.50
Condo/townhouse general	10.38	3.01	dwelling units	166.00	499.66	1,935.48

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		3.46	rooms	67.00	231.82	1,390.92
Strip mall		16.77	1000 sq ft	25.00	419.25	2,515.50
Hotel Peak		1.29	unknown	68.00	87.72	526.32
Townhouse Peak		1.29	unknown	25.00	32.25	193.50
Parking		1.72	unknown	400.00	688.00	4,128.00
Skier Drop Off		1.72	unknown	100.00	172.00	1,032.00
Timeshare		3.88	unknown	10.00	38.80	232.80
					2,205.77	12,095.02

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	2.8	4.4	4.4	5.9	5.9	6.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				0.0	0.0	100.0
Strip mall				0.0	0.0	100.0
Hotel Peak				0.0	0.0	100.0
Townhouse Peak				0.0	0.0	100.0
Parking				0.0	0.0	100.0
Skier Drop Off				0.0	0.0	100.0
Timeshare				0.0	0.0	100.0

11/17/2009 10:12:53 AM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\URBEMIS\Alternative 4 Summer and Winter 2020 Opertions.urb924

Project Name: Alternative 4 Summer and Winter 2020 and 2021

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.62	0.40	4.32	0.00	0.74	0.14	452.57
General office building	1.75	1.66	16.08	0.02	3.29	0.63	1,939.73
TOTALS (lbs/day, unmitigated)	2.37	2.06	20.40	0.02	4.03	0.77	2,392.30

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	5.33	6.75	dwelling units	16.00	108.00	432.00
General office building		25.54	1000 sq ft	15.00	383.10	1,915.50
					491.10	2,347.50

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	4.0	4.0	4.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
% of Trips - Commercial (by land use)						
General office building				0.0	0.0	100.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Home-based work rural trip length changed from 16.8 miles to 4 miles

Home-based shop rural trip length changed from 7.1 miles to 4 miles

Home-based other rural trip length changed from 7.9 miles to 4 miles

Commercial-based commute rural trip length changed from 14.7 miles to 5 miles

Commercial-based non-work rural trip length changed from 6.6 miles to 5 miles

Commercial-based customer rural trip length changed from 6.6 miles to 5 miles

11/17/2009 10:13:03 AM

Urbemis 2007 Version 9.2.4

Detail Report for Winter Operational Unmitigated Emissions (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\URBEMIS\Alternative 4 Summer and Winter 2020 Opertions.urb924

Project Name: Alternative 4 Summer and Winter 2020 and 2021

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Winter Pounds Per Day, Unmitigated)

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.55	0.60	5.04	0.00	0.74	0.14	396.66
General office building	1.98	2.47	18.95	0.02	3.29	0.63	1,691.81
TOTALS (lbs/day, unmitigated)	2.53	3.07	23.99	0.02	4.03	0.77	2,088.47

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	5.33	6.75	dwelling units	16.00	108.00	432.00
General office building		25.54	1000 sq ft	15.00	383.10	1,915.50
					491.10	2,347.50

11/17/2009 10:13:03 AM

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	4.0	4.0	4.0	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

11/17/2009 10:13:03 AM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
% of Trips - Commercial (by land use)						
General office building				0.0	0.0	100.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Home-based work rural trip length changed from 16.8 miles to 4 miles

Home-based shop rural trip length changed from 7.1 miles to 4 miles

Home-based other rural trip length changed from 7.9 miles to 4 miles

Commercial-based commute rural trip length changed from 14.7 miles to 5 miles

Commercial-based non-work rural trip length changed from 6.6 miles to 5 miles

Commercial-based customer rural trip length changed from 6.6 miles to 5 miles

11/17/2009 12:42:32 PM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\URBEMIS\Operational\Alternative 5 Summer\Alternative 5 Summer 2021 Operations.urb924

Project Name: Alternative 5 Summer 2021

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.50	0.34	3.63	0.00	0.64	0.12	389.53
Condo/townhouse general	5.00	2.78	29.73	0.03	5.26	1.01	3,187.66
Hotel	1.10	0.78	7.55	0.01	1.59	0.30	933.55
Strip mall	2.17	2.01	19.48	0.02	4.10	0.78	2,408.56
Hotel Peak	0.61	0.26	2.49	0.00	0.52	0.10	307.53
TOTALS (lbs/day, unmitigated)	9.38	6.17	62.88	0.06	12.11	2.31	7,226.83

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	5.33	5.31	dwelling units	16.00	84.96	373.82

11/17/2009 12:42:32 PM

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	14.06	3.09	dwelling units	225.00	695.25	3,059.10
Hotel		4.24	rooms	37.00	156.88	925.59
Strip mall		16.19	1000 sq ft	25.00	404.75	2,388.03
Hotel Peak		1.36	unknown	38.00	51.68	304.91
					1,393.52	7,051.45

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

11/17/2009 12:42:32 PM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	4.4	4.4	4.4	5.5	5.5	5.9
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				0.0	0.0	100.0
Strip mall				0.0	0.0	100.0
Hotel Peak				0.0	0.0	100.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Home-based work rural trip length changed from 16.8 miles to 4.4 miles

Home-based shop rural trip length changed from 7.1 miles to 4.4 miles

Home-based other rural trip length changed from 7.9 miles to 4.4 miles

Commercial-based commute rural trip length changed from 14.7 miles to 5.5 miles

Commercial-based non-work rural trip length changed from 6.6 miles to 5.5 miles

Commercial-based customer rural trip length changed from 6.6 miles to 5.9 miles

1/4/2011 9:01:20 AM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Winter\Alternative 5 Winter 2021.urb924

Project Name: Alternative 5 Winter 2021

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	12.06	14.84	115.80	0.10	19.68	3.74	10,212.75

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	12.06	14.84	115.80	0.10	19.68	3.74	10,212.75

1/4/2011 9:01:20 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.41	0.47	3.97	0.00	0.59	0.11	313.62
Apartments low rise	0.16	0.19	1.57	0.00	0.23	0.04	124.06
Condo/townhouse general	3.33	3.85	32.50	0.03	4.81	0.92	2,567.84
Hotel	0.73	0.93	6.97	0.01	1.26	0.24	645.83
Strip mall	2.24	2.83	21.31	0.02	3.85	0.73	1,974.97
Hotel Peak	0.28	0.36	2.67	0.00	0.48	0.09	247.78
Parking	3.93	4.97	37.45	0.03	6.77	1.29	3,470.92
Drop Off	0.98	1.24	9.36	0.01	1.69	0.32	867.73
TOTALS (lbs/day, unmitigated)	12.06	14.84	115.80	0.10	19.68	3.74	10,212.75

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	5.33	5.29	dwelling units	16.00	84.64	341.78
Apartments low rise	0.75	2.79	dwelling units	12.00	33.48	135.20
Condo/townhouse general	14.06	3.08	dwelling units	225.00	693.00	2,798.40

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		3.48	rooms	37.00	128.76	733.93
Strip mall		15.75	1000 sq ft	25.00	393.75	2,244.37
Hotel Peak		1.30	unknown	38.00	49.40	281.58
Parking		1.73	unknown	400.00	692.00	3,944.40
Drop Off		1.73	unknown	100.00	173.00	986.10
					2,248.03	11,465.76

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	3.3	4.4	4.4	5.5	5.5	5.7
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				0.0	0.0	100.0
Strip mall				0.0	0.0	100.0
Hotel Peak				0.0	0.0	100.0
Parking				0.0	0.0	100.0
Drop Off				0.0	0.0	100.0

9/10/2010 9:55:17 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Alternative 6 Summer\Alternative 6 Summer 2021.urb924

Project Name: Alternative 6 Summer 2021

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	8.94	5.92	60.31	0.06	11.68	2.24	6,960.56

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	8.94	5.92	60.31	0.06	11.68	2.24	6,960.56

9/10/2010 9:55:17 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.43	0.29	3.13	0.00	0.55	0.11	335.07
Apartments low rise	0.25	0.13	1.43	0.00	0.25	0.05	152.95
Condo/townhouse general	4.32	2.39	25.60	0.03	4.53	0.87	2,744.76
Hotel	1.10	0.78	7.53	0.01	1.59	0.30	931.35
Strip mall	2.23	2.07	20.13	0.02	4.24	0.81	2,488.90
Hotel Peak	0.61	0.26	2.49	0.00	0.52	0.10	307.53
TOTALS (lbs/day, unmitigated)	8.94	5.92	60.31	0.06	11.68	2.24	6,960.56

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	4.67	5.22	dwelling units	14.00	73.08	321.55
Apartments low rise	0.75	2.78	dwelling units	12.00	33.36	146.78
Condo/townhouse general	12.19	3.07	dwelling units	195.00	598.65	2,634.06
Hotel		4.23	rooms	37.00	156.51	923.41
Strip mall		16.73	1000 sq ft	25.00	418.25	2,467.67

9/10/2010 9:55:17 AM

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel Peak		1.36	unknown	38.00	51.68	304.91
					1,331.53	6,798.38

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	4.4	4.4	4.4	5.5	5.5	5.9
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				0.0	0.0	100.0
Strip mall				0.0	0.0	100.0
Hotel Peak				0.0	0.0	100.0

1/4/2011 9:06:01 AM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Alt 6\Alternative 6 Winter 2021.urb924

Project Name: Alternative 6 Winter 2021

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	11.75	14.42	112.16	0.09	19.17	3.66	9,932.63

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	11.75	14.42	112.16	0.09	19.17	3.66	9,932.63

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.37	0.42	3.50	0.00	0.53	0.10	279.96
Apartments low rise	0.17	0.19	1.60	0.00	0.24	0.05	127.80
Condo/townhouse general	3.00	3.42	28.66	0.02	4.31	0.83	2,293.37
Hotel	0.71	0.90	6.80	0.01	1.22	0.23	627.51
Strip mall	2.41	3.05	23.01	0.02	4.14	0.79	2,122.42
Hotel Peak	0.27	0.35	2.62	0.00	0.47	0.09	241.67
Parking	3.86	4.87	36.78	0.03	6.61	1.26	3,391.92
Drop Off	0.96	1.22	9.19	0.01	1.65	0.31	847.98
TOTALS (lbs/day, unmitigated)	11.75	14.42	112.16	0.09	19.17	3.66	9,932.63

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	4.67	5.22	dwelling units	14.00	73.08	305.81
Apartments low rise	0.75	2.78	dwelling units	12.00	33.36	139.60
Condo/townhouse general	12.19	3.07	dwelling units	195.00	598.65	2,505.11

1/4/2011 9:06:01 AM

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		3.44	rooms	37.00	127.28	712.77
Strip mall		17.22	1000 sq ft	25.00	430.50	2,410.80
Hotel Peak		1.29	unknown	38.00	49.02	274.51
Parking		1.72	unknown	400.00	688.00	3,852.80
Drop Off		1.72	unknown	100.00	172.00	963.20
					2,171.89	11,164.60

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	3.8	4.3	4.4	5.4	5.4	5.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				0.0	0.0	100.0
Strip mall				0.0	0.0	100.0
Hotel Peak				0.0	0.0	100.0
Parking				0.0	0.0	100.0
Drop Off				0.0	0.0	100.0

Climate Change Transportation Outputs (2021)

12/21/2009 3:57:39 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\GHG Calcuations\Transportation\Alternative 1 and 3 Summer.urb924

Project Name: Alternative 1 and 3 Operations Summer No Alternative Reduction

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	11.92	8.21	82.30	0.09	16.60	3.16	9,826.59

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	11.92	8.21	82.30	0.09	16.60	3.16	9,826.59

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	0.36	0.21	2.26	0.00	0.40	0.08	241.21
Condo/townhouse general	4.14	2.33	24.93	0.03	4.40	0.84	2,665.82
Hotel	2.36	1.79	17.40	0.02	3.73	0.71	2,184.70
Strip mall	2.76	2.63	25.59	0.03	5.48	1.04	3,212.60
Timeshare	0.39	0.31	2.96	0.00	0.63	0.12	371.90
Mini Golf	0.29	0.18	1.78	0.00	0.38	0.07	223.94
Hotel Peak	1.18	0.56	5.40	0.01	1.16	0.22	677.38
Condo/Townhouse Peak	0.44	0.20	1.98	0.00	0.42	0.08	249.04
TOTALS (lbs/day, unmitigated)	11.92	8.21	82.30	0.09	16.60	3.16	9,826.59

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments low rise	0.81	4.09	dwelling units	13.00	53.17	231.34
Condo/townhouse general	10.38	3.54	dwelling units	166.00	587.64	2,556.76
Hotel		4.91	rooms	67.00	328.97	2,171.20

12/21/2009 3:57:39 PM

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Strip mall		19.35	1000 sq ft	25.00	483.75	3,192.75
Timeshare		5.60	unknown	10.00	56.00	369.60
Mini Golf		2.81	unknown	12.00	33.72	222.55
Hotel Peak		1.50	unknown	68.00	102.00	673.20
Condo/Townhouse Peak		1.50	unknown	25.00	37.50	247.50
					1,682.75	9,664.90

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

12/21/2009 3:57:39 PM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	4.4	4.4	4.3	6.0	6.0	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				0.0	0.0	100.0
Strip mall				0.0	0.0	100.0
Timeshare				0.0	0.0	100.0
Mini Golf				0.0	0.0	100.0
Hotel Peak				0.0	0.0	100.0
Condo/Townhouse Peak				0.0	0.0	100.0

1/4/2011 11:30:29 AM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\GHG Calcuations\Transportation\Alternative 1 and 3 Winter.urb924

Project Name: Alternative 1 and 3 Operations Winter No Alternative Reduction

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	14.30	17.88	136.67	0.12	24.17	4.59	12,458.26

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	14.30	17.88	136.67	0.12	24.17	4.59	12,458.26

1/4/2011 11:30:29 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	0.21	0.25	2.08	0.00	0.32	0.06	169.11
Condo/townhouse general	2.97	3.46	28.72	0.02	4.41	0.84	2,339.38
Hotel	1.18	1.51	11.28	0.01	2.07	0.39	1,059.83
Strip mall	2.87	3.65	27.30	0.03	5.01	0.95	2,565.21
Timeshare	0.35	0.45	3.37	0.00	0.62	0.12	316.37
Parking	4.72	6.01	44.88	0.04	8.24	1.57	4,218.24
Hotel Peak	0.60	0.77	5.72	0.01	1.05	0.20	537.83
Condo/Townhouse Peak	0.22	0.28	2.10	0.00	0.39	0.07	197.73
Skier Drop Off	1.18	1.50	11.22	0.01	2.06	0.39	1,054.56
TOTALS (lbs/day, unmitigated)	14.30	17.88	136.67	0.12	24.17	4.59	12,458.26

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments low rise	0.81	3.24	dwelling units	13.00	42.12	185.31
Condo/townhouse general	10.38	3.51	dwelling units	166.00	582.66	2,563.41

1/4/2011 11:30:29 AM

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		3.00	rooms	67.00	201.00	1,206.00
Strip mall		19.46	1000 sq ft	25.00	486.50	2,919.00
Timeshare		6.00	unknown	10.00	60.00	360.00
Parking		2.00	unknown	400.00	800.00	4,800.00
Hotel Peak		1.50	unknown	68.00	102.00	612.00
Condo/Townhouse Peak		1.50	unknown	25.00	37.50	225.00
Skier Drop Off		2.00	unknown	100.00	200.00	1,200.00
					2,511.78	14,070.72

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0

1/4/2011 11:30:29 AM

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	4.1	4.4	4.6	5.9	5.9	6.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				0.0	0.0	100.0
Strip mall				0.0	0.0	100.0
Timeshare				0.0	0.0	100.0
Parking				0.0	0.0	100.0
Hotel Peak				0.0	0.0	100.0
Condo/Townhouse Peak				0.0	0.0	100.0
Skier Drop Off				0.0	0.0	100.0

12/21/2009 4:00:02 PM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\GHG Calcuations\Transportation\Alternative 4 Summer and Winter.urb924

Project Name: Alternative 4 Operations Summer and Winter No Alternative Reduction

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	2.73	3.30	25.82	0.02	4.35	0.83	2,250.82

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	2.73	3.30	25.82	0.02	4.35	0.83	2,250.82

12/21/2009 4:00:02 PM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.60	0.65	5.49	0.00	0.82	0.16	435.80
General office building	2.13	2.65	20.33	0.02	3.53	0.67	1,815.02
TOTALS (lbs/day, unmitigated)	2.73	3.30	25.82	0.02	4.35	0.83	2,250.82

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	5.33	7.25	dwelling units	16.00	116.00	475.39
General office building		27.40	1000 sq ft	15.00	411.00	2,055.00
					527.00	2,530.39

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	4.0	4.0	4.2	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General office building				0.0	0.0	100.0

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\GHG Calcuations\Transportation\Alternative 4 Summer and Winter.urb924

Project Name: Alternative 4 Operations Summer and Winter No Alternative Reduction

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	2.54	2.22	21.97	0.02	4.35	0.83	2,578.32

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	2.54	2.22	21.97	0.02	4.35	0.83	2,578.32

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.67	0.44	4.72	0.00	0.82	0.16	497.33
General office building	1.87	1.78	17.25	0.02	3.53	0.67	2,080.99
TOTALS (lbs/day, unmitigated)	2.54	2.22	21.97	0.02	4.35	0.83	2,578.32

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	5.33	7.25	dwelling units	16.00	116.00	475.39
General office building		27.40	1000 sq ft	15.00	411.00	2,055.00
					527.00	2,530.39

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	4.0	4.0	4.2	5.0	5.0	5.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
General office building				0.0	0.0	100.0

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\GHG Calcuations\Transportation\Alternative 6 Winter.urb924

Project Name: Alternative 6 Operations Winter No Alternative Reduction

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	13.87	16.77	130.48	0.12	22.33	4.26	11,558.75

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	13.87	16.77	130.48	0.12	22.33	4.26	11,558.75

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.43	0.47	3.96	0.00	0.58	0.11	311.22
Apartments low rise	0.20	0.21	1.81	0.00	0.27	0.05	142.39
Condo/townhouse general	3.56	3.83	32.41	0.03	4.78	0.92	2,549.45
Hotel	0.84	1.06	8.01	0.01	1.45	0.28	742.34
Strip mall	2.84	3.60	27.10	0.03	4.90	0.93	2,511.66
Skier Drop-off	1.14	1.44	10.82	0.01	1.96	0.37	1,003.16
Parking	4.54	5.75	43.29	0.04	7.83	1.49	4,012.63
Hotel Peak	0.32	0.41	3.08	0.00	0.56	0.11	285.90
TOTALS (lbs/day, unmitigated)	13.87	16.77	130.48	0.12	22.33	4.26	11,558.75

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	4.67	6.07	dwelling units	14.00	84.98	338.87
Apartments low rise	0.75	3.24	dwelling units	12.00	38.88	155.04
Condo/townhouse general	12.19	3.57	dwelling units	195.00	696.15	2,776.04

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		4.00	rooms	37.00	148.00	843.60
Strip mall		20.03	1000 sq ft	25.00	500.75	2,854.28
Skier Drop-off		2.00	unknown	100.00	200.00	1,140.00
Parking		2.00	unknown	400.00	800.00	4,560.00
Hotel Peak		1.50	unknown	38.00	57.00	324.90
					2,525.76	12,992.73

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	3.5	4.3	4.2	5.6	5.6	5.7
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				0.0	0.0	100.0
Strip mall				0.0	0.0	100.0
Skier Drop-off				0.0	0.0	100.0
Parking				0.0	0.0	100.0
Hotel Peak				0.0	0.0	100.0

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\GHG Calcuations\Transportation\Alternative 6 Summer.urb924

Project Name: Alternative 6 Operations Summer No Atlernative Mode Reduction

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	10.11	6.88	70.04	0.07	13.56	2.59	8,085.37

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	10.11	6.88	70.04	0.07	13.56	2.59	8,085.37

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.50	0.33	3.59	0.00	0.63	0.12	382.90
Apartments low rise	0.28	0.15	1.64	0.00	0.29	0.06	175.19
Condo/townhouse general	4.87	2.74	29.39	0.03	5.17	0.99	3,136.73
Hotel	1.23	0.92	8.88	0.01	1.87	0.36	1,101.22
Strip mall	2.59	2.45	23.76	0.03	5.01	0.95	2,944.52
Hotel Peak	0.64	0.29	2.78	0.00	0.59	0.11	344.81
TOTALS (lbs/day, unmitigated)	10.11	6.88	70.04	0.07	13.56	2.59	8,085.37

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	4.67	6.07	dwelling units	14.00	84.98	367.10
Apartments low rise	0.75	3.24	dwelling units	12.00	38.88	167.95
Condo/townhouse general	12.19	3.57	dwelling units	195.00	696.15	3,007.23
Hotel		4.92	rooms	37.00	182.04	1,092.24
Strip mall		19.47	1000 sq ft	25.00	486.75	2,920.50

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel Peak		1.50	unknown	38.00	57.00	342.00
					1,545.80	7,897.02

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.4	4.4	4.4	9.5	7.4	7.4

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	4.4	4.5	4.2	5.5	5.4	6.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				0.0	0.0	100.0
Strip mall				0.0	0.0	100.0
Hotel Peak				0.0	0.0	100.0

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\GHG Calcuations\Transportation\Alternative 5 Winter.urb924

Project Name: Alternative 5 Operations Winter No Alternative Reduction

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	14.06	17.21	134.20	0.11	22.85	4.36	11,843.39

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	14.06	17.21	134.20	0.11	22.85	4.36	11,843.39

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.48	0.55	4.62	0.00	0.69	0.13	365.93
Apartments low rise	0.19	0.22	1.83	0.00	0.27	0.05	145.06
Condo/townhouse general	3.95	4.49	37.83	0.03	5.62	1.08	2,996.87
Hotel	0.85	1.07	8.07	0.01	1.46	0.28	747.90
Strip mall	2.59	3.28	24.66	0.02	4.46	0.85	2,285.94
Skier Drop-off	1.14	1.44	10.82	0.01	1.96	0.37	1,003.16
Parking	4.54	5.75	43.29	0.04	7.83	1.49	4,012.63
Hotel Peak	0.32	0.41	3.08	0.00	0.56	0.11	285.90
TOTALS (lbs/day, unmitigated)	14.06	17.21	134.20	0.11	22.85	4.36	11,843.39

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	5.33	6.13	dwelling units	16.00	98.08	398.98
Apartments low rise	0.75	3.24	dwelling units	12.00	38.88	158.16
Condo/townhouse general	14.06	3.57	dwelling units	225.00	803.25	3,267.54

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		4.03	rooms	37.00	149.11	849.93
Strip mall		18.23	1000 sq ft	25.00	455.75	2,597.77
Skier Drop-off		2.00	unknown	100.00	200.00	1,140.00
Parking		2.00	unknown	400.00	800.00	4,560.00
Hotel Peak		1.50	unknown	38.00	57.00	324.90
					2,602.07	13,297.28

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	3.5	4.2	4.4	5.6	5.6	5.7
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				0.0	0.0	100.0
Strip mall				0.0	0.0	100.0
Skier Drop-off				0.0	0.0	100.0
Parking				0.0	0.0	100.0
Hotel Peak				0.0	0.0	100.0

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\GHG Calcuations\Transportation\Alternative 5 Summer.urb924

Project Name: Alternative 5 Operations Summer No Atlernative Mode Reduction

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	10.57	7.12	72.58	0.08	13.99	2.67	8,340.94

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	10.57	7.12	72.58	0.08	13.99	2.67	8,340.94

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	0.58	0.39	4.14	0.00	0.73	0.14	441.93
Condo/townhouse general	5.63	3.17	34.00	0.04	5.99	1.15	3,629.44
Hotel	1.23	0.92	8.88	0.01	1.87	0.36	1,101.22
Strip mall	2.49	2.35	22.78	0.03	4.81	0.91	2,823.54
Hotel Peak	0.64	0.29	2.78	0.00	0.59	0.11	344.81
TOTALS (lbs/day, unmitigated)	10.57	7.12	72.58	0.08	13.99	2.67	8,340.94

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	5.33	6.13	dwelling units	16.00	98.08	423.69
Condo/townhouse general	14.06	3.58	dwelling units	225.00	805.50	3,479.60
Hotel		4.92	rooms	37.00	182.04	1,092.24
Strip mall		18.67	1000 sq ft	25.00	466.75	2,800.50
Hotel Peak		1.50	unknown	38.00	57.00	342.00
					1,609.37	8,138.03

12/21/2009 4:00:44 PM

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	32.7	0.0	99.7	0.3
Light Truck < 3750 lbs	24.3	0.0	95.1	4.9
Light Truck 3751-5750 lbs	19.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	9.2	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.5	0.0	76.0	24.0
Lite-Heavy Truck 10,001-14,000 lbs	1.2	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	6.4	39.1	60.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	2.0	0.0	85.0	15.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	4.4	4.4	4.4	9.5	7.4	7.4
Rural Trip Length (miles)	4.4	4.5	4.2	5.5	5.4	6.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
% of Trips - Commercial (by land use)						
Hotel				0.0	0.0	100.0
Strip mall				0.0	0.0	100.0
Hotel Peak				0.0	0.0	100.0

Area Source Outputs (2021)

11/19/2009 8:31:30 AM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Area Source Unmitigated Emissions (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\URBEMIS\Area Source\Alternative 1 & 3\Alternative 1 & 3 Area 2021.urb924

Project Name: Alternative 1 and 3 Area 2021

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas							
Hearth							
Landscape	0.74	0.12	9.27	0.00	0.03	0.03	16.85
Consumer Products	10.47						
Architectural Coatings	2.45						
TOTALS (lbs/day, unmitigated)	13.66	0.12	9.27	0.00	0.03	0.03	16.85

Area Source Changes to Defaults

11/20/2009 8:33:00 AM

Urbemis 2007 Version 9.2.4

Detail Report for Winter Area Source Unmitigated Emissions (Pounds/Day)

File Name:

Project Name: Alternative 2 and exsiting wood stove

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES (Winter Pounds Per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas							
Hearth	0.71	0.13	6.40	0.02	1.04	1.01	177.59
Landscape							
Consumer Products							
Architectural Coatings							
TOTALS (lbs/day, unmitigated)	0.71	0.13	6.40	0.02	1.04	1.01	177.59

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 100%

Percentage of residences with wood fireplaces changed from 10% to 0%

Percentage of residences with natural gas fireplaces changed from 55% to 0%

Days used per year per wood stove changed from 82 days to 120 days

11/18/2009 5:44:52 PM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Area Source Unmitigated Emissions (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\URBEMIS\Area Source\Alternative 2\Alternative 2 Area.urb924

Project Name: Alternative 2 Area

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas							
Hearth							
Landscape	0.25	0.04	3.09	0.00	0.01	0.01	5.62
Consumer Products	0.00						
Architectural Coatings	0.15						
TOTALS (lbs/day, unmitigated)	0.40	0.04	3.09	0.00	0.01	0.01	5.62

Area Source Changes to Defaults

11/18/2009 5:45:40 PM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Area Source Unmitigated Emissions (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\URBEMIS\Area Source\Alternative 4\Alternative 4 Area.urb924

Project Name: Alternative 4 Area Source

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas							
Hearth							
Landscape	0.37	0.05	3.80	0.00	0.01	0.01	6.76
Consumer Products	0.78						
Architectural Coatings	0.40						
TOTALS (lbs/day, unmitigated)	1.55	0.05	3.80	0.00	0.01	0.01	6.76

Area Source Changes to Defaults

9/2/2010 1:46:44 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Sacramento\LGT-Air&Noise\Air\Homewood Ski Resort Expansion EIS 00013.09 (PCAPCD & TRPA)\URBEMIS\Area Source\Alternative 5\Alternative 5 Area 2021.urb924

Project Name: Alternative 5 Area 2021

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	15.90	0.13	9.99	0.00	0.04	0.04	18.00

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	15.90	0.13	9.99	0.00	0.04	0.04	18.00

9/2/2010 1:46:44 PM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas							
Hearth							
Landscape	0.87	0.13	9.99	0.00	0.04	0.04	18.00
Consumer Products	12.38						
Architectural Coatings	2.65						
TOTALS (lbs/day, unmitigated)	15.90	0.13	9.99	0.00	0.04	0.04	18.00

Area Source Changes to Defaults

9/2/2010 11:43:16 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\20197\Desktop\Alternative 6\Alternative 6 Area Source 2021.urb924

Project Name: Alternative 6 Area 2021

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	13.23	0.11	8.35	0.00	0.03	0.03	15.05

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	13.23	0.11	8.35	0.00	0.03	0.03	15.05

9/2/2010 11:43:16 AM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas							
Hearth							
Landscape	0.73	0.11	8.35	0.00	0.03	0.03	15.05
Consumer Products	10.22						
Architectural Coatings	2.28						
TOTALS (lbs/day, unmitigated)	13.23	0.11	8.35	0.00	0.03	0.03	15.05

Area Source Changes to Defaults

Air Quality Trip Rates

Alternative 1 and 3

Land Use	Density	URBMIS Entry[1]	Fehr & Peers Daily Trip Rate	Adjusted Daily Trip Rate[2]	
50% of lodging guests arrive Friday during the PM Peak Hour[3]				**Summer**	**Winter**
Hotel	38 rooms	Hotel Peak	1.5	1.31	1.29
Condo/hotel	30 units	Hotel Peak	1.5	1.31	1.29
Penthouse Condo	15 units	Townhouse/Condo Peak	1.5	1.30	1.29
Fractional Condos	10 units	Townhouse/Condo Peak	1.5	1.30	1.29
Skier Parking (winter only)					
Skier Parking (winter only)	400 spaces	Parking	2	n/a	1.72
Remaining 50% of lodging units, all residential units, and retail uses[4]					
Hotel	37 rooms	Hotel	8.92	4.27	3.46
Condo/hotel	30 units	Hotel	8.92	4.27	3.46
Penthouse Condo	15 units	Townhouse/Condo	5.86	3.08	3.01
Residential Condo/Townhome	151 units	Townhouse/Condo	5.86	3.08	3.01
Fractional Condos	10 units	Timeshare	10.1	4.90	3.88
Apartment	13 units	Apartment (low rise)	6.72	3.55	2.79
Shopping Center	25,000 sf	Strip Mall	42.94	16.83	16.77
Skier Drop Off (winter only)	100 skiers	Skier Drop Off	2.00	n/a	1.72
Golf Course (summer only)	12 holes	Golf Course	3.3	2.48	n/a

Notes

[1] URBEMIS Entry for modeling purposes only

[2] Accounts for internal capture, pass-by (strip mall only), and alternative transportation reductions.

[3] An average of 1.5 vehicles per unit was assumed

[4] Analyzed using typical TRPA and ITE methodologies

Source: Harned pers. comm. B

Alternative 2 (Existing)

Land Use	Density	URBMIS Entry[1]	Daily Trip Rate	Adjusted Daily Trip Rate[2]	
				Summer	**Winter**
Lodge and Maintenance	25,127	Racquetball/Health and General Office Building	100.90	n/a	n/a

Notes

[1] URBEMIS Entry for modeling purposes only

[2] Accounts for internal capture, pass-by (strip mall only), and alternative transportation reductions.

[3] Daily trip rate calculated using the following equation: Square footage/total trips where square footage =

Source: Harned pers. comm. B

Alternative 4

Land Use	Density	URBMIS Entry[1]	Daily Trip Rate	Adjusted Daily Trip Rate[2]	
				Summer	Winter
Residential Lots	16 Lots	Single Family Home	10	6.75	6.75
Commercial	15,000 sf	General Office Building	42.94	25.54	25.54

Notes

[1] URBEMIS Entry for modeling purposes only

[2] Accounts for internal capture, pass-by (strip mall only), and alternative transportation reductions.

Source: Harned pers. comm. B

Alternative 5

Land Use	Density	URBMIS Entry[1]	Daily Trip Rate	Adjusted Daily Trip Rate[2]	
50% of lodging guests arrive Friday during the PM Peak Hour[3]				Summer	Winter
Hotel	38 rooms	Hotel Peak	1.50	1.36	1.30
Skier Parking (winter only)					
Skier Parking (winter only)	400 spaces	Parking	2	n/a	1.73
Remaining 50% of lodging units, all residential units, and retail uses[3]					
Hotel	37 rooms	Hotel	1.50	3.47	3.48
Residential Condo/Townhome	225 units	Townhouse/Condo	5.86	3.08	3.08
Commercial	25,000 sf	Strip Mall	42.94	16.12	15.75
Apartment	12 units	Apartment (low rise)	6.72	n/a[4]	2.79
Skier Drop Off (winter only)	100 skiers	Skier Drop Off	2.00	n/a	1.73
Residential Lots	16 Lots	Single Family Home	10.00	5.28	5.29

Notes

[1] URBEMIS Entry for modeling purposes only

[2] Accounts for internal capture, pass-by (strip mall only), and alternative transportation reductions.

[3] Analyzed using typical TRPA and ITE methodologies

[4] Summer VMT estimate for Alternative 5 does not include trips associated with the 12 workforce housing units. These units were added to the design concept following the originally modeling completed by Fehr & Peers.

Source: Harned pers. comm. B

Alternative 6

Land Use	Density	URBMIS Entry[1]	Daily Trip Rate	Adjusted Daily Trip Rate[2]	
50% of lodging guests arrive Friday during the PM Peak Hour[3]				Summer	Winter
Hotel	25 rooms	Hotel Peak	1.50	1.36	1.29
Condo/hotel	13 units	Hotel Peak	1.50	1.36	1.29
Skier Parking (winter only)					
Skier Parking (winter only)	400 spaces	Parking	2	n/a	1.72
Remaining 50% of lodging units, all residential units, and retail uses[3]					

Hotel	25 rooms	Hotel	8.92	4.23	3.44
Condo/hotel	12 units	Hotel	8.92	4.23	3.44
Residential Condo/Townhome	195 units	Townhouse/Condo	5.86	3.07	3.07
Apartment	12 units	Apartment (low rise)	6.72	2.78	2.78
Commercial	25,000 sf	Strip Mall	42.94	16.73	17.22
Skier Drop Off (winter only)	100 skiers	Skier Drop Off	2.00	n/a	1.72
Residential Lots	14 Lots	Single Family Home	10.00	5.22	5.22

Notes

[1] URBEMIS Entry for modeling purposes only

[2] Accounts for internal capture, pass-by (strip mall only), and alternative transportation reductions.

[3] Analyzed using typical TRPA and ITE methodologies

Source: Harned pers. comm. B

Climate Change Trip Rates

Alternative 1 and 3

Land Use	URBMIS Entry[1]	Fehr & Peers Daily Trip Rate	Adjusted Daily Trip Rate[2]	
50% of lodging guests arrive Friday during the PM Peak Hour[3]			**Summer**	**Winter**
Hotel	Hotel Peak	1.5	1.50	1.50
Condo/hotel	Hotel Peak	1.5	1.50	1.50
Penthouse Condo	Townhouse/Condo Peak	1.5	1.50	1.50
Fractional Condos	Townhouse/Condo Peak	1.5	1.50	1.50
Skier Parking (winter only)				
Skier Parking (winter only)		2.00	n/a	2.00
Remaining 50% of lodging units, all residential units, and retail uses[4]				
Hotel	Hotel	8.92	4.91	3.00
Condo/hotel	Hotel	8.92	4.91	3.00
Penthouse Condo	Townhouse/Condo	5.86	3.54	3.57
Residential Condo/Townhome	Townhouse/Condo	5.86	3.54	3.57
Fractional Condos	Timeshare	10.1	5.60	6.00
Apartment	Apartment (low rise)	6.72	4.09	3.24
Shopping Center	Strip Mall	42.94	19.35	19.47
Skier Drop Off (winter only)	Skier Drop Off	2.00	n/a	2.00
Golf Course (summer only)	Golf Course	3.3	2.81	n/a

Notes

[1] URBEMIS Entry for modeling purposes only

[2] Accounts for internal capture, pass-by (strip mall only), and alternative transportation reductions.

[3] An average of 1.5 vehicles per unit was assumed

[4] Analyzed using typical TRPA and ITE methodologies

Source: Harned pers. comm. A and B

Alternative 2 (Existing)

Land Use	URBMIS Entry[1]	Daily Trip Rate	Adjusted Daily Trip Rate[2]	
			Summer	**Winter**
Lodge and Maintenance	Racquetball/Health and General Office Building	100.90	n/a	n/a

Notes

[1] URBEMIS Entry for modeling purposes only

[2] Accounts for internal capture, pass-by (strip mall only), and alternative transportation reductions.

[3] Daily trip rate calculated using the following equation: Square footage/total trips where square footage = 21, 243 and total trips = 2,535

Source: Harned pers. comm. A and B

Alternative 4

Land Use	URBMIS Entry[1]	Daily Trip Rate	Adjusted Daily Trip Rate[2]	
			Summer	Winter
Residential Lots	Single Family Home	10	7.25	7.25
Commercial	General Office Building	42.94	27.4	27.4

Notes

[1] URBEMIS Entry for modeling purposes only

[2] Accounts for internal capture, pass-by (strip mall only), and alternative transportation reductions.

Source: Harned pers. comm. A and B

Alternative 5

Land Use	URBMIS Entry[1]	Daily Trip Rate	Adjusted Daily Trip Rate[2]	
50% of lodging guests arrive Friday during the PM Peak Hour[3]			**Summer**	**Winter**
Hotel	Hotel Peak	1.50	1.50	1.50
Skier Parking (winter only)				
Skier Parking (winter only)	Parking	2.00	n/a	2.00
Remaining 50% of lodging units, all residential units, and retail uses[3]				
Hotel	Hotel	8.92	4.92	4.03
Residential Condo/Townhome	Townhouse/Condo	5.86	3.58	3.57
Commercial	Strip Mall	42.94	18.67	18.23
Apartment	Apartment (low rise)	6.72	n/a[4]	3.24
Skier Drop Off (winter only)	Skier Drop Off	2.00	n/a	2.00
Residential Lots	Single Family Home	10.00	6.13	6.13

Notes

[1] URBEMIS Entry for modeling purposes only

[2] Accounts for internal capture, pass-by (strip mall only), and alternative transportation reductions.

[3] Analyzed using typical TRPA and ITE methodologies

[4] Summer VMT estimate for Alternative 5 does not include trips associated with the 12 workforce housing units. These units were added to the design concept following the originally modeling completed by Fehr & Peers.

Source: Harned pers. comm. A and B

Alternative 6

Land Use	URBMIS Entry[1]	Daily Trip Rate	Adjusted Daily Trip Rate[2]	
50% of lodging guests arrive Friday during the PM Peak Hour[3]			**Summer**	**Winter**
Hotel	Hotel Peak	1.50	1.50	1.50
Condo/hotel	Hotel Peak	1.50	1.50	1.50
Skier Parking (winter only)				
Skier Parking (winter only)	Parking	2.00	n/a	2.00
Remaining 50% of lodging units, all residential units, and retail uses[3]				
Hotel	Hotel	8.92	4.92	4.00

Condo/hotel	Hotel	8.92	4.92	4.00
Residential Condo/Townhome	Townhouse/Condo	5.86	3.57	3.57
Apartment	Apartment (low rise)	6.72	3.24	3.24
Commercial	Strip Mall	42.94	19.47	20.03
Skier Drop Off (winter only)	Skier Drop Off	2.00	n/a	2.00
Residential Lots	Single Family Home	10.00	6.07	6.07

Notes

[1] URBEMIS Entry for modeling purposes only

[2] Accounts for internal capture, pass-by (strip mall only), and alternative transportation reductions.

[3] Analyzed using typical TRPA and ITE methodologies

Source: Harned pers. comm. A and B

OFFROAD Emissions (Tons per day)								
	ROG Exhaust	CO Exhaust	NOX Exhaust	SO2 Exhaust	PM Exhaust	CO_2 Exhaust	N_2O Exhaust	CH_4 Exhaust
2014	3.34E-03	5.02E-03	1.14E-02	6.82E-06	2.93E-04	6.06E-01	0.00E+00	3.01E-04
2015	3.44E-03	5.17E-03	1.18E-02	7.03E-06	3.03E-04	6.25E-01	0.00E+00	3.10E-04
2016	3.55E-03	5.33E-03	1.21E-02	7.25E-06	3.14E-04	6.45E-01	0.00E+00	3.20E-04
2017	3.66E-03	5.50E-03	1.25E-02	7.48E-06	3.24E-04	6.65E-01	0.00E+00	3.30E-04
2018	3.77E-03	5.67E-03	1.29E-02	7.71E-06	3.36E-04	6.85E-01	0.00E+00	3.40E-04
2019	3.89E-03	5.84E-03	1.33E-02	7.95E-06	3.47E-04	7.06E-01	0.00E+00	3.51E-04
2020	4.01E-03	6.02E-03	1.37E-02	8.19E-06	3.59E-04	7.28E-01	0.00E+00	3.62E-04
2021	4.13E-03	6.21E-03	1.41E-02	8.45E-06	3.72E-04	7.51E-01	0.00E+00	3.73E-04

Notes

[1] Assumes one diesel powered pleasure craft (max Hp 250) operating during the summer season in the Lake Tahoe portion of Placer County

Emission Factor = (tons/day) X (1/P) X (2000 lb/ton) X (1/Hp)X (0.35)

Where

Tons/day = Emissions summarized above

HP = 225

Emission Factor (pounds/ break horsepower-hour)								
	ROG Exhaust	CO Exhaust	NOX Exhaust	SO2 Exhaust	PM Exhaust	CO_2 Exhaust	N_2O Exhaust	CH_4 Exhaust
2014	3.416E-04	5.134E-04	1.169E-03	6.985E-07	2.996E-05	6.208E-02	0.000E+00	3.082E-05
2015	3.522E-04	5.293E-04	1.205E-03	7.201E-07	3.101E-05	6.400E-02	0.000E+00	3.178E-05
2016	3.631E-04	5.457E-04	1.243E-03	7.424E-07	3.210E-05	6.598E-02	0.000E+00	3.276E-05
2017	3.743E-04	5.625E-04	1.281E-03	7.653E-07	3.321E-05	6.802E-02	0.000E+00	3.377E-05
2018	3.859E-04	5.799E-04	1.321E-03	7.890E-07	3.435E-05	7.012E-02	0.000E+00	3.482E-05
2019	3.978E-04	5.979E-04	1.362E-03	8.134E-07	3.553E-05	7.229E-02	0.000E+00	3.589E-05
2020	4.101E-04	6.164E-04	1.404E-03	8.386E-07	3.676E-05	7.453E-02	0.000E+00	3.700E-05
2021	4.228E-04	6.354E-04	1.448E-03	8.645E-07	3.803E-05	7.683E-02	0.000E+00	3.815E-05

Daily Emissions (pounds per day) = (Emission Factor) X (12 hours) X (450 Hp)

Daily Emissions (pounds per day)								
	ROG Exhaust	CO Exhaust	NOX Exhaust	SO2 Exhaust	PM Exhaust	CO_2 Exhaust	N_2O Exhaust	CH_4 Exhaust
2014	1.84	2.77	6.31	0.00	0.16	335	0.00	0.17
2015	1.90	2.86	6.51	0.00	0.17	346	0.00	0.17
2016	1.96	2.95	6.71	0.00	0.17	356	0.00	0.18
2017	2.02	3.04	6.92	0.00	0.18	367	0.00	0.18
2018	2.08	3.13	7.13	0.00	0.19	379	0.00	0.19
2019 [2]	2.15	3.23	7.36	0.00	0.19	390	0.00	0.19
2020 [2]	2.21	3.33	7.58	0.00	0.20	402	0.00	0.20
2021 [2]	2.28	3.43	7.82	0.00	0.21	415	0.00	0.21

Notes

[1] Assumes two engines operating at 225 Hp

[2] Assumes the operation of two water taxis

Daily Hybrid Emissions = (Daily Emissions) X 0.30

Daily Hybrid Emissions (pounds per day)									
	ROG Exhaust	CO Exhaust	NOX Exhaust	SO2 Exhaust	PM10 Exhaust[1]	PM2.5 Exhuast[2]	CO_2 Exhaust[3]	N_2O Exhaust[3]	CH_4 Exhaust[3]
2014	0.55	0.83	1.89	0.00	0.05	0.04	6	0.00	0.00
2015	0.57	0.86	1.95	0.00	0.05	0.05	6	0.00	0.00
2016	0.59	0.88	2.01	0.00	0.05	0.05	6	0.00	0.00
2017	0.61	0.91	2.08	0.00	0.05	0.05	6	0.00	0.00
2018	0.63	0.94	2.14	0.00	0.06	0.05	6	0.00	0.00
2019 [4]	0.64	0.97	2.21	0.00	0.06	0.05	6	0.00	0.00
2020 [4]	0.66	1.00	2.28	0.00	0.06	0.05	7	0.00	0.00
2021 [4]	0.68	1.03	2.35	0.00	0.06	0.06	7	0.00	0.00

Notes

[1] PM10 assumed to be 100% of total PM

[2] PM2.5 assumed to be 92% of total PM

[3] Presented in metric tons per year (assumed 122 operatoinal days per year)

[4] Assumes the operation of two water taxis

		URBEMIS Emission Factor (Grams/bhp)					
Chairlift	**Horsepower**	**ROG**	**NOX**	**CO**	**SOX**	**PM**	**CO_2**
Ellis	300	0.350	4.316	1.391	0.004	0.135	420.920
Quail	130	0.572	5.563	2.796	0.005	0.234	420.920
Quad (2)	99	0.879	2.796	5.563	0.005	0.425	420.920
	400	0.350	4.316	1.391	0.004	0.135	420.920
Madden	150	0.572	4.999	2.241	0.005	0.234	420.920

Source: Tirman pers comm. (D); URBEMIS 2007

Emissions = (emission factor) X (Hp) X (Hours/day) X (Load Factor)

Where

Emission Factor = URBEMIS default summarized above

Hp = Chairlift horsepower summarized above

Hours/day = 0.005 (48 hours per year/8760 hours)

Load Factor = 0.740; URBEMIS default

	Emissions (pounds/day)						
Chairlift	**ROG**	**NOX**	**CO**	**SOX**	**PM10[1]**	**PM2.5[2]**	**CO_2[3]**
Ellis	0.0009	0.0116	0.0037	0	0.0004	0.0003	4.4853
Quail	0.0015	0.0149	0.0075	0	0.0006	0.0006	1.9436
Quad	0.0024	0.0075	0.0149	0	0.0011	0.0010	1.4802
Quad	0.0009	0.0116	0.0037	0	0.0004	0.0003	5.9804
Madden	0.0015	0.0134	0.0060	0	0.0006	0.0006	2.2427
Total	**0.007**	**0.059**	**0.036**	**0.000**	**0.003**	**0.003**	**16.1322**

Notes

[1] PM10 assumed to be 100% of total PM

[2] PM2.5 assumed to be 92% of total PM

[3] Presented in metric tons per year (48 hours of operation per year)

Alternative 1

	2011						2012						2013					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Winter Traffic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hybrid Water Taxi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area																		
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Product	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total Winter	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	2014						2015						2016					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	9.67	8.48	79.91	10.31	2.00	0.06	9.23	7.81	74.36	10.3	1.97	0.06	8.57	7.08	66.7	10.3	1.97	0.06
Winter Traffic	15.04	21.45	157.8	17.28	3.33	0.08	14.2	19.75	146.7	17.27	3.32	0.08	12.92	17.92	130.9	17.25	3.31	0.08
Hybrid Water Taxi	0.55	0.83	1.89	0.05	0.04	0.00	0.57	0.86	1.95	0.05	0.05	0.00	0.59	0.88	2.01	0.05	0.05	0.00
Area																		
Natural Gas	17.58	18.38	23.95	0.44	0.44	0.00	17.58	18.38	23.95	0.44	0.44	0.00	17.58	18.38	23.95	0.44	0.44	0.00
Landscape	0.74	0.12	9.27	0.03	0.03	0.00	0.74	0.12	9.27	0.03	0.03	0.00	0.74	0.12	9.27	0.03	0.03	0.00
Consumer Product	2.10	0.00	0.00	0.00	0.00	0.00	2.10	0.00	0.00	0.00	0.00	0.00	2.10	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	1.28	0.00	0.00	0.00	0.00	0.00	1.28	0.00	0.00	0.00	0.00	0.00	1.28	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**32**	**28**	**115**	**11**	**3**	**0**	**32**	**27**	**110**	**11**	**2**	**0**	**31**	**27**	**102**	**11**	**2**	**0**
Total Winter	**37**	**41**	**184**	**18**	**4**	**0**	**36**	**39**	**173**	**18**	**4**	**0**	**34**	**37**	**157**	**18**	**4**	**0**

	2017						2018						2019					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	9.59	7.5	71.34	11.84	2.26	0.07	9	6.77	65.45	11.83	2.26	0.07	9.79	6.94	68.55	13	2.48	0.07
Winter Traffic	13	17.66	129.7	18.5	3.55	0.09	11.99	15.98	118.6	18.46	3.53	0.09	12.15	15.68	118.8	19.47	3.71	0.09
Hybrid Water Taxi	0.61	0.91	2.08	0.05	0.05	0.00	0.63	0.94	2.14	0.06	0.05	0.00	0.64	0.97	2.21	0.06	0.05	0.00
Area																		
Natural Gas	21.94	20.83	29.60	0.54	0.54	0.00	21.94	20.83	29.60	0.54	0.54	0.00	25.89	23.08	34.72	0.64	0.64	0.00
Landscape	0.74	0.12	9.27	0.03	0.03	0.00	0.74	0.12	9.27	0.03	0.03	0.00	0.74	0.12	9.27	0.03	0.03	0.00
Consumer Product	4.84	0.00	0.00	0.00	0.00	0.00	4.84	0.00	0.00	0.00	0.00	0.00	7.29	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	1.66	0.00	0.00	0.00	0.00	0.00	1.66	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**39**	**29**	**112**	**12**	**3**	**0**	**39**	**29**	**106**	**12**	**3**	**0**	**46**	**31**	**115**	**14**	**3**	**0**
Total Winter	**42**	**39**	**161**	**19**	**4**	**0**	**41**	**38**	**150**	**19**	**4**	**0**	**48**	**40**	**156**	**20**	**4**	**0**

	2020						2021					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile												
Summer Traffic	9.26	6.37	63.26	12.99	2.48	0.07	10.70	7.17	71.82	14.51	2.77	0.08
Winter Traffic	11.44	14.36	109.3	19.47	3.71	0.09	12.35	15.42	118.24	20.77	3.96	0.10
Hybrid Water Taxi	0.66	1.00	2.28	7.86	0.06	0.05	0.68	1.03	2.35	0.06	0.06	0.00
Area												
Natural Gas	25.89	23.08	34.72	0.64	0.64	0.00	30.94	25.89	41.27	0.77	0.77	0.00
Landscape	0.74	0.12	9.27	0.03	0.03	0.00	0.74	0.12	9.27	0.03	0.03	0.00
Consumer Product	7.29	0.00	0.00	0.00	0.00	0.00	10.47	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	2.00	0.00	0.00	0.00	0.00	0.00	2.45	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**46**	**31**	**110**	**22**	**3**	**0**	**56**	**34**	**125**	**15**	**4**	**0**
Total Winter	**47**	**38**	**146**	**28**	**4**	**0**	**57**	**42**	**162**	**22**	**5**	**0**

Alternative 2

	2011						2012						2013					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Winter Traffic	13.69	18.94	146.97	11.62	2.27	0.06	12.27	17.37	131.06	11.61	2.26	0.06	11.30	15.99	119.14	11.60	2.25	0.06
Hybrid Water Taxi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area																		
Natural Gas	0.21	2.46	2.92	0.01	0.01	0.00	0.21	2.46	2.92	0.01	0.01	0.00	0.21	2.46	2.92	0.01	0.01	0.00
Wood Hearth	0.71	0.13	6.40	1.04	1.01	0.02	0.71	0.13	6.40	1.04	1.01	0.02	0.71	0.13	6.40	1.04	1.01	0.02
Landscape	0.25	0.04	3.09	0.01	0.01	0.00	0.25	0.04	3.09	0.01	0.01	0.00	0.25	0.04	3.09	0.01	0.01	0.00
Consumer Product	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.15	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**1**	**3**	**6**	**0**	**0**	**0**	**1**	**3**	**6**	**0**	**0**	**0**	**1**	**3**	**6**	**0**	**0**	**0**
Total Winter	**15**	**22**	**156**	**13**	**3**	**0**	**13**	**20**	**140**	**13**	**3**	**0**	**12**	**19**	**128**	**13**	**3**	**0**

	2014						2015						2016					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Winter Traffic	10.38	14.59	108.77	11.59	2.24	0.06	9.80	13.34	101.12	11.58	2.23	0.06	8.92	12.20	90.27	11.57	2.22	0.06
Hybrid Water Taxi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area																		
Natural Gas	0.21	2.46	2.92	0.01	0.01	0.00	0.21	2.46	2.92	0.01	0.01	0.00	0.21	2.46	2.92	0.01	0.01	0.00
Wood Hearth	0.71	0.13	6.40	1.04	1.01	0.02	0.71	0.13	6.40	1.04	1.01	0.02	0.71	0.13	6.40	1.04	1.01	0.02
Landscape	0.25	0.04	3.09	0.01	0.01	0.00	0.25	0.04	3.09	0.01	0.01	0.00	0.25	0.04	3.09	0.01	0.01	0.00
Consumer Product	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.15	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**1**	**3**	**6**	**0**	**0**	**0**	**1**	**3**	**6**	**0**	**0**	**0**	**1**	**3**	**6**	**0**	**0**	**0**
Total Winter	**11**	**17**	**118**	**13**	**3**	**0**	**11**	**16**	**110**	**13**	**3**	**0**	**10**	**15**	**100**	**13**	**3**	**0**

	2017						2018						2019					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Winter Traffic	8.28	11.17	82.67	11.56	2.21	0.06	7.65	10.10	75.63	11.55	2.21	0.06	7.27	9.36	70.90	11.54	2.20	0.06
Hybrid Water Taxi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area																		
Natural Gas	0.21	2.46	2.92	0.01	0.01	0.00	0.21	2.46	2.92	0.01	0.01	0.00	0.21	2.46	2.92	0.01	0.01	0.00
Wood Hearth	0.71	0.13	6.40	1.04	1.01	0.02	0.71	0.13	6.40	1.04	1.01	0.02	0.71	0.13	6.40	1.04	1.01	0.02
Landscape	0.25	0.04	3.09	0.01	0.01	0.00	0.25	0.04	3.09	0.01	0.01	0.00	0.25	0.04	3.09	0.01	0.01	0.00
Consumer Product	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.15	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**1**	**3**	**6**	**0**	**0**	**0**	**1**	**3**	**6**	**0**	**0**	**0**	**1**	**3**	**6**	**0**	**0**	**0**
Total Winter	**9**	**14**	**92**	**13**	**3**	**0**	**9**	**13**	**85**	**13**	**3**	**0**	**8**	**12**	**80**	**13**	**3**	**0**

	2020						2021					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile												
Summer Traffic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Winter Traffic	6.84	8.58	65.25	11.54	2.20	0.06	6.84	8.58	65.25	11.54	2.20	0.06
Hybrid Water Taxi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area												
Natural Gas	0.21	2.46	2.92	0.01	0.01	0.00	0.21	2.46	2.92	0.01	0.01	0.00
Wood Hearth	0.71	0.13	6.40	1.04	1.01	0.02	0.71	0.13	6.40	1.04	1.01	0.02
Landscape	0.25	0.04	3.09	0.01	0.01	0.00	0.25	0.04	3.09	0.01	0.01	0.00
Consumer Product	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.15	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**1**	**3**	**6**	**0**	**0**	**0**	**1**	**3**	**6**	**0**	**0**	**0**
Total Winter	**8**	**11**	**75**	**13**	**3**	**0**	**8**	**11**	**75**	**13**	**3**	**0**

Alternative 3

	2011						2012						2013					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Winter Traffic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hybrid Water Taxi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area																		
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Product	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total Winter	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	2014						2015						2016					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	9.67	8.48	79.91	10.31	2.00	0.06	9.23	7.81	74.36	10.3	1.97	0.06	8.57	7.08	66.7	10.3	1.97	0.06
Winter Traffic	15.04	21.45	157.82	17.28	3.33	0.08	14.2	19.75	146.7	17.27	3.32	0.08	12.92	17.92	130.85	17.25	3.31	0.08
Hybrid Water Taxi	0.55	0.83	1.89	0.05	0.04	0.00	0.57	0.86	1.95	0.05	0.05	0.00	0.59	0.88	2.01	0.05	0.05	0.00
Area																		
Natural Gas	17.58	18.38	23.95	0.44	0.44	0.00	17.58	18.38	23.95	0.44	0.44	0.00	17.58	18.38	23.95	0.44	0.44	0.00
Landscape	0.74	0.12	9.27	0.03	0.03	0.00	0.74	0.12	9.27	0.03	0.03	0.00	0.74	0.12	9.27	0.03	0.03	0.00
Consumer Product	2.10	0.00	0.00	0.00	0.00	0.00	2.10	0.00	0.00	0.00	0.00	0.00	2.10	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	1.28	0.00	0.00	0.00	0.00	0.00	1.28	0.00	0.00	0.00	0.00	0.00	1.28	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**32**	**28**	**115**	**11**	**3**	**0**	**32**	**27**	**110**	**11**	**2**	**0**	**31**	**27**	**102**	**11**	**2**	**0**
Total Winter	**37**	**41**	**184**	**18**	**4**	**0**	**36**	**39**	**173**	**18**	**4**	**0**	**34**	**37**	**157**	**18**	**4**	**0**

	2017						2018						2019					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	9.59	7.5	71.34	11.84	2.26	0.07	9	6.77	65.45	11.83	2.26	0.07	9.79	6.94	68.55	13	2.48	0.07
Winter Traffic	13	17.66	129.71	18.5	3.55	0.09	11.99	15.98	118.6	18.46	3.53	0.09	12.15	15.68	118.75	19.47	3.71	0.09
Hybrid Water Taxi	0.61	0.91	2.08	0.05	0.05	0.00	0.63	0.94	2.14	0.06	0.05	0.00	0.64	0.97	2.21	0.06	0.05	0.00
Area																		
Natural Gas	21.94	20.83	29.60	0.54	0.54	0.00	21.94	20.83	29.60	0.54	0.54	0.00	25.89	23.08	34.72	0.64	0.64	0.00
Landscape	0.74	0.12	9.27	0.03	0.03	0.00	0.74	0.12	9.27	0.03	0.03	0.00	0.74	0.12	9.27	0.03	0.03	0.00
Consumer Product	4.84	0.00	0.00	0.00	0.00	0.00	4.84	0.00	0.00	0.00	0.00	0.00	7.29	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	1.66	0.00	0.00	0.00	0.00	0.00	1.66	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**39**	**29**	**112**	**12**	**3**	**0**	**39**	**29**	**106**	**12**	**3**	**0**	**46**	**31**	**115**	**14**	**3**	**0**
Total Winter	**42**	**39**	**161**	**19**	**4**	**0**	**41**	**38**	**150**	**19**	**4**	**0**	**48**	**40**	**156**	**20**	**4**	**0**

	2020						2021					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile												
Summer Traffic	9.26	6.37	63.26	12.99	2.48	0.07	10.70	7.17	71.82	14.51	2.77	0.08
Winter Traffic	11.44	14.36	109.28	19.47	3.71	0.09	12.35	15.42	118.24	20.77	3.96	0.10
Hybrid Water Taxi	0.66	1.00	2.28	7.86	0.06	0.05	0.68	1.03	2.35	0.06	0.06	0.00
Area												
Natural Gas	25.89	23.08	34.72	0.64	0.64	0.00	30.94	25.89	41.27	0.77	0.77	0.00
Landscape	0.74	0.12	9.27	0.03	0.03	0.00	0.74	0.12	9.27	0.03	0.03	0.00
Consumer Product	7.29	0.00	0.00	0.00	0.00	0.00	10.47	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	2.00	0.00	0.00	0.00	0.00	0.00	2.45	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**46**	**31**	**110**	**22**	**3**	**0**	**56**	**34**	**125**	**15**	**4**	**0**
Total Winter	**47**	**38**	**146**	**28**	**4**	**0**	**57**	**42**	**162**	**22**	**5**	**0**

Alternative 4

	2011						2012						2013					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	0.00	0.00	0.00	0.00	0.00	0.00	3.96	4.15	39.94	4.06	0.79	0.02	3.69	3.83	36.46	4.06	0.79	0.02
Winter Traffic	0.00	0.00	0.00	0.00	0.00	0.00	4.52	6.18	47.93	4.06	0.79	0.02	4.17	5.7	43.62	4.06	0.79	0.02
Hybrid Water Taxi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area																		
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.16	0.34	0.01	0.01	0.00	0.26	0.16	0.34	0.01	0.01	0.00
Landscape	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.05	3.80	0.01	0.01	0.00	0.37	0.05	3.80	0.01	0.01	0.00
Consumer Product	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00
Total Summer	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**4**	**44**	**4**	**1**	**0**	**6**	**4**	**41**	**4**	**1**	**0**
Total Winter	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**6**	**48**	**4**	**1**	**0**	**6**	**6**	**44**	**4**	**1**	**0**

	2014						2015						2016					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	3.43	3.5	33.38	4.05	0.79	0.02	3.26	3.23	31.08	4.05	0.78	0.02	3.01	2.93	27.93	4.05	0.77	0.02
Winter Traffic	3.83	5.21	39.89	4.05	0.79	0.02	3.62	4.8	37.07	4.05	0.78	0.02	3.3	4.35	33.14	4.05	0.77	0.02
Hybrid Water Taxi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area																		
Natural Gas	0.26	0.16	0.34	0.01	0.01	0.00	0.26	0.16	0.34	0.01	0.01	0.00	0.26	0.16	0.34	0.01	0.01	0.00
Landscape	0.37	0.05	3.80	0.01	0.01	0.00	0.37	0.05	3.80	0.01	0.01	0.00	0.37	0.05	3.80	0.01	0.01	0.00
Consumer Product	0.78	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.40	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00
Total Summer	**5**	**4**	**38**	**4**	**1**	**0**	**5**	**3**	**35**	**4**	**1**	**0**	**5**	**3**	**32**	**4**	**1**	**0**
Total Winter	**5**	**5**	**40**	**4**	**1**	**0**	**5**	**5**	**37**	**4**	**1**	**0**	**5**	**5**	**33**	**4**	**1**	**0**

	2017						2018						2019					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	2.81	2.68	25.67	4.03	0.77	0.02	2.63	2.42	23.56	4.03	0.77	0.02	2.51	2.25	22.1	4.03	0.77	0.02
Winter Traffic	3.07	3.98	30.37	4.03	0.77	0.02	2.84	3.61	27.81	4.03	0.77	0.02	2.7	3.34	26.06	4.03	0.77	0.02
Hybrid Water Taxi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area																		
Natural Gas	0.26	0.16	0.34	0.01	0.01	0.00	0.26	0.16	0.34	0.01	0.01	0.00	0.26	0.16	0.34	0.01	0.01	0.00
Landscape	0.37	0.05	3.80	0.01	0.01	0.00	0.37	0.05	3.80	0.01	0.01	0.00	0.37	0.05	3.80	0.01	0.01	0.00
Consumer Product	0.78	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.40	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00
Total Summer	**5**	**3**	**30**	**4**	**1**	**0**	**4**	**3**	**28**	**4**	**1**	**0**	**4**	**2**	**26**	**4**	**1**	**0**
Total Winter	**5**	**4**	**31**	**4**	**1**	**0**	**4**	**4**	**28**	**4**	**1**	**0**	**4**	**4**	**26**	**4**	**1**	**0**

	2020						2021					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile												
Summer Traffic	2.37	2.06	20.4	4.03	0.77	0.02	2.37	2.06	20.40	4.03	0.77	0.02
Winter Traffic	2.53	3.07	23.99	4.03	0.77	0.02	2.53	3.07	23.99	4.03	0.77	0.02
Hybrid Water Taxi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area												
Natural Gas	0.26	0.16	0.34	0.01	0.01	0.00	0.26	0.16	0.34	0.01	0.01	0.00
Landscape	0.37	0.05	3.80	0.01	0.01	0.00	0.37	0.05	3.80	0.01	0.01	0.00
Consumer Product	0.78	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.40	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00
Total Summer	**4**	**2**	**25**	**4**	**1**	**0**	**4**	**2**	**25**	**4**	**1**	**0**
Total Winter	**4**	**3**	**24**	**4**	**1**	**0**	**4**	**3**	**24**	**4**	**1**	**0**

Alternative 5

	2011						2012						2013					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Winter Traffic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hybrid Water Taxi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area																		
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Product	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total Winter	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	2014						2015						2016					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	5.52	5.19	48.46	6.25	1.2	0.03	5.27	4.77	45.09	6.23	1.2	0.03	4.88	4.34	40.46	6.22	1.2	0.03
Winter Traffic	12.62	17.9	132.39	14.36	2.77	0.08	11.92	16.5	123.1	14.33	2.76	0.08	10.86	14.97	109.8	14.32	2.75	0.08
Hybrid Water Taxi	0.55	0.83	1.89	0.05	0.04	0.00	0.57	0.86	1.95	0.05	0.05	0.00	0.59	0.88	2.01	0.05	0.05	0.00
Area																		
Natural Gas	11.29	13.07	15.55	0.28	0.28	0.00	11.29	13.07	15.55	0.28	0.28	0.00	11.29	13.07	15.55	0.28	0.28	0.00
Landscape	0.61	0.10	7.73	0.03	0.03	0.00	0.61	0.10	7.73	0.03	0.03	0.00	0.61	0.10	7.73	0.03	0.03	0.00
Consumer Product	0.59	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.90	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**19**	**19**	**74**	**7**	**2**	**0**	**19**	**19**	**70**	**7**	**2**	**0**	**19**	**18**	**66**	**7**	**2**	**0**
Total Winter	**26**	**32**	**150**	**15**	**3**	**0**	**25**	**30**	**141**	**15**	**3**	**0**	**24**	**29**	**127**	**15**	**3**	**0**

	2017						2018						2019					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	10.44	7.57	74.5	11.49	2.21	0.06	9.79	6.85	68.41	11.48	2.19	0.06	9.65	6.53	66.15	11.79	2.25	0.06
Winter Traffic	14	18.56	140.57	18.99	3.63	0.11	13.03	16.92	129.6	19.12	3.65	0.1	12.61	15.94	123.6	19.39	3.69	0.1
Hybrid Water Taxi	0.61	0.91	2.08	0.05	0.05	0.00	0.63	0.94	2.14	0.06	0.05	0.00	0.64	0.97	2.21	0.06	0.05	0.00
Area																		
Natural Gas	28.72	22.12	38.04	0.71	0.71	0.00	28.72	22.12	38.04	0.71	0.71	0.00	29.86	22.80	39.53	0.74	0.74	0.00
Landscape	0.74	0.12	9.27	0.03	0.03	0.00	0.74	0.12	9.27	0.03	0.03	0.00	0.80	0.13	9.63	0.03	0.03	0.00
Consumer Product	11.59	0.00	0.00	0.00	0.00	0.00	11.59	0.00	0.00	0.00	0.00	0.00	11.99	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	2.41	0.00	0.00	0.00	0.00	0.00	2.41	0.00	0.00	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**55**	**31**	**124**	**12**	**3**	**0**	**54**	**30**	**118**	**12**	**3**	**0**	**55**	**30**	**118**	**13**	**3**	**0**
Total Winter	**57**	**42**	**181**	**20**	**4**	**0**	**56**	**40**	**170**	**20**	**4**	**0**	**58**	**40**	**165**	**20**	**4**	**0**

	2020						2021					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile												
Summer Traffic	9.13	6	61.07	11.79	2.25	0.06	9.38	6.17	62.88	12.11	2.31	0.06
Winter Traffic	11.85	14.6	113.81	19.38	3.69	0.1	12.06	14.84	115.80	19.68	3.74	0.10
Hybrid Water Taxi	0.66	1.00	2.28	7.86	0.06	0.05	0.68	1.03	2.35	0.06	0.06	0.00
Area												
Natural Gas	29.86	22.80	39.53	0.74	0.74	0.00	30.94	23.41	40.93	0.77	0.77	0.00
Landscape	0.80	0.13	9.63	0.03	0.03	0.00	0.87	0.13	9.99	0.04	0.04	0.00
Consumer Product	11.99	0.00	0.00	0.00	0.00	0.00	12.38	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	2.54	0.00	0.00	0.00	0.00	0.00	2.65	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**55**	**30**	**113**	**20**	**3**	**0**	**57**	**31**	**116**	**13**	**3**	**0**
Total Winter	**57**	**38**	**156**	**28**	**4**	**0**	**59**	**39**	**159**	**21**	**5**	**0**

Alternative 6

	2011						2012						2013					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Winter Traffic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hybrid Water Taxi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area																		
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Product	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total Winter	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

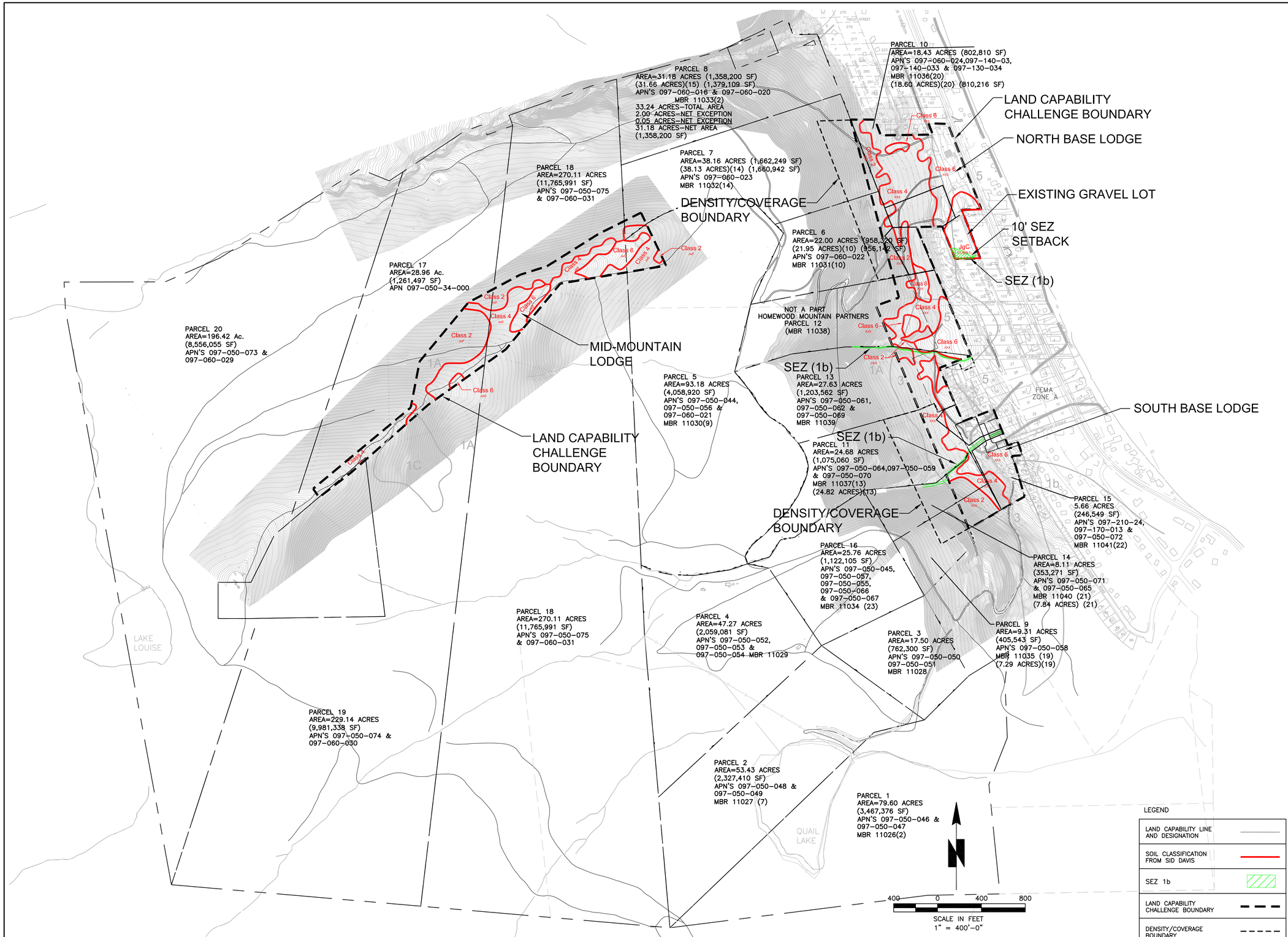
	2014						2015						2016					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	5.96	5.53	51.82	6.62	1.28	0.03	5.69	5.09	48.22	6.62	1.28	0.03	5.27	4.62	43.27	6.61	1.26	0.06
Winter Traffic	12.72	18.01	133.5	14.4	2.78	0.07	12.02	16.59	124.1	14.39	2.78	0.07	10.95	15.04	110.7	14.38	2.77	0.07
Hybrid Water Taxi	0.55	0.83	1.89	0.05	0.04	0.00	0.57	0.86	1.95	0.05	0.05	0.00	0.59	0.88	2.01	0.05	0.05	0.00
Area																		
Natural Gas	11.48	12.69	15.73	0.28	0.28	0.00	11.48	12.69	15.73	0.28	0.28	0.00	11.48	12.69	15.73	0.28	0.28	0.00
Landscape	0.61	0.10	7.73	0.03	0.03	0.00	0.61	0.10	7.73	0.03	0.03	0.00	0.61	0.10	7.73	0.03	0.03	0.00
Consumer Product	0.59	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.84	0.00	0.00	0.00	0.00	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.84	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**20**	**19**	**77**	**7**	**2**	**0**	**20**	**19**	**74**	**7**	**2**	**0**	**19**	**18**	**69**	**7**	**2**	**0**
Total Winter	**26**	**32**	**151**	**15**	**3**	**0**	**26**	**30**	**142**	**15**	**3**	**0**	**24**	**29**	**129**	**15**	**3**	**0**

	2017						2018						2019					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile																		
Summer Traffic	8.71	6.53	63.66	9.97	1.91	0.05	8.17	5.9	58.44	9.97	1.91	0.05	8.05	5.64	56.51	10.25	1.96	0.05
Winter Traffic	12.85	17.08	128.3	17.59	3.37	0.09	11.89	15.44	117.4	17.56	3.36	0.09	11.51	14.55	112	17.81	3.4	0.09
Hybrid Water Taxi	0.61	0.91	2.08	0.05	0.05	0.00	0.63	0.94	2.14	0.06	0.05	0.00	0.64	0.97	2.21	0.06	0.05	0.00
Area																		
Natural Gas	24.00	20.08	32.01	0.60	0.60	0.00	24.00	20.08	32.01	0.60	0.60	0.00	25.15	20.78	33.51	0.62	0.62	0.00
Landscape	0.61	0.10	7.73	0.03	0.03	0.00	0.61	0.10	7.73	0.03	0.03	0.00	0.67	0.11	8.04	0.03	0.03	0.00
Consumer Product	7.09	0.00	0.00	0.00	0.00	0.00	7.09	0.00	0.00	0.00	0.00	0.00	7.44	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	1.74	0.00	0.00	0.00	0.00	0.00	1.74	0.00	0.00	0.00	0.00	0.00	1.85	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**43**	**28**	**106**	**11**	**3**	**0**	**42**	**27**	**100**	**11**	**3**	**0**	**44**	**28**	**100**	**11**	**3**	**0**
Total Winter	**46**	**38**	**162**	**18**	**4**	**0**	**45**	**37**	**152**	**18**	**4**	**0**	**47**	**36**	**148**	**18**	**4**	**0**

	2020						2021					
	ROG	NOX	CO	PM10	PM2.5	SO2	ROG	NOX	CO	PM10	PM2.5	SO2
Mobile												
Summer Traffic	7.62	5.17	52.18	10.25	1.95	0.05	8.94	5.92	60.31	11.68	2.24	0.06
Winter Traffic	10.79	13.33	103.1	17.79	3.39	0.09	11.75	14.42	112.2	19.17	3.66	0.09
Hybrid Water Taxi	0.66	1.00	2.28	7.86	0.06	0.05	0.68	1.03	2.35	0.06	0.06	0.00
Area												
Natural Gas	25.15	20.78	33.51	0.62	0.62	0.00	30.94	24.06	41.02	0.77	0.77	0.00
Landscape	0.67	0.11	8.04	0.03	0.03	0.00	0.73	0.11	8.35	0.03	0.03	0.00
Consumer Product	7.44	0.00	0.00	0.00	0.00	0.00	10.22	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	1.85	0.00	0.00	0.00	0.00	0.00	2.28	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**43**	**27**	**96**	**19**	**3**	**0**	**54**	**31**	**112**	**13**	**3**	**0**
Total Winter	**46**	**35**	**139**	**26**	**4**	**0**	**56**	**40**	**156**	**20**	**4**	**0**

Existing Conditions

	2008					
	ROG	**NOX**	**CO**	**PM10**	**PM2.5**	**SO2**
Mobile						
Summer Traffic	0.00	0.00	0.00	0.00	0.00	0.00
Winter Traffic	6.84	8.58	65.25	11.54	2.20	0.06
Hybrid Water Taxi	0.00	0.00	0.00	0.00	0.00	0.00
Area						
Natural Gas	0.21	2.46	2.92	0.01	0.01	0.00
Wood Hearth	0.71	0.13	6.40	1.04	1.01	0.02
Landscape	0.28	0.04	3.32	0.01	0.01	0.00
Consumer Product	0.00	0.00	0.00	0.00	0.00	0.00
Exterior Coatings	0.15	0.00	0.00	0.00	0.00	0.00
Diesel Generator	0.01	0.06	0.04	0.00	0.00	0.00
Total Summer	**1**	**3**	**6**	**0**	**0**	**0**
Total Winter	**8**	**11**	**75**	**13**	**3**	**0**



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DATE: 09-26-08

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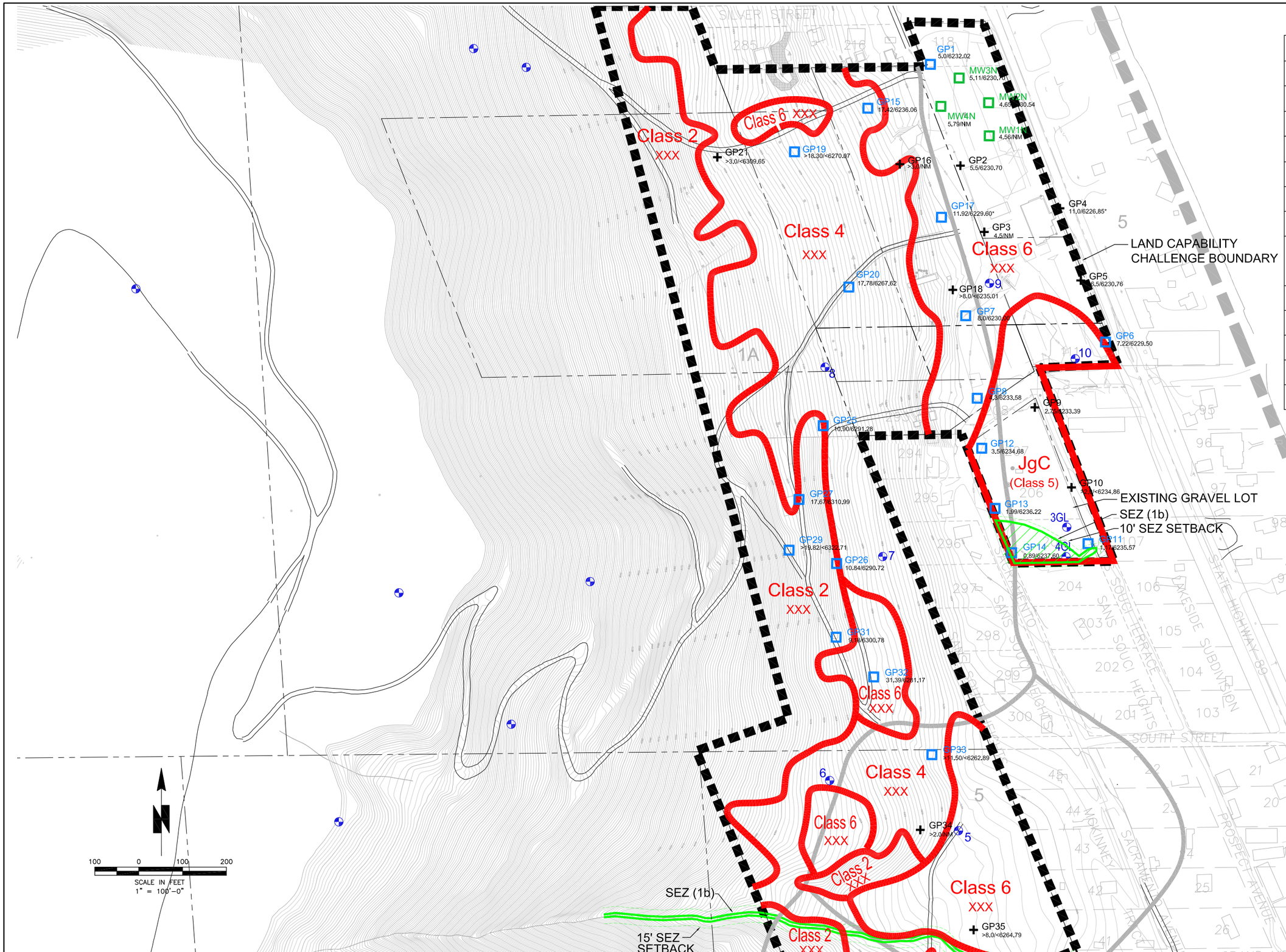
HOMEWOOD VILLAGE RESORTS, LLC

HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

LAND CAPABILITY & SEZ EXHIBIT OVERALL AREA

SHEET C1 OF 6

DATE:



LEGEND

SOIL PEDON	
SOIL PEDON & NUMBER	9
SOIL PEDON & NUMBER LOCATION=MID MOUNTAIN	1MM
SOIL PEDON & NUMBER LOCATION=GRAVEL LOT	3GL
MONITORING WELL, NEW	
MONITORING WELL, EXISTING	
MONITORING WELL, DESTROYED	
SOIL BORING	
GP39 — WELL NAME; 1.72/6298.92 — GROUNDWATER ELEV. (FT) / GROUNDWATER DEPTH (FT); Note: asterisk indicates point not used for contouring.	
SOIL DELINEATION (PROVIDED BY SID DAVIS 09/06)	Class X
LAND CAPABILITY LINE AND DESIGNATION	
SOIL CLASSIFICATION FROM SID DAVIS	
SEZ 1b	
LAND CAPABILITY CHALLENGE BOUNDARY	

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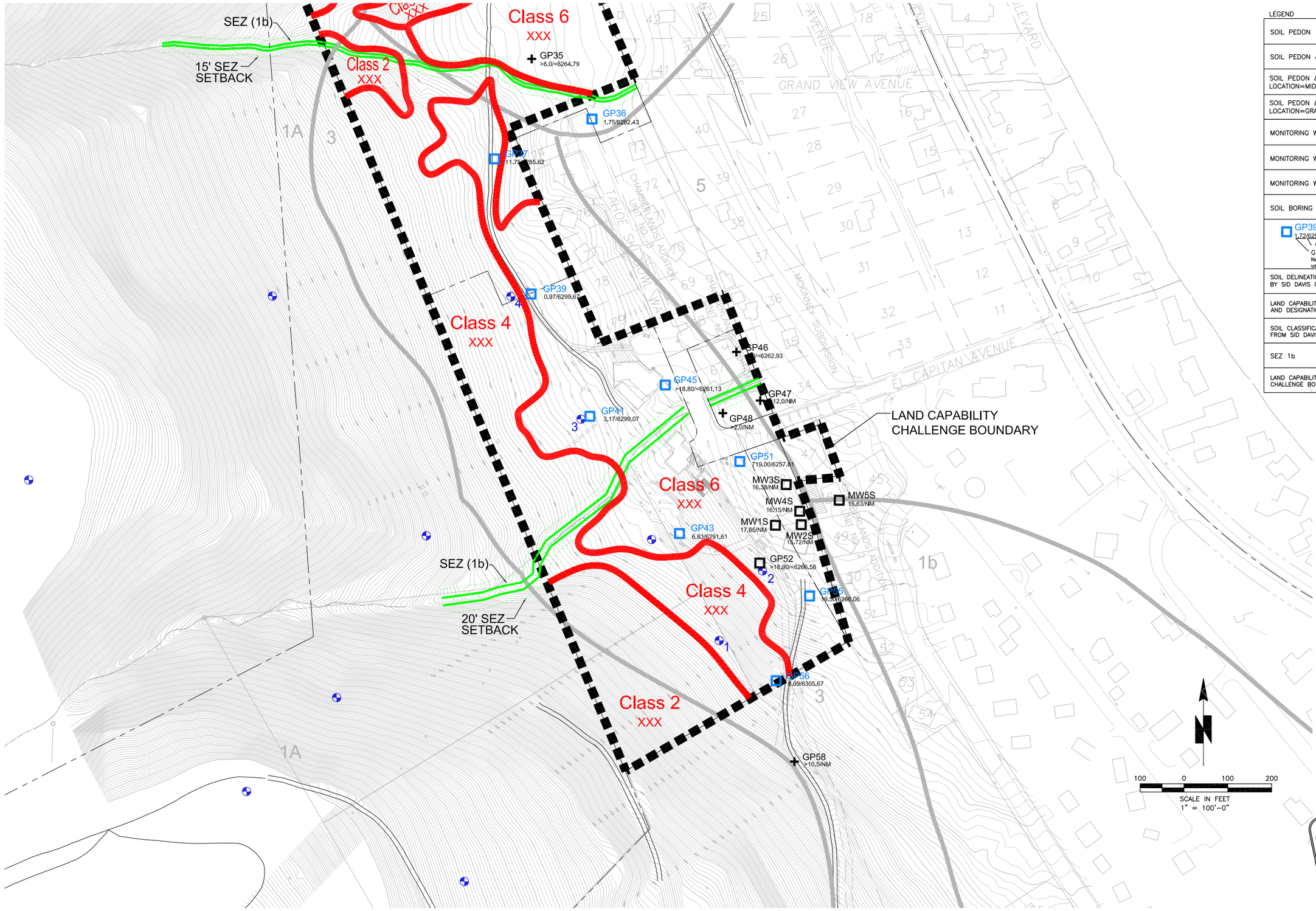
LAND CAPABILITY &
SEZ EXHIBIT
NORTH LODGE

DATE:

SHEET C2 OF 6



SOUTH LODGE

LEGEND

SOIL PEDON	
SOIL PEDON & NUMBER	9
SOIL PEDON & NUMBER LOCATION=MID MOUNTAIN	1MM
SOIL PEDON & NUMBER LOCATION=GRAVEL LOT	3GL
MONITORING WELL, NEW	
MONITORING WELL, EXISTING	
MONITORING WELL, DESTROYED	
SOIL BORING	
GP39 — WELL NAME; 1.72/6298.92 — GROUNDWATER ELEV. (FT) / GROUNDWATER DEPTH (FT); Note: asterisk indicates point not used for contouring.	
SOIL DELINEATION (PROVIDED BY SID DAVIS 09/06)	Class X
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LAND CAPABILITY & SEZ EXHIBIT
SOUTH LODGE

SHEET C3 OF 6

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Class 2
JwF

Class 4
JwE

Class 6
JwD

1MM

2MM

1A

1C

LAND CAPABILITY
CHALLENGE BOUNDARY

MID MOUNTAIN LODGE

LEGEND

SOIL PEDON	
SOIL PEDON & NUMBER	9
SOIL PEDON & NUMBER LOCATION=MID MOUNTAIN	1MM
SOIL PEDON & NUMBER LOCATION=GRAVEL LOT	3GL
MONITORING WELL, NEW	
MONITORING WELL, EXISTING	
MONITORING WELL, DESTROYED	
SOIL BORING	+
GP39 — WELL NAME; 1,72/6298.92 — GROUNDWATER ELEV. (FT) / GROUNDWATER DEPTH (FT); Note: asterisk indicates point not used for contouring.	
SOIL DELINEATION (PROVIDED BY SID DAVIS 09/06)	Class X
LAND CAPABILITY LINE AND DESIGNATION	
SOIL CLASSIFICATION FROM SID DAVIS	
SEZ 1b	
LAND CAPABILITY CHALLENGE BOUNDARY	

N

100 0 100 200

SCALE IN FEET
1" = 100'-0"

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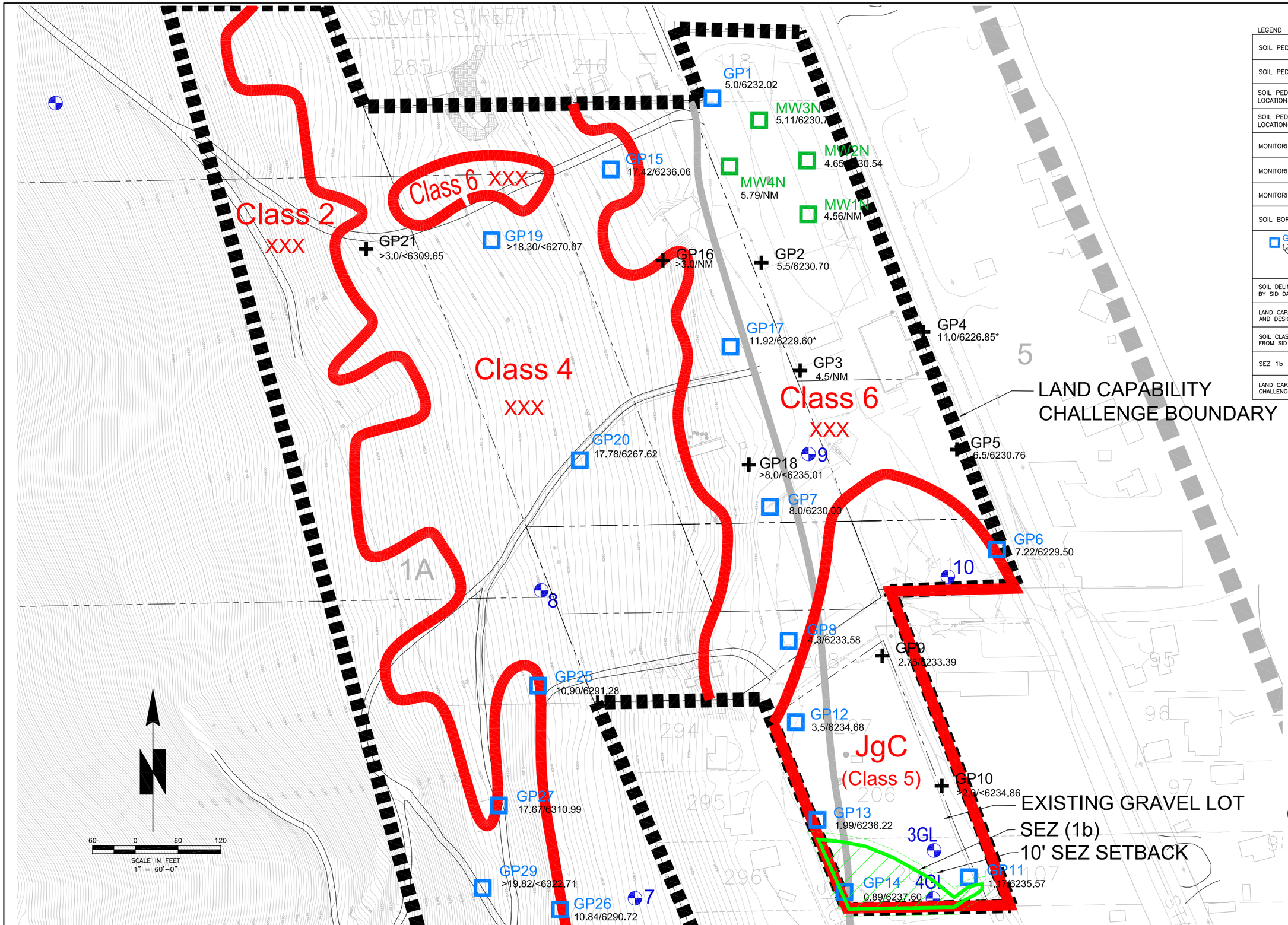
LAND CAPABILITY &
SEZ EXHIBIT
MID MOUNTAIN LODGE

SHEET C4 OF 6



LEGEND

SOIL PEDON	
SOIL PEDON & NUMBER	9
SOIL PEDON & NUMBER LOCATION=MID MOUNTAIN	1MM
SOIL PEDON & NUMBER LOCATION=GRAVEL LOT	3GL
MONITORING WELL, NEW	
MONITORING WELL, EXISTING	
MONITORING WELL, DESTROYED	
SOIL BORING	
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SOIL DELINEATION (PROVIDED BY SID DAVIS 09/06)	Class X
LAND CAPABILITY LINE AND DESIGNATION	
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LAND CAPABILITY CHALLENGE BOUNDARY	

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LAND CAPABILITY & SEZ EXHIBIT NORTH LODGE DETAIL

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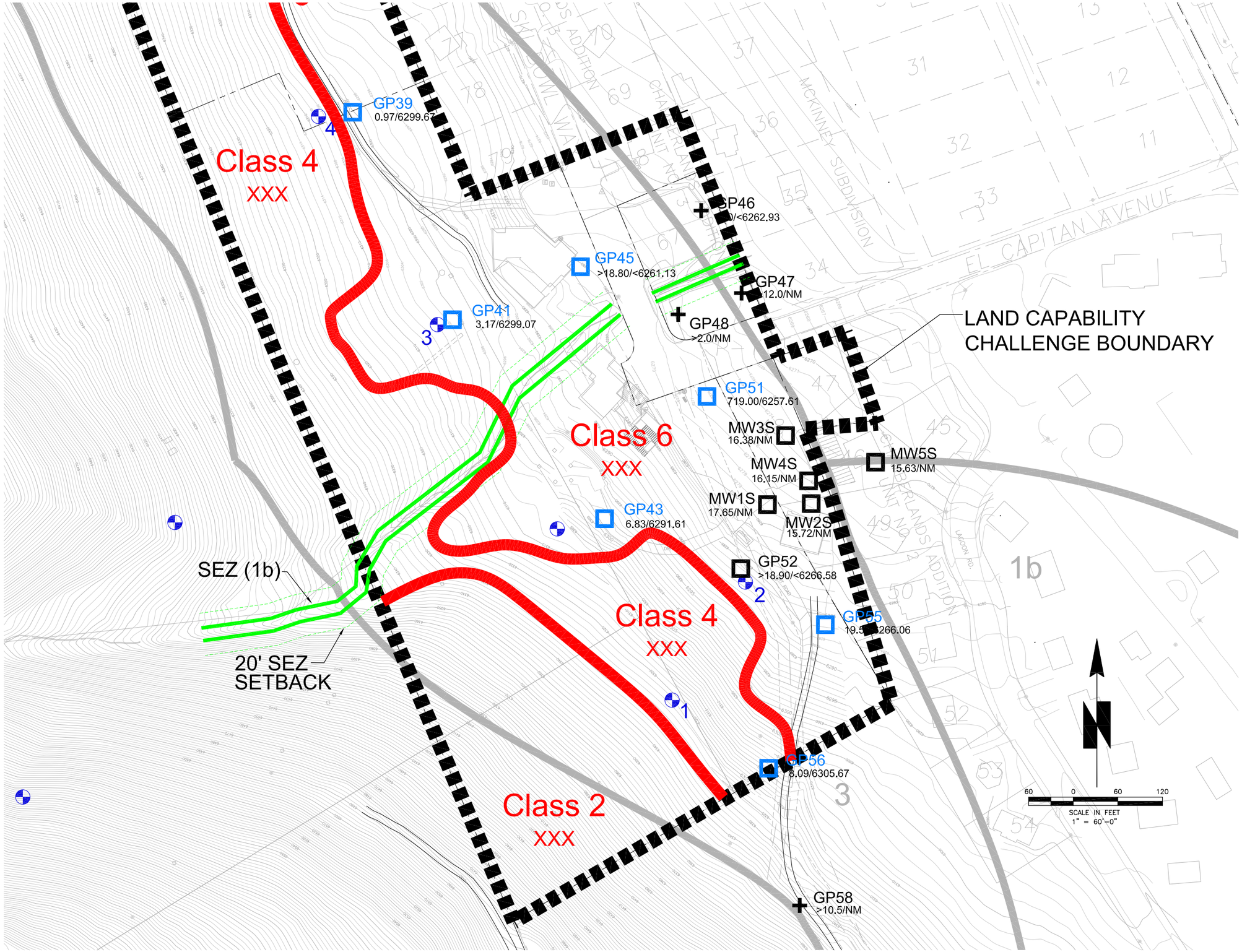

LEGEND

SOIL PEDON	
SOIL PEDON & NUMBER	9
SOIL PEDON & NUMBER LOCATION=MID MOUNTAIN	1MM
SOIL PEDON & NUMBER LOCATION=GRAVEL LOT	3GL
MONITORING WELL, NEW	
MONITORING WELL, EXISTING	
MONITORING WELL, DESTROYED	
SOIL BORING	
GP39 — WELL NAME; 1.72/6298.92 — GROUNDWATER ELEV. (FT) / GROUNDWATER DEPTH (FT); Note: asterisk indicates point not used for contouring.	
SOIL DELINEATION (PROVIDED BY SID DAVIS 09/06)	Class X
LAND CAPABILITY LINE AND DESIGNATION	
SOIL CLASSIFICATION FROM SID DAVIS	
SEZ 1b	
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SOUTH LODGE

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Fx: (775) 329-5098

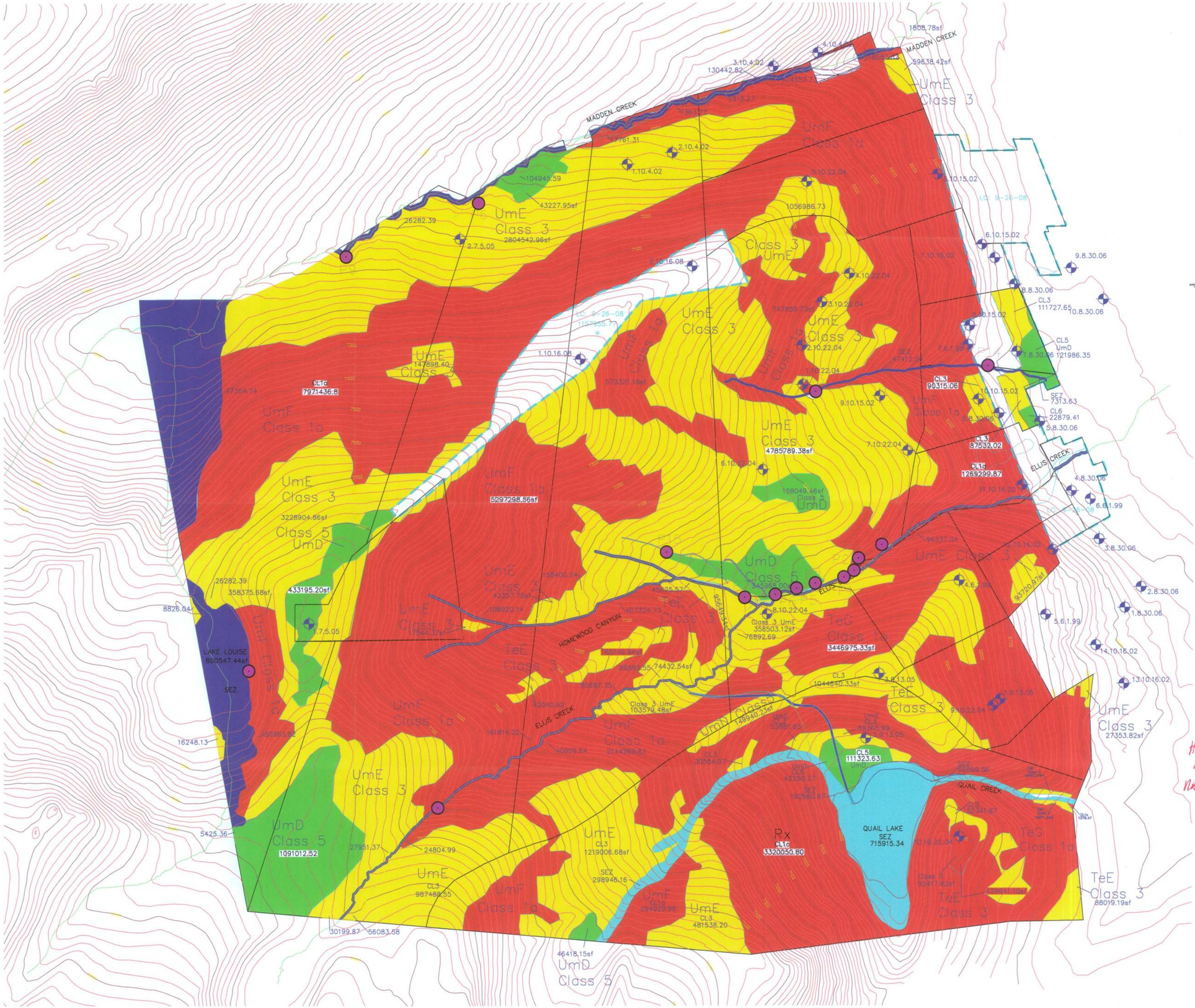
HOMEWOOD VILLAGE RESORTS, LLC

HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

LAND CAPABILITY &
SEZ EXHIBIT
SOUTH LODGE DETAIL

DATE:

SHEET C6 OF 6



DAVIS²
CONSULTING EARTH SCIENTISTS

Georgetown, CA 95634
P.O. Box 734

Tel. (530)333-1405
FAX (530)333-1009

INTEGRATED ENVIRONMENTAL RESTORATIVE SERVICES, INC. (IERS)

Preliminary Land Capability Map

5.10.15.02	Soil Description Site
3	Polygon Number
*	Capability Challenge Area
P14	FIELD VERIFICATION POINTS – IERS
	SEZ PRE VERIFICATION
	SEZ POST VERIFICATION – IERS
	LAND CHALLENGE AREA

SLOPE PERCENTAGES

Color	Range Beg.	Range End	Percent	Area
	0.00	15.00	5.5	2617156.7
	15.00	30.00	39.1	18822973.0
	30.00	100.00	55.4	26644588.0

LC-1B AND SEZ

GENERAL NOTES:

1) EXCEPTING THOSE AREAS AS DELINEATED ON SHEET C1 OF 6, "LAND CAPABILITY & SEZ EXHIBIT OVERALL", AS SHOWN ON THAT PLAN PREPARED BY NICHOLS, CHTD., ENGINEERING & ENVIRONMENTAL SERVICES, DATED 9-26-08.

2) LAND CLASSIFICATIONS AND SOIL DESCRIPTION SITES FROM SID DAVIS.

3) REVISED SEZ POST VERIFICATION FROM IERS, INC.

4) PORTIONS OF THIS MAP REFLECT DEPICTIONS OF A REVISED SEZ BOUNDARIES ON HOMEWOOD MOUNTAIN RESORT PROPERTY BASED ON A FIELD ASSESSMENT CONDUCTED BY TRPA AND IERS, INC. ON 10-22-2010.

5) PRE-VERIFICATION 4,687,581 SF TOTAL
POST-VERIFICATION 2,402,537,SF TOTAL

6) ALL POST-VERIFICATION INFORMATION IS INCORPORATED INTO THE ABOVE TABLES IN ACCORDANCE WITH ITEM NO. 4 ABOVE.

7) NO FIELD ASSESSMENT WAS CONDUCTED IN THE QUAIL LAKE AREA. SEZ INFORMATION IN THIS AREA IS DEPICTED AS PRE VERIFICATION PER ORIGINAL TRPA OVERLAYS.

Applicant Copy - Land Capability Verification
Homewood Mtn Resort - excluding LCC areas approved in 2008.

Note: (1) SEZ areas delineated in field 10-22-10 estimating/measuring stream transects in 15 areas and applying these measurements thru out stream length segments. Field measurements/determinations corroborated w/ aerial + topo work.
SEZ delineation deemed appropriate for Master Planning EIR/EIS process. Any future development in/near SEZ will require additional LCV w/ 2' contour interval survey.

(2) Non-SEZ areas based on Slope-phase adjusted Bailey.

097-060-023 // LCAP2010-0304 // 10/27/2010
HOMEWOOD VILLAGE RESORTS LLC
Gary Midkiff - Midkiff & Associates
0 Viking WAY - Placer County
080 - Land Capability Verification

LICENSED LAND SURVEYOR
Exp 12-31-10
RAYMOND R. HEBERT
No. 5870
STATE OF CALIFORNIA
12-15-10

Heather Beckman 12.20.10

TRI STATE SURVEYING, LTD
1925 E. PRATER WAY
SPARKS, NEVADA 89434
(775) 358-9491 • FAX 358-3664

REVISIONS
MARK
DATE

BENCHMARK LAKE TAHOE DATUM
DESIGNED BY
DRAWN BY RRH
CHECKED BY RRH
DATE SURVEYED
APPROVED BY
NO.

SLOPE / LCC MAP FOR
HOMEWOOD VILLAGE RESORTS, LLC
SITUATE WITHIN A PORTION OF SEC. 1, 2, 11 AND 12
T.14N., R.16E., M.D.M.
HOMEWOOD PLACER COUNTY CALIFORNIA

JOB NO. 06287.01.RC
DATE 12-15-2010
SHEET 1 OF 1

TAHOE REGIONAL PLANNING AGENCY

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September 19, 2001

Kevin Agan
Agan Consulting Corporation
P.O. Box 9180
Incline Village, NV 89452

Dear Mr. Agan:

EXISTING LAND COVERAGE VERIFICATION, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 97-130-05 et. al., TPRA FILE NUMBER 20010384.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Tahoe Regional Planning Agency (TRPA) staff has verified the following existing land coverage:

APN 97-130-05	Square Feet
Buildings	4,950 sq. ft.
Decks	850 sq. ft.
AC Paving	58,061 sq. ft.
Dirt Walk	200 sq. ft.
Total	**64,061 sq. ft.**

APN 97-130-11	Square Feet
AC Paving	19,539 sq. ft.
Total	**19,539 sq. ft.**

APN 97-130-12	Square Feet
Buildings	1,125 sq. ft.
Decks	400 sq. ft.
AC Paving	34,386 sq. ft.
Total	**35,911 sq. ft.**

APN 97-130-13	Square Feet
Buildings	913 sq. ft.
Skier Facilities	1,406 sq. ft.
AC Paving	8,100 sq. ft.
Dirt Walk	8,142 sq. ft.
4 x 4 roads	1,700 sq. ft.
Revegetation Roads	1,600 sq. ft.
Total	**~~30,894 sq. ft.~~**

21,861

in 2006/7 review of coverage for BLA analysis an math error was identified in this table. As noted on the last page of this letter, a portion of dirt walk 047-130-13 not verified. Only 8142 verified, therefore the total verified coverage for this APN should be 21,861 sq. ft.

RG 12/13/06

APN 97-130-14	Square Feet
Skier Facilities	6 sq. ft.
AC Paving	19,500 sq. ft.
Total	**19,506 sq. ft**

APN 97-130-15	Square Feet
Skier Facilities	9 sq. ft.
Total	**9 sq. ft.**

APN 97-130-16	Square Feet
Skier Facilities	136 sq. ft.
4 x 4 Roads	2,200 sq. ft.
Revegetation Roads	2,475 sq. ft.
Total	**4,811 sq. ft.**

APN 97-130-17	Square Feet
Revegetation Road	420 sq. ft.
Total	**420 sq. ft.**

APN 97-140-03	Square Feet
Buildings	139 sq. ft.
AC (Fawn Street)	1,428 sq. ft.
Dirt Walk/ Parking	57,760 sq. ft.
Total	**59,327 sq. ft.**

APN 97-141-33	Square Feet
Skier Facilities	1,293 sq. ft.
AC Paving	16,200 sq. ft.
4 x4 Roads	3,000 sq. ft.
Total	**20,493 sq. ft.**

APN 97-210-01	Square Feet
AC Paving	9,925 sq. ft.
Building	600 sq. ft.
Dirt Areas	6,288 sq. ft.
Total	**16,813 sq. ft.**

APN 97-210-02	Square Feet
AC Paving	6,600 sq. ft.
Total	**6,600 sq. ft.**

APN 97-050-05	Square Feet
Buildings	15,021 sq. ft.
Skier Facilities	1,235 sq. ft.
Gas Tank	240 sq. ft.
AC Paving/ Pedestrian Area	42,797 sq. ft.
Dirt Areas	12,543 sq. ft.
4 x 4 Roads	9,920 sq. ft.
Total	**81,756 sq. ft.**

APN 97-170-13	Square Feet
AC Paving	15,487 sq. ft.
Total	**15,487 sq. ft.**

– Grand Total 375,627

Please be advised, during the site visit, a portion of the dirt walk on APN 97-130-13 was not verified as legally established coverage.

If you have any questions, please call me at (775) 588-4547.

Sincerely,

Julie Thompson

Julie Thompson
Assistant Planner
Project Review Division

c: Homewood Mountain Resort
P.O. Box 165
Homewood, CA 96141

Pat Nick
TRPA Executive Director/Designee

9-25-01
Date

TAHOE REGIONAL PLANNING AGENCY

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March 1, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-060-10, TRPA FILE NUMBER 20050799.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	80,121 square feet
Ski Facilities:	9,112 square feet
Total Existing Land Coverage	**89,233 square feet**

Note, 16,105 square feet of coverage was restored and banked on this parcel per TRPA File Number 970662 (former APN: 097-210-01).

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this Verification Letter may be appealed within twenty-one (21) days of receipt of this correspondence.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner/Soil Scientist
Environmental Review Services

Tim Hagan
Principal Planner/Soil Scientist
Land Capability Program Manager
Environmental Review Services

TAHOE REGIONAL PLANNING AGENCY

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March 1, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-060-12, TRPA FILE NUMBER 20050801.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	106,154 square feet
Ski Facilities:	150 square feet
Total Existing Land Coverage	**106,304 square feet**

Note, 16,105 square feet of coverage was restored and banked on this parcel per TRPA File Number 970662 (former APN: 097-210-01).

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this Verification Letter may be appealed within twenty-one (21) days of receipt of this correspondence.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner/Soil Scientist
Environmental Review Services

Tim Hagan
Principal Planner/Soil Scientist
Land Capability Program Manager
Environmental Review Services

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March 1, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-060-07, TRPA FILE NUMBER 20050800.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	27,339 square feet
Ski Facilities:	1,059 square feet
Total Existing Land Coverage	**28,398 square feet**

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this Verification Letter may be appealed within twenty-one (21) days of receipt of this correspondence.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner/Soil Scientist
Environmental Review Services

Tim Hagan
Principal Planner/Soil Scientist
Land Capability Program Manager
Environmental Review Services

TAHOE REGIONAL PLANNING AGENCY

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March 1, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-050-21, TRPA FILE NUMBER 20050791.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	3,831 square feet
Total Existing Land Coverage	**3,831 square feet**

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this Verification Letter may be appealed within twenty-one (21) days of receipt of this correspondence.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner/Soil Scientist
Environmental Review Services

Tim Hagan
Principal Planner/Soil Scientist
Land Capability Program Manager
Environmental Review Services

TAHOE REGIONAL PLANNING AGENCY

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Email: trpa@trpa.org

March 1, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-050-22, TRPA FILE NUMBER 20050792.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	26,416 square feet
Total Existing Land Coverage	**26,416 square feet**

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this Verification Letter may be appealed within twenty-one (21) days of receipt of this correspondence.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner/Soil Scientist
Environmental Review Services

Tim Hagan
Principal Planner/Soil Scientist
Land Capability Program Manager
Environmental Review Services

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March 1, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-050-24, TRPA FILE NUMBER 20050793.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	57,232 square feet
Ski Facilities:	969 square feet
Total Existing Land Coverage	**58,201 square feet**

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this Verification Letter may be appealed within twenty-one (21) days of receipt of this correspondence.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner/Soil Scientist
Environmental Review Services

Tim Hagan
Principal Planner/Soil Scientist
Land Capability Program Manager
Environmental Review Services

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March 1, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-050-40, TRPA FILE NUMBER 20050796.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	133,591 square feet
Ski Facilities:	2,723 square feet
Total Existing Land Coverage	**136,314 square feet**

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this Verification Letter may be appealed within twenty-one (21) days of receipt of this correspondence.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner/Soil Scientist
Environmental Review Services

Tim Hagan
Principal Planner/Soil Scientist
Land Capability Program Manager
Environmental Review Services

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March 1, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-050-42, TRPA FILE NUMBER 20050797.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	72,704 square feet
Ski Facilities:	1,378 square feet
Total Existing Land Coverage	**74,082 square feet**

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this Verification Letter may be appealed within twenty-one (21) days of receipt of this correspondence.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner/Soil Scientist
Environmental Review Services

Tim Hagan
Principal Planner/Soil Scientist
Land Capability Program Manager
Environmental Review Services

TAHOE REGIONAL PLANNING AGENCY

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March 21, 2000

Kevin Agan
Agan Consulting Corporation
PO Box 9180
Incline Village, NV 89452-9180

Dear Mr. Agan:

HOMEWOOD SKI AREA BANKING OF EXISTING LAND COVERAGE, PLACER COUNTY, APN 97-210-01, FILE NUMBER 970662

Summer of 1998 Tahoe Regional Planning Agency (TRPA) staff visited the subject site and determined that the existing land coverage on Lombard Street (126,324 square feet), verified by the July 28, 1998 letter (attached), has been removed and restored. Therefore, 126,324 square feet of land coverage is considered banked at the subject site, and is available for transfer offsite or use onsite with TRPA review and approval.

If you have any questions, do not hesitate to call.

Sincerely,

Brian R. Judge
Senior Environmental Specialist

BRJ:

Attachment

TAHOE REGIONAL PLANNING AGENCY

308 Dorla Court
P.O. Box 1038
Zephyr Cove, Nevada 89448-1038

(702) 588-4547
Fax (702) 588-4527
Email: trpa@sierra.net

July 28, 1998

Mr. Kevin Turner
Homewood Ski Corporation
P.O. Box 165
Homewood, CA 96141

Dear Mr. Turner:

HOMEWOOD SKI AREA EXISTING LAND COVERAGE VERIFICATION AND BANKING, PLACER COUNTY, APN 097-210-01, TRPA FILE NUMBER 970662.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) has reviewed the submitted land coverage verification and banking application for Homewood Ski Area. This letter includes coverage that was verified by Chris Adair in October 1997. TRPA is able to verify the following soft land coverage:

Existing Land Coverage	
Ore Car	56,628 sq. ft.
Lombard Street	126,324 sq. ft.
Cassandra Crossing	34,848 sq. ft.
Road One	26,136 sq. ft.
Road Two	108,900 sq. ft.
Road Two and a Half	8,712 sq. ft.
Road Three	47,916 sq. ft.
Old Homeward Bound	30,492 sq. ft.
SS #1	52,272 sq. ft.
SS #2	30,492 sq. ft.
Sunnyside	43,560 sq. ft.
El Capitan	31,400 sq. ft.
Quail Road	26,136 sq. ft.
Spring Chair Road	3,000 sq. ft.
Total Verified Existing Coverage	**626,816 sq. ft.**

restored and banked summer of 1998. [illegible] 1-21-99

Please note that the land coverage has been verified but not banked in TRPA records. This land coverage will be banked once TRPA has inspected the area to ensure the revegetation of the site has been completed. Banked land coverage will then be available for future use or transfer, subject to TRPA review and approval.

This letter verifies only the portion of coverage identified by the applicant to be removed and restored. The coverage associated with other roads, sheds, buildings, lift-terminals, etc. has not been verified.

If you have any questions regarding this verification, please do not hesitate to call.

Sincerely,

Jon-Paul Harries
Assistant Planner
Project Review Division

/JPH

TAHOE REGIONAL PLANNING AGENCY

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March 1, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-050-06, TRPA FILE NUMBER 20050790.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	19,195 square feet
Total Existing Land Coverage	**19,195 square feet**

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this Verification Letter may be appealed within twenty-one (21) days of receipt of this correspondence.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner/Soil Scientist
Environmental Review Services

Tim Hagan
Principal Planner/Soil Scientist
Land Capability Program Manager
Environmental Review Services

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December 18, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-050-41, TRPA FILE NUMBER 20062002.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	9,205 square feet
Total Existing Land Coverage	**9,205 square feet**

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner / Soil Scientist
Environmental Review Services

/hg

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Email: trpa@trpa.org

March 1, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-060-18, (FORMERLY PART OF APN 097-060-03) TRPA FILE NUMBER 20050798.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	135,232 square feet
Ski Facilities:	3,780 square feet
Total Existing Land Coverage	**139,012 square feet**

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this Verification Letter may be appealed within twenty-one (21) days of receipt of this correspondence.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner / Soil Scientist
Environmental Review Services

Tim Hagan
Principal Planner/Soil Scientist
Land Capability Program Manager
Environmental Review Services

TAHOE REGIONAL PLANNING AGENCY

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December 18, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-050-36, TRPA FILE NUMBER 20062001.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	61,440 square feet
Total Existing Land Coverage	**61,440 square feet**

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner / Soil Scientist
Environmental Review Services

/hg

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March 1, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-050-33, TRPA FILE NUMBER 20050789.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	494,229 square feet
Ski Facilities:	2,836 square feet
Total Existing Land Coverage	**497,065 square feet**

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this Verification Letter may be appealed within twenty-one (21) days of receipt of this correspondence.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner/Soil Scientist
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Tim Hagan
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March 1, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-050-35, TRPA FILE NUMBER 20050795.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	184,742 square feet
Ski Facilities:	679 square feet
Total Existing Land Coverage	**185,421 square feet**

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this Verification Letter may be appealed within twenty-one (21) days of receipt of this correspondence.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner/Soil Scientist
Environmental Review Services

Tim Hagan
Principal Planner/Soil Scientist
Land Capability Program Manager
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March 1, 2006

Gary Midkiff
Midkiff & Associates, Inc.
P.O. Box 12427
Zephyr Cove, NV 89448

Dear Mr. Midkiff:

EXISTING LAND COVERAGE VERIFICATION, 5145 WEST LAKE BLVD, PLACER COUNTY, ASSESSOR'S PARCEL NUMBER (APN) 097-050-34, TRPA FILE NUMBER 20050794.

This letter is to inform you that the Tahoe Regional Planning Agency (TRPA) staff has conducted a site visit to the above referenced property. Based upon the submitted information, TRPA will recognize the following existing land coverage:

Dirt Access Roads:	41,426 square feet
Ski Facilities:	750 square feet
Total Existing Land Coverage	**42,176 square feet**

This letter is not a conceptual approval of any future project. At this time, TRPA has only verified and acknowledged the existing land coverage. Transfers and banking of land coverage require separate application to TRPA. It should be noted that banking applications require the removal of structures and restoration of the site prior to approval of the banking application.

Pursuant to Rule 11.2 of the TRPA Rules of Procedure, this Verification Letter may be appealed within twenty-one (21) days of receipt of this correspondence.

Should you have any questions regarding this matter, please feel free to call.

Sincerely,

Heather Gustafson
Associate Planner/Soil Scientist
Environmental Review Services

Tim Hagan
Principal Planner/Soil Scientist
Land Capability Program Manager
Environmental Review Services

TABLE 1

Boundary Line Adjustment

HOMEWOOD VILLAGE RESORTS LLC.

EXISTING COVERAGE CALCULATIONS- A.P.N. 097-130-05 TRPA # STD20051762

June 12, 2008

	Column Reference			A	B	C	D	E	F	G	H	I
	Equation									E+F		D - G
Orginal reference number before county approval	APN	Parcel Size Surveyor Final Calculations ф	Lake Area (Lake Louise, Quail Lake)*	Bailey Land Capability	IPES Score	Bailey or IPES % coverage	Base Allowable Coverage ¥	Existing Coverage (Hard)	Existing Coverage (Soft)	Total Existing Coverage (Hard + Soft)	Banked Restored Existing Coverage (Soft)	Remaining Allowable Coverage
1	97-130-05	91,476		1b	NA	1	915	63,861	200	64,061	0	-63,146
1	97-130-11	13,068		1b	NA	1	131	19,539	0	19,539	0	-19,408
1	97-130-13	152,460		1b	NA	1	1,525	12,019	9,842	21,861	0	-20,336
1	97-130-14	30,492		1b	NA	1	305	19,506	0	19,506	0	-19,201
1	97-130-15	30,492		1b	NA	1	305	9	0	9	0	296
1	97-130-16	104,544		1b	NA	1	1,045	2,611	2,200	4,811	0	-3,766
1	97-130-17	13,068		1b	NA	1	131	420	0	420	0	-289
1	97-140-03	69,696		1b	NA	1	697	1,567	57,760	59,327	0	-58,630
1	97-140-33	43,560		1b	NA	1	436	17,493	3,000	20,493	0	-20,057
2	97-130-12	39,204		1b	NA	1	392	35,911	0	35,911	0	-35,519
3	97-060-10	2,949,012		NA	685	15	184,255	9,112	80,121	89,233	18,949 †	95,022
3	97-060-12	2,317,392		NA	717	13	68,438	160	106,154	106,304	101,059 †	-37,866
4	97-060-07	475,240		NA	765	27	32,317	1,059	27,339	28,398	0	3,919
9	97-050-21	69,696		NA	734	23	4,720	0	3,831	3,831	0	889
9	97-050-22	2,439,360		NA	760	25	121,643	0	26,416	26,416	6,316 †	95,227
9	97-050-24	1,829,520		NA	797	26	124,092	969	57,232	58,201	0	65,891
9	97-050-40	5,749,484		NA	760	20	560,836	2,723	135,591	136,314	0	424,522
9	97-050-42	4,356,000		NA	756	26	263,209	1,378	72,704	74,082	0	189,127
10	97-210-01	21,780		1b	NA	1	218	10,525	6,288	16,813	0	-16,595
12	97-210-02	13,068		1b	NA	1	131	6,600	0	6,600	0	-6,469
13	97-170-13	21,780		NA	717	13	527	15,487	0	15,487	0	-14,960
14	97-050-06	544,500		NA	809	27	120,541	0	19,195	19,195	0	101,346
15	97-050-05	518,364		1b	NA	1	5,184	59,293	22,463	81,756	0	-76,572
16	97-050-39	139,392		NA	760	20	9,374	0	0	0	0	9,374
17	97-050-41	278,784		NA	469	10	5,946	0	9,205	9,205	0	-3,259
18	97-050-12	714,384	635,541	NA	0	1	788	0	0	0	0	788
5	97-060-19 ♦	6,738,732		NA	773	24	644,704	3,780	135,232	139,012	0	505,692
6	97-050-33	17,708,882	252,006	NA	682	21	1,525,759	2,836	494,229	497,065	0	1,028,694
8	97-050-35	5,855,771		NA	707	21	552,326	679	184,742	185,421	0	366,905
11	97-050-34	1,261,498		NA	851	28	91,764	750	41,426	42,176	0	49,588
	total	**54,590,699**					**4,322,654**	**288,277**	**1,493,170**	**1,781,447**	**126,324**	**2,541,207**

Based on coverage numbers from TRPA file numbers 20050789-20050801.

Over Covered

Based on coverage numbers from TRPA file# 20010384.

* Lake area for Lake Louise and Quail Lake was removed from the area of 1b for coverage calculations in parcels 18, and 6.

♦ A portion of this parcel is legally consolidated with APN# 97-060-18. Parcel ID and coverage verification correspond to the Madden 1 BLA, TRPA File# 20030255. Parcel is comprised of the APN# formerly known as 97-050-036.

ф (1) Parcel sizes were initially submitted in 2001 for coverage verifications on a portion of the Homewood Mountain Resort (APN: 097-130-05, TRPA # 20010384) based on record information from Placer County Assessor. The parcel sizes submitted in 2005/2006 for the Land Capability, IPES and Coverage applications associated with this BLA were based on preliminary survey information which varied from the 2001 submittal. TRPA staff decided to proceed with 2005/2006 parcel sizes as it is the most current RLS data. All Base Allowable coverage in both the Existing and Proposed BLA configurations were initially calculated using this information. (2) In 2007/2008 more precise parcel data was submitted based on final survey data from Tri State Surveyors. This changed the entire HMR project area by a reduction of 16,987 square feet; some parcels sizes increased, while others decreased. Again, TRPA staff chose to use the 2007/2008 data as it is the most current RLS data and was confirmed to be correct by Tri State Surveyors. The change in parcel sizes impacted the Base Allowable coverages for nearly all parcels in the Existing Configuration (see table 3) and for 7 parcels in the Proposed Configuration (Parcel 4, 8, 9,10,11,13, and 15, see table 4). (3) The applicant chose not to fully redo the DOACs due to the time involved in creating new slope maps and processing new applications. Instead, the following protocol was used in order to rectify the changes in Base Allowable Coverage. The Base Allowable Coverage for parcels that increased in size, increased by 1% of the amount of increased parcel size. The Base Allowable Coverage for parcels that decreased in size, decreased by the % of coverage associated with the IPES score and multiplied by the amount the parcel size

† 126,324 s.f. of coverage associated with "Lombard Street" was banked per TRPA file# 970662 to APN# 097-210-01. "Lombard Street" crosses numerous parcels; however this was not documented in the aforementioned TRPA file. In order to distribute the banked coverage "Lombard Street" was interpolated as follows: 80% attributed to APN # 97-060-12, 15% was attributed to APN# 97-060-10, and 5% attributed to APN# 97-050-22. The banking of coverage shall be applied to the respective parcels based on this breakdown.

¥ Base allowable coverage is determined from TRPA issued land capability verification or IPES/DOAC calculations.

TABLE 2
Boundary Line Adjustment
HOMEWOOD VILLAGE RESORTS LLC.
PROPOSED COVERAGE CALCULATIONS - A.P.N. 097-130-05 TRPA #20051762STD

August 15, 2008

Column Reference Equation				A	B	C	D	E	F	G E+F	H	I D - G
Parcel Reference Number	APN	Parcel Size Surveyor Final Calculations ф	Lake Area (Lake Louise, Quail Lake)*	Bailey Land Capability	IPES Score	DOAC % coverage	Base Allowable Coverage	Existing Coverage (Hard)	Existing Coverage (Soft)	Total Existing Coverage (Hard + Soft)	Banked Restored Existing Coverage (Soft)	Remaining Allowable Coverage
corresponding to parcels on the BLA proposed site plan								TRPA has not distinguished between "soft" and "hard" coverage categories		Existing Coverage in the Proposed configuration has not been verified		
Parcel 1	Not assigned	6,638,980	460,740	NA	760	20	273,811			57,945		215,866
Parcel 2	Not assigned	872,942	174,801	NA	877	30	110,252			48,608		61,644
Parcel 3	Not assigned	762,300		NA	786	26	17,443			12,293		5,150
Parcel 4	Not assigned	341,946		NA	744	19	30,524			20,093		10,431
Parcel 5	Not assigned	5,753,405		NA	713	18	680,181			162,594	70,741 †	517,587
Parcel 6	Not assigned	545,371		NA	692	15	18,788			38,851	34,108 †	-20,063
Parcel 7	Not assigned	1,660,943		NA	798	24	19,949			61,717		-41,768
Parcel 8	Not assigned	1,379,110		NA	669	4	14,227			53,507		-39,280
Parcel 9	Not assigned	405,544		NA	788	25	26,521			15,001		11,520
Parcel 10	Not assigned	810,216		1b	NA	NA	8,102			262,921		-254,819
Parcel 11	Not assigned	809,780		NA	797	26	61,863			3,020		58,843
Parcel 12	Not assigned	678,665		NA	809	27	98,083			9,460	21,475 †	88,623
Parcel 13	Not assigned	656,014		NA	760	25	71,559			5,660		65,899
Parcel 14	Not assigned	341,510		NA	894	29	12,142			1,670		10,472
Parcel 15	Not assigned	246,985		1b	NA	NA	2,469			120,656		-118,187
Parcel 16	Not assigned	1,122,106		NA	707	14	55,872			43,777		12,095
Parcel 17	Not assigned	1,261,498		NA	851	28	91,764			44,890		46,874
Parcel 18	Not assigned	11,765,992		NA	665	20	1,066,466			298,640		767,826
Parcel 19	Not assigned	9,981,338		NA	727	18	783,418			286,900		496,518
Parcel 20	Not assigned	8,556,055	252,006	NA	773	24	767,870			233,244		534,626
total		**54,590,699**					**4,211,304**			**1,781,447**	**126,324**	**2,429,857**

* Lake area for Lake Louise and Quail Lake was removed from the area of 1b for coverage calculations in parcels 1, 2, and 20.

ф (1) Parcel sizes were initially submitted in 2001 for coverage verifications on a portion of the Homewood Mountain Resort (APN: 097-130-05, TRPA # 20010384) based on record information from Placer County Assessor. The parcel sizes submitted in 2005/2006 for the Land Capability, IPES and Coverage applications associated with this BLA were based on preliminary survey information which varied from the 2001 submittal. TRPA staff decided to proceed with 2005/2006 parcel sizes as it is the most current RLS data. All Base Allowable coverage in both the Existing and Proposed BLA configurations were initially calculated using this information. (2) In 2007/2008 more precise parcel data was submitted based on final survey data from Tri State Surveyors. This changed the entire HMR project area by a reduction of 16,987 square feet; some parcels sizes increased, while others decreased. Again, TRPA staff chose to use the 2007/2008 data as it is the most current RLS data and was confirmed to be correct by Tri State Surveyors. The change in parcel sizes impacted the Base Allowable coverages for nearly all parcels in the Existing Configuration (see table 3) and for 7 parcels in the Proposed Configuration (Parcel 4, 8, 9,10,11,13, and 15, see table 4). (3) The applicant chose not to fully redo the DOACs due to the time involved in creating new slope maps and processing new applications. Instead, the following protocol was used in order to rectify the changes in Base Allowable Coverage. The Base Allowable Coverage for parcels that increased in size, increased by 1% of the amount of increased parcel size. The Base Allowable Coverage for parcels that decreased in size, decreased by the % of coverage associated with the IPES score and multiplied by the amount the parcel size decreased.

† 126,324 s.f. of coverage associated with "Lombard Street" was banked per TRPA file# 970662 to APN# 097-210-01. "Lombard Street" crosses numerous parcels; however this was not documented in the aforementioned TRPA file. In order to distribute the banked coverage "Lombard Street" was interpolated as follows: 80% attributed to APN # 97-060-12, 15% was attributed to APN# 97-060-10, and 5% attributed to APN# 97-050-22. The banking of coverage shall be applied to the respective parcels based on this breakdown.

Over covered

TABLE 3
BOUNDARY LINE ADJUSTMENT
HOMEWOOD VILLAGE RESORTS LLC.
Revised Base Allowable Coverage Calculations- Existing Configuration (Supports Table 1) A.P.N. 097-130-05 TRPA #20051762STD
June 19, 2008

Parcels Existing Config.	APN	Preliminary Parcel Size	Base Allowable Coverage	Revised Final Parcel Size ϕ	Lake Area (Quail Lake, Lake Louise)	Land Area	Difference (from preliminary parcel size)	IPES % Coverage	*Adjusted DOAC/Bailey Base Allowable	Allowable Adjustment	New Base Allowable
1	97-130-05	95,396	954	91,476			-3,920	1			915
	97-130-11	19,166	192	13,068			-6,098	1			131
	97-130-13	141,570	1,416	152,460			10,890	1			1,525
	97-130-14	29,185	292	30,492			1,307	1			305
	97-130-15	27,007	270	30,492			3,485	1	NC	NC	305
	97-130-16	108,029	1,080	104,544			-3,485	1			1,045
	97-130-17	21,780	218	13,068			-8,712	1			131
	97-140-03	64,033	640	69,696			5,663	1			697
	97-140-33	38,333	383	43,560			5,227	1			436
2	97-130-12	38,768	388	39,204			436	1			392
3	97-060-10	2,911,550	183,880	2,949,012			37,462	15	37462(.01)	375	184,255
	97-060-12	2,278,188	68,046	2,317,392			39,204	13	39204(.01)	392	68,438
4	97-060-07	475,240	32,317	475,240			0	27	NC	NC	32,317
5	97-060-19 ♦	6,738,732	644,704	6,738,732			0	24	NC	NC	644,704
6	97-050-33	17,712,803	1,529,102	17,708,882	252,006	17,456,876	-3,921	21	3921(.21)	-823	1,528,279
8	97-050-35	5,855,771	552,326	5,855,771			0	21	NC	NC	552,326
9	97-050-21	27,878	4,302	69,696			41,818	23	41818(.01)	418	4,720
	97-050-22	2,376,634	121,016	2,439,360			62,726	25	62726(.01)	627	121,643
	97-050-24	1,853,042	130,208	1,829,520			-23,522	26	23522(.26)	-6,116	124,092
	97-050-40	5,929,387	596,817	5,749,484			-179,903	20	179903(.20)	-35,981	560,836
	97-050-42	4,391,284	272,383	4,356,000			-35,284	26	35284(.26)	-9,174	263,209
10	97-210-01	25,265	253	21,780			-3,485	1	SEZ ADJUST		218
11	97-050-34	1,261,498	91,764	1,261,498			0	28	NC	NC	91,764
12	97-210-02	10,890	109	13,068			2,178	1	SEZ ADJUST		131
13	97-170-13	25,700	1,036	21,780			-3,920	13	3920(.13)	-510	527
14	97-050-06	507,474	120,171	544,500			37,026	27	37026(.01)	370	120,541
15	97-050-05	519,235	5,192	518,364			-871	1	SEZ ADJUST		5,184
16	97-050-39	148,540	11,204	139,392			-9,148	20	9148(.20)	-1,830	9,374
17	97-050-41	279,655	6,033	278,784			-871	10	871(.10)	-87	5,946
18	97-050-12	695,653	6,956	714,384	635,541	78,843	18,731	1	SEZ ADJUST		788
		54,607,686	4,383,652	54,590,699			16,987				4,325,174

Due to the area of Lake Louise and Quail Lake being included in the final parcel size, it was necessary to recalculate allowable coverage to compensate for the land area minus lake area.

This table illustrates how Base Allowable Coverages were adjusted accordingly with revised parcel sizes as submitted in 2007/2008.

♦ A portion of this parcel is legally consolidated with APN# 97-060-18. Parcel ID and coverage verification correspond to the Madden 1 BLA. TRPA File# 20030255.

* 16,987 Sq. Ft. area change required new calculations. Column shows calculations used to arrive at New Base Allowable.

ϕ (1) Parcel sizes were initially submitted in 2001 for coverage verifications on a portion of the Homewood Mountain Resort (APN: 097-130-05, TRPA # 20010384) based on record information from Placer County Assessor. The parcel sizes submitted in 2005/2006 for the Land Capability, IPES and Coverage applications associated with this BLA were based on preliminary survey information which varied from the 2001 submittal. TRPA staff decided to proceed with 2005/2006 parcel sizes as it is the most current RLS data. All Base Allowable coverage in both the Existing and Proposed BLA configurations were initially calculated using this information. (2) In 2007/2008 more precise parcel data was submitted based on final survey data from Tri State Surveyors. This changed the entire HMR project area by a reduction of 16,987 square feet; some parcels sizes increased, while others decreased. Again, TRPA staff chose to use the 2007/2008 data as it is the most current RLS data and was confirmed to be correct by Tri State Surveyors. The change in parcel sizes impacted the Base Allowable coverages for nearly all parcels in the Existing Configuration (see table 3) and for 7 parcels in the Proposed Configuration (Parcel 4, 8, 9,10,11,13, and 15, see table 4). (3) The applicant chose not to fully redo the DOACs due to the time involved in creating new slope maps and processing new applications. Instead, the following protocol was used in order to rectify the changes in Base Allowable Coverage. The Base Allowable Coverage for parcels that increased in size, increased by 1% of the amount of increased parcel size. The Base Allowable Coverage for parcels that decreased in size, decreased by the % of coverage associated with the IPES score and multiplied by the amount the parcel size decreased.

Table 4
Homewood Village Resorts LLC.
May 19, 2008

Revised Base Allowable Coverage Calculations- Proposed Configuration (Supports Table 2) A.P.N. 097-130-05 TRPA #20051762STD

Parcel # Proposed Parcel Configuration	Parcel Size	Base Allowable Coverage	Revised Parcel Size ϕ	Difference	IPES % Coverage	Bailey Land Capability	*Adjusted DOAC/Bailey Base Allowable ϕ	Allowable Adjustment	New Base Allowable
4	342,382	30,607	341,946	-436	19	NA	436(.19)	-83	30,524
8	1,362,121	14,057	1,379,110	16,989	4	NA	16,989(.01)	170	14,227
9	417,305	29,461	405,544	-11,761	25	NA	11,761(.25)	-2,940	26,521
10	812,830	8,128	810,216	-2,614	NA	1b	2614(.01)	-26	8,102
11	804,118	61,806	809,780	5,662	26	NA	5,662(.01)	57	61,863
13	658,192	72,104	656,014	-2,178	25	NA	2,178(.25)	-545	71,559
15	269,636	2,696	246,985	-22,651	NA	1b	22651(.01)	-227	2,469
	4,666,584	218,859	4,649,595	-16,989					215,265

This table illustrates how Base Allowable Coverages were adjusted accordingly with revised parcel sizes as submitted in 2007/2008.

ϕ (1) Parcel sizes were initially submitted in 2001 for coverage verifications on a portion of the Homewood Mountain Resort (APN: 097-130-05, TRPA # 20010384) based on record information from Placer County Assessor. The parcel sizes submitted in 2005/2006 for the Land Capability, IPES and Coverage applications associated with this BLA were based on preliminary survey information which varied from the 2001 submittal. TRPA staff decided to proceed with 2005/2006 parcel sizes as it is the most current RLS data. All Base Allowable coverage in both the Existing and Proposed BLA configurations were initially calculated using this information. (2) In 2007/2008 more precise parcel data was submitted based on final survey data from Tri State Surveyors. This changed the entire HMR project area by a reduction of 16,987 square feet; some parcels sizes increased, while others decreased. Again, TRPA staff chose to use the 2007/2008 data as it is the most current RLS data and was confirmed to be correct by Tri State Surveyors. The change in parcel sizes impacted the Base Allowable coverages for nearly all parcels in the Existing Configuration (see table 3) and for 7 parcels in the Proposed Configuration (Parcel 4, 8, 9,10,11,13, and 15, see table 4). (3) The applicant chose not to fully redo the DOACs due to the time involved in creating new slope maps and processing new applications. Instead, the following protocol was used in order to rectify the changes in Base Allowable Coverage. The Base Allowable Coverage for parcels that increased in size, increased by 1% of the amount of increased parcel size. The Base Allowable Coverage for parcels that decreased in size, decreased by the % of coverage associated with the IPES score and multiplied by the amount the parcel size decreased.

TABLE 5
QUAIL LAKE BOUNDARY LINE ADJUSTMENT
HOMEWOOD VILLAGE RESORTS LLC.
A.P.N. 097-050-047 TRPA #LLAD2008-0083
June 6, 2008

TABLE 5A
HOMEWOOD VILLAGE RESORTS - RESULTANT PARCELS

Parcel Reference Number*	Parcel	Parcel Size	IPES	DOAC %	1b SEZ Area	Area >30% Slope	Area <30% Slope	Base Allowable Coverage	Existing Coverage	Remaining Allowable Coverage
1	1C	435,108	786	26	0	412,193	22,915	10,080	7,120	**2,960**
3	3	1,043,601	786	26	0	796,187	247,414	72,289	41,591	30,698
4	4	1,339,082	760	20	130,562	629,784	578,736	123,351	56,128	67,223
18	18A	8,968,834	665	20	795,290	4,313,393	3,860,151	823,117	229,540	**593,577**
19	19A	9,652,348	727	18	873,741	4,950,543	3,828,064	747,294	282,220	**465,074**
		21,438,973			**1,799,593**	**11,102,100**	**8,537,280**	**1,776,131**	**616,599**	**1,159,532**

TABLE 5B
QUAIL LAKE WATERSHED - RESULTANT PARCELS

Parcel Reference Number*	Parcel	Parcel Size	IPES	DOAC %	Quail Lake Area	1b SEZ Area	Area Minus SEZ	Area >30% Slope	Area <30% Slope	Base Allowable Coverage	Existing Coverage	Remaining Allowable Coverage
2	**1B-Q**	5,157,028	486	16	460,740	351,770	4,344,539	3,712,153	632,365	141,818	12,590	129,228
2	**2B-Q**	591,641	877	30	174,801	11,797	405,048	257,061	147,982	47,084	19,310	27,774
2	**4B-Q**	49,708	744	19	0	0	49,708	16,793	32,915	6,422	2,200	4,222
2	**18B-Q**	2,797,158	665	20	0	186,462	2,610,696	1,477,129	1,133,567	243,349	69,100	174,249
2	**19B-Q**	328,990	727	18	0	0	328,990	135,850	193,140	36,124	4,680	31,444
	Total	8,924,525			635,541	550,029	7,738,981	5,598,986	2,139,969	474,797	107,880	366,917

* Parcel Reference Number refers to the "**2008 Homewood BLA Existing Parcel Configuration" and "Quail Lake BLA**" Map of 5/13/08.
These numbers refer to the parcel numbers on the map to be recorded with Placer County.

Table 6
Quail Lake Watershed Parcel
Comparison of development potential of those parcels affected by "Quail Lake BLA"
Homewood Village Resorts LLC.
A.P.N. 097-050-047 TRPA #LLAD2008-0083
August 15, 2008

Parcel Configuration Resultant of Homewood BLA (Table 2)

Table 6A

Parcel Number	Parcel Size	Base Allowable Coverage	Existing Coverage	Remaining Allowable Coverage
1	6,638,980	278,419	57,945	220,474
2	872,942	112,000	48,608	63,392
3	762,300	17,443	12,293	5,150
4	341,946	30,524	20,093	10,431
18	11,765,992	1,066,466	298,640	767,826
19	9,981,338	783,418	286,900	496,518
Total	**30,363,498**	**2,288,270**	**724,479**	**1,563,791**

Quail Lake Watershed Parcel

Alternate IPES Building Site (site 02(09-05))

Table 6C

Parcel Number	Parcel Size	Base Allowable Coverage	Existing Coverage	Remaining Allowable Coverage
2	8,924,525	703,481	107,880	595,601

Parcel Configuration Resultant of Quail Lake BLA (Table 5A & 5B)

Table 6B

Parcel Number	Parcel Size	Base Allowable Coverage	Existing Coverage	Remaining Allowable Coverage
1B-Q	5,157,028	141,818	12,590	129,228
1C	435,108	10,080	7,120	2,960
2B-Q	591,641	47,084	19,310	27,774
3	1,043,601	72,289	41,591	30,698
4	1,339,082	123,351	56,128	67,223
4B-Q	49,708	6,422	2,200	4,222
18A	8,968,834	823,117	229,540	593,577
18B-Q	2,797,158	243,349	69,100	174,249
19A	9,652,348	747,294	282,220	465,074
19B-Q	328,990	36,124	4,680	31,444
Total	**30,363,498**	**2,250,928**	**724,479**	**1,526,449**

Homewood Mountain Resort Ski Area Master Plan Project

Cumulative Watershed Effects Analysis

Review Draft

December 31st, 2010

Prepared by Michael Hogan, IERS,

Dr. Mark Grismer, UC Davis,

and Gerald Dion, Tallac Applied Ecology

for the

Tahoe Regional Planning Agency

EXECUTIVE SUMMARY

Cumulative Watershed Effects (CWE) Model

CWE Overview

Integrated Environmental Restoration Services (IERS), in collaboration with Dr. Mark Grismer (UC Davis Hydrology and Environmental Engineering) completed the HMR Cumulative Watershed Effects (CWE) analysis for the Project area watersheds following the approach outlined in the TRPA's Ski Area Master Plan Guidelines (TRPA 1990) with guidance from TRPA Staff. Appendix 5 of the Ski Area Master Plan Guidelines outlines the requirements for preparation of a CWE analysis. The HMR CWE analysis assists in the planning for and understanding of the cumulative impacts of redevelopment within the Project area, especially as they relate to sediment movement and water quality. These Project area findings have been combined with sediment movement and water quality findings for the total watersheds for a more complete understanding of impacts and areas of influence.

A CWE analysis is a qualitative evaluation of the overall health of a watershed and which provides an insight into the sensitivity of the watershed to disturbances such as land use development and redevelopment. The analysis includes a qualitative evaluation of a watershed that is supported by quantitative modeled parameters. The purpose of the HMR CWE analysis is to estimate the relative impacts caused by facilities or activities related to past and proposed development and to determine appropriate mitigation if necessary.

Thresholds of Concern (TOC)

The HMR CWE analysis evaluates the relative impacts of the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 as compared to existing conditions (No Project or Alternative 2) and Thresholds of Concern (TOCs). TOCs are conceptual thresholds that describe a point beyond which a relatively irreversible trend of increasing degradation to 'beneficial uses' may occur. The TOC concept is roughly analogous to the TRPA Environmental Thresholds and the ecological concept of carrying capacity. For purposes of the HMR CWE analysis a TOC is defined as *"the point at which the watershed would undergo irreversible degradation supported by a positive environmental feedback loop"*(IERS 2010).

Two types of TOCs for the Project area watersheds are defined:

1. Project Area TOCs determine the threshold of impact significance to sediment yield for development and redevelopment actions taken within the Project area (i.e. those portions of Madden, Homewood and Quail Lake Creek and Intervening Zone 7000 watersheds within the Project area boundary). The Project Area TOCs help gauge 1) whether existing conditions within the Project area already exceed the Project Area TOCs, and 2) whether estimates the level of impact from the Project would exceed Project Area TOCs within the Project area boundary. Exceedance of a Project Area TOC constitutes a significant impact requiring mitigation under TRPA codified regulation.

2. Total Watershed TOCs determine the threshold of impact significance to sediment yield for future development and redevelopment actions that could be taken outside the Project area considered cumulatively with those actions taken, as defined by the Project, within the HMR Project area (i.e. the portions of the Madden, Homewood and Quail Lake Creek

and Intervening Zone 7000 watersheds located upstream and downstream of the Project area ADDED to those portions of Madden, Homewood and Quail Lake Creek and Intervening Zone 7000 watersheds within the Project area boundary). The Total Watershed TOCs gauge the incremental contribution of the Project to cumulatively considerable impacts when combined with future reasonable and foreseeable projects outside the Project area portions of the watersheds. Exceedance of a Total Watershed TOC could constitute a potentially cumulatively significant effect as defined by CEQA and TRPA.

The TOCs were developed using two main components. The first component is quantitative and provides modeled annualized sediment yields that could theoretically result from build-out of base allowable land coverage permissible under current TRPA Bailey land use coefficients. The second component is qualitative and consults several levels of stream condition assessments, surface water quality from a period of record dating back to 1989, and other watershed indicators (i.e., 2007 HMR Watershed Atlas, professional knowledge of the Project area hydrology, field evidence) to support or discount the quantitative TOC for the four watersheds of study. These qualitative elements are used as 'checks' or indicators to support of refute the quantitative, modeled TOC findings.

HMR CWE Analysis

The HMR CWE analysis employs a process and model that reflect those utilized in the development of the Lake Tahoe Total Maximum Daily Load (TMDL) and described in the *Lake Tahoe TMDL Technical Study* (Lahontan and NDEP 2007). The Lake Tahoe TMDL process employed the Loading Simulation Program in C++ model (LSPC), a nationally recognized watershed model developed by the United States Environmental Protection Agency (USEPA) (http://www.epa.gov/ATHENS/wwqtsc/html/lspc.html). At its core, the LSPC model considers watershed hydrologic processes as they depend on climate, topography, and land-use to determine the runoff and sedimentation rates from each defined land-use category within a watershed. The sedimentation rates are summed to estimate the watershed sediment yields reported in metric Tonnes per year (T/yr).

The HMR CWE analysis utilizes the LSPC model land use inputs, topography and climate conditions and sediment rates from urban areas, as defined for the Lake Tahoe TMDL, together with model computed runoff rates and Project area field-measured, pervious area erosion rates to determine sediment yields from each land use. These baseline land use categories are described by existing conditions (i.e., No Project or Alternative 2). By varying land uses within each of the four watersheds to reflect changes proposed by the Project, it is possible to estimate the relative impacts to annual sediment yields that could occur from the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6.

The following steps that resulted in a GIS dataset of some 20,000 polygons were taken to setup the HMR CWE analysis for the existing conditions and simulate each of the project alternative land-use conditions to estimate sediment yield (T/yr).

1. The 1-meter land use raster dataset are converted into a feature (polygon) dataset using the standard ESRI "raster to poly" toolset.

2. The average slope for each land use is calculated based on 10-meter grid dataset. This dataset is simplified to a 100-meter grid and intersected with the baseline land-use dataset. The slope for each land use is determined as an area-weighted average.

3. The soil parent material (volcanic or granitic origin) is used to determine sediment rates per unit of runoff from pervious areas. This key parameter for each watershed is derived from the 2007 NRCS soil survey GIS data layer.

4. The unpaved (dirt) roaded area, used in the original TMDL modeling effort, under-estimated the actual dirt roaded areas found in the Homewood area. As such the dirt road land use category area is increased by approximately 958,311 square feet or 22 acres to reflect field-measured land use and land coverage conditions while adjoining vegetated land use category areas were reduced by an equivalent amount. This correction results in a more realistic representation of existing conditions.

5. For the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6, the land uses are adjusted (added or subtracted) for each watershed to reflect proposed changes in land use under each alternative. The total watershed areas are held constant.

6. Following the Lake Tahoe TMDL Pollutant Reduction Opportunities Report, reductions in sediment yield are established based on the pollutant load reduction measures proposed under each project alternative.

7. The resulting sediment yields from each set of land use conditions are summarized and graphically displayed.

Section 3 of this report further details the HMR CWE analysis methodology.

Existing Compliance with Project Area and Total Watershed TOCs

The modeled existing sediment yields from the Madden Creek, Quail Lake Creek and Homewood Creek watersheds and Intervening Zone 7000 are used as the baseline to describe existing conditions. Table ES-1 presents the existing Project area sediment yield for each watershed as compared against the Project Area TOC for that watershed and the Total Watershed sediment yield, which combines the Project area sediment yield with the sediment yield for the portions of the watershed located upstream and downstream of the Project area, for comparison against the Total Watershed TOC for that watershed.

Table ES-1. Annualized Sediment Yield Estimates –Existing Conditions vs. Project Area and Total Watershed TOCs

	Baseline Sediment Yield for Project Area (T/yr)	TOC for Project Area (T/yr)	Baseline Sediment Yield for Total Watershed (T/yr)	TOC for Total Watershed (T/yr)*
Intervening Zone 7000	62	55	361	355
Madden Creek	459	435	1036	1085
Homewood Creek	828	865	906	955
Quail Lake Creek	152	147	409	462
Totals	**1501**	**1502**	**2712**	**2857**

Source: IERS 2010

Notes: * TOC for Total Watershed equates the Project Area TOC plus the Outside of Project Area TOC. The Outside of Project Area TOCs are as follows in T/yr: Intervening Zone 7000 – 300; Madden Creek – 650; Homewood Creek – 90; Quail Lake Creek – 315

The modeled results demonstrate that the Homewood Creek watershed has a sediment yield that is below its Project Area TOC and Total Watershed TOC. Quail Lake Creek and Madden Creek watersheds are estimated to have sediment yields that exceed their Project Area TOC, while the sediment yields for the whole watersheds are below the Total Watershed TOC. Intervening Zone 7000 is estimated to have a sediment yield that exceeds its Project Area TOC and the Total Watershed TOC.

Future Compliance with Project Area and Total Watershed TOCs

Figure ES-1, following, presents modeled Project area sediment yields for Homewood Creek, Madden Creek, Quail Lake Creek watersheds and Intervening Zone 7000. The HMR CWE analysis concludes that implementation of the Proposed Project (Alternative 1) or Alternative 3, 5 and 6 will reduce Project area sediment yields as compared to baseline conditions. Sediment yields will be reduced to a level which is at or below the Project Area TOC in Homewood Creek, Madden Creek and Intervening Zone 7000 (note: Intervening Zone 7000 is reduced to within 1 T/yr of the Project Area TOC, which is within the LSPC model margin of error – Mark Grismer, 2010). Quail Lake Creek sediment yield is reduced but remains above the Project Area TOC.

	Baseline	TOC	Project	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
INT 7000	62	55	56	62	58	49	56	56
Madden	459	435	425	459	425	380	425	425
Homewood	828	865	799	828	777	814	784	784
Quail	152	147	151	152	149	136	149	150
Combined	1500	1502	1431	1500	1409	1379	1414	1415

Figure ES-1. Sediment Yields (T/yr) for Project Area Watersheds vs. Project Area TOCs

As displayed in Figure ES-2, following, the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 will reduce Total Watershed sediment yields from the four study watersheds as compared to existing conditions. As compared to the Total Watershed TOCs, sediment yields modeled for proposed conditions under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 will not exceed Total Watershed TOCs for Madden Creek, Homewood Creek or Quail Lake Creek watersheds and Intervening Zone 7000, noting that the modeled sediment yield in Intervening Zone 7000 is close to the TOC and within the expected range of error for the HMR CWE analysis. The development and redevelopment actions defined by the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 is expected to reduce combined sediment yields to Lake Tahoe by approximately 69 T/yr for cumulatively beneficial effects to surface water quality and beneficial uses.

	Baseline	TOC	Project	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
INT 7000	361	355	356	361	357	348	355	355
Madden	1036	1085	1002	1036	1002	957	1002	1002
Homewood	906	955	877	906	855	892	862	862
Quail	409	462	407	409	406	393	406	406
Combined	2712	2857	2642	2712	2620	2590	2625	2626

Figure ES-2. Sediment Yields (T/yr) for Total Watershed vs. Total Watershed TOCs

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Section 1: Introduction to the Homewood CWE

This Cumulative Watershed Effects (CWE) analysis has been conducted to assist in the planning and understanding of the cumulative impacts of redevelopment at the Homewood Mountain Resort (HMR), especially as those impacts relate to area sediment yield and water quality. Planning for the resort redevelopment is being conducted within the Ski Area Master Plan Guidelines of the Tahoe Regional Planning Agency (TRPA). Appendix 5 of the Guidelines outlines the requirements for preparation of a CWE analysis. These requirements are fully addressed in the following sections of this report.

There are two unique elements of the HMR CWE analysis that have not been realized in other CWE assessments. First, this CWE analysis is linked directly to the Lake Tahoe Total Maximum Daily Load (TMDL) study summarized in the 2007 TMDL Report (Roberts and Reuter, 2007). Analyses derived from Phase 2 of the Tahoe TMDL process was used to develop the sub-basin sediment yield analyses in this report. Second, each sub-basin annual sediment yield as presented here is derived from a combination of sub-basin land-uses and annualized climate information as used in the TMDL modeling efforts with field-measured sediment yields[1] from plots within the Homewood area and across the Tahoe Basin. These elements have helped create a more complete, defensible and repeatable numerical output than has previously been achieved in the Tahoe Basin as well in most other CWE studies. The Tahoe TMDL Report, based on a nationally recognized model and peer reviewed by watershed scientists and regulatory staff, provided the unique opportunity to develop a CWE that represents a study with widespread applicability to the Tahoe TMDL and, when linked to the ongoing intensive monitoring in the Homewood watersheds, to erosion-related projects throughout the Tahoe Truckee region and beyond.

The primary application of the HMR CWE analysis is to evaluate the relative impacts of the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6, to existing conditions (the No Project or Alternative 2) in terms of sediment yield and other ecological variables, and then compare those to a Threshold of Concern (TOC), which is a sort of ecological tipping point[2]. In the HMR CWE analysis, the threshold of concern was developed using two main components, per directive from TRPA (see Appendix D). The first component is quantitative and provides a modeled derived annualized sediment yield. The second is qualitative and includes two stream condition assessments and water quality data. A more complete discussion of the TOC is provided in Section 2 of this report.

---

[1] Over 1000 field plots of sediment yield and infiltration data were used to develop sediment delivery curves that were then used in the TMDL model to produce sediment yield values over a range of site conditions.
[2] TOCs are discussed in detail in Section 2 of this document.
[3] The term 'positive feedback loop' can be misleading. The term is adapted from system cybernetics such that a
[2] TOCs are discussed in detail in Section 2 of this document.

1.1 Cumulative Watershed Effects Analysis Use and History in Tahoe

The use of CWE analysis for ski areas in the Lake Tahoe Basin was pioneered at Heavenly Mountain Resort in the early 1990's (Holland 1991) to model the impacts of new activities within a ski area master planning process, to identify mitigation needs and to identify monitoring activities needed to assess development impacts. The CWE methodology was derived from a USDA Forest Service method for modeling the potential or expected impacts of logging and associated activities on sediment movement and water quality. A CWE analysis has been conducted twice at Heavenly Mountain Resort, once in 1993 and again in 2005. The introduction to the 2005 Heavenly CWE provides a good description of the utility of the CWE analysis as part of a master planning process.

> *A Cumulative Watershed Effects analysis is a* ***qualitative*** *evaluation of the overall health of a watershed and the sensitivity of the watershed to disturbances. It includes a qualitative evaluation of a watershed that is supported by quantitative measurable parameters. The purpose of the CWE Analysis completed in 1993 (Holland) for the Heavenly watersheds was to identify erosive areas, estimate the relative impacts on erosion caused by facilities or activities related to past development and proposed projects, and determine appropriate mitigation.*
>
> *~2005 Heavenly Cumulative Watershed Effects Model Revision*

For both of the Heavenly CWE analyses, erosion was estimated using the Modified Universal Soil Loss Equation (MUSLE), which is an empirical equation for estimating annualized sediment yields due to sheet and rill erosion from mildly sloping lands. It incorporates the four major factors affecting erosion as individual parameters including climate (precipitation), soil characteristics, topography, and ground cover. This information was then translated into a conceptual quantity called 'Equivalent Roaded Acres' or ERA. While commonly used, it should be noted the ERA concept has not been independently tested (Reid pg 283 in Elliot, 2010). From this information, and based on observations and assumptions about watershed processes, a conceptual threshold is defined assuming that a level of disturbance exists within the watershed that will cause the stream channel network to 'unravel' or to reach an ecological tipping point such that a positive hydrologic and sediment transport feedback loop[3] develops whereby irreversible damage (e.g. excessive channel scour/incision leading to collapsing hillslopes) occurs. This conceptual tipping point is known as the Threshold of Concern or TOC. In the past decade, this concept as applied in the CWE analysis has been a subject of considerable debate and study albeit with very limited actual field data (Elliot, MacDonald, others, also see Chapter 5 USEPA, 2005). These assessments discuss the validity of and problems with CWE assessments, including deficiencies in the MUSLE-ERA approach. A great deal of progress has been made since the Heavenly CWE analyses were undertaken and

[3] The term 'positive feedback loop' can be misleading. The term is adapted from system cybernetics such that a positive feedback loop is one that feeds itself or is self perpetuating.

CWE methodology has progressed far beyond what is currently considered the standard by TRPA. CWE limitations, non-validated assumptions and potential inaccuracies present challenges that can result in non-representative output. The HMR CWE analysis was developed by working collaboratively with TRPA and Lahontan agency staff. A more robust approach, linked directly to the Tahoe TMDL, was developed and agreed upon by staff and HMR. As a result, in this CWE analysis, we have taken a more rigorous modeling and field analysis approach that represents a significant improvement in CWE analyses and addresses shortcomings of other CWE assessments.

1.2 CWE-Lake Tahoe TMDL Linkage

In the *National Management Measures to Control Nonpoint Source Pollution from Forestry* (USEPA 2005, pg 4-5), the authors note that "Because TMDL assessments calculate all point source and non-point source pollution for a watershed, ***a TMDL is essentially a cumulative effects analysis*** *(emphasis added)*", further supporting and legitimizing the watershed modeling based approach developed here for the Homewood CWE. Given that the Lake Tahoe TMDL analyzes the HMR watersheds and Intervening Zone 7000[4], that approach, according to the USEPA, offers a greater level of accuracy than previous CWE attempts in the Tahoe Basin (USEPA 2005 "Problems in Cumulative Effects Analysis" pgs 4-5 to 4-6). For a more complete discussion of the limitations and potentials of CWE analyses, see MacDonald (2000).

In summary, the HMR CWE analysis is designed to quantify the existing conditions annualized sediment yields from the Homewood area, assess other available watershed condition information and compare those variables to a Threshold of Concern (TOC). This analysis is completed not only for the HMR property for the entirety of all three watersheds (Quail, Homewood and Madden) that the HMR development touches. The specific approach used here represents a significant, or quantum advancement in CWE analyses as it includes watershed-scale analysis of the hydrologic processes controlling sediment loading across multiple watersheds within which the proposed project area is only a very small fraction. It also addresses some of the known limitations of CWE analyses while forming the foundation of future adaptive management in the HMR property. The CWE report itself is used to help determine if: 1) the current development both within the HMR project area and within the 3 watersheds exceeds the TOC; 1) whether the proposed development and development alternatives exceed the TOC; 2) what effects the proposed development and development alternatives may have on sediment yields, and 3) if the development *combined with all foreseeable development* in the subject watersheds will exceed the TOC.

[4] Intervening Zone 7000 or INT 7000, are terms used to describe areas between clearly delineated watersheds that are believed to drain water directly to Lake Tahoe. Intervening Zone 7000 includes areas between the Quail, Homewood and Madden Creek sub-basins from Tahoma to Homewood.

Section 2: Defining the Threshold of Concern

2.1 Overview

The Threshold of Concern (TOC) is a conceptual limit past which further hydrologic, soils or ecologic impacts in a watershed are assumed to have either irreversible or unacceptable consequences. As the original CWEs were typically sediment-transport focused, the idea of 'too much' disturbance has been translated into some 'tipping point' at which the watershed, specifically the stream and drainage channels, would begin to incise and streambanks, hence hillslopes collapse as a result of greater runoff rates with no further disturbance. In fact, the watershed sediment transport processes and the landscape as a whole would be modified resulting in possible loss of riparian habitat and enormous sediment deliveries downstream. It is assumed that this tipping point can be discerned in evidence from the sediment, water quality and/or streambank signatures. Soil compaction, road building and other disturbances that would deliver an increased amount of water flow and sediment to streams would tend to cause a self-perpetuating stream channel and watershed unraveling process. Whether or not, such a threshold exists or can be identified quantitatively, it is clear that at accumulation of watershed impacts, there is likely to be an increase in sediment yield, reduction of habitat, loss of soil water storage, and other watershed characteristics or properties, that are unacceptable to land managers and regulatory agencies.

2.2 TOC and CWE Relationship

The CWE is designed to address the anticipated limits (TOC) to which watersheds can be disturbed before an ecosystem function of importance (e.g. preservation of water quality) is altered to an undesirable level or irreversibly. Setting a TOC presumes that an upper limit of disturbance (i.e. coverage and therefore sediment yield) exists and that the watershed 'healing' process is on a time-scale that is unacceptable. The CWE analysis is directed at simply assessing the total current or anticipated impacts on soils and stream sediment loading from a particular area and is compared to the TOC to see if the existing or proposed development (and commensurate sediment yield) is above or below the TOC. As a result of this subtle difference, two bases were used in the HMR CWE, one to assess watershed sediment yields for each project alternative as they depend on proposed land-use changes and the other for setting the TOC based in part on what land-uses currently exist and what changes could be anticipated under current permitting allowances. The two are related in the following manner: Overall sediment yields (as determined by the LSPC-based CWE modeling) were determined by calculating the amount and types of coverage in the project area (that land owned by HMR within the 4 watershed areas) for each of the proposed alternatives and adding that to total existing and potential future coverage outside the project area but within the four watersheds. Those coverages were converted to appropriate land use categories in the LSPC model,

which is what the LSPC model uses as a basis for calculations, and sediment yields were calculated (see 'Methods' section). Additionally, the potential future coverages for the overall CWE analysis were calculated using both the Bailey Land Capability System and the Individual Parcel Evaluation System (IPES) where appropriate and converted into appropriate land use categories in the model. Also factored in to the analysis was the result of a recent land capability challenge (LCC) within the project area.

The overall TOC used a combination of quantitative and qualitative parameters, as previously discussed. For the quantitative sediment component of the TOC, total future (maximum allowable) coverage was calculated for both inside and outside the project area[5] based solely on the Bailey Land Capability System as directed by TRPA staff (see Appendix D and Chapter 20 of TRPA Code of Ordinances and Bailey 1974)[6]. This threshold was directed by TRPA staff as it is the current land capability system in use for non-single family home development, and was agreed upon by all team members.

[5] Note that the Heavenly Valley CWE only analyzed land within the jurisdiction of Heavenly Valley Ski Corporation. TRPA staff requested that the HMR CWE analyze the entirety of the watersheds, even though some of the areas are not under the jurisdiction of Homewood Mountain Resort, thus making extrapolation into the future somewhat problematic.

[6] Soils in the Lake Tahoe Region have most recently been mapped by the United States Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS) and are described in the Soil Survey of the Tahoe Basin Area, California and Nevada (USDA 2007). It is important to note that for land capability, coverage and permitting purposes TRPA currently uses the Bailey Land Capability system, which is based upon the Soil Survey of the Tahoe Basin Area, California and Nevada (Rogers 1974). The 2007 soil survey is being proposed for adoption and integration into the Bailey Land Capability System as part of the TRPA Regional Plan Update, but cannot be used until/if it is formally adopted.

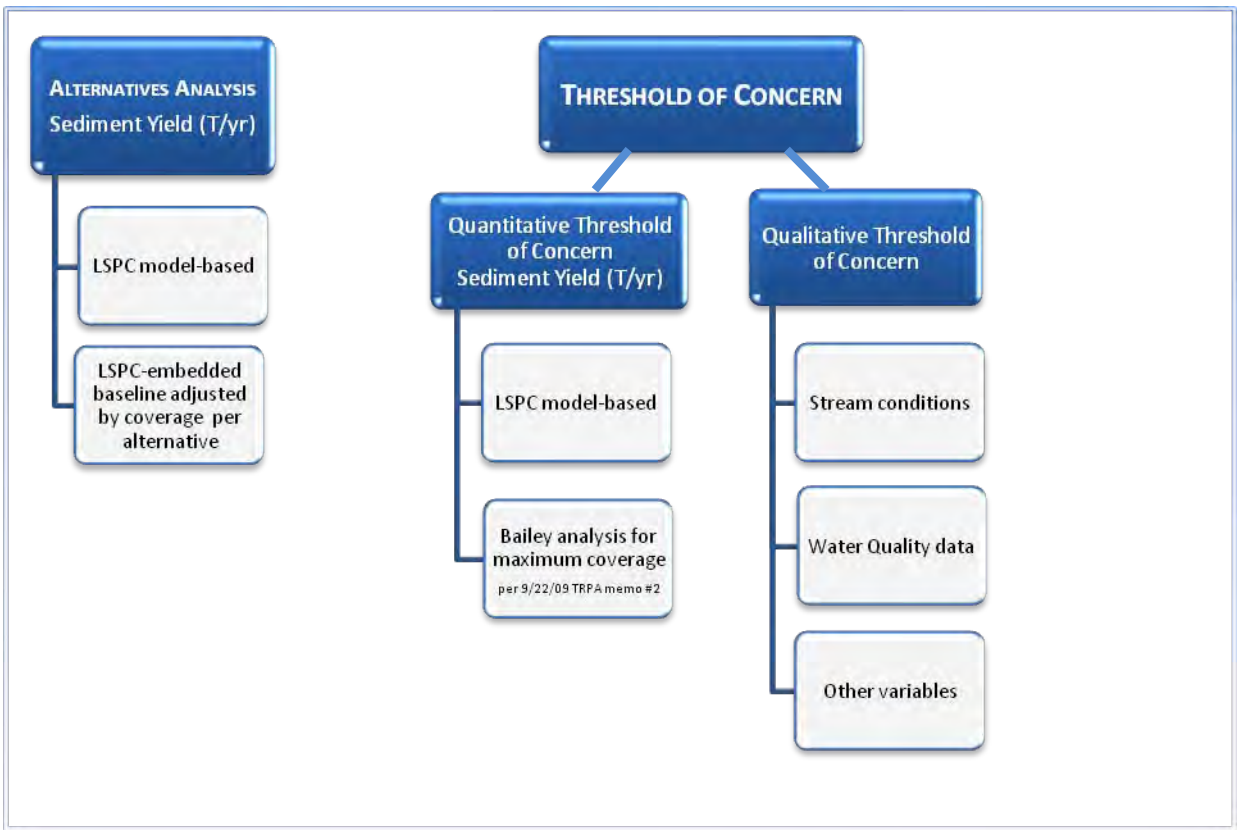

Figure 1: Graphical representation of sediment yield and TOC elements. This graphic shows each area of sediment yield analysis (Alternatives and TOC) and the elements of the TOC itself.

The following parameters were used to determine the TOCs for Madden Creek, Homewood Creek, Quail Lake Creek and INT7000, per direction from TRPA staff (Scott Frazier, Heather Gustafson (Beckman) and David Landry and approved by Joanne Marchetta per memo directives included in the Appendix D):

1) The current Bailey Land Capability overlay maps adjusted for a more accurate slope (slope phase adjustment-for land coverage and sediment yield (T/yr)) inside the project area
2) The 1974 Bailey Classification and Bailey allowable coverages for areas outside the project area
3) Stream conditions assessments;
4) Stream Water quality data
5) Other watershed indicators (such as potential build-out under a revised Bailey).

These elements are then considered together in order to make a semi-subjective, 'best professional judgment' decision as to whether a) the watershed drainage system sediment transport capability and structural (stream bank and channel) stability is currently beyond a TOC and b) whether it may, upon completion of

redevelopment activities, exceed a TOC. The two main elements plus the additional variables are considered separately and if any suggest clear exceedance of watershed stability, greater scrutiny is called for and in some cases, mitigation is considered. Since the ultimate TOC is, in effect, an interpretation of these elements, we must consider the variables carefully and consider whether there are clear and defensible indicators that when taken together, suggest that current or anticipated future land-use conditions will result in exceeding this TOC.

2.3 Threshold of Concern Determination

The TOC consists of the watershed-scale sediment yield (quantitative) element, and qualitative soils, stream channel and stream water quality elements. The quantitative element is determined from watershed process modeling using LSPC developed annualized infiltration and runoff rates as applied to land-use categories [7]determined from existing, proposed and TRPA permittable base allowable coverage (e.g. Bailey allowable coverage). As in the TMDL process, sediment rate factors for each land-use category were determined either from field plot measurements for pervious areas, or as modified by anticipated BMP installations and their relative effectiveness in releasing suspended sediment and nutrients downstream. The qualitative element of the HMR TOC is based on field observations of upland soils and stream channel conditions and a historical analysis of stream water quality data. The water quality data is evaluated to determine if clear trends of increasing sediment loading are occurring per unit of streamflow. These two elements are combined through the presumption that if the 'qualitative' indicators suggest that a sediment transport capability threshold has **not** been exceeded under present or existing conditions reflective of the past several years, then the sediment yields determined from the watershed modeling efforts based on climate and land-use conditions of those same years faithfully represents our best scientific judgment of below TOC conditions. Moreover, this modeling effort enables 'disaggregation' of the land-use components of the overall sediment yield from each watershed for existing conditions such that they can be re-assembled to project what annualized sediment yields may be expected for TOC land-use conditions and later, proposed project alternative conditions. As a result of this linkage in TOC analyses, we first discuss the qualitative element followed by the quantitative assessment of the Homewood area TOC.

2.4 The Quantitative TOC Element – Watershed Sediment Yields

While the qualitative field assessments and semi-quantitative water quality evaluations provide direct evidence that the Homewood area watersheds are not currently at a hydrologic threshold, by their nature they provide little in the way of quantitative targets by which to set an upper limit of concern. One possible quantitative target would be that set by meeting Basin-wide TMDL related reductions in fine sediment and presumably total sediment loading of 32%, but development of such a number

[7] Land use categories are specific categories within the LSPC model that are assigned specific sediment yield values.

also requires an assessment of the current loading values. Presently, recent or current sediment or fine sediment loadings, or yields can only be determined through watershed modeling efforts such as that employed in the initial TMDL-related studies using LSPC. We adopt this latter approach to determine annualized sediment yields (T/yr) for TRPA allowable coverage[8], existing coverage (per TMDL modeling) and project alternatives coverage of the area watersheds. The TOC sediment yield is developed from the allowable land coverage classifications of the 1974 Bailey Land Capability System, translated into land use categories in the LSPC model. This system assigns coverage coefficients based on soil type, vegetation and land slope[9]. This 'allowable coverage' component of the TOC is considered a legally defensible threshold as the Bailey system limiting development is the permitting standard applicable to the Homewood area development. Moreover, similar to the CWE type analysis, the Bailey system is predicated on the concept that impermeable coverage resulting from development beyond the soil/slope capability would result in irreparable damage to hydrologic function within the watershed and subsequent excessive discharge of sediment to Lake Tahoe from each watershed (Bailey, 1974, pgs 1,2). Site specific slope adjustments (as directed by TRPA staff) were made to the Bailey overlay map for the areas in question as there is more refined topographic information in the area than was available for the 1974 Bailey mapping effort. The topographic information was derived from current USGS topographical maps (prepared by Tri State Survey, LLC). This map is referred to as the 'slope phase adjusted map'. Based on this revised mapping, base allowable coverage was determined for each watershed. Allowable coverage within each watershed was then converted into specific land-use categories for use in the LSPC model to determine sediment yields for the area watersheds. Modeling analyses were completed for areas both inside and outside the HMR project area within each watershed to facilitate assessment of project-level impacts (i.e. inside of the project area) separately from potential whole watershed impacts.

In order to determine maximum allowable coverage both in and outside of the HMR project areas, TRPA Directives (September 22, 2009 and November 24, 2009, Appendix D), as well as the TRPA Ski Area Master Plan Guidelines, were followed. Within the Project area, the slope adjusted Bailey overlay was utilized. This exercise produced a total base (or maximum) allowable coverage. That coverage, in square feet, was converted into land-use categories and sediment yields determined using the LSPC hydrology information as described above by Dr. Mark Grismer. The result is total sediment as well as silt and clay yields in mass/year. For total sediment and silt, results are in Tonnes per yr (T/yr). For clay, output is reported in kg/yr.

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[8] Based on Bailey and IPES allowable coverage

[9] Coverage limitations in the Lake Tahoe basin have been historically based upon the Bailey Land Capability System (Bailey, R. 1974) developed in part from the initial SCS soil survey of the Basin (Rogers, 1974). Since 1987, the IPES (Individual Parcel Evaluation System) system had been adopted for single family dwelling development on parcels that were vacant on or after that time.

Table 1 summarizes the annualized sediment yields determined for each watershed under Bailey allowable coverage. There are two caveats to using these values as direct (vs. comparative) sediment yield indicators. While the numerical modeling enables determination of theoretical sediment yields from areas inside and outside of the proposed project areas in each watershed, it is not clear that making such an artificial distinction is meaningful from a watershed hydrologic perspective as some of the project areas are not inter-connected, nor are some upland source areas that likely control streamflows and sediment transport. As such, sediment yields generated per watershed should be compared between watersheds as a whole. Secondly, it should be noted that INT7000 is **not** a single watershed with a definable discharge or drainage channel network. Rather INT7000 is an accumulation of individual hillslope areas between Tahoma and Homewood that ultimately drain to roadside channels along Highway 89. For such small hillslope areas, it is not likely that a hydrogeomorphic threshold could actually be defined, though it is possible that an individual hillslope could be impacted. Moreover, the spatial scale of this analysis for INT7000 does not realistically consider individual hillslopes that lack definable fluvial drainage systems. Finally, the project areas within INT7000 are fairly small relative to the definable watersheds so INT7000 sediment yields are not included in the overall summation of yields. Given these qualifiers, it should be kept in mind that this analysis is for comparative purposes and as all models, is an approximation of real systems.

The Bailey allowable coverage conditions represent the best estimate of the legally defensible quantitative TOC sediment yield for each watershed. It should also be noted that the Bailey allowable coverage TOCs are much lower than that which would be set using the new soil survey-based thresholds.

Table 1. Existing condition and Bailey land-use derived annualized sediment yields from which a numeric TOC can be determined.

Land-use conditions modeled	INT 7000			MADDEN			HOMEWOOD			QUAIL			TOTAL		
	in-proj	out-proj	Total	in-proj	out-proj	Total	in-proj	out-proj	Total	in-proj	out-proj	Total	All In	All Out	All
Existing Condition	62	300	361	459	577	1036	828	78	906	152	257	409	1500	1211	2712
TOC	55	300	355	435	650	1085	865	90	955	147	315	462	1502	1354	2857

2.5 Qualitative TOC Elements – Field Observations of stream channel morphology, water quality and other soil indicators

This part of the TOC includes presentation and interpretation of stream channel conditions, historic water quality data and general field observations during soils restoration activities in the three watersheds. These somewhat more qualitative elements are presented to establish a field-based, non-model component to the TOC as described above. These elements are used to help determine whether physical evidence exists in the field indicating that ongoing watershed degradation is

underway. This degradation would be an indication that the TOC may have been reached or exceeded. This field evidence for the TOC is especially valuable in cases where the modeled sediment yields suggest that the TOC may be reached or exceeded. Thus, this qualitative evidence is used to corroborate or refute the numeric or quantitative TOC as developed under the LSPC model.

2.5.1 Stream Channel Morphology Assessment

TRPA assessment

Every five years the TRPA has committed to assess the conditions of streams within the Lake Tahoe Basin for fish habitat. The rating system is described in the 2006 Threshold Evaluation by TRPA (TRPA, 2006). The streams in the project area watersheds are rated "Marginal" for resident fish; the lowest of the three rankings. As described below, such a ranking for the three streams in the project area watersheds stems in part from them being among the steepest gradient streams in the Lake Tahoe basin, making them inherently marginal at best for fish habitat . Therefore, comparison to other streams such as the Upper Truckee River, Trout, General, Blackwood, Ward or other lower gradient creeks is not a useful approach in determining the condition of the project area creeks. Further, two of the creeks, Madden and Quail, tend to be intermittent in all but the wettest years and therefore not readily habitable for fish. Homewood Creek runs year around in portions, primarily as a result of flows from two springs.

Entrix-Kleinfelder Assessment

In recent years, two stream channel condition assessments were conducted at HMR. Entrix, Inc. performed a stream channel condition assessment in 2005 on behalf of Placer County as part of the Homewood Erosion Control Project. Entrix evaluated stream conditions of the lower portions of the three major drainages on HMR property; Madden Creek (from River Mile [RM] 0.0 to 1.0), Ellis Creek (aka Homewood Creek) (from RM 0.0 to 0.7), and Quail Lake Creek (from RM 0.0 to 0.9). Entrix utilized the Stream Condition Inventory (SCI) protocol to assess the stability of the creeks. The findings of the assessment were presented in a 2006 report and in Kleinfelders' "Stream Channel and Baseline Surface Water Assessment-HMR, Homewood California" dated November 12th, 2007.

The second stream channel condition assessment was performed by Kleinfelder in October/ November 2006. Kleinfelder evaluated stream conditions and stream stability of the upper portions of Madden Creek (from RM 1.0 to Louise Lake at RM 2.08), Homewood Creek (RM 0.7 to 1.89), and Quail Lake Creek (RM 0.9 to 0.97) as well as and unnamed drainage (from RM 0.0 to 0.7) located between Madden and Homewood Creek. The results of this assessment are presented in Kleinfelders' "Stream Channel and Baseline Surface Water Assessment-HMR, Homewood California" dated November 12th, 2007.

A critical element in the interpretation of both the Entrix and Kleinfelder reports is the lack of discussion of temporal changes in stream conditions relative to large or even catastrophic flow events and the process of equilibration. That is, both Rosgen and Montgomery-Buffington discuss the concept of the dynamic nature of streams and the impact-equilibration response that is almost constantly underway in stream systems. That process is more pronounced and in constant play in high gradient streams where even moderate pulse events can add to the already high energy system is such as way that impacts to stream channels and banks result in responses that would be considered abnormal in lower energy (gradient) systems. The runoff events of 1997 and 2005 were not discussed in the Klienfelder report when summarizing and interpreting this data and Entrix's data. However, given the extreme nature of those two runoff years and the dynamic nature of channel processes, the point in time assessments of Kleinfelder and Entrix can be used to suggest that the streams within the project area are resilient and are responding naturally to the high flow years of 1997-98 and 2005-06. It should be noted that the Rosgen system was developed in much lower gradient streams and the Montgomery-Buffington system, while discussing elements such as bedrock limited stream reaches, is generally applied to lower gradient mountain streams. Nonetheless, the ratings indicate a relatively stable system when graded so soon after a 100-year event (1997-98). We base that interpretation on the fact that many of the stream channels are in fair to good condition which is unlikely to be the case if the watersheds had reached a critical threshold (TOC).

Kleinfelder Stream Condition Assessment Methods and Conclusions

Kleinfelder classified channel segment (0.1 miles) conditions as good, fair, or poor. Streams were assessed in 0.1 mile segments and each individual segment was given a specific rating depending on a number of parameters. A portion of a stream was listed as "Good" when banks exhibited erosion only on outcurves, at obstructions, and otherwise infrequently. A segment was listed as "Fair" when channels were eroded intermittently in location not explained by stable fluvial processes. Poor conditions included extensive and continuous erosion on one or both banks.

- Approximately 75% of the Madden Creek section assessed by Kleinfelder (RM 1.0 to RM 2.08) was rated as good. Approximately 20% was rated as fair with 5% rated as poor.
- Approximately 92% of the Ellis (Homewood) Creek section assessed by Kleinfelder (RM 0.7 to RM 1.89) was rated as good. Approximately 7% was rated as fair.
- 100% of the Quail Creek section assessed by Kleinfelder (RM 0.9 to RM 0.97) was rated as good.
- Approximately 72% of the Unnamed Creek that was assessed by Kleinfelder (RM 0.0 to RM 0.7) was rated as good. Approximately 28% was rated as fair.

Overall, from the Kleinfelder assessment, less than 1.5% of the 3.67 miles of stream channels surveyed were in 'poor' condition, less than 15% were in the intermediate changing condition of 'fair', while the remaining channel reaches were in 'good' conditions within the three watersheds. From their analysis, following the wet water years of 1998 and 2005, the Homewood area streams have already adapted to land-use conditions at the time and show little to no evidence of increased sediment transport capability.

Entrix Stream Condition Assessment Methods and Conclusions

Entrix utilized the Stream Channel Inventory (SCI) protocol (Frazier, et al., 2005) to assess the stability of stream banks in channel segments located immediately downstream of the segments considered by Kleinfelder. The SCI method rates stream banks as stable, vulnerable, or unstable for each 0.1 mile stream segment. The SCI protocol is based on a checklist that considers the amount of vegetative cover, presence of boulders and other coarse bank material, bank angle, and other indicators of bank stability. Stable banks have no instability factors and greater than 75% cover (cover includes vegetation, large rock, downed wood, or erosion resistant soil types with clay and conglomerates). Unstable banks have less than 75% cover and at least one instability indicator. Vulnerable banks have greater than 75% cover with at least one instability indicator. According to Entrix,

- Approximately 60% of the Madden Creek section (RM 0.0 to 1.0) was rated as unstable with vulnerable and stable conditions each comprising 20%.
- Approximately 48% of the Ellis Creek (RM 0.0 to 0.7) section was rated as unstable while vulnerable and stable conditions comprised 23% and 29% of the channel, respectively.
- Approximately 60% of the Quail Creek section (RM 0.0 to 0.9) was rated as stable, while the remainder was considered vulnerable. 100% of the Quail Lake Creek section within HMR property was rated as stable.

Overall Stream Condition Classifications of Drainages within Project Area

The results of the Kleinfelder and Entrix stream condition assessments are illustrated in Figure 6, Channel Condition and Bank Stability. The results from the Kleinfelder and Entrix stream condition assessments were combined to provide an approximate summary of the stream condition classifications of each creek. The percentages for each stream condition classification were calculated by dividing each classification segment by the total length of the assessed stream segments using Figure 6. The results are summarized below.

Madden Creek

- Good/ Stable: 42%
- Fair/ Vulnerable: 21%
- Unstable/ Poor: 37%

Ellis (Homewood) Creek

- Good/ Stable: 70%
- Fair/ Vulnerable: 18%
- Unstable/ Poor: 12%

Quail Lake Creek

- Good/ Stable: 88%
- Fair/ Vulnerable: 12%
- Unstable/ Poor: 0%

Unnamed Creek

- Good/ Stable: 71%
- Fair/ Vulnerable: 29%
- Unstable/ Poor: 0 %

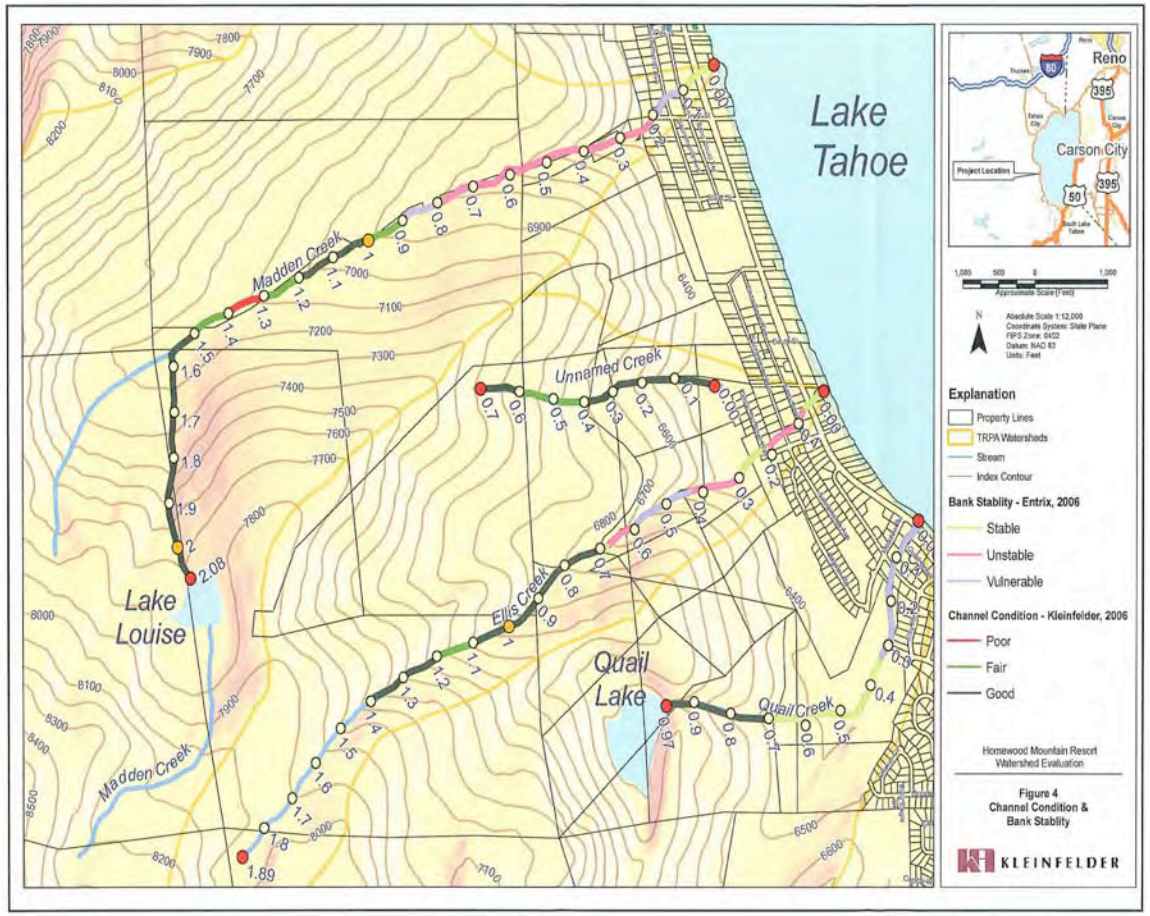


Figure 2: Channel Condition and Slope Stability

Conclusions Regarding Stream Condition Assessments Conducted by Entrix and Kleinfelder

The stream condition rating systems by used Entrix and Kleinfelder utilized pre-existing assessment methodologies that were developed for use on lower gradient streams and are therefore not expected to adequately characterize stream conditions for the type of high gradient small watershed streams encountered in the Homewood area. In fact, the three streams assessed are among the shortest and steepest in the Lake Tahoe basin and consist of a great deal of glacial 'debris', which is extremely erodible. Generally used rating assessment methodologies have not been developed for the small, high gradient, steep walled (in places) creeks such as are encountered in the project area[10]. (That is, there is no 'standard' or industry norm.) For example, the Stream Condition Inventory Technical Guide (Frazier, et al., 2005) was developed for the entire United States Forest Service-Pacific Southwest Region. This guide explicitly states limitations on using the SCI method on high- gradient streams such as those in the Homewood area. In an effort to avoid this limitation, the Kleinfelder stream condition assessment did not utilize an established assessment methodology, referring instead to more generalized geomorphological evaluations. In order to determine the general adequacy of these methodologies for determining stream conditions, two individuals with local geomorphological experience and training were contacted and asked to provide additional general comments on the assessment and outcome of those assessments:

- Mark Grismer PhD, PE, Professor of Hydrology, Soils and Environmental Engineering, Depts. of LAWR and Biological & Agricultural Engineering, UC Davis, (2/25/2010): According to Dr. Grismer, the lower stream sections are generally more dynamic and meandering in this type of watershed than typically encountered in lower gradient watersheds, depending on the local gradient and sediment yield from upstream. Upper reaches tend to incise more and are hard rock controlled. Homewood and Quail Creeks should be considered reasonably stable – there should always be conditions that would meet the "vulnerable/unstable" classification reported in the Entrix report since very steep and short, recently glaciated watersheds are more actively equilibrating (cutting and stabilizing).
- Matt Kiesse River Run Associates, fisheries biologist and stream/watershed geomorphologist, 20 years practice in Tahoe Basin (3/05/2010): The stream condition inventory protocol that was utilized by Entrix does not take into account natural erosion conditions or natural fluvial process of the stream channels. Pre-existing geological conditions of the channel area will influence natural erosion conditions of the channel and those defining conditions, critical in a recently glaciated and very steep watershed, are not well represented in the Entrix assessment. Human modifications may also play a significant role in determining stream conditions and

[10] An assessment document reference was found but we were unable to locate it in the TRPA or TIMMS website or the USGS archives (Huffman and Associates, 1998).

the Entrix approach does not include anthropogenic influences. Further inquiry into the natural conditions and processes of the stream channel would need to be made before making definitive statements regarding stream conditions/stability.

CWE assessments must be approached with a level of caution in interpreting information. Site-specific conditions should be taken into account. As suggested in the Sierra Nevada Ecosystem Project report CWE section suggests: "*Users are expected to exercise* ***judgment*** *in modifying ERA coefficients and TOCs for particular sites.* "(SNEP, Volume III, pg. 13 Berg et al, 1996; also, see MacDonald, L. 2000).

Overall, despite their limitations, the overall field assessment of the stream channel conditions in the Homewood area not surprisingly reflects dynamic nature of stream channel evolution. In addition, it is important to note that very little of the proposed re-development will occur near streams and most will take place in the lower area of the mountain thus having very little influence on *upstream* reach source areas that control channel flow velocities and subsequent channel stability. The North Base portion of the development does not drain directly to a stream. Most of the South Base portion of the development is in the Homewood (Ellis) Creek drainage and in fact, is located directly adjacent to the creek. However, stream restoration is slated in this lower reach as part of the project and implemented BMPs are expected to improve channel conditions over what currently exist (i.e. large paved areas, old buildings with few BMPs.) The only part of the development in the upper watershed is the mid-mountain Lodge in an area that drains towards Madden Creek. Soil restoration and slated BMPs for themed-mountain lodge are expected to improve overall infiltration capacity, thereby reducing net runoff from the area as compared to current conditions. The present and planned soils restoration activities (e.g. dirt road removal) across the Homewood area are expected to have the largest impacts on the local streams in terms of reduced rates of runoff and sediment loading from overland flow processes as a result of greater infiltration and soil-water storage generated by the restoration. Such reductions in upstream generated flowrates will increase the likelihood of channel restoration success at the lower gradient channel sections downstream near which more of the re-development is to take place.

Of the nearly 4 miles of stream channels considered, the majority are in good/stable condition suggesting that an "unraveling" type threshold has not been reached, as the following sections indicate.

2.5.2 Stream Water Quality Data

Stream water quality data is actually a quantitative element within the qualitative section of this report in that the data requires some subjective or expert interpretation. This data is used as a reference to see whether clear trends exist in water quality. Variations in the stream water quality over time, provide an indirect measure of the sediment/nutrient transport capacity of the watershed as well as a direct measure of the stream channel stability. In both cases, relative invariance of the sediment/nutrient mass discharged per unit volume or depth of watershed runoff

relationship across wet and dry water years provides an insight into whether or not threshold conditions have been reached or exceeded. Often only stream water quality (concentration) information is available rather than loading information as needed for say the TMDLs (and therefore this CWE analysis), however, lately more combined stream flow rate and water quality information is becoming available. For the HMR project area, there is existing stream water quality data as a product of Lahontan Waste Discharge Requirements (WDRs) requirements.

WDRs are imposed in an effort to bring facilities into compliance with the Clean Water Act (CWA). Sampling, as required by HMR's WDRs, are done at specific areas at weekly intervals during runoff periods; that is, in the spring until water flow volume decreases to baseflow levels absent significant overland flow. These weekly samples are averaged to a monthly basis and then that monthly mean is used to create a yearly average or Mean of Monthly Means (MOMM). As actual stream water quality data reflects an integration of watershed and channel processes underway at the time the water sampling is completed, it is analogous and complimentary to the stream channel morphology assessments described above. This approach is something of a regulatory standard and as such implies a defensibility through compliance with TRPA and State of California discharge limits. See Box 1 for additional discussion.

Figures 3, 4 and 5 summarize the MOMMs for total suspended sediment (TSS), nitrogen (TN) and phosphorous (TP) in the streams of the Homewood area, respectively, for the period 1995-2008. The sampling points and frequency were designed to develop an understanding with time of the influence of the ski resort on water quality[11]. Water quality objectives are also indicated by the solid red lines in each figure. As is evident in these figures, no clear temporal trend is apparent for any of the water quality parameters and with the exception of TP concentrations and wet year conditions of 2005, the MOMM values are well below water quality objectives. From the perspective of establishing proximity to or exceedance of a watershed threshold condition, trends of increasing concentrations from one similar water year to the next (e.g. between dry years of 2001-04 to 2006-07) would suggest evolving degradation within the watershed. Seemingly large MOMM concentrations of TSS in 2005 are associated with the very high flows and if expressed on a per unit of runoff would likely have been similar to other years (2005 was an extremely wet year, associated with a number of landslide activities throughout the Tahoe Truckee area). Reasons for occasional high nutrient concentrations such as that for TN in 2001 are less clear, though this likely a result of very low flow conditions resulting in less dilution of nitrogen leaching from the forest soils during near continuous base flow conditions in this dry year.. What is especially interesting is the total phosphorus which is often higher in the Madden 1 sampling location at the top of the watershed.

[1111] A note about water quality monitoring: HMR has undertaken near continuous water quality monitoring for sediment and flow, which presents a rare opportunity to analyze watershed signatures from runoff events. This monitoring is being used to develop TMDL restoration actions and expected responses. While not directly related to the redevelopment efforts, this monitoring will fill some of the gaps in the MOMM analysis.

In fact, in every instance, P is higher in the uppermost elevation sampling station. This may be a result of the sampling location being just below Lake Louise where TP is concentrating during the summer months and/or a high level of native P in the watershed itself, such as is observed in the Martis Valley watersheds.

2.5.3 Stream Water Quality Conclusions

In summary, increasing trends in stream water concentrations with time are not observed, but rather highs and lows of various constituents that appear to be linked to episodic runoff events and high water years. Thus, water quality data offers corroboration to the stream channel assessments that the watershed drainage system (streams) capability as of the 1995-2008 period are not above threshold conditions and that watershed modeling based on this period should also represent below TOC conditions. Taking the water quality objectives as another measure of watershed threshold conditions, with the exception of TP, Homewood area stream water quality is well-below such a threshold. And even in the case of TP, phosphorus levels generally trend downward as water passes through Homewood property, suggesting that generic objectives are actually below background levels in these watersheds. Homewood area stream MOMM concentrations would even meet the TMDL planning and implementation perspective of decreasing fine sediment loading by approximately one-third in the next 15 years, another possible measure of a TOC.

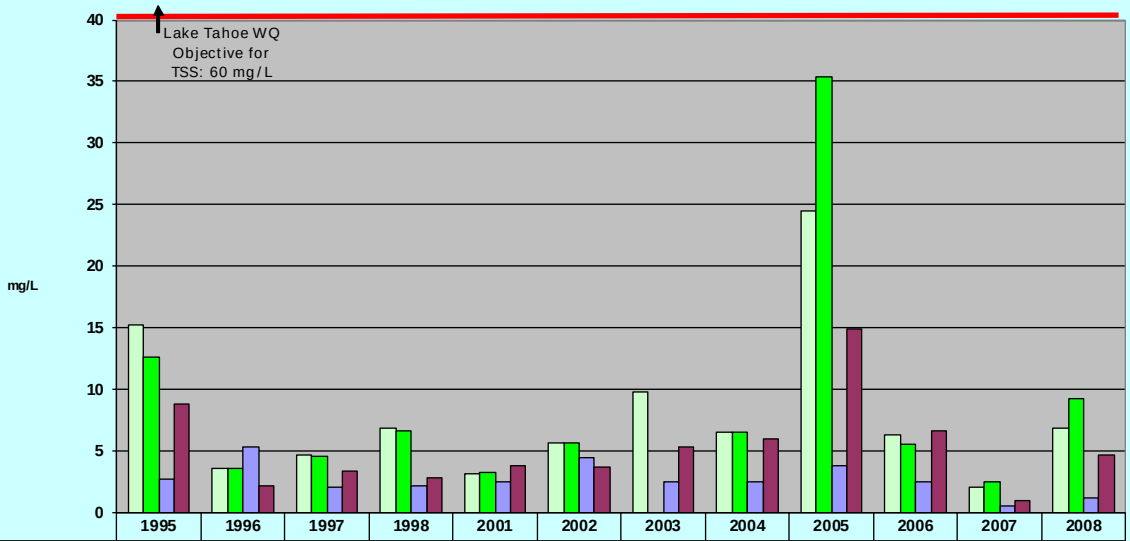
Box 1 Use of Current Water Quality Objective Data

The only actual data available at this time to evaluate a TOC is the past 13 years of water quality monitoring data for the two main watercourses in the HMR property, Homewood (aka Ellis) and Madden Creeks. The data, while meeting the requirements set forth in the Waste Discharge Requirements (WDRs), represents the accepted regulatory standard of water quality assessment in the Lahontan Region. Samples are taken weekly during the runoff season when sites are safely accessible and are then translated into an average for the entire water year. Although Water Quality Objectives (WQOs) for total phosphorus, total nitrogen, and suspended sediment have been established for surface waters in the Lake Tahoe Hydrologic Unit in the Water Quality Control Plan for the Lahontan region (Basin Plan), it is difficult to compare the WQOs to the available data because samples were collected primarily during high flows and do not represent the full range of the hydrologic cycle within the water year.

A correct comparison to these WQOs requires samples collected at fixed intervals (e.g. monthly, weekly or more often through the entire water year). Unfortunately, the surface waters at the project cannot be sampled on a fixed interval schedule due to snow conditions during the winter months. Additionally, it appears that surface waters in the project area are naturally high in total phosphorus as is indicated in the phosphorus graph. This graph shows that P is higher in the upper watershed in many years and is lower in the lower sampling point. Phosphorus levels during high flows tend to be above the WQOs at both upstream (background) and downstream sampling locations. Results for suspended solids are well below WQOs for both upstream and downstream sampling sites. An additional limitation on sampling is that Madden Creek seldom runs year round and thus cannot be sampled during the late summer and fall months in any case. It should be noted that if year round samples were taken, the average mean would most likely go down.

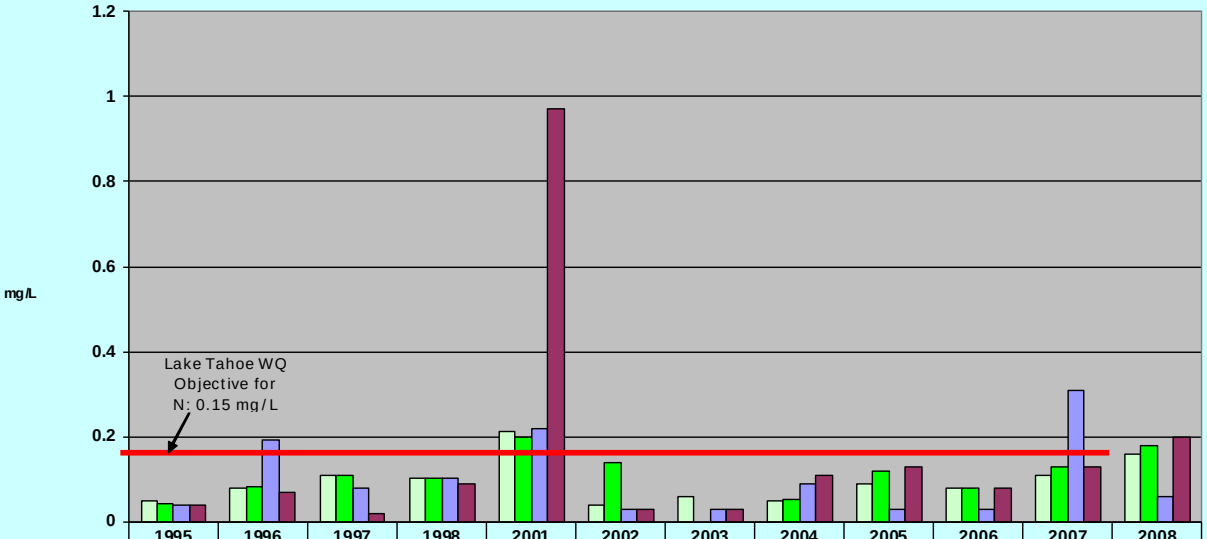
Based on the data limitations, water quality was evaluated by comparing differences between upstream and downstream constituent concentrations. Figures 3, 4 and 5 illustrate the (WDR) dataset for suspended solids, nitrogen, and phosphorus. This dataset does not indicate negatively trending degradation. In fact, the data does not indicate consistent pollutant values between the downstream and upstream monitoring locations.

The TRPA Ski Area Master Plan Guidelines state that the first objective in setting the threshold of concern is to evaluate if a Cumulative Watershed Effect has already occurred (page 36 of TRPA CWE Guidelines). An evaluation of available water quality monitoring data from 1995 to 2008 does not indicate that the project area watersheds are currently experiencing an irreversible, serious, and/or wholesale change in sediment loading rates (see Figures 3, 4, 5) but, like most relatively stable watersheds, respond to climate variations.



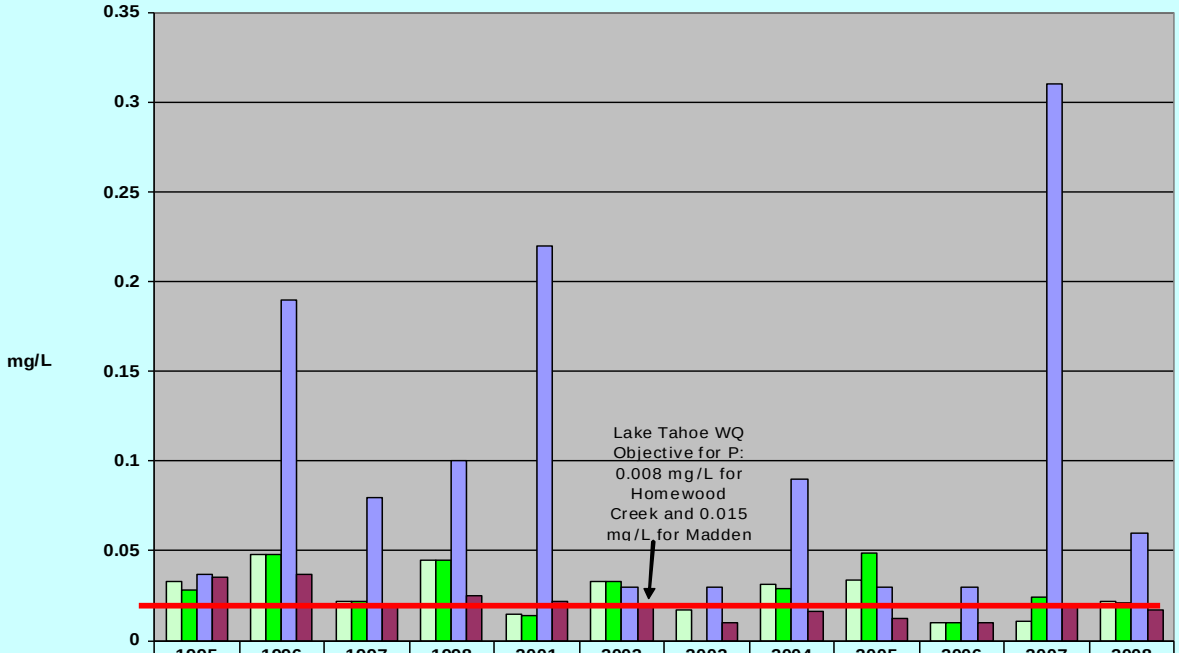
	1995	1996	1997	1998	2001	2002	2003	2004	2005	2006	2007	2008
Homewood-1	15.2	3.6	4.7	6.8	3.2	5.7	9.8	6.5	24.5	6.3	2.1	6.8
Homewood-2	12.67	3.58	4.58	6.67	3.29	5.69		6.54	35.33	5.57	2.46	9.21
Madden -1	2.75	5.3	2.1	2.16	2.5	4.5	2.5	2.5	3.8	2.5	0.57	1.25
Madden -2	8.85	2.2	3.4	2.8	3.8	3.75	5.3	6	14.9	6.6	1	4.7

Figure 3: Total Suspended Solids Concentrations (Annual Mean by Water Year)



	1995	1996	1997	1998	2001	2002	2003	2004	2005	2006	2007	2008
Homewood-1	0.05	0.08	0.11	0.1	0.21	0.04	0.06	0.05	0.09	0.08	0.11	0.16
Homewood-2	0.043	0.082	0.11	0.1	0.2	0.14		0.053	0.12	0.08	0.13	0.18
Madden -1	0.037	0.19	0.08	0.1	0.22	0.03	0.03	0.09	0.03	0.03	0.31	0.06
Madden -2	0.037	0.07	0.02	0.09	0.97	0.03	0.03	0.11	0.13	0.08	0.13	0.2

Figure 4: Total Nitrogen Concentrations (Annual Mean by Water Year)



	1995	1996	1997	1998	2001	2002	2003	2004	2005	2006	2007	2008
Homewood-1	0.033	0.048	0.022	0.045	0.015	0.033	0.017	0.031	0.034	0.01	0.011	0.022
Homewood-2	0.028	0.048	0.022	0.045	0.014	0.033		0.029	0.049	0.01	0.024	0.021
Madden -1	0.037	0.19	0.08	0.1	0.22	0.03	0.03	0.09	0.03	0.03	0.31	0.06
Madden -2	0.035	0.037	0.02	0.025	0.022	0.02	0.01	0.016	0.012	0.01	0.019	0.017

Figure 5: Total Phosphorus Concentrations (Annual Mean by Year)

2.5.4 Other Watershed Indicators

Homewood Mountain Resort began environmental improvement work in 2007 with development of a watershed problems and opportunities analysis (separate from this CWE) that has been used to help determine where problem areas exist and where restoration and environmental improvement efforts would be most efficaciously applied. This analysis resulted in a Watershed Plan that included a GIS identification and assessment of most of the roads, streams, ski runs and forested areas of the Homewood project area. It has provided a robust on-the-ground understanding of the Homewood area watersheds. While this area has endured a number of impacts in the past, especially road building for mining, logging, and ski area operation, there is little evidence of widespread erosion, either through the presence of obvious and widespread rills, large gullies or mass slope failures. Certainly, the presence of roads, ski trails and some bare areas has increased runoff locally, however, only one location of obvious and insidious gullying was discovered and it was associated with a man-

made drainage channel mid-mountain within the Homewood Creek watershed. This area is presently being addressed through intensive soil restoration efforts. Ongoing road runoff is observed but usually runs through forest floor cover, either by design or naturally, before it reaches the creeks. Additionally, there are a number of abandoned roads that are revegetating spontaneously, which indicates that recovery from past disturbances is underway.

Thus vegetative and soil indicators (vegetation cover, infiltration, soil movement and others) suggest that the watersheds as a whole, while experiencing some accelerated erosion, have not yet reached nor appear to be on a trajectory towards exceedance of an irreversible threshold. Rather, it appears that less severe disturbance areas are in a process of active recovery/equilibration and greatly disturbed areas are in the process of being restored or slated for future soils restoration work.

As with the stream channel assessments and stream water quality data, no field evidence was discovered suggesting that the Homewood area watersheds are in a state of "unraveling" that might be associated with exceeding a sediment transport capability threshold beyond which the stream channels and landscape is unlikely to recover.

Qualitative TOC Conclusions

The qualitative TOC elements, taken together, do not call out blatant areas of concern or clear suggestions that we have either reached a TOC or are on a trajectory to do so. These qualitative elements are physical, real time field 'reality checks' to be used in conjunction with the quantitative TOC in helping to determine allowable impacts in the watersheds.

2.6 Other Watershed Impacts: Oil and Grease Discussion and Results

While not technically part of the TOC discussion, oil and grease are adjunct pollutants that can foul water quality. Thus, we present the following discussion in order to offer evidence that oil and grease will not be a contributing element of water quality, and thus watershed degradation.

Oil and grease represent a reasonable potential to harm beneficial uses. There are two main pathways for oil and grease to enter surface waters. The first is from highway legal vehicles, such as cars and trucks. The second is from accidental spills from snow grooming and equipment maintenance. The likelihood of oil and grease entering surface waters will be compared to the existing conditions.

2.6.1 Existing Conditions

Currently, the north and south base areas are dominated by parking lots for private vehicles. Oil separators are installed in both areas to remove oil and grease from stormwater. The resort maintenance facility is located in the southern end of the south base area. A spill of oil or grease here could quickly enter surface water from the storm drains. It is possible that a large spill could overwhelm the oil separators.

2.6.2 Proposed Project and Alternatives 3, 5 and 6

As part of the Proposed Project and Alternatives most of the parking (95%) in the north and south base areas will be underground. These underground parking areas eliminate most of the current potential for outflow of oil and grease and make the capture of oil and grease easier since rainfall cannot flush oil and grease into surface water drainages before containment. In addition, spills within underground parking areas can be contained quickly. For above-ground parking, high-quality sand oil separators will be installed to prevent oil and grease from entering surface waters.

Also as part of the Proposed Project and Alternatives 3, 5 and 6, snow grooming machine parking and equipment maintenance will occur at the mid-mountain station. The construction of the mid-mountain maintenance facility will include state of the art systems to capture oil and grease spills. The facility is located far from surface waters and much farther from Lake Tahoe, making the probability of any oil and grease reaching the surface waters and/or the Lake much lower.

2.6.3 Alternative 4

Alternative 4 divides the resort into 20 residential parcels. Oil and grease spill prevention and treatment are not required for residential parcels. The risk of oil and grease spills is assumed to be the same as other residential parcels around the region. However, very little actual data or understanding is available on the impacts of private homes on inputs of oil and grease to storm drain or sewer systems.

2.6.4 Conclusions

Oil and grease pollution has not been tracked in the Homewood watersheds. However, the development alternatives consider oil and grease pollution and make significant strides to minimize not only existing pollution pathways but also to lower probabilities of pollution by relocating potential sources of pollution. Therefore, oil and grease are not expected to pose threats to any of the watersheds during normal operations.

Section 3: CWE Analysis Methodology

3.1 Overview

The HMR CWE analysis models sediment yield (T/yr)[12] that could result from land use changes implemented under the Proposed Project (Alternative 1) and Alternatives 3, 4, 5 and 6 and compares those yields to existing sediment yields and TOCs. The HMR CWE analysis is built upon the watershed modeling conducted for the Lake Tahoe TMDL Pollutant Reduction Opportunities Report (Roberts, D. and J. Reuter, 2007). The Lake Tahoe TMDL process relied on the LSPC model, which is described in Box 2.

3.1.1 Tahoe TMDL Context

Since the 2005 Heavenly CWE analysis was completed, the Lahontan Regional Water Quality Control Board (Lahontan) has completed a Technical TMDL study (2007) for the Lake Tahoe Basin. The Lake Tahoe TMDL establishment process involved calibration of modeled tributary stream flows and sediment loads to existing data based on the years for which combined climate and streamflow data was available. The TMDL report also considered the "opportunities" or methods for possible sediment loading reductions from the forested uplands, stream channels and urban areas of the Lake Basin.

In an effort to make the HMR CWE analysis more accurate and relevant to the Tahoe TMDL and thus set a new standard for CWE analyses in the Lake Tahoe Basin, this CWE analysis employs the TMDL model input land-use data (for existing conditions) and annualized output hydrology (e.g. infiltration, runoff rates) information combined with the plot measured erosion rates per unit of runoff to determine sediment yields from the Homewood area.

The HMR CWE analysis is linked directly to the Lake Tahoe Total Maximum Daily Load (TMDL) study summarized in the Lake Tahoe TMDL Technical Report (Lahontan and NDEP 2007). Modeling data and analyses derived from Phase 2 of the Tahoe TMDL process was used to develop the sediment yield analyses in this report.

The original TMDL modeling effort provided a *hypothesis* of sediment yields for each sub-basin based on constant land-use conditions and annualized climate data (1993-2004) rather than a *prediction* of an annual sediment yield for any one particular year. Eventually, model predicted sediment yields per year for given sub-basin land-use conditions and actual climate information can be compared with measured accumulated daily sediment loads determined from actual stream water quality

[12] Wherever the term 'sediment yield' is used, unless otherwise stated, we are referring to annualized sediment yield in metric tonnes per year (T/yr) from a particular area. While a TMDL is based on a 'daily' load, the Tahoe TMDL and most others, group daily values into annualized values to make assessment and understanding more straightforward.

monitoring. We discuss existing and future monitoring efforts at HMR later in this report.

The LSPC model estimates existing pollutant yields and potentially achievable yield reductions by land use for each watershed in the Lake Tahoe Basin. The LSPC model assigns sedimentation rates for each land use category as defined by soil type and slope, with the exception of impervious land uses, which have no soil or slope dependence.

The following steps (that resulted in a GIS dataset of some 20,000 polygons) were completed to set up the HMR CWE analysis for the existing and proposed land use conditions:

1. The 1-meter land use raster dataset was converted into a feature (polygon) dataset using the standard ESRI "raster to poly" toolset.
2. The average slope for each land use was calculated based on 10-meter grid dataset. This dataset was simplified to a 100-meter grid and intersected with the land-use dataset for existing conditions. The slope for each land use was determined as an area-weighted average.
3. The soil parent material (volcanic or granitic origin) is used to determine sediment rates per unit of runoff from pervious areas. This key parameter for each watershed was derived from the 2007 NRCS soil survey GIS data layer.
4. The dirt roaded area used in the original TMDL modeling effort under-estimated the actual dirt roaded areas found in the Homewood area. As such the dirt road land-use category area was increased by approximately 89,030 m^2 (958,311 ft^2 or 22 acres) as measured in the field, while adjoining vegetated land-use category areas were reduced by an equivalent amount overall. This correction resulted in a more realistic representation of current conditions.
5. For the Proposed Project and each alternative, the land uses are readjusted (added or subtracted) for each watershed to reflect proposed changes in land use under each alternative. The total watershed areas were always held constant.
6. Following the Lake Tahoe TMDL Pollutant Reduction Opportunities Report, reductions in sediment yield were established based on the mitigation measures selected (see Pollutant Reduction Measures and Mitigation Measures below).
7. The resulting sediment yields from each set of land-use conditions are summarized and graphically displayed.

The annualized averaged climate (e.g. precipitation) and hydrology data from the period 1994-2004 as used in the TMDL modeling effort are used to develop the average infiltration, runoff and streamflow rates from LSPC. The modeled results are based on changing the land uses and sedimentation rates associated with those land

uses, summing for both the project area portion of the watershed and for the total watershed area.

Box 2 The LSPC Model from the US-EPA

Watershed and Water Quality Modeling Technical Support Center of the USEPA defines the Loading Simulation Program in C++ with the following.

LSPC is the Loading Simulation Program in C++, a watershed modeling system that includes streamlined Hydrologic Simulation Program Fortran (HSPF) algorithms for simulating hydrology, sediment, and general water quality on land as well as a simplified stream transport model. LSPC is derived from the Mining Data Analysis System (MDAS), which was developed by USEPA Region 3 and has been widely used for mining applications and TMDLs. A key data management feature of this system is that it uses a Microsoft Access database to manage model data and weather text files for driving the simulation. The system also contains a module to assist in TMDL calculation and source allocations. For each model run, it automatically generates comprehensive text-file output by subwatershed for all land-layers, reaches, and simulated modules, which can be expressed on hourly or daily intervals. Output from LSPC has been linked to other model applications such as EFDC, WASP, and CE-QUAL-W2. LSPC has no inherent limitations in terms of modeling size or model operations.

More information can be found at:
http://www.epa.gov/athens/wwqtsc/html/lspc.html

In summary, the HMR CWE analysis is designed to quantify the existing annualized sediment yields from the Homewood area and when combined with additional field stream channel observations and determination of sediment yields from allowable build-out conditions to determine the TOC against which project alternative impacts (sediment yields) can be compared. This approach represents a significant, or quantum advancement in CWE analyses as it includes watershed-scale analysis of the hydrologic processes controlling sediment loading across multiple watersheds within which the proposed project area is only a very small fraction. It also addresses some of the known limitations of CWE analyses while forming the foundation of future adaptive management on the HMR property. The CWE report itself is used to help determine if: 1) the Proposed Project or Alternatives 3, 4, 5 and 6 exceed the TOC; 2) what effects the Proposed Project or Alternatives 3, 4, 5 and 6 may have on sediment yields, and 3) if the Proposed Project or Alternatives 3, 4, 5 and 6 combined with all foreseeable development in the subject watersheds will exceed the TOC.

3.2 Assumptions

The LSPC, as with any model, makes various assumptions necessary to quantitatively describe complex natural processes. Therefore, where process measurements have not been made or the processes are not completely understood, the best available empirical science or judgment is applied in order to develop assumed relationships between process parameters as they are best understood. It is important to understand some of the assumptions embedded in the model in order to better understand the output. As with every model, these assumptions may or may not precisely align with the broad range of field conditions but were developed by the team of scientists and Lake Tahoe Basin agency staff to develop clarity and consistency in the model outcome.

3.2.1 LSPC Model Assumptions

The following assumptions are embedded in the LSPC model used in the HMR CWE analysis:

- Impervious surface runoff from buildings and paved surfaces is completely treated with one or more mitigation measures and does not produce significant pollutant yields.
- Impervious surface runoff is routed in such a way that no additional pollutants are entrained and such that no additional erosion is caused downslope.
- Paved roads are integrated with highly functional infrastructure components such that no additional erosion or sediment transport losses are created. This infrastructure includes roadside drains, piping, and treatment facilities.
- All water quality treatment facilities are perfectly maintained and thus are operating at maximum effectiveness.
- Ski trails always produce higher sediment yields than surrounding forested areas

3.2.2 Pollutant Reduction Measures and Mitigation Measures

The LSPC model estimates sediment yield for forested upland and urban land use areas. The Lake Tahoe TMDL Pollutant Reduction Opportunities Report defines a range of mitigation measures and quantifies the reduction in sediment yield for each mitigation measure and for each source area type (forested uplands and urban). Mitigation measures are called Pollutant Source Controls (PSC). For urban areas, those measures are lumped into two tiers of actions. Tier 1 PSCs reflect present day requirements for new construction projects while Tier 2 PSCs are additional measures above and beyond Tier 1 that may become part of efforts to reduce sediment loading efforts across the Basin in the future. Tier 2 PSCs include more advanced techniques

and higher levels of maintenance. **Error! Reference source not found.**3 summarizes the total and fractional reductions assumed for Tier 1 and Tier 2 type mitigation measures.

Tier 1 measures are assumed for the urban areas for this analysis so that possible mitigation benefits are not overstated. While Tier 2 mitigation measures are presumed to be more effective due to the increased costs and associated efforts for fine sediment reduction from urban areas, this assumption has not been widely tested in the Lake Tahoe Basin. Thus, the more conservative Tier 1 measures are used in the model. Even though Tier 1 measures are assumed, it is important to highlight that the Proposed Project (Alternative 1) and Alternatives incorporate Low Impact Design (LID) elements as well as a number of other cutting-edge components that likely meet or exceed Tier 2 reduction targets. This assumption of Tier 1 measures produces a more conservative sediment yield value and likely understates actual achievable results.

Table 2: Pollutant Source Control (PSC) Examples (Roberts, D. and J. Reuter, 2007)

Land Use	Tier 1 PSC (Mitigation Measures)	Tier 2 PSC (Mitigation Measures)
Residential Multi-Family PSC-3	a. Private BMP implementation including soil stabilization, driveway paving, and so on as currently defined by TRPA.	a. Private BMP implementation including soil stabilization, driveway paving, and so on, as currently defined by TRPA. b. Control of over-the-counter fertilizer sales. c. Control of nonnative plant sales in the Basin and public education regarding Lake Tahoe-friendly landscaping. d. Increase in individual stewardship of all private land owners. e. High performance is assumed for the above measures—increased enforcement or incentives could be needed as an integral part of the PSC.
Urban Roads PSC-1	a. Road drainage system stabilization, sand trap installation, slope stabilization, and revegetation b. Minimal change in abrasive application rates c. Particulate recovery strategies focused on inter-storm removal in locations with greatest accumulation of particulates.	a. Road drainage system stabilization, sand trap installation, slope stabilization, and revegetation b. Advanced deicing strategies c. Rigorous and advanced particulate recovery strategies including sweeping, vacuuming, and sand trap vactoring d. High performance is assumed for the above measures

Table 3: Example of Pollutant Reductions for Tier1 and Tier 2 (Roberts, D. and J. Reuter, 2007)

Land Use	Pollutant of Concern	Existing Conditions (MT/yr)	Tier 1 PSC (Mitigation Measures)	Tier 2 PSC (Mitigation Measures)
Commercial	Total Nitrogen	2.472	2.136 (14% Reduction)	1.80 (27% Reduction)
	Total Phosphorus	0.702	0.536 (25% Reduction)	0.370 (38% Reduction)
	Total Suspended Soils	296.4	204 (31% Reduction)	112 62% Reduction)
	Fine Sediment	260.8	179.5 (31% Reduction)	98.6 (62% Reduction)
Secondary Urban Roads	Total Nitrogen	2.844	2.322 (14% Reduction)	1.80 (27% Reduction)
	Total Phosphorus	0.588	0.407 (31% Reduction)	0.378 (36% Reduction)
	Total Suspended Soils	150	100 (33% Reduction)	50 (66% Reduction)
	Fine Sediment	132	88 (33% Reduction)	44 (66% Reduction)

3.2.3 Road Removal and Restoration

The value of removing unpaved roads in the upper watershed is defined in the Lake Tahoe TMDL Pollutant Reduction Opportunity Report. Unpaved roads are classified by level of erodibility from Functional Condition Class A (low erodibility) to Condition Class F (high erodibility). Sediment rates increase from Functional Condition Class A to F as summarized in Table 4. Unpaved roads in the project area are generally characterized by highly compacted soil conditions, low to no surface cover, and high runoff and sediment yield rates. Some of the road areas are also associated with cut and fill slopes, which is taken into consideration in the model. For this analysis all unpaved roads are initially assumed to be at Functional Class F.

Road removal and restoration treatments include recontouring the road prism to match surrounding slopes where appropriate, soil loosening, incorporation of soil amendments, and application of fertilizer, seed, and mulch. This combination of treatments is designed to provide immediate protection against erosion and to achieve long-term sustainable sediment source control and establish an appropriate and self-sustaining native plant community over time via natural succession. For this analysis, a restored road segment is considered Functional Condition Class B, even

though Class A is typically produced (as measured by simulated rainfall). Functional Condition Class B represents a conservative characterization of site conditions and associated sediment yield following careful implementation of this restoration treatment approach. (See Table 4, below, for a full description of soil functional classes).

Table 4: Descriptions for soil functional condition classes.

Functional Condition Class	Description
A	Fully functional forest soils – limited erodibility, high infiltration rates, and sustainable soil nutrient conditions.
B+	Approaching functional soil conditions as per class A; may not yet be sustainable, or are limited by available soils and slope.
B	Functional surface soil protection and initiation towards hydrologic functionality; long-term condition uncertain.
C	Disturbed sites with surface treatment (e.g. hydroseeding or erosion control fabric) that provide temporary cover but little functional erosion control.
D	No protective surface cover and limited infiltration capacity due in part to dispersed soil aggregates.
F	Compacted bare soil conditions; highly erodible.

3.3 Defining Existing Conditions

The LSPC model used an array of existing conditions data for analysis. For this exercise, some of that data was adjusted for greater accuracy where appropriate. Please refer to Appendix A for a full treatment of that data, which is abbreviated in the form of maps and tables. In order to reflect actual rather than verified conditions, the CWE analysis incorporated verified and mapped roads and associated land coverage and also includes dirt roads that existed on in the project area prior to current, on-going restoration efforts. The removal of 240,000 sq ft of roads is reflected in the model, (Note: As of November 2010, and estimated 350,000 sq ft of roads have been removed and restored). This approach reports sediment yields that are higher than what would be reflected by using verified roads only.

Existing land use within the project area includes developed area, roads, and ski trails. Table A7 summarizes the existing land use within the project area. Table 5 presents a breakdown of land uses within each project area watershed.

Table 5. Existing Land Use by Watershed

	Existing Land Use within the Project Area (m^2)				
Watershed	Developed Area	Roads	Ski Run/Vegetated	Water Body	Total
Intervening Area#7000	16,187 (174,235 ft^2)	24,281 (261,359 ft^2)	424,920 (4,573,801 ft^2)	-	469,435 (5,052,956 ft^2)
Madden Creek	-	52,609 (566,279 ft^2)	1,343,556 (14,461,916 ft^2)	24,281 (261,359 ft^2)	1,420,447 (15,289,564 ft^2)
Homewood Creek	4,047 (43,562 ft^2)	89,031 (958,322 ft^2)	2,031,522 (21,867,121 ft^2)	-	2,124,600 (22,869,004 ft^2)
Quail Lake Creek	-	16,187 (174,235 ft^2)	906,496 (9,757,442 ft^2)	56,656 (609,840 ft^2)	979,339 (10,541,517 ft^2)
Total	20,234 (217,797 ft^2)	186,155 (2,003,756 ft^2)	4,706,494 (50,660,280 ft^2)	80,937 (871,199 ft^2)	4,993,821 (53,753,042 ft^2)

Source: 2004 TMDL GIS Dataset

3.4 Defining Proposed Conditions

*In order to define proposed conditions that would result for each alternative, land uses were changed within the model to accurately reflect those future conditions. For a complete technical discussion of those changes, please refer to "**Alterations to the Land Use Conditions for Analysis**", in Appendix A.*

Land use and land coverage changes assumed for the Proposed Project and Alternatives are defined in Appendix A. the following sub-sections 3.4.1 through 3.4.6 summarize the Proposed Project (Alternative 1) and Alternatives 2, 3, 4, 5 and 6. Table 6 provides a comparison matrix of the components proposed under each alternative.

Table 6: Summary of the Proposed Project and Alternatives (Nichols, 2010)

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
	Proposed Master Plan	**No Action (existing to remain)**	**No Code Amend. for Height**	**Privatize Resort**	**Urban Boundary Subdivision**	**Urban Boundary Lower Height Subdivision**
North Base						
Hotel						
Rooms	up to 75		up to 75	0	up to 75	50
Condo/Hotel Units	up to 40*		40*	0	0	25
Penthouse Condos	up to 30		up to 30	0	0	0
Residential Condos	up to 36		up to 36	0	up to 225	up to 145
Fractional Condos	up to 20		up to 20	0	0	0
Townhomes	up to 16		up to 16	0	0	0
Residential Lots	0		0	8	0	0
Workforce Housing	13		13	0	12	12
Commercial	up to 25,000sf		up to 25,000sf	1	up to 25,000sf	up to 25,000sf
Skier Services	Aprox. 30,000sf		up to 30,000sf	0	up to 30,000sf	up to 20,000sf
Parking spaces						
Day skier structure	270		270	0	156	156
Surface parking	50		50	0	80	80
Underground	450		450	0	534	534
Total Parking	*770*		*770*	*0*	*770*	*770*
South Base						
Residential Condos	up to 99		up to 99	0	0	up to 50
Maintenance	0		0	0	0	0
Parking spaces	150		150	0	0	65
Residential Lots	0		0	8	up to 16	up to 14
Skier Services	up to 2,000sf		up to 2,000sf	0	up to 2,000sf	up to 2,000sf
Mid Mountain						
Day Lodge	up to 15,000sf		up to 15,000sf	0	up to 15,000sf	up to 15,000sf
Gondola terminal	up to 18,000sf		up to 18,000sf	0	up to 18,000sf	up to 18,000sf
Maintenance facility	up to 15,000sf		up to 15,000sf	0	up to 15,000sf	up to 15,000sf
Water storage tanks	2		2	0	2	2

Notes

* up to 40 condo/hotel units, 20 of which could have lock-offs

3.4.1 Alternative 1- Proposed Ski Area Master Plan Project

The Proposed Project includes a new lodge, gondola, employee housing, and parking structure in the North Base area. Just south of the North Base, 16 townhomes would be built along an extended Tahoe Ski Bowl Way. In the South Base area, three residential condominium buildings would also be built. Also in the South Base area, part of the Homewood Creek SEZ would be restored. Additionally, other upland

areas would be restored as well. A new mid-mountain lodge would be added at the upper gondola terminal and a new maintenance facility would be added on the upper mountain. Unused dirt access roads within the upper watersheds would be removed and restored.

3.4.2 Alternative 2 - No Project (Baseline/Existing Conditions)

There would be no changes to the existing land uses or activities within the project area. Sediment yields developed for this alternative employ the roaded area corrected land-use areas as developed from the 2004 GIS layers for the original TMDL studies.

3.4.3 Alternative 3 - No Code Amendment for Height

Alternative 3 assumes that there is no code amendment to allow taller buildings. This alternative contains the same number of residential, hotel, and commercial units as the Proposed Project; however, these units would be in more buildings and require a larger footprint. This would include four additional buildings within the North Base and three additional buildings within the South Base. Unused dirt access roads within the upper watersheds would be removed and restored. The Mid-Mountain Lodge will be the same as the Proposed Project proposal.

3.4.4 Alternative 4 - Privatize Resort

Alternative 4 is completely different from the Proposed Project. It assumes the project area is closed and is divided into parcels that allow 16 new private residences. The North Base parcel would remain a commercial land use. The dirt access roads to these residences would be paved. No other road restoration is assumed.

3.4.5 Alternative 5 - Urban Boundary Subdivision

Under Alternative 5, all of the proposed condominiums are located in buildings adjacent to Highway 89 at the North Base and in the existing gravel parking lot area. The parking structure and employee housing are moved from the gravel parking lot area proposed in Alternative 1 to a site adjacent to the skier services building. A new mid-mountain lodge will be the same as described for the Proposed Project . The South Base would be subdivided into 16 residential lots, which would each have a single-family residence. Unused dirt access roads within the upper watersheds would be removed and restored.

3.4.6 Alternative 6- Urban Boundary Subdivision-Lower Height

Under Alternative 6, the PAS 159 – Homewood/Commercial boundary line adjustment (PAS boundary amendment) proposed for the Proposed Project (Alternative 1) would be reduced to eliminate the proposed Townhouses at the North Base area. In addition, a majority of the South Base area would remain in PAS 157 with the exception of the site of the existing skier services lodge located north of Homewood Creek, which would be redeveloped into a multi-family residential

condominium building and added to PAS 158 – McKinney Tract Residential. Under Alternative 6, the total number of TAUs proposed for the North Base area under Alternative 1 would be reduced from 155 to 75. Each of the TAUs would be located in the hotel/lodge building located north of the skier services building.

To offset the large reduction in TAUs under Alternative 6, the number of proposed multi-family residential units (for sale units) would be increased from 181 to 195. Under Alternative 6, 145 of the multi-family residential units would be located at the North Base area, spread out amongst each of the proposed residential buildings and also the upper floors of the skier services building. At the South Base area, up to 50 multi-family residential units would be located in one building located north of Homewood Creek, in the same location and design as one of the buildings proposed under Alternative 1. The remainder of the South Base area would include 14 single-family residential lots developed using existing HMR lots along with a small skier services building to service residents and skiers utilizing the Quail lift.

Alternative 6 includes 12 onsite affordable housing units that would be attached to the parking structure, (Building P) because the alternative parking structure location does not include enough land area for the 13 units included in Alternative 1 and 3. As such, Alternative 6 may require identification of additional offsite affordable housing for HMR employees. Under Alternative 6, the proposed development at the Mid-Mountain area will be the same as that for Alternatives 1, 3 and 5

3.5 Defining Actions Outside of Project Area

In order to ascertain land used changes on sediment yield for total watersheds, it is assumed that land use changes will occur both inside and outside of the project area in each of the four watersheds. Four actions are assumed to occur outside of the project area and these actions are incorporated into the future existing conditions (Alternative 2), the Proposed Project (Alternative 1) and the Alternatives:

1. New homes will be built on vacant land within the watersheds. The modeled values for changes in land use assumed that all vacant parcels above the IPES value of 726 would be built and each home would be built to the maximum allowable land coverage. Thus, where a home is built on a vacant lot, the model converts land from a vegetated land use to the single family impervious land use (SFI). These values are summarized in Table 7.
2. 100% of the residential homes will have BMPs installed, which represents a 97.5% increase in BMP implementation. Following the Lake Tahoe TMDL Pollutant Load Reduction Opportunities Report (Roberts, D. and J. Reuter, 2007), the modeled output was changed so that the four residential land uses (SFI, SFP, MFI, and MFP) produced less sediment yield based on the assumption that properly installed and maintained residential BMPs result in an overall reduction in sediment delivery. The result is the amount of land

converted from one vegetated land use to the single family imperious land use (SFI).

3. 100% of the commercial land area will have BMPs installed. Commercial land use is found only in INT7000 and Homewood Creek watersheds. The total INT7000 contains 95,196 m^2 (1,024,681 ft^2) and Homewood Creek watershed has 1,169 m^2 (77,155 ft^2) of commercial land. Based on the directives and assumptions employed in the Lake Tahoe TMDL Pollutant Load Reduction Opportunities Report (Roberts, D. and J. Reuter, 2007), modeled output showed that these areas produced less sediment following BMP installation.
4. The EIP projects within the four watersheds will consist of treating three roadway types: highway, secondary roads and dirt roads. CALTRANS and Placer County have committed to treating all of these road types within these watersheds. Following the directives and assumptions in the Lake Tahoe TMDL Pollutant Load Reduction Opportunities Report (Roberts, D. and J. Reuter, 2007), the total area received treatment and resulted in a reduced sediment yield within the model, as summarized in Table 6.

These changes were assumed and incorporated into the model at the direction of TRPA staff in order to define a clear and defensible future condition based on TRPA code.

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Table 7: Summary of Changes in Land Use from Future Residential Units Outside of Project Area

	Change in Land Use Change to SFI (m^2)			
Watershed	Veg EP-2	Veg EP-3	Veg EP-4	Total
Intervening Area #7	4,381 (47,157 ft^2)	24,094 (259,346 ft^2)	26,284 (282,919 ft^2)	54,759 (589,421 ft^2)
Madden Creek	38 (409 ft^2)	209 (2,250 ft^2)	227 (2,443 ft^2)	474 (5,102 ft^2)
Homewood Creek	72 (775 ft^2)	395 (4,252 ft^2)	431 (4,639 ft^2)	897 (9,655 ft^2)
Quail Lake Creek	34 (366 ft^2)	188 (2,024 ft^2)	205 (2,207 ft^2)	428 (4,607 ft^2)
Total	4,525 (48,707 ft^2)	24,886 (267,871 ft^2)	27,148 (292,219 ft^2)	56,558 (608,785 ft^2)

Table 8: Area of Roadway Outside of Project Area Treated by EIP Project

Watershed	Area of Roadway Within EIP Project by Watershed and Land Use (m^2)			
	Highway (CALTRANS)	Secondary Road (Placer Co.)	Dirt Road (Placer Co.)	Total
Intervening Area #7	88,793 (955,760 ft^2)	407,056 (4,381,514 ft^2)	16,878 (181,673 ft^2)	512,727 (5,518,947 ft^2)
Madden Creek	2,585 (27,825 ft^2)	2,585 (27,825 ft^2)	2,053 (22,098 ft^2)	7,223 (77,748 ft^2)
Homewood Creek	1,476 (15,888 ft^2)	6,209 (66,833 ft^2)	2,480 (26,694 ft^2)	10,165 (109,415 ft^2)
Quail Lake Creek	1,476 (15,888 ft^2)	17,834 (191,964 ft^2)	11,178 (120,319 ft^2)	30,488 (328,170 ft^2)
Total	94,330 (1,015,360 ft^2)	433,684 (4,668,136 ft^2)	32,589 (350,785 ft^2)	560,603 (6,034,280 ft^2)

Section 4: CWE Results and Conclusions

4.1 Introduction

The following section presents the results for Project Area and Total Watershed sediment yields. Sediment yields in T/yr are compared against existing conditions represented under the No Project (Alternative 2) and Project Area TOCs and Total Watershed TOCs. Table 8 summarizes the sediment yields by watershed for each alternative as compared to those developed from Existing land-use conditions and to Project Area and Total Watershed TOCs.

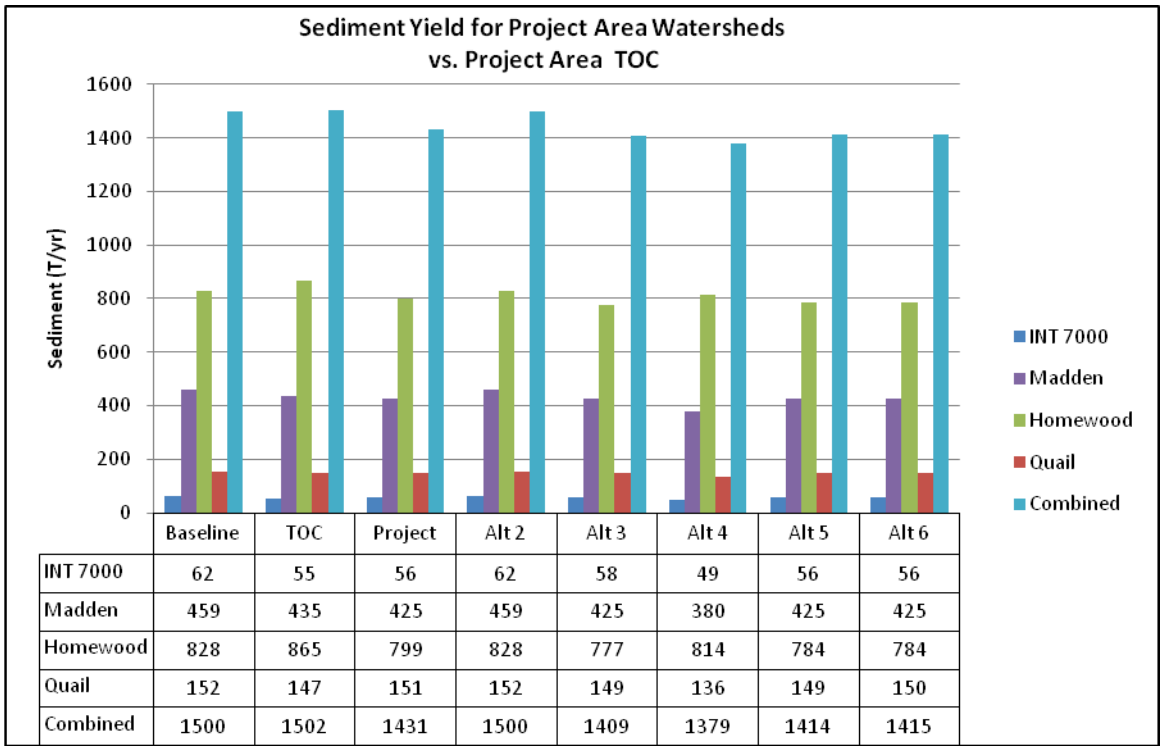
Table 9: Sediment Yields by Watershed and Alternative

	INT 7000			MADDEN			HOMEWOOD			QUAIL			TOTAL		
	in	out	Tot Wtrshd	in	out	Tot Wtrshd	in	out	Tot Wtrshd	Ql in	Ql out	Tot Wtrshd	All In	All Out	All
Baseline	62	300	361	459	577	1036	828	78	906	152	257	409	1500	1211	2712
TOC	55	300	355	435	650	1085	865	90	955	147	315	462	1502	1354	2857
Project	56	300	356	425	577	1002	799	78	877	151	257	407	1431	1211	2642
Alt 2	62	300	361	459	577	1036	828	78	906	152	257	409	1500	1211	2712
Alt 3	58	300	357	425	577	1002	777	78	855	149	257	406	1409	1211	2620
Alt 4	49	300	348	380	577	957	814	78	892	136	257	393	1379	1211	2590
Alt 5	56	300	355	425	577	1002	784	78	862	149	257	406	1414	1211	2625
Alt 6	56	300	355	425	577	1002	784	78	862	150	257	406	1415	1211	2626
T/yr below TOC (project)			-1			82			78			55			214
% reduction from baseline			1.5%			3.3%			3.1%			0.4%			2.6%
t/yr reduction from baseline			5.3			33.9			28.3			1.7			69.2

4.2 Project Area Sediment Yields

Figure 6 illustrates the comparison of Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 project area sediment yields against existing sediment yield and Project Area TOCs. The potential impacts from project alternatives are discussed below according to watershed. Note that the proposed project and all of the

alternatives result in a reduction of sediment in all the watersheds from 'baseline[13]' or existing conditions, largely due to the decrease in overall coverage as a result of project construction and the advanced stormwater treatments designed into the project. Note also that sediment reductions as a result of BMP implementation have been estimated conservatively, as described previously. It should also be noted that an inherent 'error' of +/- 5% in the model is expected and is, in fact, a low error rate for models of this type.



	Baseline	TOC	Project	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
INT 7000	62	55	56	62	58	49	56	56
Madden	459	435	425	459	425	380	425	425
Homewood	828	865	799	828	777	814	784	784
Quail	152	147	151	152	149	136	149	150
Combined	1500	1502	1431	1500	1409	1379	1414	1415

Figure 6. Project Area Sediment Yields vs. Project Area TOCs

4.2.1 Homewood Creek Watershed

The Homewood watershed is the only watershed area within the project boundary that is currently below the Quantitative TOC. The project reduces the expected annualized sediment yield from 828 T/yr to 799 T/yr, or 29 T/yr.

4.2.2 Madden Creek Watershed

The Madden Creek watershed is currently above the Quantitative TOC by 24 T/yr. This watershed contains a number of roads that will ultimately be removed to reduce

[13] "Baseline" is typically used in modeling exercises to describe existing conditions, since those conditions are a starting point. While some confusion can ensue when using the term baseline and existing conditions, for this analysis, baseline IS existing conditions.

sediment post project to 10 T/yr below the TOC and 34 T/yr below current conditions.

4.2.3 Quail Lake Creek Watershed

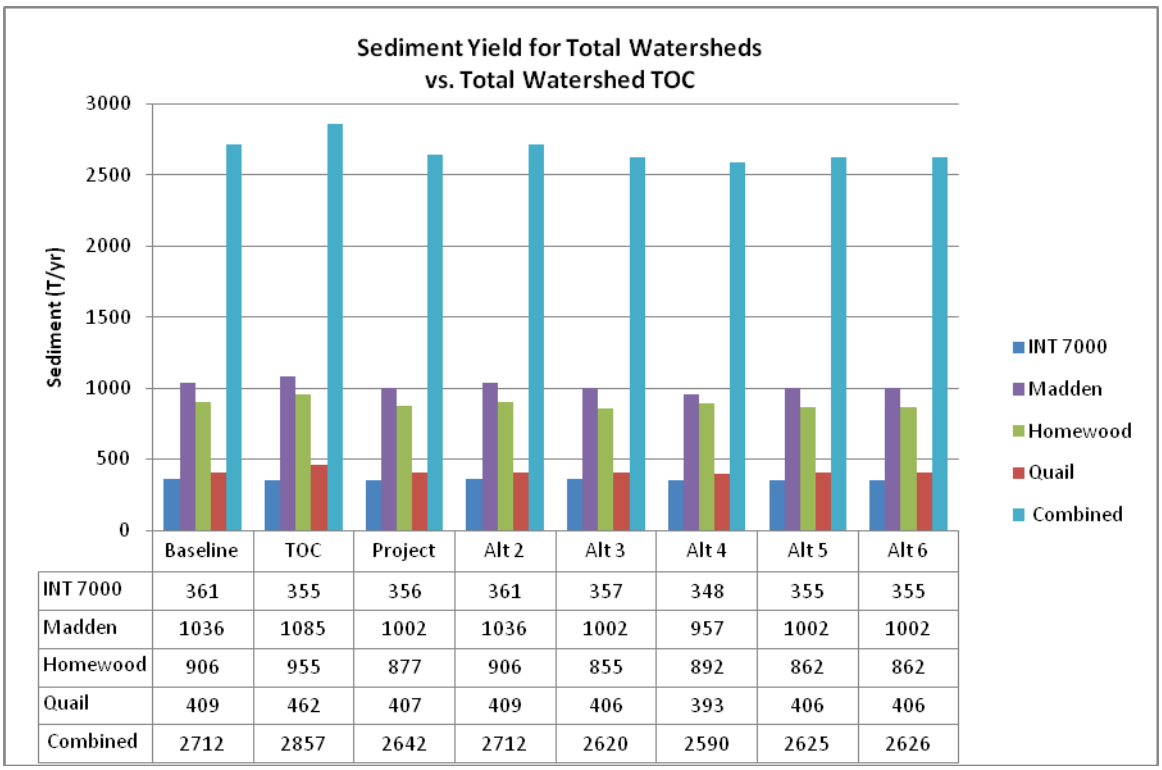
The Quail Lake watershed is currently 5 T/yr above the TOC, which is within the margin of error. Thus, this value may or may not be significant. Since the Quail Creek watershed will not be impacted by the development but will benefit from restoration efforts associated with the project, those efforts will result in a 1T/yr reduction in estimated sediment. Again, this value is well within the margin of error of the model. However, the model does show an improvement, albeit minor.

4.2.4 Intervening Zone 7000

Intervening Zone 7000 is currently 7 T/yr above the Quantitative TOC. That number will be reduced by 6 T/yr per the model output. This value is within the margin of error of the model and is, in fact, assumed to be within the range of model 'noise' or the variability that comes from calculations within the model. Thus, this benefit of sediment reduction from the project is likely to result in a value that is within the variability of the TOC itself.

4.3 Total Watershed Sediment Yields

Figure 7 illustrates the comparison of Proposed Project (Alternative 1) and Alternatives 3, 4, 5, and 6 total watershed sediment yields against existing sediment yield and Total Watershed TOCs. The potential impacts from project alternatives are discussed below according to watershed.



	Baseline	TOC	Project	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
INT 7000	361	355	356	361	357	348	355	355
Madden	1036	1085	1002	1036	1002	957	1002	1002
Homewood	906	955	877	906	855	892	862	862
Quail	409	462	407	409	406	393	406	406
Combined	2712	2857	2642	2712	2620	2590	2625	2626

Figure 7. Total Watershed Sediment Yield vs. Total Watershed TOC

4.3.1 Homewood Creek Watershed

The sediment yield for current conditions in the entire Homewood Creek watershed is below the TOC by 49 T/yr. The Project further reduces that value to 78 T/yr.

4.3.2 Madden Creek Watershed

Madden Creek watershed current conditions, when considered as a whole, is below the quantitative TOC by 49 T/yr also. Largely this is due to large tracts of intact land outside of HMR boundaries to the north which is managed by the USFS. Implementation of the Project estimates a 34 T/yr reduction below existing conditions and an 83 T/yr reduction below baseline.

4.3.3 Quail Lake Creek Watershed

Quail Creek watershed is modeled to be 53 T/yr below the TOC and 55 T/yr below the TOC following Project implementation. Again, Quail Creek watershed will not be impacted by the project itself but will benefit from restoration efforts in the watershed associated with project commitments.

4.3.4 Intervening Zone 7000

Intervening Zone 7000, while not directly connected to a stream, is the one area (not strictly a 'watershed' in the classic sense) that will remain at or slightly above the quantitative TOC following implementation of the Project. The Project, as modeled, will reduce sediment by 5 T/yr below existing conditions and within 1 T/yr of the TOC. As previously stated, this small amount is expected to be within both the margin of error and the model 'noise'. Note that Intervening Zone 7000 does not use any of the qualitative assessment methodologies since there is no stream that drains this area.

4.4 Qualitative TOC Discussion

As described in Section 2, surface water quality, stream conditions, and other watershed indicators were consulted in the development of the Project Area and Total Watershed TOCs. Results and conclusions for the qualitative TOC elements are summarized in the following sections.

4.4.1 Stream Assessment Conclusions

The stream condition analyses did not indicate a clear degradation trend in any of the watersheds. The analysis methodologies were not completely appropriate for high gradient mountain streams; however, local professionals were able to interpret the streams and stream assessment data and conclude that, while HMR streams are not in pristine condition, they do not show signs of positive feedback loop types of degradation. Most of the accelerated erosional signatures are likely from significant

recent runoff years (1997 and 2005) and not from ongoing degradation. Thus, the stream assessment data and interpretations do not suggest that the streams have reached a threshold of concern.

4.4.2 Surface Water Quality Data

Surface water quality data collected between 1995 and 2008 does not indicate any sort of trend, either downward or upward, for TSS, TN or TP. It is difficult to determine watershed response to precipitation events. In order to determine those responses, a data set that includes near continuous monitoring for at least 20 years is needed and that type of data simply doesn't exist in the Lake Tahoe Basin except for a very small number of USGS monitoring sites. However, the mean of monthly means data presented here is a standard in much of the United States, and therefore is useful for comparison and potential long-term trend analysis.

There is no clear trend indicated in this data set, except perhaps that P is higher above the project area and decreases in every case as water in the two monitored streams moves through the project area. Therefore, the water quality data does not indicate that surface water quality of the project area streams is at or near a threshold of concern.

Oil and grease are the other pollutant types that have a reasonable potential to harm beneficial uses. There are two main pathways for oil and grease to enter surface waters. The first is from highway legal vehicles, such as cars and trucks. The second is from accidental spills from snow grooming and equipment maintenance.

Under existing conditions the North and South Base areas are dominated by parking lots for private vehicles. Oil separators are installed in both areas to remove oil and grease from stormwater. The HMR maintenance facility is located in the southern end of the south base area. A spill of oil or grease here could quickly enter surface water from the storm drains. It is possible that a large spill could overwhelm the oil separators.

As part of the Proposed Project and Alternatives most of the parking (95%) in the North and South Base areas will be underground. These underground parking areas eliminate most of the current potential for outflow of oil and grease and make the capture of oil and grease easier since rainfall cannot flush oil and grease into surface water drainages before containment. In addition, spills within underground parking areas can be contained quickly. For above ground parking, high-quality sand oil separators will prevent oil and grease from entering surface waters.

Snow grooming machine parking and equipment maintenance will move to the Mid-Mountain. The construction of the Mid-Mountain maintenance facility will include systems to capture oil and grease spills. The facility is located far from surface waters and much farther from Lake Tahoe, making the probability of any oil and grease reaching the surface waters and Lake Tahoe much lower.

Alternative 4 divides the resort into 20 residential parcels. Oil and grease spill prevention and treatment are not required for residential parcels. The risk of oil and grease spills is assumed to be the same as other residential parcels around the region. However, very little actual data or understanding is available on the impacts of private homes on inputs of oil and grease to storm drain or sewer systems.

4.4.3 Other Watershed Indicators

Other watershed indicators, including visual assessment associated with Waste Discharge Requirement inspections suggest that some accelerated erosion is occurring within the project area. Ongoing use of roads and other facilities creates some amount of erosion above 'background' or undisturbed conditions. However, there is no evidence that suggests that this situation is intensifying or is at a level that is considered on an upward self-perpetuating trend. Old access roads that are spontaneously revegetating suggest that parts of the watersheds are, to a degree, moving toward more stability. Therefore, the combination of other watershed indicators that have been assessed do not indicate that the project area watersheds have reached a critical threshold of concern.

4.5 Conclusions – Project Area

- Sediment yields are one element of the overall TOC and must be considered with other specific elements in order to determine whether there are clear indications of TOC exceedance.
- Project Area and Total Watershed TOCs are more conservative (lower) that those developed under a 2007 Soil Survey TOC or a IPES-based TOC (see Appendix X for alternative TOC analyses).
- Existing sediment yields do not show a clear exceedance of the TOC, given that the sediment yields are within the statistical margin of error of the model and analysis.
- Surface water quality, stream conditions, and other watershed indicators do not show clear evidence that HMR watersheds are approaching or exceeding qualitative threshold of concern indicators.
- The HMR CWE analysis suggests that activities undertaken under all Alternatives except the no project alternative (Alternative 2) will reduce sediment yields within the project area to the benefit of the total watersheds regardless of reasonably, foreseeable future actions in the area.

4.6 Conclusions – Total Watershed

Whole watershed sediment yield data as well as other watershed indicator conclusions are identical to the project area conclusions with the exception that when the whole watershed are considered, the margin between the TOC and each project alternative

sediment yield is greater or more beneficial, with the exception of Intervening Zone 7000 which still shows a decrease in sediment yield. Thus in general, this CWE evaluation suggests that: 1) the Project will not clearly exceed individual watershed TOCs and 2) the proposed Project reduces sediment yield by an estimated total of between 1.7 and 33.9 T/yr depending on watershed and 69 T/yr for all watersheds combined.

Section 5: Monitoring Plan Requirements

5.1 Background

CWE studies are designed to identify sediment loads and qualitative thresholds beyond which disturbance should not take place. However, as stated previously, these studies provide a hypothesis from which to develop a more complete understanding of watershed conditions. Monitoring is a critical component of understanding actual field conditions. This ongoing information gathering will inform the accuracy of the modeling efforts of the TOC and CWE sediment yields, and how it may or may not impact future development. HMR has been leading monitoring efforts in a number of ways over the past several years. First, nearly all of HMRs restoration efforts have been intensively monitored for sediment, cover, vegetation and soil nutrients conditions. The information gained has helped develop a greater understanding of treatment effects and sediment reduction impacts of restoration treatments in general. Further, HMR has partnered with IERS and Lahontan Regional Water Quality Control Board to intensively monitor stream flows and surface water quality in an effort to enhance TMDL implementation potential. This information will be some of the most thorough water quality monitoring in a privately held watershed in the Lake Tahoe Basin. Thus, HMRs commitment to monitoring has already been demonstrated and is likely the most comprehensive soil and erosion monitoring yet implemented on private property in the Lake Tahoe Basin. All of this monitoring has been put into place in an effort to better understand the impacts from both construction and restoration. The intent of the overall monitoring efforts at HMR is to redevelop while reducing the overall environmental impacts from ski area operations. The primary method of understanding whether this goal can be achieved is through current and other types of ongoing monitoring.

The monitoring approach for the Project will focus on continuing to gather data and information that can be used to identify and address the sources of water quality impairment (and improvement) in a timely manner and can be used to improve environmental and cost effectiveness of treatments. Specific monitoring methods are described below. The HMR CWE calibration monitoring will consist of the following:

1. Ongoing Evaluation of the TOC;
2. Restoration Project/Mitigation Effectiveness Monitoring;
3. Visual Inspections of permanent BMPs and LID bioretention areas; and
4. Surface Water Quality Sampling and Report for Updated WDRs;

5.2 Ongoing Evaluation of the TOC

5.2.1 Waste Discharge Requirement Monitoring

WDR have been established for HMR that require weekly water quality sampling at four creek stations and a number of parking lot locations during snowmelt periods from April until snowmelt ends, typically in May or June. The Updated WDRs are expected to require spring runoff monitoring and possibly expanded storm event monitoring. The purpose of this sampling is to: 1) determine stream water quality above and below the project area in an attempt to determine watershed impacts of ski area operations on stream water quality, and 2) determine water quality impacts of vehicles, especially relative to oil and grease, parking areas, and other base facility operations, into runoff infrastructure. This monitoring data will be included in a report that also describes on-mountain observed erosion issues and approaches for addressing those issues. This report is prepared twice per season and submitted to the Lahontan. It is possible that this monitoring of surface waters draining the watershed could be used to detect large-scale disturbance and changes in the watershed, and therefore could help identify if/when the TOC has been exceeded. However, changes would have to be significantly larger than historical variability in measurements and climate in order to indicate a cause for concern.

5.2.2 State 319 Grant Monitoring

In addition to the monitoring and reporting completed for the WDR, HMR continues to expand a targeted watershed restoration and monitoring program with the support of EPA 319 grant funding and HMR match funding. This project (known as the Lake Tahoe TMDL Targeted Implementation and Assessment Project) includes installation of water quality monitoring instrumentation that will enable continuous measurement of stream flow and turbidity in the Homewood Creek watershed for the duration of this grant (May 2009 – December 2012). Additionally, grab samples will be collected at each station a minimum of once per month during low-flow periods (July – March) and a minimum of weekly during snowmelt periods (approx. April – June). Collected water samples will be analyzed for particle-size distribution (PSD) and total suspended sediment (TSS). Laboratory measured TSS values will be correlated with sensor-determined turbidities to estimate continuous TSS concentrations at each monitoring station. Collection of continuous turbidity readings and stream flow, as well as discrete grab sampling for PSD and TSS, will allow for the assessment of the cumulative effects of water quality improvement projects on watershed-wide sediment yields. If significant changes are detected as a result of road restoration, this information can be used to evaluate the TOC. Again, changes would have to be significantly larger than historical variability in measurements and climate to attribute the results to particular actions.

This TMDL monitoring program is also developing adaptive management strategies based on monitoring data and the adaptive management process as outlined in the Sediment Source Control Handbook (Hogan and Drake, 2009;

http://www.sbcouncil.org/pdf/SSCH_second%20print%20run.pdf). The efforts undertaken at HMR to reduce sediment delivery and restore portions of the watershed will be described and used as a model for monitoring and implementation of TMDL strategies for upland areas throughout the Lake Tahoe basin.

5.2.3 Restoration Project/Mitigation Effectiveness Monitoring

HMR has been engaged in the removal/restoration of underutilized roads on their property and quantitative monitoring of project effectiveness since 2006. Two complimentary monitoring packages are being used to directly measure the sediment source control effectiveness of on-mountain restoration projects: 1) rainfall and runoff simulation, and 2) soil and vegetation monitoring. Each package is a collection of individual measurements, which are described below. This integrated monitoring approach has already set the standard for upland restoration project effectiveness monitoring in the Lake Tahoe Basin. With funding assistance from the recently awarded 319 grant, HMR intends to continue monitoring and reporting on the effectiveness of its restoration efforts.

Rainfall and Runoff Simulation: these techniques are used to produce artificial rainfall or runoff (overland flow) depending on site characteristics. By simulating hydrologic events, one can directly measure runoff and infiltration rates and sediment yields (i.e. erodibilities) from treatment and reference areas.

Soil and Vegetation Monitoring: This process includes direct measurement of key erosion variables such as surface cover, vegetation species cover and composition, soil nutrient content, soil density, soil physical characterization, soil moisture and solar input. These soil and vegetation measurements are a critical complement to the rainfall and runoff simulations described above, as they provide valuable information about the ecological "capital", resilience and sustainability of a site and that site's ability to resist erosive forces, support habitat, and respond to disturbance. Data from these monitoring efforts are directly improving the precision of future restoration as well as modeling efforts.

5.2.4 Visual Inspections

Inspections and reporting will be conducted at regular intervals, once in the spring and once in the fall, as part of HMR's Waste Discharge Permit requirements (currently in revision). Inspections will focus on known sediment source areas such as unpaved roads, parking lots and other impervious surfaces, and recently disturbed and/or treated areas. Visual inspections will assess the effectiveness of maintenance activities at protecting against pollutant discharges and maintaining proper BMP function. Any identified erosion or pollutant discharge issues will be addressed, documented, and reported to the Lahontan on a semi-annual basis.

Table 10. Summary of monitoring methods

Monitoring Method	Frequency	Purpose	Relationship to the TOC and WDR
Grab samples (TSS and PSD)	Weekly (during snowmelt period)	To assess in-stream water quality impacts of facilities, operations, maintenance, and restoration/mitigation projects	Part of the WDR to evaluate discharge against standards
Stream flow	Continuous	To measure seasonal changes in stream flow in order to determine total sediment load	Further refinement of hydrology calculations
Turbidity	Continuous	To determine total sediment yield (correlated with TSS)	To determine total sediment yield (correlated with TSS)
Soil and vegetation	Pre-project and 1 year post-project	To directly measure indices of site sustainability at restoration/mitigation project sites	Estimate the value of restoration projects for LSPC model analysis
Rainfall and/or runoff simulation	Pre-project and 1 year post-project	To directly measure yield reductions from restoration/mitigation project sites	Estimate the value of restoration projects for LSPC model analysis
Visual inspections	Semi-annual (spring and fall)	To identify, address, and document sources of water quality impairment (and improvement)	To make sue that all PMB are functioning well

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The Homewood Mountain Resort CWE Appendices

Appendix A: CWE Supporting Tables, Maps and Descriptions

TMDL and LSPC Supporting Information

Box A1 TMDL Land Use Codes Defined

The TMDL Land Use codes are used in this document to allow for critical review of the analysis. The following list defines the land use codes.

TMDL Code	Land Use
Residential_SFP	Pervious Areas of Single Family Homes
Residential_MFP	Pervious Areas of Multi-Family Units
CICU-Pervious	Pervious Areas of Commercial or Utility
Ski_Runs-Pervious	Ski Runs
Veg_EP1	Un-impacted Vegetation Class 1
Veg_EP2	Un-impacted Vegetation Class 2
Veg_EP3	Un-impacted Vegetation Class 3
Veg_EP4	Un-impacted Vegetation Class 4
Veg_EP5	Un-impacted Vegetation Class 5
Veg_Recreational	Impacted Forest Area such as campgrounds
Veg_Burned	Forested Areas that have recently burned
Veg_Harvest	Forested Areas that have recently been logged
Veg_Turf	Turf Playing Fields
Water_Body	Lake
Residential_SFI	Impervious Areas of Single Family Homes
Residential_MFI	Impervious Areas of Multi-Family Units
CICU-Impervious	Impervious Areas of Commercial or Utility
Roads_Primary	Highways
Roads_Secondary	Residential and Smaller Paved Roads
Roads_Unpaved	Unpaved Roads

Table A-1 Modified Existing Condition Land Use from TMDL model.

Land Use	Location	Total Area (m^2)			
		Intervening Area #7	Madden Watershed	Homewood Watershed	Quail Watershed
CICU-Impervious	In Project	14,459 (155,635 ft^2)		4,111 (44,250 ft^2)	
	Out of Project	35,797 (385,316 ft^2)		657 (7,072 ft^2)	
CICU-Pervious	In Project	2,143 (23,067 ft^2)		571 (6,146 ft^2)	
	Out of Project	59,399 (639,366 ft^2)		6,511 (70,084 ft^2)	
Residential_MFI	In Project				
	Out of Project	71,066 (764,948 ft^2)	130 (1,399 ft^2)	96 (1,033 ft^2)	411 (4,424 ft^2)
Residential_MFP	In Project	38 (409 ft^2)			
	Out of Project	263,949 (2,841,123 ft^2)	2,700 (29,063 ft^2)	1,570 (16,899 ft^2)	730 (7,858 ft^2)
Residential_SFI	In Project			11 (118 ft^2)	
	Out of Project	257,589 (2,772,665 ft^2)	1,013 (10,904 ft^2)	2,106 (22,669 ft^2)	11,394 (122,644 ft^2)
Residential_SFP	In Project	64 (689 ft^2)		4 (43 ft^2)	
	Out of Project	1,489,892 (16,037,064 ft^2)	15,716 (169,166 ft^2)	27,664 (297,773 ft^2)	55,617 (598,656 ft^2)
Roads_Primary	In Project	199 (2,142 ft^2)			
	Out of Project	88,793 (955,760 ft^2)	1,050 (11,302 ft^2)	1,476 (15,888 ft^2)	739 (7,955 ft^2)
Roads_Secondary	In Project	2,910 (31,323 ft^2)	157 (1,690 ft^2)	7,328 (78,878 ft^2)	
	Out of Project	407,056 (4,381,514 ft^2)	2,585 (27,825 ft^2)	6,209 (66,833 ft^2)	17,834 (191,964 ft^2)
Roads_Unpaved	In Project	22,768	52,082	82,017	17,375

		Total Area (m^2)			
		(245,072 ft^2)	(560,606 ft^2)	(882,823 ft^2)	(187,023 ft^2)
	Out of Project	16,878 (181,673 ft^2)	2,053 (22,098 ft^2)	2,480 (26,694 ft^2)	11,178 (120,319 ft^2)
Ski_Runs-Pervious	In Project	226,543 (2,438,489 ft^2)	573,016 (6,167,893 ft^2)	434,296 (4,674,723 ft^2)	37,282 (401,300 ft^2)
	Out of Project	21,519 (231,629 ft^2)	40,017 (430,739 ft^2)	4,877 (52,496 ft^2)	
Veg_Recreational	In Project				
	Out of Project	11,697 (125,905 ft^2)			
Veg_Unimpacted EP-2	In Project	345 (3,714 ft^2)	96 (1,033 ft^2)	13,350 (143,698 ft^2)	86,781 (934,103 ft^2)
	Out of Project	448,010 (4,822,340 ft^2)	160,462 (1,727,199 ft^2)	33,030 (355,532 ft^2)	749,437 (8,066,872 ft^2)
Veg_Unimpacted EP-3	In Project	72,940 (785,120 ft^2)	190,979 (2,055,681 ft^2)	248,493 (2,674,756 ft^2)	484,186 (5,211,735 ft^2)
	Out of Project	2,250,372 (24,222,803 ft^2)	2,407,712 (25,916,396 ft^2)	191,673 (2,063,151 ft^2)	1,207,834 (13,001,017 ft^2)
Veg_Unimpacted EP-4	In Project	126,117 (1,357,512 ft^2)	569,362 (6,128,562 ft^2)	1,240,264 (13,350,091 ft^2)	253,975 (2,733,764 ft^2)
	Out of Project	1,057,093 (11,378,454 ft^2)	1,087,123 (11,701,695 ft^2)	204,214 (2,198,141 ft^2)	797,571 (8,584,983 ft^2)
Veg_Unimpacted EP-5	In Project		7,576 (81,547 ft^2)	94,453 (1,016,684 ft^2)	41,815 (450,093 ft^2)
	Out of Project		151,195 (1,627,449 ft^2)	1,799 (19,364 ft^2)	713 (7,674 ft^2)
Veg_Unimpacted EP-UNK	In Project		531 (5,716 ft^2)		2,604 (28,029 ft^2)
	Out of Project	34,802 (374,606 ft^2)	706 (7,599 ft^2)		45 (484 ft^2)
Water_Body	In Project		26,182 (281,821 ft^2)		56,287 (605,868 ft^2)
	Out of Project	60,325 (649,332 ft^2)	2,821 (30,365 ft^2)		
Total		7,042,763 (75,807,670 ft^2)	5,295,264 (56,997,747 ft^2)	2,609,260 (28,085,841 ft^2)	3,833,808 (41,266,766 ft^2)

Table A-2 Summary of Land Uses Converted to Unpaved Roads in Upper Watershed.

WATERSHED	Land Use	Location	Area Replaced with Unpaved Road (m^2)
INT ZONE 7	Residential_SFP	In Project	16 (172 ft^2)
INT ZONE 7	Residential_SFP	Out of Project	629 (6,770 ft^2)
INT ZONE 7	Residential_SFI	Out of Project	332 (3,574 ft^2)
INT ZONE 7	Residential_MFP	Out of Project	18 (194 ft^2)
INT ZONE 7	CICU-Pervious	Out of Project	528 (5,683 ft^2)
INT ZONE 7	CICU-Impervious	In Project	5 (54 ft^2)
INT ZONE 7	CICU-Impervious	Out of Project	36 (388 ft^2)
INT ZONE 7	Roads_Secondary	In Project	58 (624 ft^2)
INT ZONE 7	Roads_Secondary	Out of Project	396 (4,263 ft^2)
INT ZONE 7	Ski_Runs-Pervious	In Project	4,604 (49,557 ft^2)
INT ZONE 7	Ski_Runs-Pervious	Out of Project	1,429 (15,381 ft^2)
INT ZONE 7	Veg_Unimpacted EP-2	Out of Project	1,478 (15,909 ft^2)
INT ZONE 7	Veg_Unimpacted EP-3	In Project	329 (3,541 ft^2)
INT ZONE 7	Veg_Unimpacted EP-3	Out of Project	949 (10,215 ft^2)
INT ZONE 7	Veg_Unimpacted EP-4	In Project	3,921 (42,205 ft^2)
INT ZONE 7	Veg_Unimpacted EP-4	Out of Project	1,194 (12,852 ft^2)
MADDEN CREEK	Water_Body	In Project	828 (8,913 ft^2)
MADDEN CREEK	Ski_Runs-Pervious	In Project	5,381 (57,921 ft^2)
MADDEN CREEK	Veg_Unimpacted EP-3	In Project	1,004 (10,807 ft^2)
MADDEN CREEK	Veg_Unimpacted EP-3	Out of Project	665 (7,158 ft^2)
MADDEN CREEK	Veg_Unimpacted EP-4	In Project	5,603 (60,310 ft^2)
MADDEN CREEK	Veg_Unimpacted EP-5	In Project	313 (3,369 ft^2)
MADDEN CREEK	Veg_Unimpacted EP-UNK	In Project	7 (75 ft^2)
HOMEWOOD CREEK	Residential_MFP	Out of Project	75

WATERSHED	Land Use	Location	Area Replaced with Unpaved Road (m^2)
			(807 ft^2)
HOMEWOOD CREEK	Residential_MFI	Out of Project	1 (11 ft^2)
HOMEWOOD CREEK	Roads_Secondary	Out of Project	183 (1,970 ft^2)
HOMEWOOD CREEK	Ski_Runs-Pervious	In Project	11,696 (125,895 ft^2)
HOMEWOOD CREEK	Ski_Runs-Pervious	Out of Project	135 (1,453 ft^2)
HOMEWOOD CREEK	Veg_Unimpacted EP-2	In Project	991 (10,667 ft^2)
HOMEWOOD CREEK	Veg_Unimpacted EP-2	Out of Project	520 (5,597 ft^2)
HOMEWOOD CREEK	Veg_Unimpacted EP-3	In Project	4,275 (46,016 ft^2)
HOMEWOOD CREEK	Veg_Unimpacted EP-3	Out of Project	130 (1,399 ft^2)
HOMEWOOD CREEK	Veg_Unimpacted EP-4	In Project	27,836 (299,624 ft^2)
HOMEWOOD CREEK	Veg_Unimpacted EP-4	Out of Project	491 (5,285 ft^2)
HOMEWOOD CREEK	Veg_Unimpacted EP-5	In Project	2,645 (28,470 ft^2)
QUAIL CREEK	Ski_Runs-Pervious	In Project	754 (8,116 ft^2)
QUAIL CREEK	Veg_Unimpacted EP-2	In Project	591 (6,361 ft^2)
QUAIL CREEK	Veg_Unimpacted EP-2	Out of Project	963 (10,366 ft^2)
QUAIL CREEK	Veg_Unimpacted EP-3	In Project	4,560 (49,083 ft^2)
QUAIL CREEK	Veg_Unimpacted EP-3	Out of Project	1,874 (20,172 ft^2)
QUAIL CREEK	Veg_Unimpacted EP-4	In Project	2,950 (31,754 ft^2)
QUAIL CREEK	Veg_Unimpacted EP-4	Out of Project	271 (2,917 ft^2)
QUAIL CREEK	Veg_Unimpacted EP-5	In Project	936 (10,075 ft^2)
QUAIL CREEK	Veg_Unimpacted EP-UNK	In Project	151 (1,625 ft^2)
		TOTAL	91,751 (987,600 ft^2)

Watershed Size

The project area contains parts of the Homewood Creek, Madden Creek, and the Quail Lake Creek watersheds. Portions of the South and North Base areas are contained within Intervening Area #7 (See Figure A1). For initial modeling efforts, all of Intervening zone 7 was modeled in order to remain consistent with the TMDL approach. In the TOC modeling, only those portions of Intervening zone 7 (also

referred to as INT 7000 in some maps and documents) that were contiguous with the project area were modeled. The sizes of each watershed and the portions within the project area are defined in Table A2.

(Please note: some entities refer to Homewood Creek by a different name – Ellis Creek. For this document, the name Homewood Creek was used).

Table A3. Size of HMR Watersheds

Watershed	TMDL Watershed #	Area (m^2)[1]		% of Watershed within Project Area
		Full Watershed	Project Area in Watershed	
Intervening Area #7	7000	7,041,530 (75,794,398 ft^2) (1,740ac)	469,435 (5,052,956 ft^2) (116ac)	7%
Madden Creek	7020	5,297,335 (57,020,039 ft^2) (1,309ac)	1,420,446 (15,289,553 ft^2) (351ac)	27%
Homewood Creek	7030	2,610,222 (28,096,196 ft^2) (645ac)	2,124,600 (22,869,004 ft^2) (525ac)	81%
Quail Lake Creek	7040	3,832,373 (41,251,320 ft^2) (947ac)	979,339 (10,541,517 ft^2) (242ac)	26%
Total		18,777,413 (202,118,391 ft^2) (4,640ac)	4,993,821 (53,753,042 ft^2) (1,234ac)	27%

[1] The GIS files within the LSPC model use metric units. This convention is used in this document. Values provided in the narrative sections have English Units within parenthesis.

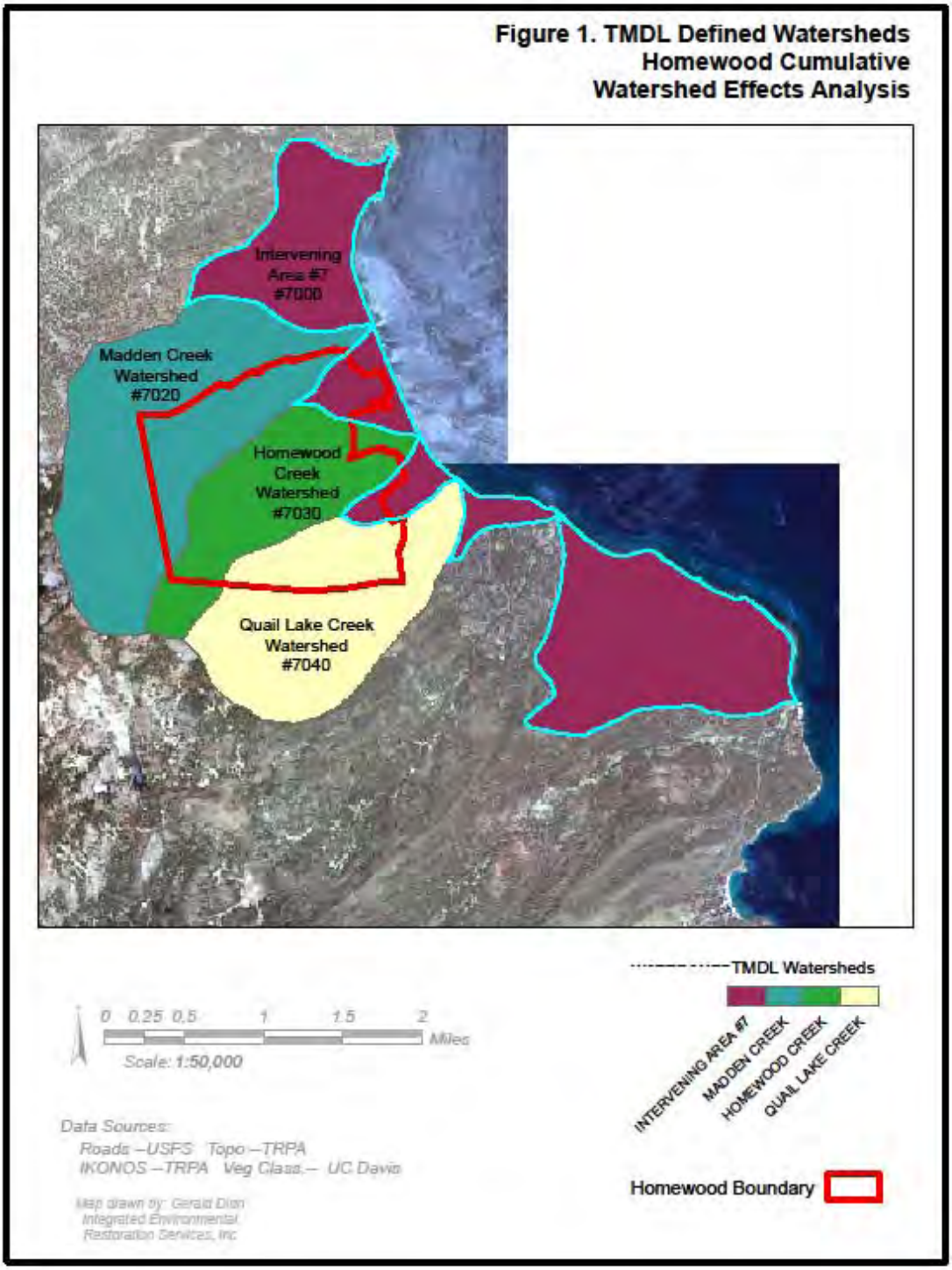

Figure A1: TMDL Defined Watersheds

Watershed Characteristics

Soil Map Units within the Project area

When addressing erosion concerns, the origin (parent material) of the soil is important. The Natural Resources Conservation Service (NRCS) produces maps of the soils found in a given area. These maps are a collection of delineated areas called "Map Units," and are collections of described soil types. Map units are used to describe the properties and origin of soil on a watershed or larger scale. As soil genesis is generally an element in describing map units, this tool is helpful in identifying the soil parent material. The NRCS has classified and mapped the soil conditions within the HMR watersheds in two separate soil surveys. The original soil survey was completed in 1974 (Rogers, 1974) and was of a relative low resolution due to funding and time constraints. A new, more complete survey was completed in 2007 (NRCS, 2007). Slope and watershed attributes discussed here are from the 2007 survey. Most of the soils within these watersheds are derived from volcanic parent material. However, there are a few areas mapped as a mixture between volcanic and granitic parent material.

Figure A2 illustrates areas derived from volcanic or granitic parent material. Table A2 summarizes the acreage of map units by parent material. It is important to know the soil parent material, as volcanically-derived soil produces more sediment than granitically-derived soil (Grismer, M.E. and M.P. Hogan. 2005). A parameter in the LSPC model is the total percentage of each watershed in granitic or volcanically-derived soil.

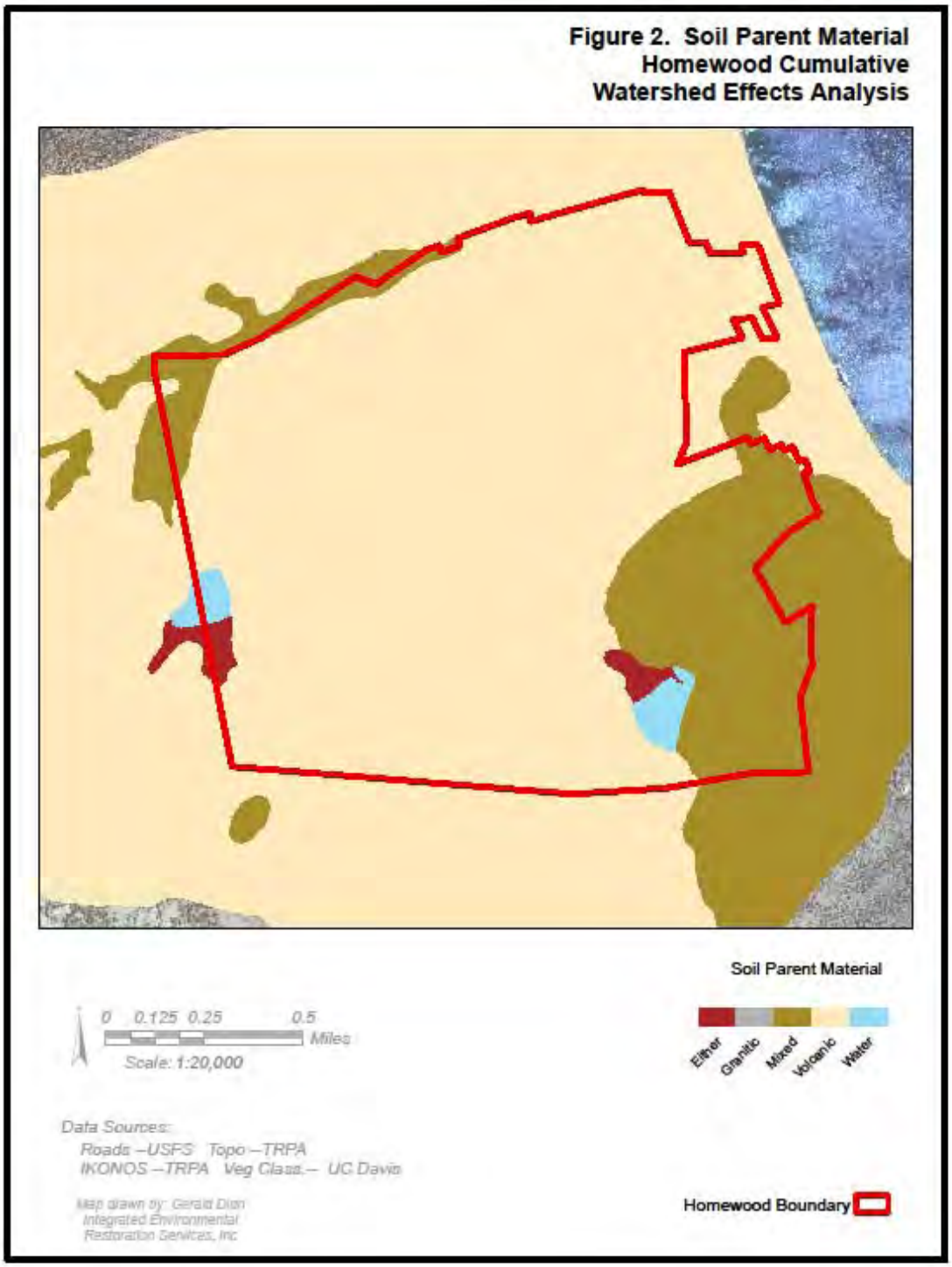

Figure A2: Soil Parent Material

Table A4. Soil Parent Material by Watershed

Watershed	Soil Parent Material (m^2)			
	Volcanic	Mixed	Either[1]	Total[2]
Intervening Area#7	331,842 (3,571,918 ft^2)	137,593 (1,481,039 ft^2)	--	469,435 (5,052,956 ft^2)
Madden Creek	1,258,572 (13,547,156 ft^2)	117,359 (1,263,242 ft^2)	24,281 (261,359 ft^2)	1,396,165 (15,028,195 ft^2)
Homewood Creek	1,902,023 (20,473,205 ft^2)	222,577 (2,395,799 ft^2)	--	2,124,600 (22,869,004 ft^2)
Quail Lake Creek	34,185 (367,964 ft^2)	368,264 (3,963,961 ft^2)	28,328 (304,920 ft^2)	934,824 (10,062,362 ft^2)
Totals	4,026,622 (43,342,198 ft^2)	845,793 (9,104,040 ft^2)	52,609 (566,279 ft^2)	49,213,821 (529,733,161 ft^2)

[1] These areas are mapped as having either volcanic or granitic parent material.

[2] The difference between the Table 3 area total and the area total in Table 2 can be accounted for by the two lakes within the watersheds, which encompass 72,843m2 (784,076 ft2) (18 acres).

Geological Units with the Project area

The underlying geology within the HMR watersheds is mostly volcanic in origin and has been modified by past glaciers (see Figure A3). Within the Quail Lake watershed exists soils of both granitic and sedimentary origin. The underlying geology helps define the soil parent material, which is a parameter in the LSPC model.

Table A5. Geologic Units by Watersheds

Geologic Symbol	Geologic Unit	Volcanic or Granitic Origin
gr	Granitic Rocks	Granitic
ms	Metasedimentary Rocks	Volcanic
Ql	Older Lakebed Deposits	Mixed
Qlo	Older Lake Sediments	Mixed
Qm3	Tioga Till Glacial Moraines	Volcanic

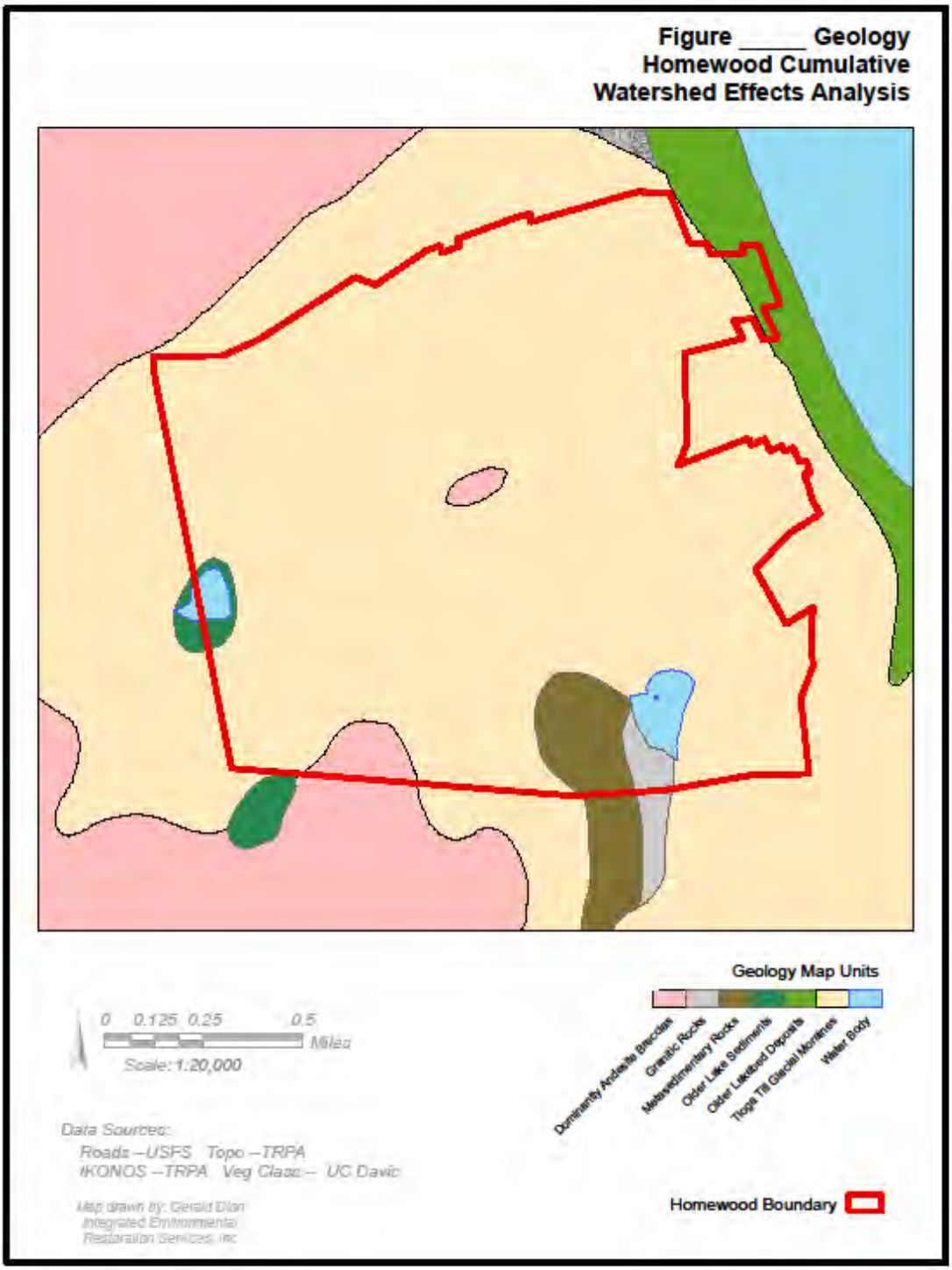

Figure A3: Geology

Average Slope and Aspect

The HMR watersheds generally drain from the southwest into Lake Tahoe, and therefore the sides of the valleys generally face (exposure) southeast and northwest (see Figures A4 and A5). The watersheds have high average slopes of between 26% and 48%. This is important because areas of steeper slope will generally produce more sediment than areas with a more gradual slope. The North and South Base areas, where most of the redevelopment is planned, is relatively flat. The mid mountain development is planned for a relatively flat ridge area that is flanked by steep (50%+ areas to the north and south.)

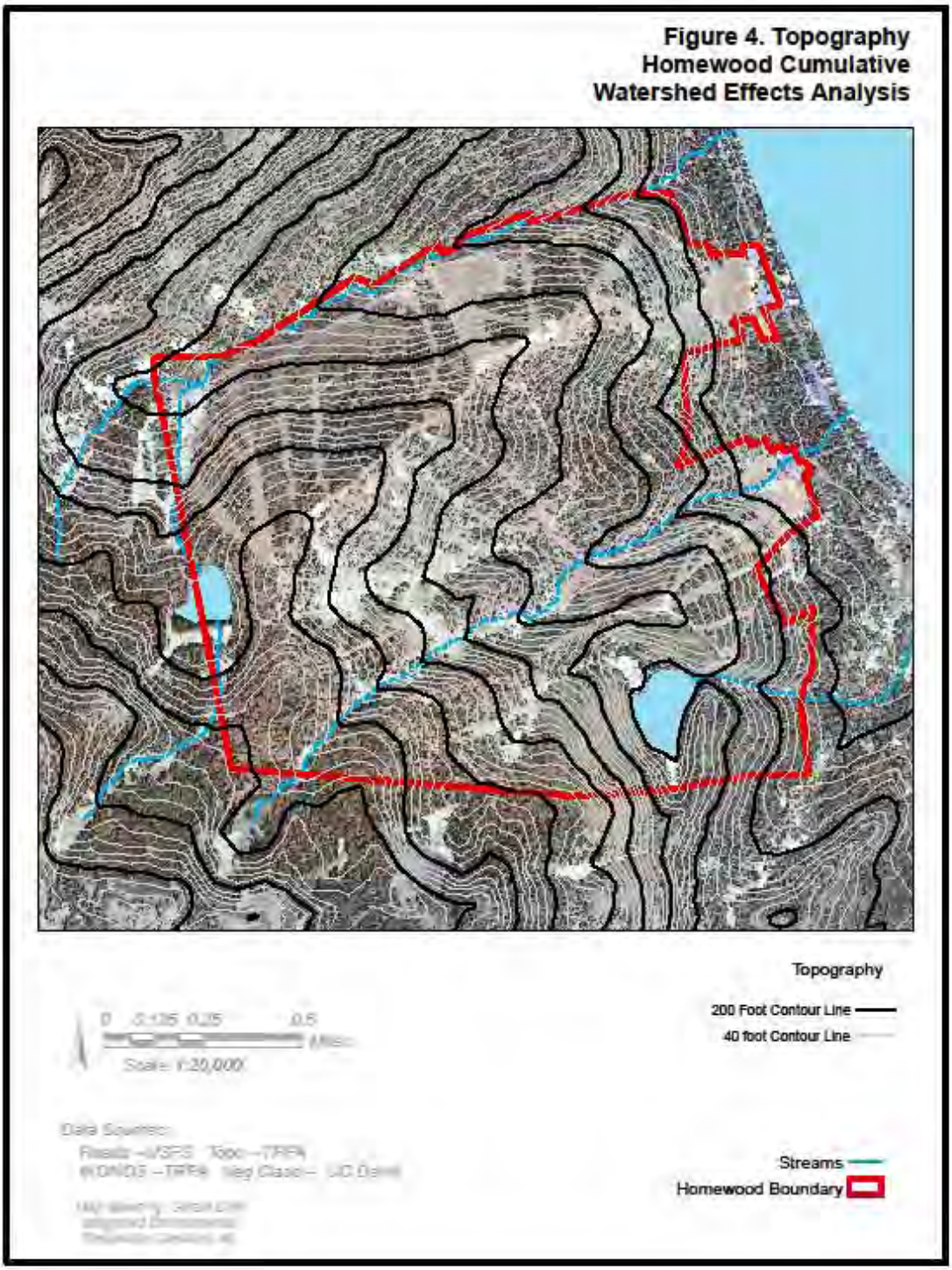

Figure A4: Topography

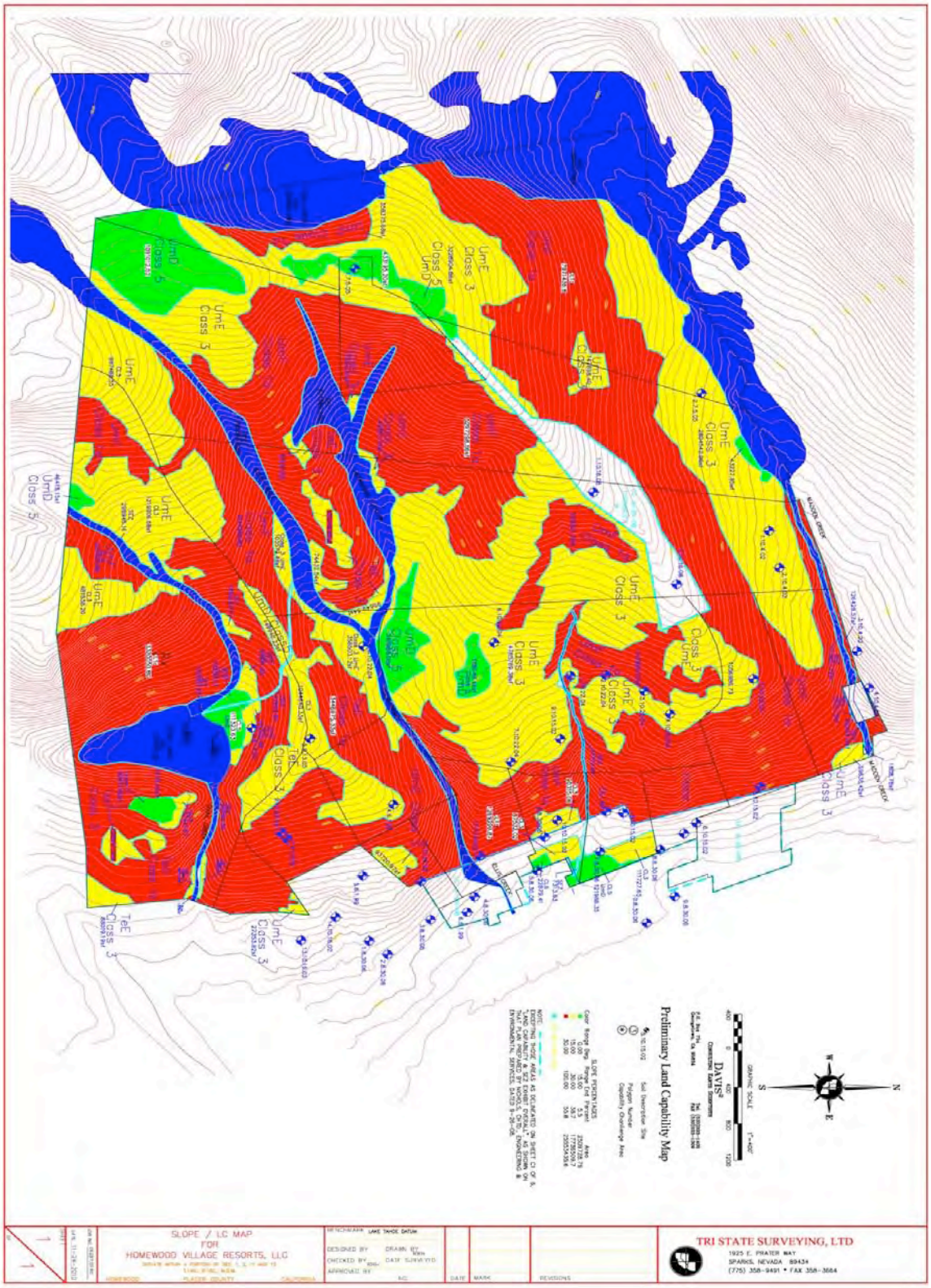

Figure A5: Average Slope. This is the 'adjusted slope phase' map used in TOC development.

Table A6. Average Slope and Aspect by Watershed

Watershed	Average Slope	General Aspect
Intervening Area #7	26%	NE
Madden Creek	48%	SE and NW
Homewood Creek	47%	SE and NW
Quail Creek	45%	SE and NW

Watershed and Land Use History

The Homewood, California area has a long history of logging, mining, vacation, and recreational use. Logging was conducted during the turn of the century to support the Comstock boom. Tahoe's only gold mine was operated adjacent to the project area. Established in 1939, it was operated into the 1940's when the value of the ore was found to be too low to be profitable. The two mine shafts are located south of Quail Lake and an open pit area is located just outside of Chamberlands. The first hotel was built in the area in 1910, and by 1960 the first rope tow was installed at Homewood, California that would be developed into HMR. There have been a number of ownership changes over the years, with the current owners (JMA Ventures) acquiring the resort in 2006. Homewood Ski Area and Tahoe Ski Bowl, former separate resorts which shared a common ridge (Rainbow Ridge), were merged into one ski area in the 1980's.

Current land use, as mapped within the TMDL GIS layer, within the project area includes developed area, roads, and ski trails. Table A7 summarizes the existing land use within the project area. Table A-1 presents a full breakdown of land uses within each project area watershed.

Table A7. Baseline/Existing Land Use by Watershed

	Summarized Baseline/Existing Land Use within the Project Area (m^2)				
Watershed	Developed Area	Roads	Ski Run/Vegetated	Water Body	Total
Intervening Area#7	16,187 (174,235 ft^2)	24,281 (261,359 ft^2)	424,920 (4,573,801 ft^2)	-	469,435 (5,052,956 ft^2)
Madden Creek	-	52,609 (566,279 ft^2)	1,343,556 (14,461,916 ft^2)	24,281 (261,359 ft^2)	1,420,447 (15,289,564 ft^2)
Homewood Creek	4,047 (43,562 ft^2)	89,031 (958,322 ft^2)	2,031,522 (21,867,121 ft^2)	-	2,124,600 (22,869,004 ft^2)
Quail Lake Creek	-	16,187 (174,235 ft^2)	906,496 (9,757,442 ft^2)	56,656 (609,840 ft^2)	979,339 (10,541,517 ft^2)
Total	20,234 (217,797 ft^2)	186,155 (2,003,756 ft^2)	4,706,494 (50,660,280 ft^2)	80,937 (871,199 ft^2)	4,993,821 (53,753,042 ft^2)

Alterations to the Land Use Conditions for Analysis

To reflect the program elements for the Proposed Project and alternatives, the following alterations to existing land uses were made for the LSPC-based analysis.

Existing Conditions/Baseline Conditions

The existing conditions for this analysis is from the TMDL GIS land use dataset (2004 dataset). The area associated with each land use is summarized in Appendix A, Table A-1. Please see Hydrologic Modeling and Sediment and Nutrient Loading Estimation for the Lake Tahoe Total Maximum Daily Load Project (Lahontan 2008) for a full description of the method used for land use classification.

The TMDL assigned a specific amount of sediment delivery to the lake from each watershed. Assumptions were made about land use based on existing GIS layers. As was previously stated, field observations and measurements indicated that more dirt roads existed than were shown on the GIS layers. In order to more accurately reflect specific contributions to the sediment delivery, the TMDL GIS-derived baseline land use was modified to correct an under-counting of unpaved roads within the watersheds. These roads were undercounted in the TMDL model which was based on older maps and aerial photography. Field verification identified roads that had been built since the mid 1970's. Using the TMDL land use classification, 174,015m^2 (1,873,082 ft^2; 43 acres) of existing dirt roads were identified. However, there are an additional 91,751m^2 (987,600 ft^2; 22 acres) of dirt roads known to exist in the project area based on actual field verifications and measurements. Using the HMR GIS database (IERS, 2009), these 91,751m^2 (987,600 ft^2; 22 acres) of roads are added to the land use data layer, and 91,751m^2 (987,600 ft^2; 22 acres) of other land uses are removed.

Table A8. Baseline Annual Sediment Yield by Watershed (T/yr)

Baseline Sediment Yield	INT 7000 yield (T/yr))		WS 7020 Madden yield (T/yr)		WS 7030 Homewood yield (T/yr)		WS 7040 Quail yield (T/yr)		TOTAL Yield (T/yr)	
Subcategory Name	**In-Proj**	**Out-Proj**	**In-Proj**	**Out-Proj**	**In-Proj**	**Out-Proj**	**In-Proj**	**Out-Proj**	**In-Proj**	**Out-Proj**
Residential_SFP	0.00	20.12	0.00	0.76	0.00	1.93	0.00	2.57	0.00	25.39
Residential_MFP	0.00	9.41	0.00	0.30	0.00	0.30	0.00	0.09	0.00	10.10
CICU-Pervious	0.17	2.89	0.00	0.00	0.00	0.00	0.00	0.00	0.17	2.89
Ski_Runs-Pervious	28.76	1.87	209.85	13.28	251.18	0.98	14.48	0.00	504.27	16.13
Veg_EP1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Veg_EP2	0.00	4.14	0.00	4.30	0.84	0.86	2.94	19.11	3.78	28.41
Veg_EP3	2.26	31.27	12.65	193.85	34.49	17.38	44.52	100.70	93.92	343.20
Veg_EP4	14.50	70.56	123.91	244.48	365.49	50.92	52.29	118.03	556.19	483.98
Veg_EP5	0.00	0.00	5.72	114.15	69.52	1.32	21.06	0.36	96.30	115.83
Veg_Recreational	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
Veg_Burned	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Veg_Harvest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Veg_Turf	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Baseline Sediment Yield	INT 7000 yield (T/yr))		WS 7020 Madden yield (T/yr)		WS 7030 Homewood yield (T/yr)		WS 7040 Quail yield (T/yr)		TOTAL Yield (T/yr)	
Water_Body	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Residential_SFI	0.00	13.57	0.00	0.07	0.00	0.14	0.00	0.79	0.00	14.57
Residential_MFI	0.00	10.00	0.00	0.02	0.00	0.02	0.00	0.07	0.00	10.10
CICU-Impervious	5.82	9.92	0.00	0.00	2.10	0.23	1.05	0.12	8.97	10.27
Roads_Primary	0.26	65.48	0.00	0.93	0.00	1.38	0.00	0.60	0.26	68.38
Roads_Secondary	0.60	55.57	0.04	0.45	1.93	1.09	0.00	3.05	2.56	60.15
Roads_Unpaved	9.14	3.65	106.67	4.49	102.22	1.35	15.78	11.21	233.81	20.70
Veg_Unknown	0.00	0.92	0.04	0.06	0.00	0.00	0.10	0.00	0.14	0.99
Totals	***61.51***	***299.52***	***458.88***	***577.13***	***827.77***	***77.91***	***152.23***	***256.69***	***1500.38***	***1211.25***

From Grismer, 2010, CWE sediment output based on LSPC-TMDL coefficients

[1] See Box 3 for definitions of land use codes.

Proposed Project (Alternative 1)

The following changes to baseline conditions were made to the LSPC model parameters to represent the Proposed Project (Alternative 1).

Mid-Mountain Facilities

The Proposed Project includes a lodge and maintenance facility at the mid-mountain area. The total land use footprint is 7548m^2 (81,251ft^2), all located within the Madden Creek watershed. For the HMR CWE analysis, this area was converted from a forest land use to a commercial land use (Land use code: CICU-Impervious).

Private Townhomes

Sixteen private townhomes are added to the mountain area just south of the North Base.. A new paved road will be needed to access these townhomes. The area of this paved road is 3,461m^2 (37,254ft^2).

North Base Area

The parking structure and lodge area and associated footprint of the townhomes have a total land use footprint of 37,090m^2 (399,235ft^2). Most of this area is on previously disturbed land. Although this is a mixed-use development, only one land use maybe selected for a future condition. For the parking structure and the lodge area, the land use was changed to commercial (Land use code: CICU-Impervious). Within the North Base area, there are new access roads and parking areas. For these areas (7,832m^2 or 84,303ft^2), the land use was changed from a commercial land use to a paved secondary road land use (Land use code: Roads_ Secondary).

South Base Area

The South Base area contains two new multi-family residential buildings, a redesigned roadway, and restoration areas. The two new buildings have a total land use footprint

of 13,307 m^2 (143,233ft^2). Most of this area is on previously disturbed land and was converted to multi-family residential land use. As part of the road redesign and access to the North Base townhomes, 2,248m^2 (24,197ft^2) of existing commercial land use will become a paved road (Land use code: Road_Secondary). Areas of previous urban land use (6,083m^2 or 65,477ft^2) that will be restored are reclassified to forest land use category in order to reflect high function within those lands (Land use code: EP3)[14]. Note that the LSPC model does not explicitly model riparian restoration.

Removal of Unpaved Roads in the Upper Watershed

There is currently a significant effort to remove and restore unneeded roads within the project area. Since 2006, approximately 22,337 m^2 (240,434 ft^2) of unused dirt access roads and other areas have been treated. Within the scope of the Proposed Project, a total of 46,451 m^2 (500,000 ft^2) of dirt roads and other disturbances will be removed, treated and restored. As previously described, some of these are TRPA verified roads, and some of the work is done on non-verified roads, road cut and fills, and non-road areas. Each treatment area was accurately reflected in the modeling exercise and assigned appropriate sediment values. Following the methodology outlined in the Lake Tahoe TMDL Pollutant Load Reduction Opportunities Report (Roberts, D. and J. Reuter, 2007), the restored roadways would be reclassified from a Condition Class F to a Condition Class B (shown in Table 21), which would reduce the total amount of sediment produced. For the HMR CWE analysis, the conservative value of 250,000 ft^2 of additional coverage removal is assumed. Removal of additional roadways would obviously result in increased reductions of total sediment yield.

Alternative 2 - No Project

Alternative 2 is described in the Existing Conditions/Baseline Conditions section above.

Alternative 3 - No Code Amendment for Height

The following changes to baseline conditions were made to the LSPC model parameters to represent Alternative 3.

Mid-Mountain Facilities

Alternative 3 includes a lodge and maintenance facility at the mid-mountain area, all located within the Madden Creek watershed. For the analysis, this area was converted from a forest land use to a commercial land use (Land use code: CICU-Impervious).

[1414] In this report, wherever land is reported as returned to forest, this statement is referring to a forest land use category, which is a high function category within the model but does not necessarily denote an actual forest restoration. Soil conditions will be brought back to forest soil conditions with high infiltration and organic matter.

Private Townhomes

Sixteen private townhomes are added to the mountain area just south of the North Base. A new paved road will be needed to access these townhomes. The area of this paved road is split between the Madden and Homewood Creek watersheds.

North Base Area

The parking structure and lodge area are as listed for Alternative 1. Most of this area is on previously disturbed lands. Although this is a mixed-use development, only one land use maybe selected for a future condition. For the parking structure and the lodge area the land use was changed to commercial (Land use code: CICU-Impervious). Within the North Base area, there are access roads and parking areas.

South Base Area

The South Base Area contains two new multi-family residential buildings, a redesigned roadway, and restoration areas. Most of this area is on previously disturbed lands and was converted to multi-family residential land use.

Removal of Dirt Roads in the Upper Watershed

Road removal is as described in Alternative 1.

Alternative 4 - Privatize Resort

The following changes to baseline conditions were made to the LSPC model parameters to represent Alternative 4.

Private Residences

Sixteen private residences are added to parcels within the mountain area. It is assumed that these residences would have a large footprint (465m^2 or 5,000ft^2 of coverage). It is further assumed that these residences would be sited within the existing ski trails and forested areas.

Paved Access Road

It is assumed that the primary access dirt roads to the residences would be paved.

North Base Area

There are no changes in land use within the North Base area.

Alternative 5 - Urban Boundary Subdivision

The following changes to baseline conditions were made to the LSPC model parameters to represent Alternative 5.

Mid-Mountain Facilities

Alternative 5 includes a lodge and maintenance facility at the mid-mountain area as listed in the preferred alternative. This area was from converted from a forest land use to a commercial land use (Land use code: CICU-Impervious).

North Base Area

Alternative 5 includes a lodge and parking structure at the North Base. Most of this area is on previously disturbed lands. Although this is a mixed-use development, only one land use may be selected for a future condition. For the parking structure and the lodge area, the land use was changed to commercial (Land use code: CICU-Impervious). Within the North Base area there are access roads and parking areas.

South Base Area

The South Base Area is subdivided into 16 parcels and sold as residential lots. It is assumed that large multi-story homes are built on each lot, and that 163m^2 (1,750ft^2) is converted to a single-family residential land use (Land use code: Residential_SFI). The total land use footprint of these residential homes is 2,608m^2 (28,072ft^2).

Removal of Dirt Roads in the Upper Watershed

Dirt road removal is as described in the preferred alternative.

Alternative 6 - Urban Boundary Subdivision Variant

Under Alternative 6, the proposed buildings are lower in height than in Alternative 5. Residential condominiums are located in buildings adjacent to Highway 89 at the North Base, in the existing gravel parking lot area, and some in the hotel and day skier structure. The day skier parking structure and employee housing are moved from the gravel parking lot area proposed in Alternative 1 to a site adjacent to the skier services building. A new mid-mountain lodge will be the same as described for the Proposed Project. The South Base would be subdivided into 14 residential lots and one residential condominium building. A number of unused dirt access roads within the upper watersheds would be removed and restored.

Appendix B: Understanding the Beneficial Uses of Water and Protection Standards

Surface and ground waters provide beneficial uses for people, animals, plants, and industries. The State of California Water Quality Control Board (State Board) has defined the beneficial uses for surface and groundwater in almost every watershed within its jurisdiction. These beneficial uses are defined within Chapter 2 of the Water Quality Control Plan for the Lahontan Region (Lahontan Basin Plan 1995), which is a regulatory plan designed to guide the protection of water quality. Table B1 lists the beneficial uses for the three watersheds within the project area. The exact definition from the Lahontan Basin Plan for each of these uses can be found in Box 1. The three HMR watersheds are the Madden Creek, Homewood Creek, and Quail Lake Creek.

In general, for every beneficial use and water quality objective defined in the Lahontan Basin Plan there are protection standards called Water Quality Protection Criteria. The indicators of unacceptable disturbance used for this CWE analysis are defined as the water quality protection criteria taken from the Lahontan Basin Plan.

Existing and proposed activities within the project area do not directly generate chemicals or coliform organisms, or change the temperature of the surface waters. It should be noted that spills and accidents could release chemicals into surface waters, but this potential is not part of the HMR CWE analysis.

All beneficial uses described in Table B1 require protection. Two pollutant types within the project area have a reasonable potential to harm the listed beneficial uses. These pollutant types are: 1) sediment and 2) oil and grease. These two pollutants provide two different mechanisms to create impacts to beneficial uses.

The approaches used to address these two mechanisms are discussed below.

Sediment

Impacts from sediment are estimated based on the LSPC results and modification of existing land uses to proposed land uses. Section 3, entitled Analysis Methodology, contains a complete description of the methodology. The units of the annual total sediment yield are estimated in Tonnes (T). To compare the sediment yields of the Proposed Project (Alternative 1) and alternatives 3, 4 and 5 to the existing conditions (Alternative 2), the results were converted to a percent of the existing conditions. Values greater than 100% indicate an increase in erosion and values less than 100% indicate a decrease in erosion.

Oil and Grease

Section 4 provided a discussion of the treatment of vehicle generated and entrained oil and grease and provides a comparison between existing and proposed oil and grease discharges.

In order to ascertain whether these limits are being met, the standard used is spring runoff and storm event sampling by the landowner or "discharger". HMR has kept records of sampling for at least 20 years (1989 to present) and submits sampling results to Lahontan in conformance with waste discharge requirements

Table B1. Lahontan Water Quality Protection Criteria

Beneficial Use	Indicator of Unacceptable Disturbance (Water Quality Protection Criteria)
Municipal and Domestic Supply	2. California ambient water quality standards a. Total Dissolved Salts 60mg/l b. Chlorine 0.1mg/l c. Nitrogen 0.15mg/l d. Phosphorus 0.018mg/l 3. Suspended sediment concentrations in streams tributary to Lake Tahoe shall not exceed a 90th percentile value of 60 mg/L. 4. Waters shall not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes.
Ground Water Recharge	In ground waters designated as MUN, the median concentration of coliform organisms over any seven-day period shall be less than 1.1/100 milliliters.
Water Contact Recreation	Waters shall not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes.
Noncontact Water Recreation	None
Commercial and Sportfishing	High heavy metal concentrations
Cold Freshwater Habitat	Same as Spawning, Reproduction, and Development
Wildlife Habitat	None defined
Spawning, Reproduction, and Development	Species dependent standards, however lake clarity sediment protection standard would protect all fish and invertebrate species.
Suspended Sediment Objective for Lake Tahoe	Suspended sediment concentrations in streams tributary to Lake Tahoe shall not exceed a 90th percentile value of 60mg/L. (Lahontan Basin Plan, 1995)

Box B1 Definitions of Beneficial Use
(Lahontan Basin Plan, 1995)

Municipal and Domestic Supply.

Beneficial uses of waters used for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Ground Water Recharge.

Beneficial uses of waters used for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

Water Contact Recreation.

Beneficial uses of waters used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, and use of natural hot springs.

Noncontact Water Recreation.

Beneficial uses of waters used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.

Commercial and Sportfishing.

Beneficial uses of waters used for commercial or recreational collection of fish or other organisms including, but not limited to, uses involving organisms intended for human consumption.

Cold Freshwater Habitat.

Beneficial uses of waters that support cold water ecosystems including, but not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.

Wildlife Habitat.

Beneficial uses of waters that support wildlife habitats including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.

Spawning, Reproduction, and Development.

Beneficial uses of waters that support high quality aquatic habitat necessary for reproduction and early development of fish and wildlife.

Appendix C: TOC Supporting Documents

Figure C-1: Bailey coefficients from Bailey, 1974

Table 4. Basis of capability classification for Lake Tahoe basin lands

Capability levels	Tolerance for use	Slope percent[1]	Relative erosion potential	Runoff potential[2]	Disturbance hazards
7	Most	0-5	Slight	Low to moderately low	
6		0-16	Slight	Low to moderately low	Low hazard
5		0-16	Slight	Moderately high to high	
4		9-30	Moderate	Low to moderately low	Moderate hazard lands
3		9-30	Moderate	Moderately high to high	
2		30-50	High	Low to moderately low	
1a	Least	30+	High	Moderately high to high	High hazard lands
1b		Poor natural drainage			
1c		Fragile flora & fauna[3]			

[1] *Most slopes occur within this range. There may be, however, small areas that fall outside the range given.*

[2] *Low to moderately low – hydrologic-soil groups A and B; moderately high to high – hydrologic-soil groups C and D.*

[3] *Areas dominated by rocky and stony land.*

Table 5. – Lake Tahoe basin land area classified by capability

Land capability class	Total area		National Forest land	
	Acres	*Percent*	*Acres*	*Percent*
7	3,030	2	101	
6	8,800	4	1,144	
5	16,730	8	4,878	4
4	7,050	4	1,421	
3	12,900	6	3,471	3
2	4,770	2	2,012	2
	148,750	74	102,266	88
Total	202,030	100		100

20

Table C1: Sid Davis Calculations for Bailey 1974, adjusted for slope					
SMU	**SMU Acres**	**Capability Class**	**Allowable % Coverage**	**Acres of Coverage**	
Gr	2	1b	1	0.0	***Total Map Unit Acres***
Gr	11	1b	1	0.1	1991
Gr	6	1b	1	0.1	
Gr	8	1b	1	0.1	***Total Acres of Coverage***
Gr	1	1b	1	0.0	122.6
Gr	10	1b	1	0.1	
Lo	7	1b	1	0.1	Sq Ft
Mh	5	1b	1	0.1	5,339,149
MsE	13	1a	1	0.1	
MsG	5	1a	1	0.1	
MxF	36	1c	1	0.4	
MxF	22	1c	1	0.2	
MxF	68	1c	1	0.7	
MxF	133	1c	1	1.3	
MxF	18	1c	1	0.2	
Ra	35	1c	1	0.4	
Ra	1	1c	1	0.0	
Ra	20	1c	1	0.2	
Ra	308	1c	1	3.1	
Rx	14	1c	1	0.1	
Rx	31	1c	1	0.3	
Rx	18	1c	1	0.2	
Rx	17	1c	1	0.2	
Rx	20	1c	1	0.2	
Rx	10	1c	1	0.1	
Rx	11	1c	1	0.1	
Rx	4	1c	1	0.0	
Rx	10	1c	1	0.1	
Sm	0	1c	1	0.0	
Sm	10	1c	1	0.1	
Sm	116	1c	1	1.2	
TcB	116	5	25	29.0	
TcC	4	5	25	1.0	
TeE	43	3	5	2.2	
TeE	24	3	5	1.2	
TeG	24	1a	1	0.2	
TeG	51	1a	1	0.5	

Table C1: Sid Davis Calculations for Bailey 1974, adjusted for slope					
SMU	**SMU Acres**	**Capability Class**	**Allowable % Coverage**	**Acres of Coverage**	
TkC	135	5	25	33.8	
TkC	9	5	25	2.3	
TkC	9	5	25	2.3	
TkC	16	5	25	4.0	
TkC	23	5	25	5.8	
TkC	46	5	25	11.5	
TrF	2	1a	1	0.0	
UmD	4	5	25	1.0	
UmE	5	3	5	0.3	
UmF	9	1a	1	0.1	
UmF	42	1a	1	0.4	
WaE	31	3	5	1.6	
WBDY	2		0	0.0	
WcE	22	3	5	1.1	
WcE	85	3	5	4.3	
WcE	34	3	5	1.7	
WcF	151	3	5	7.6	
WcF	26	1a	1	0.3	
WcF	8	1a	1	0.1	
WcF	9	1a	1	0.1	
WcF	20	1a	1	0.2	
WcF	10	1a	1	0.1	
WcF	27	1a	1	0.3	
WcF	8	1a	1	0.1	
WcF	3	1a	1	0.0	
WcF	4	1a	1	0.0	
WcF	19	1a	1	0.2	

Table C2: Sid Davis Calculation table for Bailey '07					
Map Unit	**Acres**	**Land Capability**	**Percent Coverage**	**Acres Of Coverage**	
7041	6.1	7	0.30	1.82	***Total Map Unit Acres***
7122	3.1	1	0.01	0.03	1994.1
7123	24.4	1	0.01	0.24	
7131	64.7	3	0.05	3.23	***Total Acres of Coverage***
7132	5.1	1	0.01	0.05	164.57
7132	19.1	1	0.01	0.19	
7132	8.6	1	0.01	0.09	Sq ft
7151	15.9	6	0.30	4.78	7,168,542

Table C2: Sid Davis Calculation table for Bailey '07					
Map Unit	**Acres**	**Land Capability**	**Percent Coverage**	**Acres Of Coverage**	
7152	18.1	4	0.20	3.61	
7153	11.2	2	0.01	0.11	
7171	5.8	6	0.30	1.75	
7173	0.3	7	0.30	0.09	
7173	79.0	7	0.30	23.69	
7174	27.8	6	0.30	8.35	
7174	9.2	6	0.30	2.77	
7191	3.7	1	0.01	0.04	
7191	0.2	1	0.01	0.00	
7191	15.4	1	0.01	0.15	
7191	10.9	1	0.01	0.11	
7231	72.5	3	0.05	3.62	
7231	11.3	3	0.05	0.57	
7231	22.1	3	0.05	1.11	
7232	9.7	1	0.01	0.10	
7232	37.7	1	0.01	0.38	
7232	11.6	1	0.01	0.12	
7232	67.3	1	0.01	0.67	
7485	14.9	4	0.20	2.98	
7486	4.7	1	0.01	0.05	
7522	110.1	4	0.20	22.01	
7522	0.0	4	0.20	0.00	
7523	32.5	1	0.01	0.33	
7523	13.8	1	0.01	0.14	
7525	4.3	6	0.30	1.30	
7526	9.3	6	0.30	2.80	
7526	22.1	6	0.30	6.62	
7526	77.6	6	0.30	23.28	
7526	46.7	6	0.30	14.02	
9001	5.5	1	0.01	0.06	
9011	32.7	1	0.01	0.33	
9011	8.0	1	0.01	0.08	
9011	30.4	1	0.01	0.30	
9011	7.8	1	0.01	0.08	
9121	3.3	6	0.30	0.98	
9122	10.3	4	0.20	2.07	
9123	1.6	1	0.01	0.02	
9141	9.1	3	0.05	0.46	
9141	7.6	3	0.05	0.38	
9142	17.1	1	0.01	0.17	
9161	7.8	3	0.05	0.39	
9161	3.7	3	0.05	0.19	
9161	48.1	3	0.05	2.40	

Table C2: Sid Davis Calculation table for Bailey '07					
Map Unit	**Acres**	**Land Capability**	**Percent Coverage**	**Acres Of Coverage**	
9161	7.5	3	0.05	0.37	
9161	58.5	3	0.05	2.93	
9161	135.0	3	0.05	6.75	
9161	20.5	3	0.05	1.03	
9161	13.4	3	0.05	0.67	
9162	46.1	1	0.01	0.46	
9162	6.3	1	0.01	0.06	
9162	14.4	1	0.01	0.14	
9162	23.8	1	0.01	0.24	
9162	44.9	1	0.01	0.45	
9162	40.7	1	0.01	0.41	
9162	73.3	1	0.01	0.73	
9162	9.8	1	0.01	0.10	
9163	12.1	1	0.01	0.12	
9163	1.8	1	0.01	0.02	
9163	20.5	1	0.01	0.20	
9163	9.2	1	0.01	0.09	
9164	35.8	3	0.05	1.79	
9164	31.1	3	0.05	1.55	
9164	30.3	3	0.05	1.52	
9164	27.2	3	0.05	1.36	
9164	6.6	3	0.05	0.33	
9164	12.3	3	0.05	0.61	
9164	34.3	3	0.05	1.71	
9165	5.3	1	0.01	0.05	
9165	12.8	1	0.01	0.13	
9165	5.6	1	0.01	0.06	
9165	1.6	1	0.01	0.02	
9165	35.7	1	0.01	0.36	
9165	18.7	1	0.01	0.19	
9165	28.4	1	0.01	0.28	
9165	9.7	1	0.01	0.10	
9165	29.6	1	0.01	0.30	
9165	2.2	1	0.01	0.02	
9165	8.9	1	0.01	0.09	
9166	9.8	1	0.01	0.10	
9166	14.1	1	0.01	0.14	
9406	1.6	1	0.01	0.02	
W	1.4				
W	3.5				

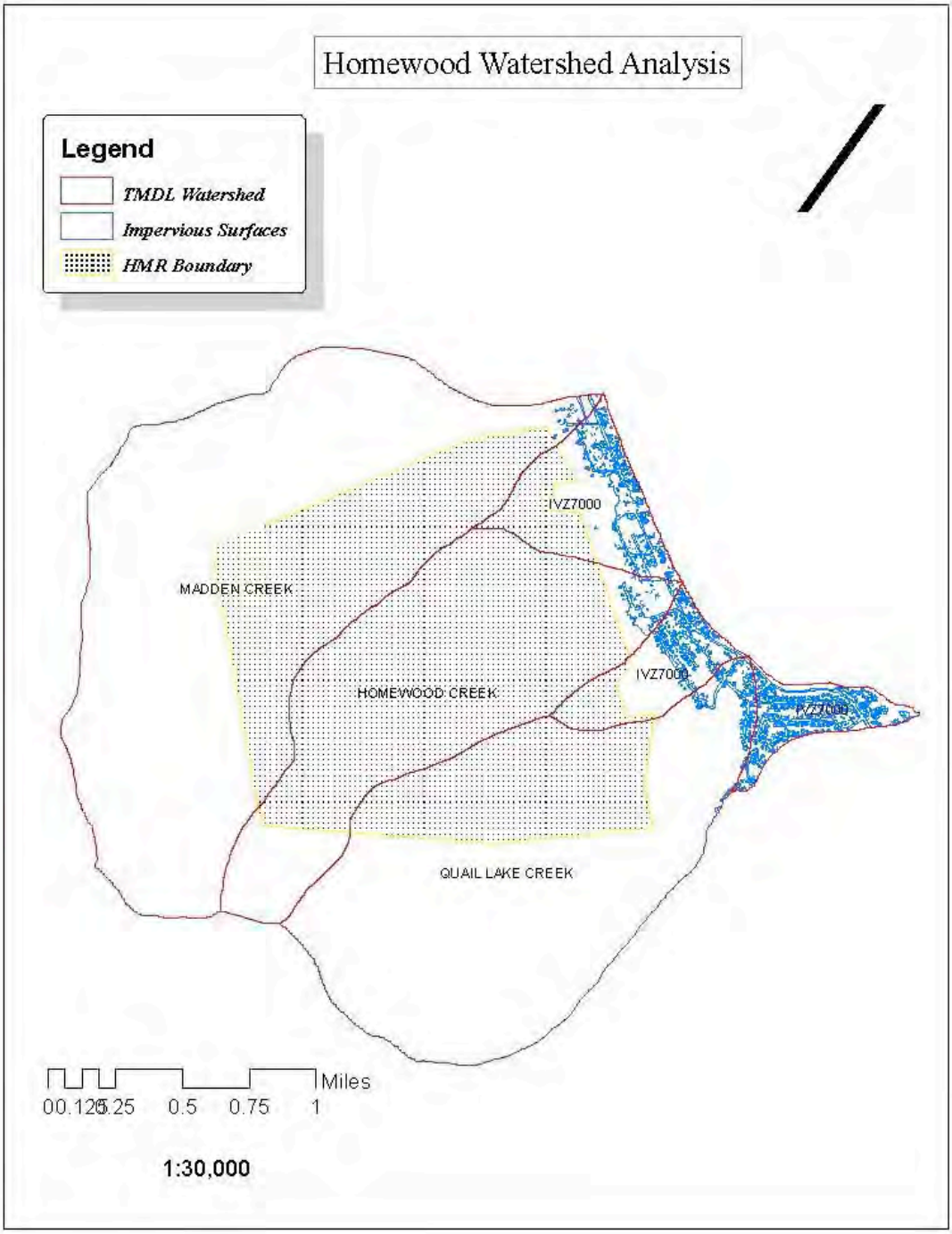

Figure C2: Graphic GIS data used to determine existing coverage outside of HMR boundaries, per TRPA staff

Table C3: all sediment data for all alternatives by watershed (From Grismer, 2010)

Summary Table - SubWS # 7000

Yield

Parameter	AC Out-Proj	AC In-Proj	AC Total	Baseline	Out-Proj	IN-Proj	% Baseline	Proposed	Altern. 2	Altern. 3	Altern. 4	Altern. 5	Altern. 6
Sed (T/yr)	299.8	55.1	354.9	361.0	299.5	61.5	17.0	355.7	355.2	357.2	348.3	355.5	355.5
Silt (T/yr)	211.0	31.3	242.2	246.6	210.6	35.9	14.6	244.2	243.7	248.9	237.8	243.4	243.4
Clay (kg/yr)	510.6	293.3	803.9	838.1	510.5	327.6	39.1	803.3	799.2	748.7	756.9	808.1	808.1
Surflow (m3/yr)	1522283	90175	1612457	1612457	1522282.7	90174.6	5.6	1644505.6	1642348.7	1700348.0	1621353.8	1632742.3	1632742.3
Interflow (m3/yr)	4157272	313002	4470274	4470274	4157271.8	313002.2	7.0	4478886.8	4477995.3	4492360.2	4481839.9	4475425.7	4475425.7

Summary Table - SubWS # 7020 Madden

Yiled

Parameter	AC Out-Proj	AC In-Proj	AC Total	Baseline	Out-Proj	IN-Proj	% Baseline	Proposed	Altern. 2	Altern. 3	Altern. 4	Altern. 5	Altern. 6
Sed (T/yr)	649.8	434.7	1084.5	1036.0	577.1	458.9	44.3	998.6	1002.2	1002.2	957.4	1001.9	1001.9
Silt (T/yr)	416.3	270.7	687.0	641.2	351.3	290.0	45.2	611.7	614.6	614.6	578.6	614.5	614.5
Clay (kg/yr)	5409.9	3624.1	9034.0	8440.6	4433.0	4007.6	47.5	7880.6	7933.7	7933.7	7222.2	7932.5	7932.5
Surflow (m3/yr)	686901	390662	1077563	1077563	686901.1	390662.2	36.3	1046249.2	1093309.2	1093309.2	1090269.5	1093309.2	1093309.2
Interflow (m3/yr)	3015249	1365727	4380976	4380976	3015248.6	1365727.3	31.2	4251772.8	4257634.6	4257634.6	4274249.0	4251772.8	4251772.8

Summary Table - SubWS # 7030 Homewood

Yield

Parameter	AC Out-Proj	AC In-Proj	AC Total	Baseline	Out-Proj	IN-Proj	% Baseline	Proposed	Altern. 2	Altern. 3	Altern. 4	Altern. 5	Altern. 6
Sed (T/yr)	89.9	865.4	955.2	905.7	77.9	827.8	91.4	877.3	858.5	854.6	892.3	862.2	862.2
Silt (T/yr)	87.9	575.4	663.3	622.6	83.4	539.2	86.6	601.1	586.1	584.1	611.9	588.2	588.2
Clay (kg/yr)	588.1	8333.5	8921.6	8067.5	525.0	7542.5	93.5	7715.8	7428.4	7391.8	7911.8	7473.4	7473.4
Surflow (m3/yr)	96230	458234	554465	554465	96230.4	458234.4	82.6	561941.6	561941.6	571725.0	561812.3	549324.0	549324.0
Interflow (m3/yr)	375125	1747013	2122138	2122138	375125.3	1747013.1	82.3	2112953.2	2112953.2	2102810.4	2134104.0	2125346.7	2125346.7

Summary Table - SubWS # 7040 Quail Cr.

Yield

Parameter	AC Out-Proj	AC In-Proj	AC Total	Baseline	Out-Proj	IN-Proj	% Baseline	Proposed	Altern. 2	Altern. 3	Altern. 4	Altern. 5	Altern. 6
Sed (T/yr)	314.9	147.2	462.1	408.9	256.7	152.2	37.2	407.6	405.9	405.9	392.5	405.9	406.4
Silt (T/yr)	199.0	86.7	285.7	239.7	149.3	90.4	37.7	238.8	237.5	237.5	227.8	237.5	238.1
Clay (kg/yr)	1996.7	1043.7	3040.4	2513.8	1408.6	1105.2	44.0	2511.1	2486.5	2486.5	2324.8	2486.4	2484.0
Surflow (m3/yr)	529345	166286	695632	695632	529345.4	166286.5	23.9	695420.6	695420.6	695420.6	695358.2	695420.6	695420.6
Interflow (m3/yr)	2212731	714372	2927104	2927104	2212731.1	714372.5	24.4	2929942.3	2927314.9	2927314.9	2928219.7	2929942.3	2929942.3

1.3

Summary Table - Overall four sub-basins

Parameter	AC Out-Proj	AC In-Proj	AC Total	Baseline	Out-Proj	IN-Proj	% Baseline	Proposed	Altern. 2	Altern. 3	Altern. 4	Altern. 5	Altern. 6
Sed (T/yr)	1354.4	1502.4	2856.8	2711.6	1211.2	1500.4	55.3	2639.2	2621.7	2620.0	2590.5	2625.5	2626.0
Silt (T/yr)	914.2	964.1	1878.3	1750.1	794.6	955.5	54.6	1695.8	1681.9	1685.1	1656.0	1683.6	1684.1
Clay (kg/yr)	8505.4	13294.6	21800.0	19860.0	6877.1	12982.9	65.4	18910.7	18647.7	18560.6	18215.7	18700.5	18698.1
Surflow (m3/yr)	2834760	1105358	3940117	3940117	2834760	1105357.7	28.1	3948117.0	3993020.1	4060802.7	3968793.8	3970796.1	3970796.1
Interflow (m3/yr)	9760377	4140115	13900492	13900492	9760377	4140115.1	29.8	13773555.1	13775898.0	13780120.1	13818412.5	13782487.5	13782487.5

Sed yield only (T/yr)

Watershed	AC Out-Proj	AC In-Proj	AC Total	Baseline	Out-Proj	IN-Proj	% Baseline	Proposed	Altern. 2	Altern. 3	Altern. 4	Altern. 5	Altern. 6
INT 7000	299.8	55.1	354.9	361.0	299.5	61.5	17.0	355.7	355.2	357.2	348.3	355.5	355.5
WS 7020	649.8	434.7	1084.5	1036.0	577.1	458.9	44.3	998.6	1002.2	1002.2	957.4	1001.9	1001.9
WS 7030	89.9	865.4	955.2	905.7	77.9	827.8	91.4	877.3	858.5	854.6	892.3	862.2	862.2
WS 7040	314.9	147.2	462.1	408.9	256.7	152.2	37.2	407.6	405.9	405.9	392.5	405.9	406.4
Total	***1354.4***	***1502.4***	***2856.8***	***2711.6***	***1211.2***	***1500.4***	***55.3***	***2639.2***	***2621.7***	***2620.0***	***2590.5***	***2625.5***	***2626.0***

Appendix D – TRPA Directives for Determination of the TOC

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MEMORANDUM

DATE: September 22, 2009

FROM: Scott Frazier, Soil Conservation & SEZ Program Manager

David Landry, Senior Planner

TO: David Tirman, Executive Vice President, JMA Ventures, LLC

SUBJECT: Threshold of Concern for Homewood Cumulative Watershed Effects Analysis

---

Integrated Environmental Restoration Services (IERS), representative of JMA Ventures and Homewood Mountain Resort, submitted the first draft of the cumulative watershed effects (CWE) analysis for the Homewood Mountain Resort Ski Area Master Plan Project (Homewood Project) on May 5, 2009. After much review and discussion, the thresholds of concern (TOCs) contained in that draft report were determined to be inadequate by Tahoe Regional Planning Agency (TRPA) staff. The objective of this memorandum is to provide definitive guidance to JMA Ventures, LLC and IERS regarding the development of a scientifically valid and appropriate Threshold of Concern (TOC) for use in the Homewood CWE analysis. Some discussion of TRPA CWE analysis guidelines and work performed by IERS to date are provided here for context.

As you are aware, the TRPA Ski Area Master Plan Guidelines (Guidelines) require CWE analyses to evaluate the potential for proposed ski area master plan projects to contribute to adverse, cumulative effects on watershed conditions and water quality. The Guidelines require the use of a CWE analysis methodology that is based largely on the Equivalent Roaded Area (ERA) Methodology developed by Region 5 of the U.S. Forest Service (Region 5 USFS). The details of this methodology are described in the Guidelines and the Region 5 USFS Soil and Water Conservation Handbook (FSH 2509.22), but in general, the procedure involves four major steps: (i) characterize the natural sensitivity of each affected watershed and develop ERA-based thresholds of concern (TOC) that define or set limits on the "disturbance capacity" of each affected watershed, (ii) develop disturbance coefficients for each type of existing, proposed, and reasonably foreseeable land use or treatment in the affected watersheds, (iii) apply these disturbance coefficients to calculate an ERA value for each treatment or land use area, and (iv) compare the sum total of ERA values for each affected watershed to the appropriate ERA-based TOC. If existing ERA is equal to or greater the watershed's TOC, then cumulative watershed effects are likely and additional land disturbance is typically not permitted. If existing ERA is less that a watershed's TOC, then additional land disturbance up to the TOC may be permitted. Central to this procedure is the use of a quantitative TOC in gauging the potential for the proposed action to contribute trigger cumulative adverse effects on watershed conditions and water quality.

The ERA-based methodology described above has not yet been officially adopted by TRPA. The Guidelines state that until such a time as a CWE analysis methodology is formally adopted by TRPA, the agency may allow other methods for CWE analyses. In accordance with this clause of the Guidelines, IERS elected to use an alternative approach for the Homewood CWE analysis wherein sediment loading to surface waters, as predicted or "modeled" by the Loading Simulation Program in C++ (LSPC), was used as and indicator of cumulative watershed effects rather than

ERA. Joanne Marchetta, TRPA Executive Director, officially approved this alternative approach on April 24, 2009

In their attempt to establish sediment loading-based TOCs for the three subject watersheds and one intervening area affected by the Homewood Project, IERS first looked at annualized suspended sediment data for the Homewood Creek and Madden Creek watersheds to gauge whether or not these watersheds are currently experiencing significant cumulative effects from existing development and disturbance. In general, the data showed no clearly degrading trend, which lead IERS to conclude that although the Homewood and Madden Creek watersheds are experiencing some adverse effects from existing development and disturbance, individual development and disturbance activities have not yet combined to trigger significant, irreversible cumulative effects on watershed conditions and water quality. Based solely on this limited amount of annualized water quality data, they deduced that the TOC for the Madden and Homewood Creek watersheds has not yet been exceeded, but that it was not possible to establish scientifically valid, sediment loading-based TOCs for these watersheds. Similar conclusions were drawn for the Quail Creek watershed and Intervening Area #7, although no suspended sediment data are available for these areas. Instead, they proposed using LSPC-predicted sediment loading rates for the baseline project alternative (i.e., current day conditions) as a kind of conservative, default TOC, and focused on using the LSPC model outputs as a tool for comparing the relative effects of the proposed action alternatives.

The use of modeled baseline sediment loading rates as the default TOCs for the subject watersheds and intervening area is convenient for the proposed project, as all of the action alternatives propose to improve watershed conditions and decrease sediment loading. However, this approach has no scientific basis, and suggests that any further disturbance or development that occurs after the proposed master plan project is implemented would trigger significant cumulative effects on watershed conditions and water quality. In addition, the annualized suspended sediment data presented by IERS do not necessarily reflect peak sediment loading rates, and by themselves, are not sufficient to establish that TOCs for the subject watersheds and intervening area have not yet been exceeded as the result of existing development and disturbance. For these reasons, TRPA staff have determined these methods are insufficient to establish valid and defensible TOCs for the subject watersheds and intervening area, and are requesting the following additional analysis be conducted and incorporated into the Draft Homewood CWE Report:

1. Compile existing data and information to characterize the overall condition of the subject watersheds and intervening area (e.g., channel conditions, mass wasting, accelerated hillslope erosion). These data and information on watershed conditions should be used in combination with available water quality data to substantiate the IERS interpretation that significant, adverse cumulative watershed effects have not already been triggered by existing development, disturbance, and land management activities.

2. Establish quantitative, sediment loading-based TOCs for each of the subject watersheds and intervening area by using LSPC to model sediment loading rates that would be expected if each subject watershed and intervening area contained the maximum allowable impervious land coverage established by Bailey (1974)[1].

[1] Bailey, R.G. 1974. Land-capability classification of the Lake Tahoe Basin, California-Nevada. U.S. Department of Agriculture Forest Service, in cooperation with the Tahoe Regional Planning Agency. South Lake Tahoe, CA.

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MEMORANDUM

DATE: November 24, 2009

FROM: David Landry, Senior Planner, Environmental Review Services, TRPA Project Manager

TO: David Tirman, Executive Vice President, JMA Ventures, LLC

SUBJECT: Threshold of Concern for Homewood Cumulative Watershed Effects Analysis Final Direction Memorandum

---

Background: As stated in the September 22, 2009 Memorandum from Scott Frazier TRPA Soil Conservation & SEZ Program Manager;

Integrated Environmental Restoration Services (IERS), representative of JMA Ventures and Homewood Mountain Resort, submitted the first draft of the cumulative watershed effects (CWE) analysis for the Homewood Mountain Resort Ski Area Master Plan Project (Homewood Project) on May 5, 2009. The thresholds of concern (TOCs) contained in that draft report was determined to be inadequate by Tahoe Regional Planning Agency (TRPA) staff. The objective of the September 22, 2009 memorandum was to provide definitive guidance to JMA Ventures, LLC and IERS regarding the development of a scientifically valid and appropriate Threshold of Concern (TOC) for use in the Homewood CWE analysis.

CWE Approach:
After lengthy discussions on the topic, it was decided by TRPA Scott Frazier TRPA Soil Conservation & SEZ Program Manager; Heather Gustafson, TRPA Senior Planner - Land Capability Program Manager, and David Landry, Senior Planner, Environmental Review Services, TRPA Homewood Project Manager, and acknowledged by Integrated Environmental Restoration Services (IERS), representative, JMA Ventures and Homewood Mountain Resort that the agreed upon approach to the CWE analysis will be based on the following data collection methodology;

1. Verified Bailey Scores
2. The results of Land Capability Challenges (located primarily in the base mountain areas)
3. Bailey overlay map (to be adjusted with the Slope Phase analysis) in which the applicant JMA Ventures would be responsible for compiling and/or conducting the actual work.

It was decided that the Bailey overlay for these areas could be "refined" by adjusting the land capability lines based on slope phase. It was envisioned by TRPA Staff that the applicant would obtain the necessary topographic information; (possible source, USGS and/or aerial photographic data) and then do a CAD analysis to breakdown the slope phases. The Bailey overlay could then be adjusted accordingly. The result would be a more accurate estimate of the land capability for the Homewood area. As a cautionary note, the results of this exercise may not be used for any TRPA verified LCV under any circumstances.

Appendix E – Alternative TOC Determinations and Discussions of Utility for Future Modeling Efforts

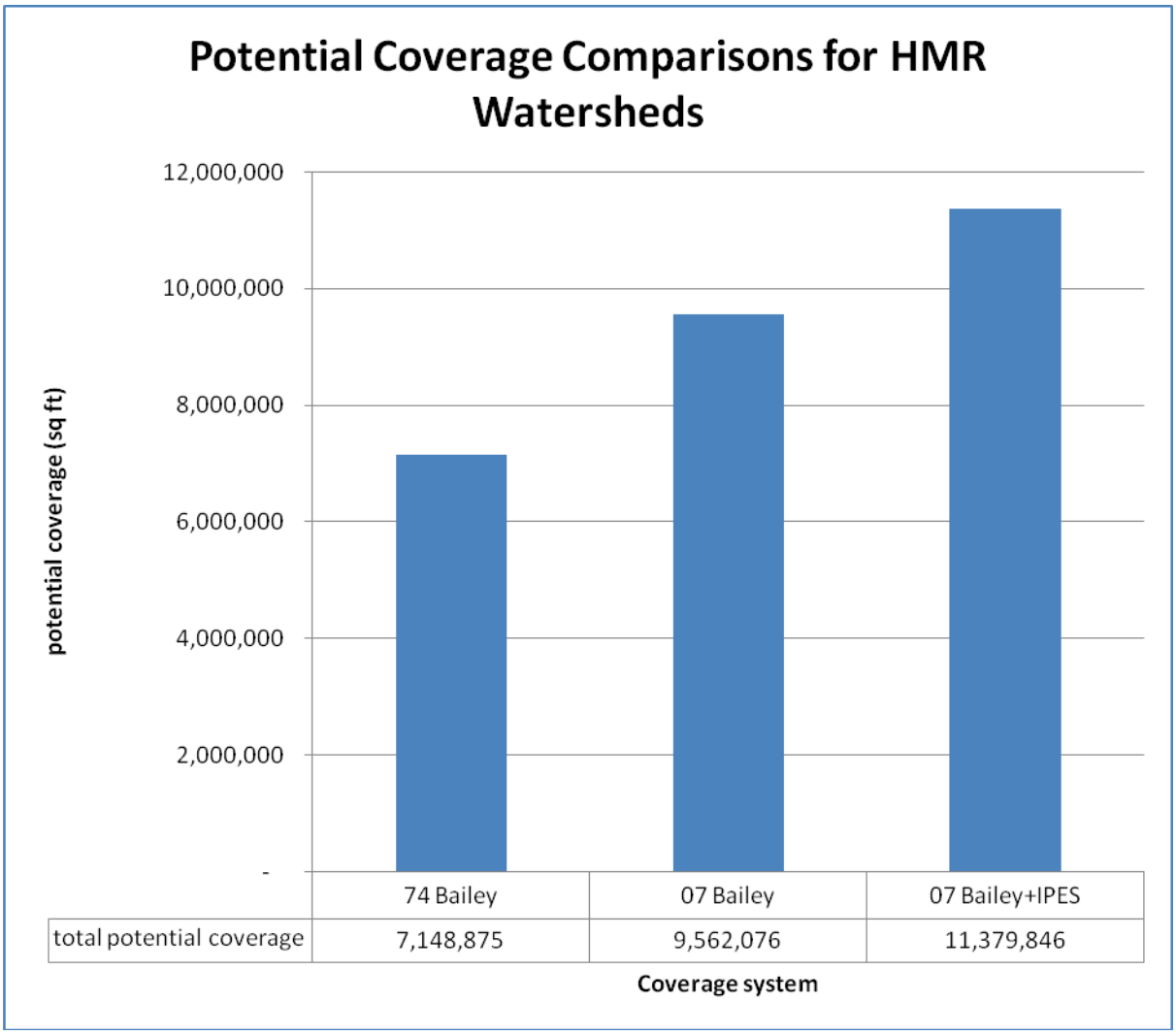

Figure E1: comparison of alternate coverage scenarios

Discussion

The graph and table presented above is the result of three coverage calculations developed as suggested by TRPA staff using different but arguably defensible alternate coverage calculations for the total watershed areas. This graphic is presented in order to show that the coverage system and associated assumptions used for this CWE study is one of three reasonable alternatives. As discussed in the body of this CWE report, we used the Bailey Land Classification System with associated 1974

Tahoe Soil Survey coverage coefficients. A more recent soil survey with a more accurate classification of soil types was used to determine what the total allowable coverage would be once that more recent information is used to update the Bailey coverage coefficients. One can see that this revision would result in approximately 1.4 million square feet of coverage in the 4 watersheds. Further, if the Homewood property were subdivided, using a combination of the updated Bailey Classification System and the more modern IPES system an additional 4.2 million feet of total watershed coverage would be possible. These data are presented in order to suggest that the current TOC would be significantly altered and increased under either of these scenarios. And while this CWE study was directed to use the currently accepted Bailey coefficients, future CWE studies on the same area would suggest that the TOC could be nearly 50% higher.

References for coverage values:

- Total existing verified land coverage **inside of project area**: TRPA land coverage values provided by Gary Midkiff from stamped TRPA table (Table 2, Boundary Line Adjustment, August 15th, 2008).
- Total existing land coverage area **outside of project area**: coverage calculations provided by Sid Davis from GIS data tables from TRPA. The project area was 'clipped' per watershed and land coverage for the remaining area was calculated See figure B1, in Appendix B.
- '74 Bailey allowable base land coverage: based on the Bailey LC polygons supplied by TRPA (adopted by Code), which were superimposed over the soil maps by Sid Davis to ascertain the pertinent soil map units (per Code language) and then appropriately adjusted for slope group of the appropriate SMU (1974 Soil Survey) as based on the USGS topographic maps (1:24000) per direction from TRPA staff. This includes allowable base land coverage inside the project area plus the additional land coverage from the land capability challenge recently approved by TRPA.
- '07 Bailey allowable base land coverage: provided by Sid Davis using the new soil survey and converting soil map units into Bailey Land Use Categories for allowable base land coverage based on those new map units.
- IPES inside project area: based on the August 15th, 2008 Boundary Line Adjustment Table 2 document from Gary Midkiff, which includes both allowable base land coverage and IPES scores that would be used if the resort is closed and the project area converted to private residences.

Preliminary Drainage Report For

Homewood Mountain Resort

Placer County, California

Prepared for:
JMA Ventures LLC
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Engineering and Surveying Department

December 2010

Preliminary Drainage Report for:

Homewood Mountain Resort
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December 20, 2010

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1.0 INTRODUCTION

This Preliminary Drainage report for the Homewood Mountain Resort in Homewood, Placer County, California was prepared by Nichols Consulting Engineers (NCE) at the request of Placer County Community Development/Resources Agency to evaluate existing and proposed stormwater runoff flows within the developed project area. The criteria set forth in the Placer County Stormwater Management Manual (SWMM) constitute the basis for this drainage report.

1.1 Project Description

1.1.1 Existing Site Context/Conditions:

Existing on-site Land Use(s): Recreation with accessory uses, and seasonal uses. The property is exclusively used for a ski operation along with its accessory food & beverage and rental/retail uses. Seasonal uses include wedding receptions, the Lake Tahoe Music Festival's "Summer Concert Series", and other community events.

Adjacent/Surrounding Land Uses: Predominantly Residential, followed by Commercial/Tourist. Both of these land use designations typically flank the SR89 corridor.

Current Site Details: Total existing coverage on the entire property is +/- 1.8 million sq ft, whereas the base allowable coverage is just over 4 million sq ft. There are no existing Tourist Accommodation Units (TAUs), Residential Units (RUs), or any Commercial Floor Area (CFA) on the property. Parking lots are predominantly paved, with the exception of the Gravel "overflow" Lot at the North base. It is important to note that both the existing North Base and South Base areas are dominated by surface parking.

Natural Features: Include, but aren't limited to Watersheds (Homewood Mountain contains all or a portion of 3 watersheds); Alpine Lakes – such as Quail Lake and more than half of Lake Louise; creeks and associated tributaries – such as Madden, Quail, and Ellis; Mixed-Conifer type forests, all of which are on mountainous terrain ranging from a base elevation of +/-6230 ft to a top elevation of roughly 7800 feet.

1.1.2 Proposed Site Context/Conditions:

North Base: Approximately 56 Residential Condominiums distributed among 4 smaller residential buildings, up to 20 of which are planned to be fractional ownership. The main hotel lodge includes approximately 30 Penthouse Condominium Units (Upper Floors of Hotel), up to 75 Traditional Hotel Rooms, and approximately 40 two-bedroom for sale Condo-Hotel Units. The North Base also includes a request for up to 25,000 sq ft of Commercial Floor Area and up to 13 workforce housing apartments attached to the east and north side of the day skier parking structure.

South Base: Up to 99 Residential Condominiums in a series of 2 full story plus roof-top unit residential buildings are planned for the South Base area. The existing full vehicle shop/maintenance facility at the South Base will be eliminated with servicing of rubber-tire vehicles moved to an off-site location. Snow based equipment maintenance is planned at a new mid-mountain facility. The proposed plan relocates all existing day-skier access to the North Base area helping to further reinforce the sense of a neighborhood residential area. The existing culvert for the Homewood Creek is planned to be removed to allow the stream to be day-lighted and bridged.

Between Base Areas (above Sacramento Avenue): 16 townhomes on the Planned Development lot accessed via Tahoe Ski Bowl Way from the South Base.

Mid-Mountain: The mid-mountain will include a new 15,000+/- sq ft day lodge with a gondola terminal, food & beverage facility, outdoor dining, small sundry outlet, and an outdoor swimming facility for use during the summer months. The new mid-mountain lodge replaces the white tent structure and the existing concrete foundation located near the mid-mountain. The snow based vehicle shop/maintenance facility is proposed to be rebuilt in the mid-mountain area behind the proposed mid-mountain lodge.

Parking at Base Areas: Parking spaces provided at North Base include approximately 300 day skier spaces in a 3 level parking structure, roughly 60 limited surface parking spaces at the retail and day skier drop-off area, and approximately 450 underground parking spaces directly below the building footprint of the hotel/lodge structure. The South Base will include approximately 150 parking spaces directly below the residential building footprints. This takes advantage of the excavation required for the building foundations and allows for more pervious landscape surface around the buildings (in lieu of surface parking).

1.2 Compliance with Regulations and Adopted Plans

This preliminary drainage report was prepared to conform with the Placer County Stormwater Management Manual (SWMM) and the requirements set forth by the Tahoe Regional Planning Agency (TRPA). The proposed drainage facilities and improvements for this project will be designed to meet compliance with the local, state, and regional regulations and adopted plans. The preliminary drainage report shows that proposed conditions mitigated cumulative stormwater flows will be less than existing conditions watershed flows for the 7 analyzed sub-watershed areas.

Construction related detention basins for on-site runoff will be designed as part of the construction SWPPP document.

2.0 Hydrologic and Hydraulic Design Criteria

2.1 Placer County Design Criteria

The storm drainage collection, conveyance and treatment facilities for the proposed project will be designed according to the Placer County Storm Water Management Manual (SWMM), dated September 1, 1990. All existing and proposed watersheds were analyzed using the Small Watershed Peak Flow Worksheet as shown in the included SWMM tables. According to the SWMM, the 10-year event is the minimum design storm for sizing all drainage facilities and all new development shall be planned and designed so that no damages occur to structures or improvements and to prevent loss of life during the 100-year event.

2.2 Precipitation and Snowmelt

Average annual precipitation ranges from 40 to 45 inches per year at the project site elevation. The majority of this precipitation occurs between November and May in the form of snow, which is included in the annual precipitation quantity as equivalent water content.

Though snow predominates the precipitation regime, treatment facilities will be designed using rainfall models.

2.3 Infiltration

Infiltration rates are dependant on soil type and vegetation. For the purpose of this drainage report, infiltration rates between 0.15 to 0.51 inches per hour were selected for each watershed by calculating the percentage of cover type for each soil group and averaging the infiltration rate accordingly. Cover types vary between good cover of woodland consisting of coniferous and broadleaf trees with a canopy density of at least 50% to paved streets and roads with open ditches. Soils of the soil group A have “low runoff potential with high infiltration

rates even when thoroughly wetted and consisting chiefly of deep, well to excessively drained sands and gravel." Soils of the soil group B have "moderate infiltration rates when thoroughly wetted and consist chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission" (SWMM, 1990).

3.0 RUNOFF PEAK FLOW

3.1 Runoff Peak Flow Analysis

The runoff flow analysis was conducted according to the computation of peak flows from small watershed outlined in the SWMM. This method allows an evaluation of the peak flow from a small watershed without extensive computation. It may be used to estimate the peak runoff from basins of up to 200 acres, in areas in which no significant ponding occurs.

The method is based on a relationship between the characteristic watershed response time and peak flow per unit area from precipitation patterns typical for the region. The peak flow is a function of the area, unit peak flow, infiltration rate, and impervious surface area and was calculated using the spreadsheet calculations included in this report.

The project area is located at elevations between 6,230 feet and 7,600 feet above sea level (ASL). Snow covered areas are assumed impervious since the ground beneath is likely to be saturated and could also be frozen. The portion of the watershed covered with snow depends on elevation and location relative to the Sierra Nevada crest according to the SWMM. Based on Table 5-4 of the SWMM, 90 percent impervious was selected for the winter peak flow calculations. The summer peak flows were calculated using the actual impervious coverage areas in each watershed for the existing and proposed conditions.

The peak flows for the post-project conditions were developed based on the requirements of the SWWM manual.

3.2 Peak Flow Analysis

The peak flow analysis was conducted by determining the runoff from the proposed layout of the development and drainage facilities. The following table summarizes the calculated peak flows for each watershed area for the existing and proposed development conditions during the summertime.

Summer - Peak Flow Rates Existing Conditions (10-, and 100-year)

WSA	Runoff Area (acres)	10-Year (cfs)	100-Year (cfs)
WSA 1	28.3	20.35	41.26
WSA 2	42.4	27.79	58.31
WSA 3	9.6	4.80	10.48
WSA 4	67.4	21.81	65.61
WSA 5	5.4	4.29	8.61
WSA 6	2.2	2.65	5.10
WSA 7	145.7	97.57	199.55
Totals:	301.0	179.26	388.93

Summer - Peak Flow Rates Proposed Conditions (10-, and 100-year)

WSA	Runoff Area (acres)	10-Year (cfs)	100-Year (cfs)
WSA 1	28.3	18.81	36.96
WSA 2	42.4	23.90	49.02
WSA 3	9.6	5.29	10.77
WSA 4	67.4	21.25	65.34
WSA 5	5.4	4.32	7.47
WSA 6	2.2	2.66	5.00
WSA 7	145.7	97.93	199.91
Totals:	301.0	174.16	374.47

Winter - Peak Flow Rates Existing Conditions (10-, and 100-year)

WSA	Runoff Area (acres)	10-Year (cfs)	100-Year (cfs)
WSA 1	28.3	25.12	46.03
WSA 2	42.4	37.38	67.90
WSA 3	9.6	8.36	14.05
WSA 4	67.4	56.45	100.25
WSA 5	5.4	5.79	10.13

WSA 6	2.2	3.28	5.73
WSA 7	145.7	140.82	242.81
Totals:	301.0	277.21	486.89

Winter - Peak Flow Rates Proposed Conditions (10-, and 100-year)

WSA	Runoff Area (acres)	10-Year (cfs)	100-Year (cfs)
WSA 1	28.3	21.87	40.02
WSA 2	42.4	32.65	57.77
WSA 3	9.6	7.89	13.37
WSA 4	67.4	54.34	98.43
WSA 5	5.4	5.2	8.34
WSA 6	2.2	3.18	5.52
WSA 7	145.7	140.86	242.84
Totals:	301.0	265.98	466.30

3.3 Infiltration Volume Analysis

Table 1 lists the required runoff volume to be stored or infiltrated on site. The proposed Low Impact Development (LID) and infiltration components are designed to store and infiltrate (at a minimum) the runoff generated by the 20-year, 1-hour event calculated at 1 inch over the impervious developed surface area.

Table 1: Impervious Surface Areas and Runoff Volumes

Underground Infiltration Galleries						
	North-1	North-2	North-3	North-4	South-1	South-2
Gallery Type	SW	SW	SW	SW	SW	SW
Total Impervious Area (sf)	24,635	19,890	145,378	174,587	89,307	44,527
Required Infiltration Vol. (cf)	2,053	1,658	12,115	14,549	7,442	3,711
Proposed Gallery volume (cf)	2,681	2,167	15,904	23,441	9,650	8,040
Finish Grade (ft)	6238	6237.5	6238	6240.5	6269	6272
Bottom Elev. of Gallery (ft)	6234	6233	6233.5	6236	6264.5	6267.5
SHGW (ft)	6232	6231	6231.5	6234	6256.5	6263
GW Clearance (ft)*	2	2	2	2	8	4.5
Adjacent GW Monitoring Well Data (well#, SHGW)	MW3N, 6230.7	GP2, 6230.7	GP5, 6230.76	GP8, 6233.58	MW3S, 6256.5	GP4, <66262.93
Infil. Gallery Dimensions (ft)	48x36x3	63x22x3	120x86x3	145x105x2	90x80x2.5	100x52x3

Legend:
SW= stormwater
GW= groundwater
MW= monitoring well
GP= monitoring well

Note*
Seasonal high groundwater levels are projected to rise 0.7 feet under stormwater galleries & 0.8 feet under groundwater reinjection galleries due to infiltration.

3.4 Treatment & Infiltration Area Descriptions

In order to meet TRPA requirements for treatment of storm water runoff from impervious surfaces, a series of bio swales, storm drain collection and sub-surface infiltration devices are proposed to be constructed with the development.

The intent of the proposed design is to collect all runoff from impervious areas such as the building roofs, walkways, roadways, and parking areas and convey it to infiltration trenches sized to meet TRPA requirements.

4.0 CONCLUSIONS

Design for the proposed Homewood Mountain Resort project incorporates current requirements by Placer County for storm water collection and conveyance as well as requirements by the TRPA. The SWMM post development calculations show a cumulative reduction in peak flow from existing to proposed conditions for the 10 and 100 year storm events. Therefore the proposed storm drain facilities are designed to capture, convey and infiltrate (at a minimum) runoff generated by the 20-year, 1-hour event at 1 inch over the impervious surface area per TRPA requirements.

The proposed storm drain collection, conveyance and infiltration facilities will comply with the Placer County Storm Water Management Manual (SWMM), dated September 1, 1990.

5.0 REFERENCES

Placer County, Flood Control and Water Conservation District; *Stormwater Management Manual (SWMM)*; September 1990.

United States Forest Service; *Soil Survey Tahoe National Forest Area, California*, January 2002.

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HOMEWOOD MOUNTAIN RESORT

December 20, 2010

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QUALITY CONTROL REVIEWER

Paul Pettersen
Principal

Appendix A

SWMM Summary Table

SWMM Summary Sheet
Summer Impervious Calculations
Homewood Mountain Resort

Lahontan 20-Yr, 1-Hr Storm Event Calculations

Total Watershed Area (sf)	Impervious Area (sf)	Infiltration Requirement (in)	Required Volume (cf)	Proposed Infiltration Volume (cf)
13,111,354	651,876	0.9	54,324	61,883

Placer County SWMM Model Calculations

	10-YEAR PEAK FLOW			100-YEAR PEAK FLOW		
	Existing Conditions	Proposed Conditions	Exist/Proposed Difference	Existing Conditions	Proposed Conditions	Exist/Proposed Difference*
WATERSHED AREAS	[cfs]	[cfs]	[cfs]	[cfs]	[cfs]	[cfs]
WS-1	20.35	18.81	-1.54	41.26	36.96	-4.30
WS-2	27.79	23.90	-3.89	58.31	49.02	-9.29
WS-3	4.80	5.29	0.50	10.48	10.77	0.29
WS-4	21.81	21.25	-0.57	65.61	65.34	-0.28
WS-5	4.29	4.32	0.03	8.61	7.47	-1.15
WS-6	2.65	2.66	0.01	5.10	5.00	-0.10
WS-7	97.57	97.93	0.37	199.55	199.91	0.37
TOTAL	**179.26**	**174.16**	**-5.10**	**388.93**	**374.47**	**-14.46**

* Negative numbers shown in the tables represent a reduction in flow from existing to proposed conditions.

SWMM Summary Sheet
Winter Impervious Calculations
Homewood Mountain Resort

Lahontan 20-Yr, 1-Hr Storm Event Calculations

Total Watershed Area (sf)	Impervious Area (sf)	Infiltration Requirement (in)	Required Volume (cf)	Proposed Infiltration Volume (cf)
13,111,354	651,876	0.9	54,324	61,883

Placer County SWMM Model Calculations

	10-YEAR PEAK FLOW			100-YEAR PEAK FLOW		
	Existing Conditions	Proposed Conditions	Exist/Proposed Difference	Existing Conditions	Proposed Conditions	Exist/Proposed Difference*
WATERSHED AREAS	[cfs]	[cfs]	[cfs]	[cfs]	[cfs]	[cfs]
WS-1	25.12	21.87	-3.25	46.03	40.02	-6.01
WS-2	37.38	32.65	-4.73	67.90	57.77	-10.13
WS-3	8.36	7.89	-0.47	14.05	13.37	-0.68
WS-4	56.45	54.34	-2.12	100.25	98.43	-1.82
WS-5	5.79	5.20	-0.59	10.13	8.34	-1.78
WS-6	3.28	3.18	-0.10	5.73	5.52	-0.21
WS-7	140.82	140.86	0.03	242.81	242.84	0.03
TOTAL	**277.21**	**265.98**	**-11.23**	**486.89**	**466.30**	**-20.59**

* Negative numbers shown in the tables represent a reduction in flow from existing to proposed conditions.

Appendix B

SWMM Tables

Summer

Nichols Consulting Engineers, Chtd.
1885 S. Arlington Ave., Suite 111
Reno, Nevada 89509
(775) 329-4955

Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Existing Conditions WS-1

Area (acres)	28.3	Elevation (ft)	6702	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	516	0.23	0.4			13.46
Collector 1	1942	0.38	0.1	20.7	15	3.36
Collector 2	369	0.18	0.05	25.3	15	0.48
Collector 3	221	0.02	0.05	28.3	1	0.37
					Total Response Time (minutes)	17.67
					Unit Peak Flow (cfs/acre)	0.91
					Infiltration Rate (in/hr)	0.17
					Infiltration Factor (cfs/acre)	0.21
					Percent Impervious	8.5

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **20.35**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Existing Conditions WS-2

Area (acres)	42.4	Elevation (ft)	6645	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.27	0.4			12.63
Collector 1	1853	0.33	0.1	28.2	15	3.12
Collector 2	824	0.07	0.1	37.3	3	1.56
Collector 3	305	0.01	0.05	42.4	1	0.56
Collector 4						
					Total Response Time (minutes)	17.88
					Unit Peak Flow (cfs/acre)	0.91
					Infiltration Rate (in/hr)	0.23
					Infiltration Factor (cfs/acre)	0.3
					Percent Impervious	10
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**27.79**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010					
Engineer	Jack Norberg					
Project	Homewood Mountain Resort - Summer Calculations					
Watershed	Existing Conditions WS-3					
Area (acres)	9.6	Elevation (ft)	6593	Return Period (years)	**10**	
	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.36
Collector 1	1715	0.30	0.1	8.6	15	4.05
Collector 2	280	0.12	0.02	9.6	3	0.19
Collector 3						
					Total Response Time (minutes)	18.60
					Unit Peak Flow (cfs/acre)	0.91
					Infiltration Rate (in/hr)	0.35
					Infiltration Factor (cfs/acre)	0.43
					Percent Impervious	3.8
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**4.80**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Existing Conditions WS-4

Area (acres)	67.4	Elevation (ft)	6652	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	2448	0.26	0.1	57.5	15	3.81
Collector 2	1456	0.04	0.02	67.4	3	0.92
Collector 3						
					Total Response Time (minutes)	18.99
					Unit Peak Flow (cfs/acre)	0.90
					Infiltration Rate (in/hr)	0.51
					Infiltration Factor (cfs/acre)	0.62
					Percent Impervious	7.3
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**21.81**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Existing Conditions WS-5

Area (acres)	5.4	Elevation (ft)	7408	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.19	0.4			14.04
Collector 1	616	0.23	0.1	5.4	15	1.81
Collector 2						
Collector 3						
					Total Response Time (minutes)	15.85
					Unit Peak Flow (cfs/acre)	1.10
					Infiltration Rate (in/hr)	0.26
					Infiltration Factor (cfs/acre)	0.31
					Percent Impervious	1.0

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **4.29**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Existing Conditions WS-6

Area (acres)	2.2	Elevation (ft)	7565	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	100	0.30	0.4			4.66
Collector 1	401	0.07	0.1	2.2	15	2.32
Collector 2						
Collector 3						
					Total Response Time (minutes)	6.98
					Unit Peak Flow (cfs/acre)	1.50
					Infiltration Rate (in/hr)	0.26
					Infiltration Factor (cfs/acre)	0.31
					Percent Impervious	0.0

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **2.65**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Existing Conditions WS-7

Area (acres)	145.7	Elevation (ft)	7465	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	4308	0.27	0.1	145.7	15	5.24
Collector 2						
Collector 3						
					Total Response Time (minutes)	19.50
					Unit Peak Flow (cfs/acre)	1.00
					Infiltration Rate (in/hr)	0.28
					Infiltration Factor (cfs/acre)	0.33
					Percent Impervious	1.1

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **97.57**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Proposed Conditions WS-1

Area (acres)	28.3	Elevation (ft)	6702	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	516	0.23	0.4			13.46
Collector 1	1942	0.38	0.1	20.7	15	3.36
Collector 2	1051	0.06	0.025	24.5	1	0.74
Collector 3						
					Total Response Time (minutes)	17.56
					Unit Peak Flow (cfs/acre)	0.91
					Infiltration Rate (in/hr)	0.15
					Infiltration Factor (cfs/acre)	0.18
					Percent Impervious	22.3

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **18.81**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	ProposedConditions WS-2

Area (acres)	42.4	Elevation (ft)	6645	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.27	0.4			12.63
Collector 1	1853	0.33	0.1	28.2	15	3.12
Collector 2	1344	0.05	0.04	33.7	15	2.30
Collector 3	707	0.01	0.025	38.1	1	1.09
					Total Response Time (minutes)	19.15
					Unit Peak Flow (cfs/acre)	0.89
					Infiltration Rate (in/hr)	0.26
					Infiltration Factor (cfs/acre)	0.32
					Percent Impervious	18.2
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**23.90**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Proposed Conditions WS-3

Area (acres)	9.6	Elevation (ft)	6593	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.36
Collector 1	1715	0.30	0.1	8.6	15	4.05
Collector 2	527	0.06	0.025	9.1	1	0.47
Collector 3						
					Total Response Time (minutes)	18.88
					Unit Peak Flow (cfs/acre)	0.90
					Infiltration Rate (in/hr)	0.30
					Infiltration Factor (cfs/acre)	0.36
					Percent Impervious	11.5

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **5.29**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Proposed Conditions WS-4

Area (acres)	67.4	Elevation (ft)	6652	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	2448	0.26	0.1	57.5	15	3.81
Collector 2	1456	0.04	0.02	64.8	3	0.93
Collector 3						
					Total Response Time (minutes)	19.00
					Unit Peak Flow (cfs/acre)	0.90
					Infiltration Rate (in/hr)	0.51
					Infiltration Factor (cfs/acre)	0.62
					Percent Impervious	7.6
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**21.25**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Proposed Conditions WS-5

Area (acres)	5.4	Elevation (ft)	7408	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.19	0.4			14.04
Collector 1	631	0.22	0.1	4.8	3	1.32
Collector 2						
Collector 3						
					Total Response Time (minutes)	15.36
					Unit Peak Flow (cfs/acre)	1.10
					Infiltration Rate (in/hr)	0.22
					Infiltration Factor (cfs/acre)	0.26
					Percent Impervious	20.4
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**4.32**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Proposed Conditions WS-6

Area (acres)	2.2	Elevation (ft)	7565	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	180	0.32	0.4			6.52
Collector 1	376	0.30	0.22	2.2	3	1.54
Collector 2						
Collector 3						
					Total Response Time (minutes)	8.06
					Unit Peak Flow (cfs/acre)	1.45
					Infiltration Rate (in/hr)	0.23
					Infiltration Factor (cfs/acre)	0.28
					Percent Impervious	5.9

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **2.66**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Proposed Conditions WS-7

Area (acres)	145.7	Elevation (ft)	7465	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	4308	0.27	0.1	145.7	15	5.24
Collector 2						
Collector 3						
					Total Response Time (minutes)	19.50
					Unit Peak Flow (cfs/acre)	1.00
					Infiltration Rate (in/hr)	0.28
					Infiltration Factor (cfs/acre)	0.33
					Percent Impervious	1.2

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **97.93**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Existing Conditions WS-1

Area (acres)	28.3	Elevation (ft)	6702	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	516	0.23	0.4			13.46
Collector 1	1942	0.38	0.1	20.7	15	3.36
Collector 2	369	0.18	0.05	25.3	15	0.48
Collector 3	221	0.02	0.05	28.3	1	0.37
					Total Response Time (minutes)	17.67
					Unit Peak Flow (cfs/acre)	1.65
					Infiltration Rate (in/hr)	0.17
					Infiltration Factor (cfs/acre)	0.21
					Percent Impervious	8.5

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **41.26**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Existing Conditions WS-2

Area (acres)	42.4	Elevation (ft)	6645	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.27	0.4			12.63
Collector 1	1853	0.33	0.1	28.2	15	3.12
Collector 2	824	0.07	0.1	37.3	3	1.56
Collector 3	305	0.01	0.05	42.4	1	0.56
Collector 4						
					Total Response Time (minutes)	17.88
					Unit Peak Flow (cfs/acre)	1.63
					Infiltration Rate (in/hr)	0.23
					Infiltration Factor (cfs/acre)	0.3
					Percent Impervious	10
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**58.31**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010					
Engineer	Jack Norberg					
Project	Homewood Mountain Resort - Summer Calculations					
Watershed	Existing Conditions WS-3					
Area (acres)	9.6	Elevation (ft)	6593	Return Period (years)	**100**	
	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.36
Collector 1	1715	0.30	0.1	8.6	15	4.05
Collector 2	280	0.12	0.02	9.6	3	0.19
Collector 3						
					Total Response Time (minutes)	18.60
					Unit Peak Flow (cfs/acre)	1.50
					Infiltration Rate (in/hr)	0.35
					Infiltration Factor (cfs/acre)	0.43
					Percent Impervious	3.8
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**10.48**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Existing Conditions WS-4

Area (acres)	67.4	Elevation (ft)	6652	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	2448	0.26	0.1	57.5	15	3.81
Collector 2	1456	0.04	0.02	67.4	3	0.92
Collector 3						
					Total Response Time (minutes)	18.99
					Unit Peak Flow (cfs/acre)	1.55
					Infiltration Rate (in/hr)	0.51
					Infiltration Factor (cfs/acre)	0.62
					Percent Impervious	7.3

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **65.61**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Existing Conditions WS-5

Area (acres)	5.4	Elevation (ft)	7408	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.19	0.4			14.04
Collector 1	616	0.23	0.1	5.4	15	1.81
Collector 2						
Collector 3						
					Total Response Time (minutes)	15.85
					Unit Peak Flow (cfs/acre)	1.90
					Infiltration Rate (in/hr)	0.26
					Infiltration Factor (cfs/acre)	0.31
					Percent Impervious	0.5

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **8.61**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Existing Conditions WS-6

Area (acres)	2.2	Elevation (ft)	7565	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	100	0.30	0.4			4.66
Collector 1	401	0.07	0.1	2.2	15	2.32
Collector 2						
Collector 3						
					Total Response Time (minutes)	6.98
					Unit Peak Flow (cfs/acre)	2.60
					Infiltration Rate (in/hr)	0.26
					Infiltration Factor (cfs/acre)	0.31
					Percent Impervious	0.0

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **5.10**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Existing Conditions WS-7

Area (acres)	145.7	Elevation (ft)	7465	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	4308	0.27	0.1	145.7	15	5.24
Collector 2						
Collector 3						
					Total Response Time (minutes)	19.50
					Unit Peak Flow (cfs/acre)	1.70
					Infiltration Rate (in/hr)	0.28
					Infiltration Factor (cfs/acre)	0.33
					Percent Impervious	1.1

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **199.55**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010					
Engineer	Jack Norberg					
Project	Homewood Mountain Resort - Summer Calculations					
Watershed	Proposed Conditions WS-1					
Area (acres)	28.3	Elevation (ft)	6702	Return Period (years)	**100**	
	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	516	0.23	0.4			13.46
Collector 1	1942	0.38	0.1	20.7	15	3.36
Collector 2	1051	0.06	0.025	24.5	1	0.74
Collector 3						
					Total Response Time (minutes)	17.56
					Unit Peak Flow (cfs/acre)	1.65
					Infiltration Rate (in/hr)	0.15
					Infiltration Factor (cfs/acre)	0.18
					Percent Impervious	22.3
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**36.96**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	ProposedConditions WS-2

Area (acres)	42.4	Elevation (ft)	6645	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.27	0.4			12.63
Collector 1	1853	0.33	0.1	28.2	15	3.12
Collector 2	1344	0.05	0.04	33.7	15	2.30
Collector 3	707	0.01	0.025	38.1	1	1.09
					Total Response Time (minutes)	19.15
					Unit Peak Flow (cfs/acre)	1.55
					Infiltration Rate (in/hr)	0.26
					Infiltration Factor (cfs/acre)	0.32
					Percent Impervious	18.2
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**49.02**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010					
Engineer	Jack Norberg					
Project	Homewood Mountain Resort - Summer Calculations					
Watershed	Proposed Conditions WS-3					
Area (acres)	9.6	Elevation (ft)	6593	Return Period (years)	**100**	
	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.36
Collector 1	1715	0.30	0.1	8.6	15	4.05
Collector 2	527	0.06	0.025	9.1	1	0.47
Collector 3						
					Total Response Time (minutes)	18.88
					Unit Peak Flow (cfs/acre)	1.50
					Infiltration Rate (in/hr)	0.30
					Infiltration Factor (cfs/acre)	0.36
					Percent Impervious	11.5
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**10.77**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Proposed Conditions WS-4

Area (acres)	67.4	Elevation (ft)	6652	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	2448	0.26	0.1	57.5	15	3.81
Collector 2	1456	0.04	0.02	64.8	3	0.93
Collector 3						
					Total Response Time (minutes)	19.00
					Unit Peak Flow (cfs/acre)	1.58
					Infiltration Rate (in/hr)	0.51
					Infiltration Factor (cfs/acre)	0.62
					Percent Impervious	7.6

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor	**65.34**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Proposed Conditions WS-5

Area (acres)	5.4	Elevation (ft)	7408	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.19	0.4			14.04
Collector 1	631	0.22	0.1	4.8	3	1.32
Collector 2						
Collector 3						
					Total Response Time (minutes)	15.36
					Unit Peak Flow (cfs/acre)	1.75
					Infiltration Rate (in/hr)	0.22
					Infiltration Factor (cfs/acre)	0.26
					Percent Impervious	20.4

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor	**7.47**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010					
Engineer	Jack Norberg					
Project	Homewood Mountain Resort - Summer Calculations					
Watershed	Proposed Conditions WS-6					
Area (acres)	2.2	Elevation (ft)	7565	Return Period (years)	**100**	
	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	180	0.32	0.4			6.52
Collector 1	376	0.30	0.22	2.2	3	1.54
Collector 2						
Collector 3						
					Total Response Time (minutes)	8.06
					Unit Peak Flow (cfs/acre)	2.50
					Infiltration Rate (in/hr)	0.23
					Infiltration Factor (cfs/acre)	0.28
					Percent Impervious	5.9
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**5.00**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Summer Calculations
Watershed	Proposed Conditions WS-7

Area (acres)	145.7	Elevation (ft)	7465	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	4308	0.27	0.1	145.7	15	5.24
Collector 2						
Collector 3						
					Total Response Time (minutes)	19.50
					Unit Peak Flow (cfs/acre)	1.70
					Infiltration Rate (in/hr)	0.28
					Infiltration Factor (cfs/acre)	0.33
					Percent Impervious	1.2

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **199.91**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

Winter

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Existing Conditions WS-1

Area (acres)	28.3	Elevation (ft)	6702	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	516	0.23	0.4			13.46
Collector 1	1942	0.38	0.1	20.7	15	3.36
Collector 2	369	0.18	0.05	25.3	15	0.48
Collector 3	221	0.02	0.05	28.3	1	0.37
					Total Response Time (minutes)	17.67
					Unit Peak Flow (cfs/acre)	0.91
					Infiltration Rate (in/hr)	0.17
					Infiltration Factor (cfs/acre)	0.21
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**25.12**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Existing Conditions WS-2

Area (acres)	42.4	Elevation (ft)	6645	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.27	0.4			12.63
Collector 1	1853	0.33	0.1	28.2	15	3.12
Collector 2	824	0.07	0.1	37.3	3	1.56
Collector 3	305	0.01	0.05	42.4	1	0.56
Collector 4						
					Total Response Time (minutes)	17.88
					Unit Peak Flow (cfs/acre)	0.91
					Infiltration Rate (in/hr)	0.23
					Infiltration Factor (cfs/acre)	0
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**37.38**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010					
Engineer	Jack Norberg					
Project	Homewood Mountain Resort - Winter Calculations					
Watershed	Existing Conditions WS-3					
Area (acres)	9.6	Elevation (ft)	6593	Return Period (years)	**10**	
	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.36
Collector 1	1715	0.30	0.1	8.6	15	4.05
Collector 2	280	0.12	0.02	9.6	3	0.19
Collector 3						
					Total Response Time (minutes)	18.60
					Unit Peak Flow (cfs/acre)	0.91
					Infiltration Rate (in/hr)	0.35
					Infiltration Factor (cfs/acre)	0.43
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**8.36**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Existing Conditions WS-4

Area (acres)	67.4	Elevation (ft)	6652	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	2448	0.26	0.1	57.5	15	3.81
Collector 2	1456	0.04	0.02	67.4	3	0.92
Collector 3						
					Total Response Time (minutes)	18.99
					Unit Peak Flow (cfs/acre)	0.90
					Infiltration Rate (in/hr)	0.51
					Infiltration Factor (cfs/acre)	0.62
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**56.45**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Existing Conditions WS-5

Area (acres)	5.4	Elevation (ft)	7408	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.19	0.4			14.04
Collector 1	616	0.23	0.1	5.4	15	1.81
Collector 2						
Collector 3						
					Total Response Time (minutes)	15.85
					Unit Peak Flow (cfs/acre)	1.10
					Infiltration Rate (in/hr)	0.26
					Infiltration Factor (cfs/acre)	0.31
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**5.79**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

90	12/20/2010					
Engineer	Jack Norberg					
Project	Homewood Mountain Resort - Winter Calculations					
Watershed	Existing Conditions WS-6					
Area (acres)	2.2	Elevation (ft)	7565	Return Period (years)	**10**	
	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	100	0.30	0.4			4.66
Collector 1	401	0.07	0.1	2.2	15	2.32
Collector 2						
Collector 3						
					Total Response Time (minutes)	6.98
					Unit Peak Flow (cfs/acre)	1.50
					Infiltration Rate (in/hr) 0.26	
					Infiltration Factor (cfs/acre) 0.31	
					Percent Impervious 90	
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**3.28**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Existing Conditions WS-7

Area (acres)	145.7	Elevation (ft)	7465	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	4308	0.27	0.1	145.7	15	5.24
Collector 2						
Collector 3						
					Total Response Time (minutes)	19.50
					Unit Peak Flow (cfs/acre)	1.00
					Infiltration Rate (in/hr)	0.28
					Infiltration Factor (cfs/acre)	0.33
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **140.82**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-1

Area (acres)	28.3	Elevation (ft)	6702	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	516	0.23	0.4			13.46
Collector 1	1942	0.38	0.1	20.7	15	3.36
Collector 2	1051	0.06	0.025	24.5	1	0.74
Collector 3						
					Total Response Time (minutes)	17.56
					Unit Peak Flow (cfs/acre)	0.91
					Infiltration Rate (in/hr)	0.15
					Infiltration Factor (cfs/acre)	0.18
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **21.87**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	ProposedConditions WS-2

Area (acres)	42.4	Elevation (ft)	6645	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.27	0.4			12.63
Collector 1	1853	0.33	0.1	28.2	15	3.12
Collector 2	1344	0.05	0.04	33.7	15	2.30
Collector 3	707	0.01	0.025	38.1	1	1.09
					Total Response Time (minutes)	19.15
					Unit Peak Flow (cfs/acre)	0.89
					Infiltration Rate (in/hr)	0.26
					Infiltration Factor (cfs/acre)	0.32
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**32.65**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-3

Area (acres)	9.6	Elevation (ft)	6593	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.36
Collector 1	1715	0.30	0.1	8.6	15	4.05
Collector 2	527	0.06	0.025	9.1	1	0.47
Collector 3						
					Total Response Time (minutes)	18.88
					Unit Peak Flow (cfs/acre)	0.90
					Infiltration Rate (in/hr)	0.30
					Infiltration Factor (cfs/acre)	0.36
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**7.89**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-4

Area (acres)	67.4	Elevation (ft)	6652	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	2448	0.26	0.1	57.5	15	3.81
Collector 2	1456	0.04	0.02	64.8	3	0.93
Collector 3						
					Total Response Time (minutes)	19.00
					Unit Peak Flow (cfs/acre)	0.90
					Infiltration Rate (in/hr)	0.51
					Infiltration Factor (cfs/acre)	0.62
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**54.34**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-5

Area (acres)	5.4	Elevation (ft)	7408	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.19	0.4			14.04
Collector 1	631	0.22	0.1	4.8	3	1.32
Collector 2						
Collector 3						
					Total Response Time (minutes)	15.36
					Unit Peak Flow (cfs/acre)	1.10
					Infiltration Rate (in/hr)	0.22
					Infiltration Factor (cfs/acre)	0.26
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor	**5.20**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-6

Area (acres)	2.2	Elevation (ft)	7565	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	180	0.32	0.4			6.52
Collector 1	376	0.30	0.22	2.2	3	1.54
Collector 2						
Collector 3						
					Total Response Time (minutes)	8.06
					Unit Peak Flow (cfs/acre)	1.45
					Infiltration Rate (in/hr)	0.23
					Infiltration Factor (cfs/acre)	0.28
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor	**3.18**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-7

Area (acres)	145.7	Elevation (ft)	7465	Return Period (years)	**10**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	4308	0.27	0.1	145.7	15	5.24
Collector 2						
Collector 3						
					Total Response Time (minutes)	19.50
					Unit Peak Flow (cfs/acre)	1.00
					Infiltration Rate (in/hr)	0.28
					Infiltration Factor (cfs/acre)	0.33
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **140.86**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010					
Engineer	Jack Norberg					
Project	Homewood Mountain Resort - Winter Calculations					
Watershed	Existing Conditions WS-1					
Area (acres)	28.3	Elevation (ft)	6702	Return Period (years)	**100**	
	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	516	0.23	0.4			13.46
Collector 1	1942	0.38	0.1	20.7	15	3.36
Collector 2	369	0.18	0.05	25.3	15	0.48
Collector 3	221	0.02	0.05	28.3	1	0.37
					Total Response Time (minutes)	17.67
					Unit Peak Flow (cfs/acre)	1.65
					Infiltration Rate (in/hr)	0.17
					Infiltration Factor (cfs/acre)	0.21
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**46.03**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Existing Conditions WS-2

Area (acres)	42.4	Elevation (ft)	6645	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.27	0.4			12.63
Collector 1	1853	0.33	0.1	28.2	15	3.12
Collector 2	824	0.07	0.1	37.3	3	1.56
Collector 3	305	0.01	0.05	42.4	1	0.56
Collector 4						
					Total Response Time (minutes)	17.88
					Unit Peak Flow (cfs/acre)	1.63
					Infiltration Rate (in/hr)	0.23
					Infiltration Factor (cfs/acre)	0
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**67.90**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Existing Conditions WS-3

Area (acres)	9.6	Elevation (ft)	6593	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.36
Collector 1	1715	0.30	0.1	8.6	15	4.05
Collector 2	280	0.12	0.02	9.6	3	0.19
Collector 3						
					Total Response Time (minutes)	18.60
					Unit Peak Flow (cfs/acre)	1.50
					Infiltration Rate (in/hr)	0.35
					Infiltration Factor (cfs/acre)	0.43
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **14.05**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Existing Conditions WS-4

Area (acres)	67.4	Elevation (ft)	6652	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	2448	0.26	0.1	57.5	15	3.81
Collector 2	1456	0.04	0.02	67.4	3	0.92
Collector 3						
					Total Response Time (minutes)	18.99
					Unit Peak Flow (cfs/acre)	1.55
					Infiltration Rate (in/hr)	0.51
					Infiltration Factor (cfs/acre)	0.62
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor	**100.25**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Existing Conditions WS-5

Area (acres)	5.4	Elevation (ft)	7408	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.19	0.4			14.04
Collector 1	616	0.23	0.1	5.4	15	1.81
Collector 2						
Collector 3						
					Total Response Time (minutes)	15.85
					Unit Peak Flow (cfs/acre)	1.90
					Infiltration Rate (in/hr)	0.26
					Infiltration Factor (cfs/acre)	0.31
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**10.13**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Existing Conditions WS-6

Area (acres)	2.2	Elevation (ft)	7565	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	100	0.30	0.4			4.66
Collector 1	401	0.07	0.1	2.2	15	2.32
Collector 2						
Collector 3						
					Total Response Time (minutes)	6.98
					Unit Peak Flow (cfs/acre)	2.60
					Infiltration Rate (in/hr)	0.26
					Infiltration Factor (cfs/acre)	0.31
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **5.73**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Existing Conditions WS-7

Area (acres)	145.7	Elevation (ft)	7465	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	4308	0.27	0.1	145.7	15	5.24
Collector 2						
Collector 3						
					Total Response Time (minutes)	19.50
					Unit Peak Flow (cfs/acre)	1.70
					Infiltration Rate (in/hr)	0.28
					Infiltration Factor (cfs/acre)	0.33
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **242.81**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-1

Area (acres)	28.3	Elevation (ft)	6702	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	516	0.23	0.4			13.46
Collector 1	1942	0.38	0.1	20.7	15	3.36
Collector 2	1051	0.06	0.025	24.5	1	0.74
Collector 3						
					Total Response Time (minutes)	17.56
					Unit Peak Flow (cfs/acre)	1.65
					Infiltration Rate (in/hr)	0.15
					Infiltration Factor (cfs/acre)	0.18
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor	**40.02**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	ProposedConditions WS-2

Area (acres)	42.4	Elevation (ft)	6645	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.27	0.4			12.63
Collector 1	1853	0.33	0.1	28.2	15	3.12
Collector 2	1344	0.05	0.04	33.7	15	2.30
Collector 3	707	0.01	0.025	38.1	1	1.09
					Total Response Time (minutes)	19.15
					Unit Peak Flow (cfs/acre)	1.55
					Infiltration Rate (in/hr)	0.26
					Infiltration Factor (cfs/acre)	0.32
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**57.77**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-3

Area (acres)	9.6	Elevation (ft)	6593	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.36
Collector 1	1715	0.30	0.1	8.6	15	4.05
Collector 2	527	0.06	0.025	9.1	1	0.47
Collector 3						
					Total Response Time (minutes)	18.88
					Unit Peak Flow (cfs/acre)	1.50
					Infiltration Rate (in/hr)	0.30
					Infiltration Factor (cfs/acre)	0.36
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **13.37**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-4

Area (acres)	67.4	Elevation (ft)	6652	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	2448	0.26	0.1	57.5	15	3.81
Collector 2	1456	0.04	0.02	64.8	3	0.93
Collector 3						
					Total Response Time (minutes)	19.00
					Unit Peak Flow (cfs/acre)	1.58
					Infiltration Rate (in/hr)	0.51
					Infiltration Factor (cfs/acre)	0.62
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**98.43**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-5

Area (acres)	5.4	Elevation (ft)	7408	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.19	0.4			14.04
Collector 1	631	0.22	0.1	4.8	3	1.32
Collector 2						
Collector 3						
					Total Response Time (minutes)	15.36
					Unit Peak Flow (cfs/acre)	1.75
					Infiltration Rate (in/hr)	0.22
					Infiltration Factor (cfs/acre)	0.26
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **8.34**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-6

Area (acres)	2.2	Elevation (ft)	7565	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	180	0.32	0.4			6.52
Collector 1	376	0.30	0.22	2.2	3	1.54
Collector 2						
Collector 3						
					Total Response Time (minutes)	8.06
					Unit Peak Flow (cfs/acre)	2.50
					Infiltration Rate (in/hr)	0.23
					Infiltration Factor (cfs/acre)	0.28
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **5.52**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	12/20/2010
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-7

Area (acres)	145.7	Elevation (ft)	7465	Return Period (years)	**100**

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	4308	0.27	0.1	145.7	15	5.24
Collector 2						
Collector 3						
					Total Response Time (minutes)	19.50
					Unit Peak Flow (cfs/acre)	1.70
					Infiltration Rate (in/hr)	0.28
					Infiltration Factor (cfs/acre)	0.33
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor **242.84**

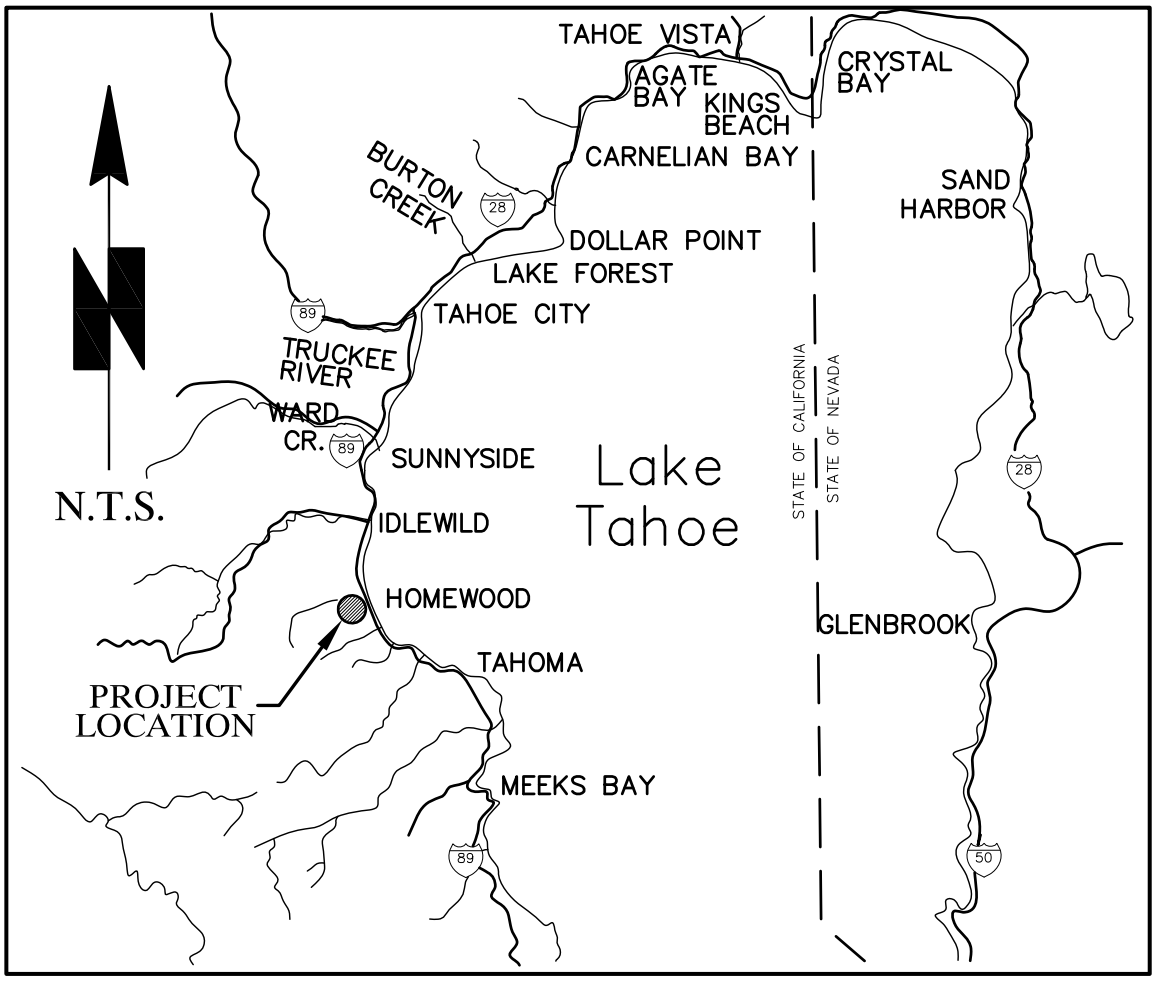
1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

Appendix C

Figures



VICINITY MAP

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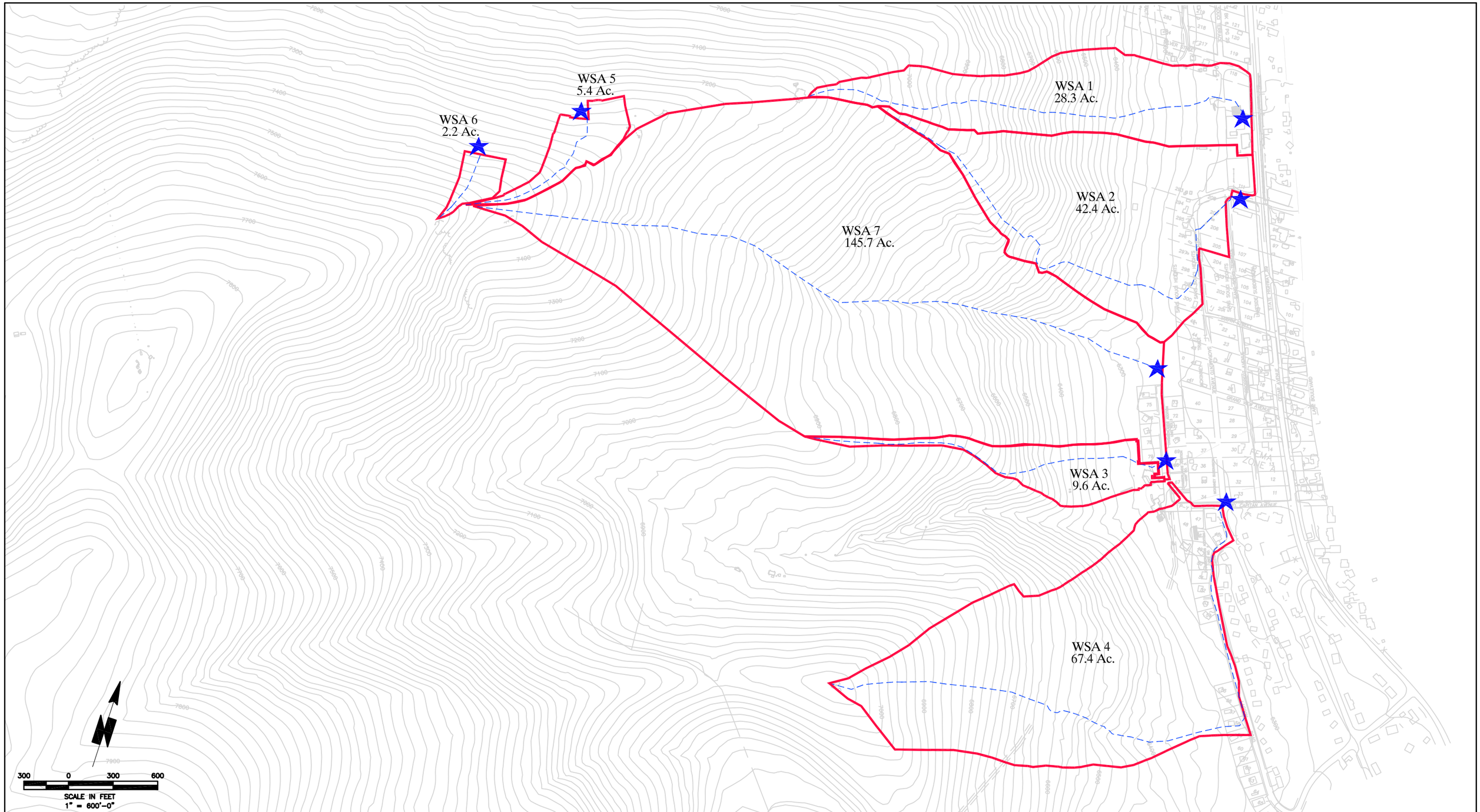
VICINITY/SITE MAP
HOMEWOOD MOUNTAIN RESORT
PLACER COUNTY
CALIFORNIA

FIGURE 1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
CKC	A514.02.14		DECEMBER 2010		



LEGEND

- FLOW PATH
- WATERSHED BOUNDARY
- CONCENTRATION POINT

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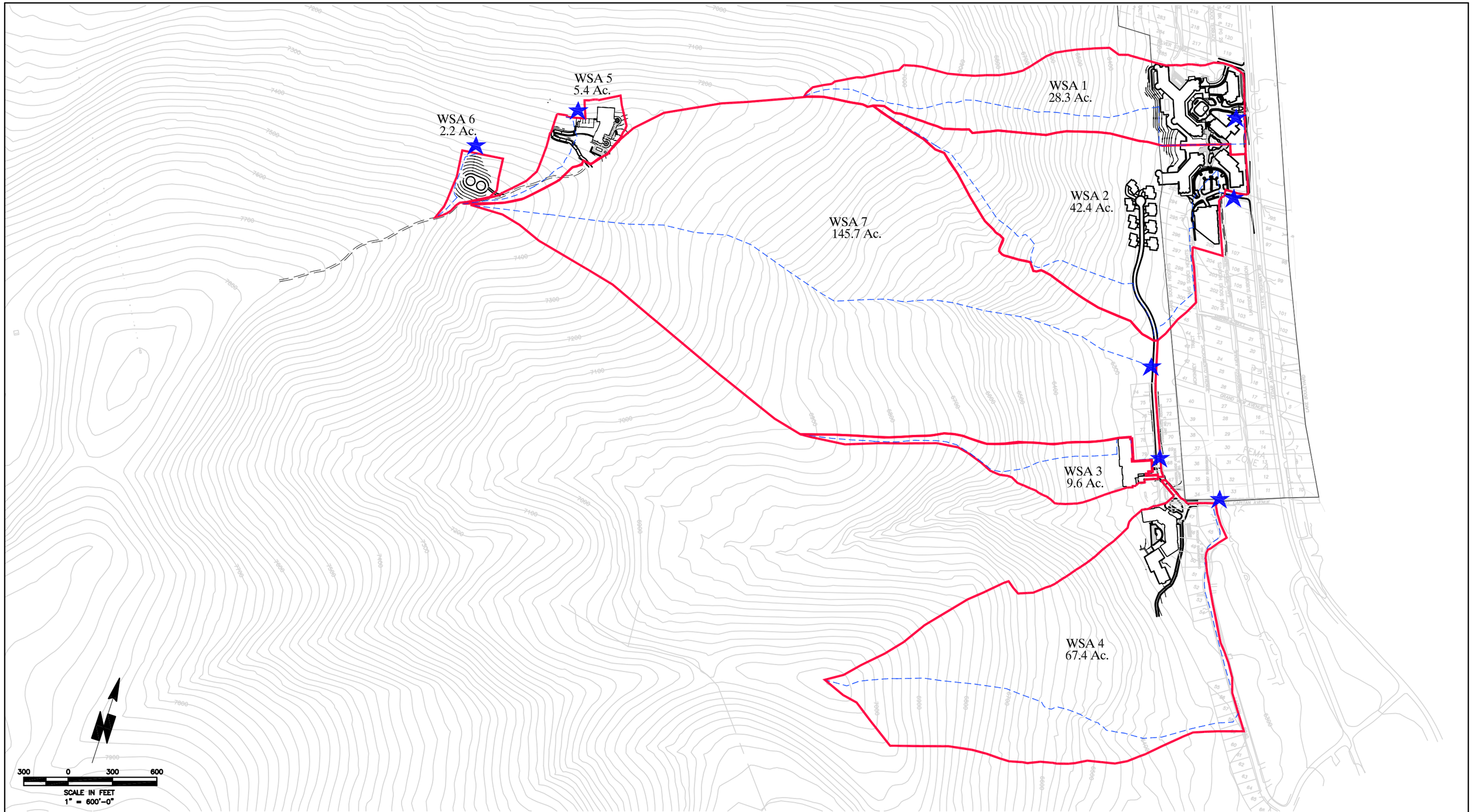
HOMEWOOD MOUNTAIN RESORT
EXISTING CONDITIONS
WATERSHED AREAS

SHEET 2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
CKC	A514.02.14		DECEMBER 2010	



LEGEND

- FLOW PATH
- WATERSHED BOUNDARY
- CONCENTRATION POINT

Nichols Consulting Engineers, Chtd.
1885 S. Arlington Ave., Suite 111
Reno, NV 89509
(775) 329-4955

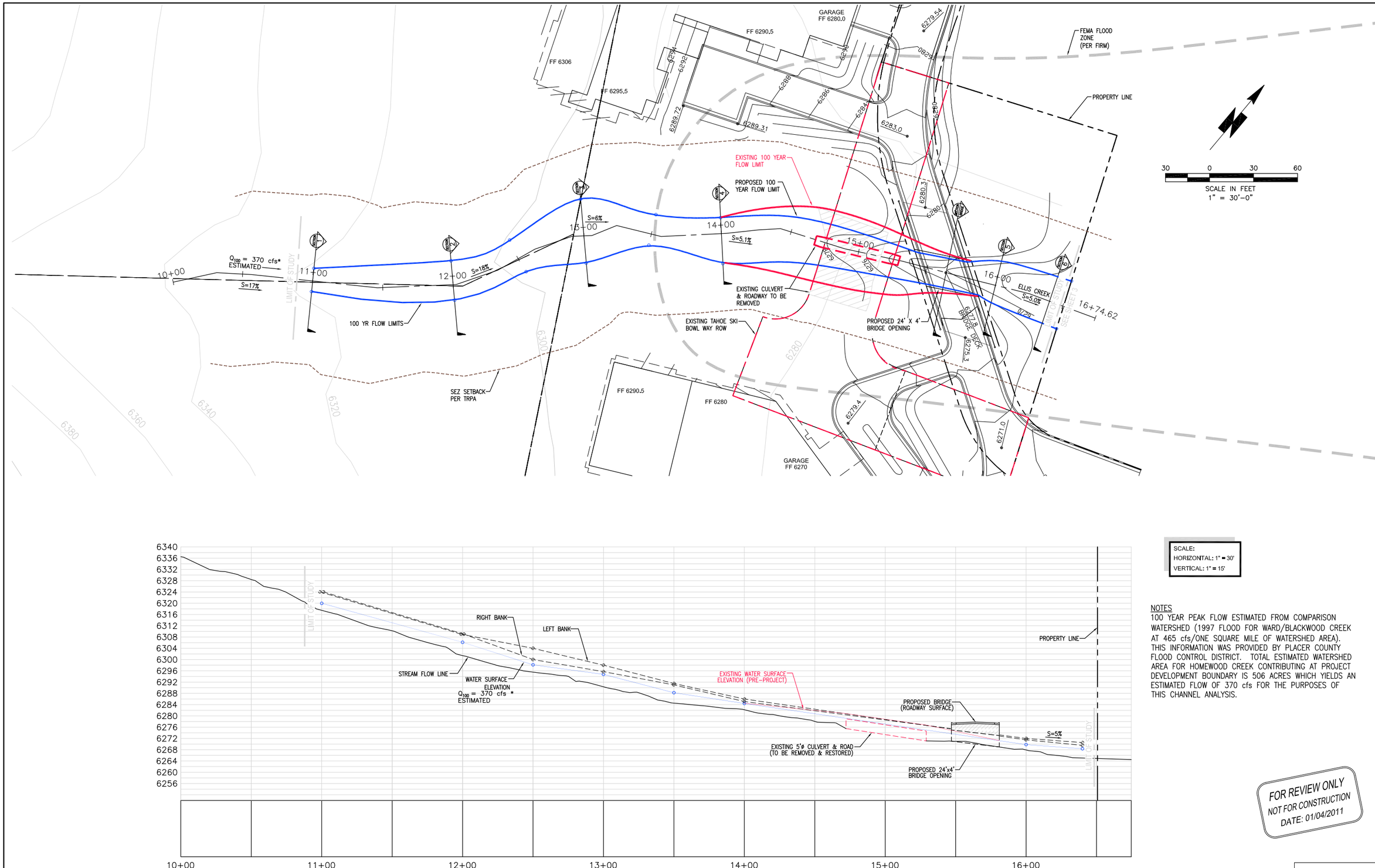
HOMEWOOD MOUNTAIN RESORT
PROPOSED DEVELOPMENT
WATERSHED AREAS

SHEET 3

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
CKC	A514.02.14		DECEMBER 2010	

Appendix D

Ellis Creek Channel Analysis



SCALE:
HORIZONTAL: 1" = 30'
VERTICAL: 1" = 15'

NOTES
100 YEAR PEAK FLOW ESTIMATED FROM COMPARISON WATERSHED (1997 FLOOD FOR WARD/BLACKWOOD CREEK AT 465 cfs/ONE SQUARE MILE OF WATERSHED AREA). THIS INFORMATION WAS PROVIDED BY PLACER COUNTY FLOOD CONTROL DISTRICT. TOTAL ESTIMATED WATERSHED AREA FOR HOMEWOOD CREEK CONTRIBUTING AT PROJECT DEVELOPMENT BOUNDARY IS 506 ACRES WHICH YIELDS AN ESTIMATED FLOW OF 370 cfs FOR THE PURPOSES OF THIS CHANNEL ANALYSIS.

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DATE: 01/04/2011

DATE:_____

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DRAWN: CKC
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JOB No: A514.02.14
SCALE: AS NOTED
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Engineering & Environmental Services
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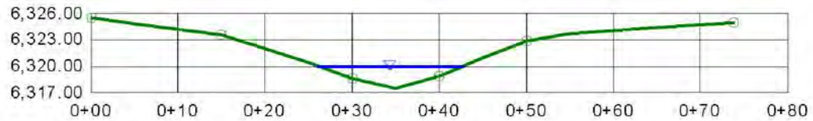
HOMEWOOD VILLAGE RESORTS, LLC

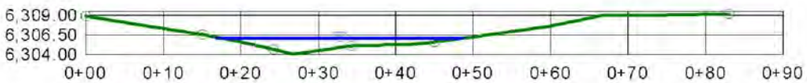
HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

SOUTH BASE
ELLIS CREEK CHANNEL
PLAN & PROFILE

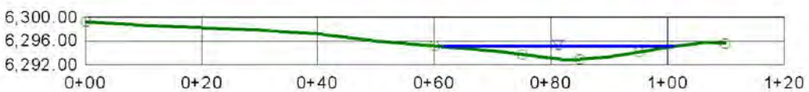
SHEET 1 OF 3



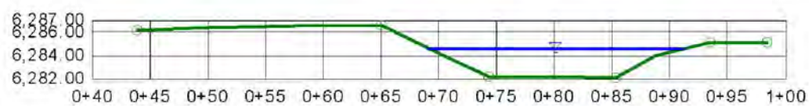
CHANNEL CROSS SECTION – STA: 11+00 (SECTION 1)
MAX. WATER SURFACE ELEV: 6319.97
MAX. WATER VELOCITY: 15.91 ft/s
Q_{100}=370 CFS



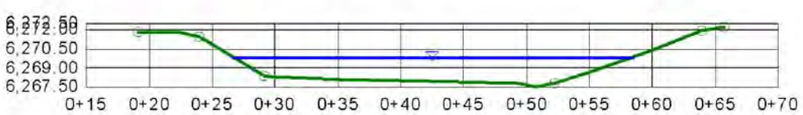
CHANNEL CROSS SECTION – STA: 12+00 (SECTION 2)
MAX. WATER SURFACE ELEV: 6306.14
MAX. WATER VELOCITY: 12.11 ft/s
Q_{100}=370 CFS



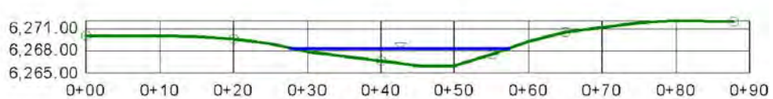
CHANNEL CROSS SECTION – STA: 13+00 (SECTION 3)
MAX. WATER SURFACE ELEV: 6295.04
MAX. WATER VELOCITY: 7.85 ft/s
Q_{100}=370 CFS



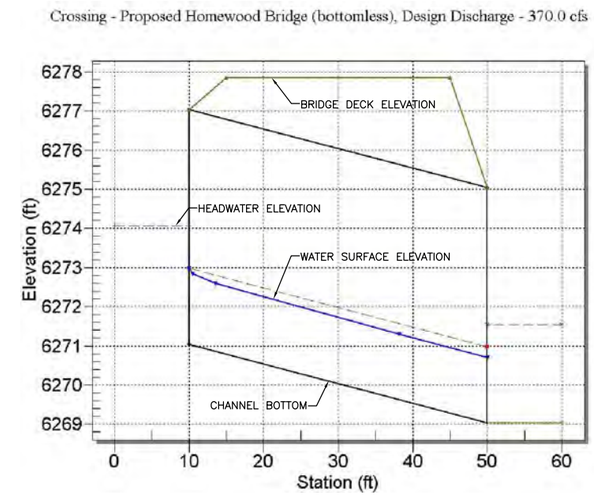
CHANNEL CROSS SECTION – STA: 14+00 (SECTION 4)
MAX. WATER SURFACE ELEV: 6284.57
MAX. WATER VELOCITY: 9.59 ft/s
Q_{100}=370 CFS



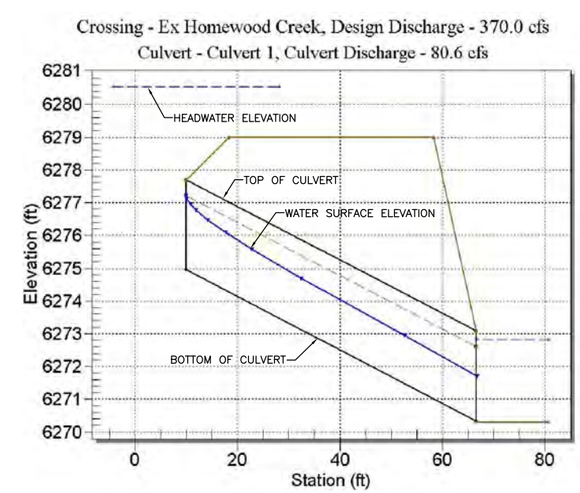
CHANNEL CROSS SECTION – STA: 15+00 (SECTION 5)
MAX. WATER SURFACE ELEV: 6269.82
MAX. WATER VELOCITY: 7.16 ft/s
Q_{100}=370 CFS



CHANNEL CROSS SECTION – STA: 16+40 (SECTION 6)
MAX. WATER SURFACE ELEV: 6268.35
MAX. WATER VELOCITY: 8.52 ft/s
Q_{100}=370 CFS



CHANNEL CROSS SECTION AT PROPOSED BRIDGE (SECTION BRIDGE)
HEADWATER ELEV: 6274.02
OUTLET VELOCITY: 9.26 ft/s
TAILWATER VELOCITY: 8.46 ft/s
Q_{100}=370 CFS



CHANNEL CROSS SECTION AT EXISTING CULVERT (SECTION CULVERT)
HEADWATER ELEV: 6280.54
OUTLET VELOCITY: 15.919 ft/s
TAILWATER VELOCITY: 10.664 ft/s
Q_{100}=370 CFS

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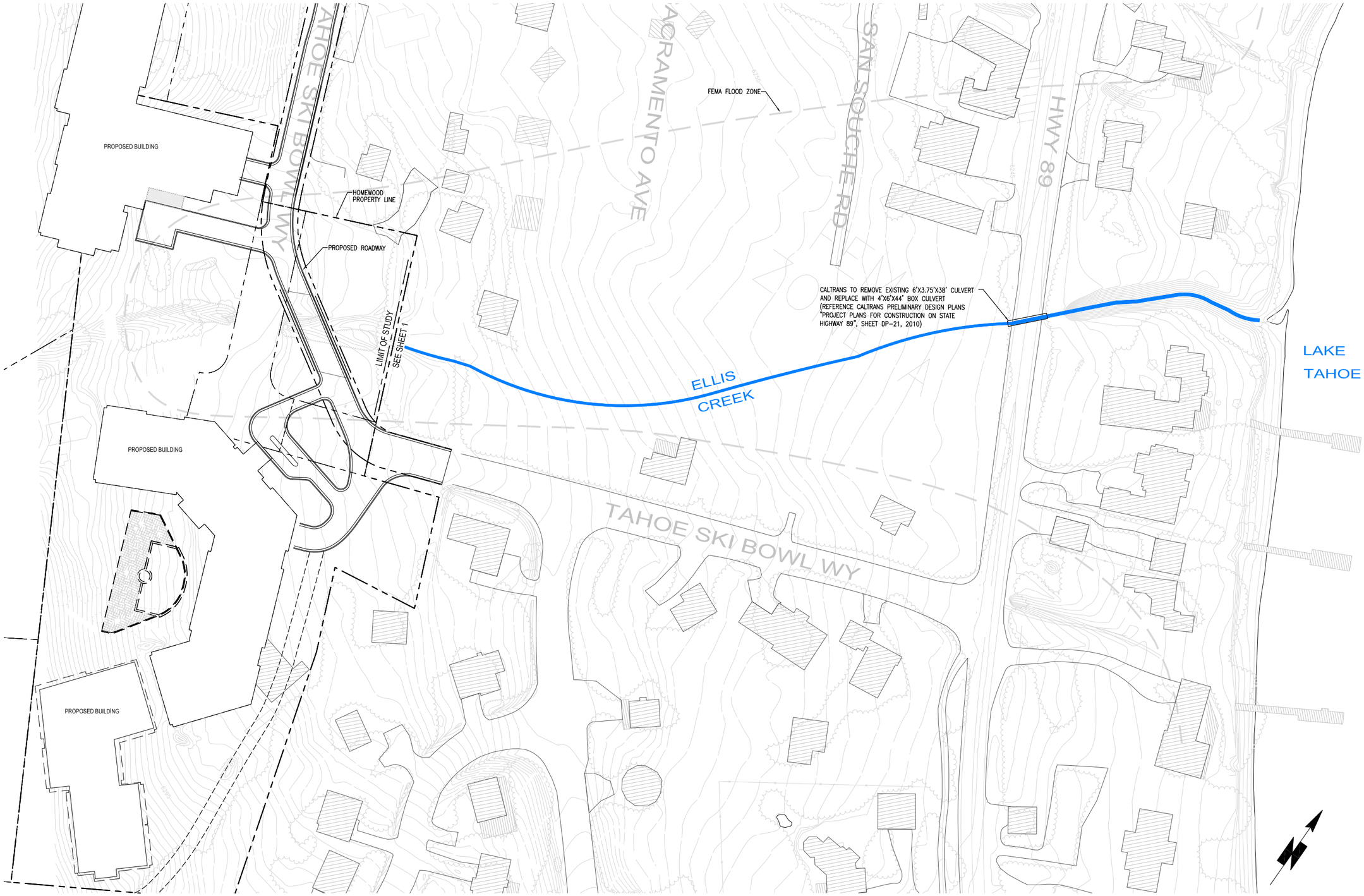
HOMEWOOD VILLAGE RESORTS, LLC

HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

SOUTH BASE
STREAM DAYLIGHTING
CROSS SECTIONS



NOTE
MAPPING & TOPO BY TRISTATE SURVEYING LTD.

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50 0 50 100
SCALE IN FEET
1" = 50'-0"

DATE: _____

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DESIGNED: CKC
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TRUCKEE, CALIFORNIA 96160

SOUTH BASE ELLIS CREEK AREA MAPPING

SHEET 3 OF 3

HY-8 Culvert Analysis Report

Table 1 - Summary of Culvert Flows at Crossing: Ex Homewood Creek

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
6278.75	60.00	60.00	0.00	1
6279.32	94.00	67.02	26.88	6
6279.53	128.00	69.50	58.40	5
6279.71	162.00	71.54	90.41	5
6279.87	196.00	73.33	122.49	4
6280.01	230.00	74.96	154.92	4
6280.15	264.00	76.47	187.48	4
6280.28	298.00	77.87	219.86	3
6280.41	332.00	79.21	252.63	3
6280.52	366.00	80.49	285.44	3
6280.54	370.00	80.63	289.15	2
6279.00	63.17	63.17	0.00	Overtopping

Rating Curve Plot for Crossing: Ex Homewood Creek

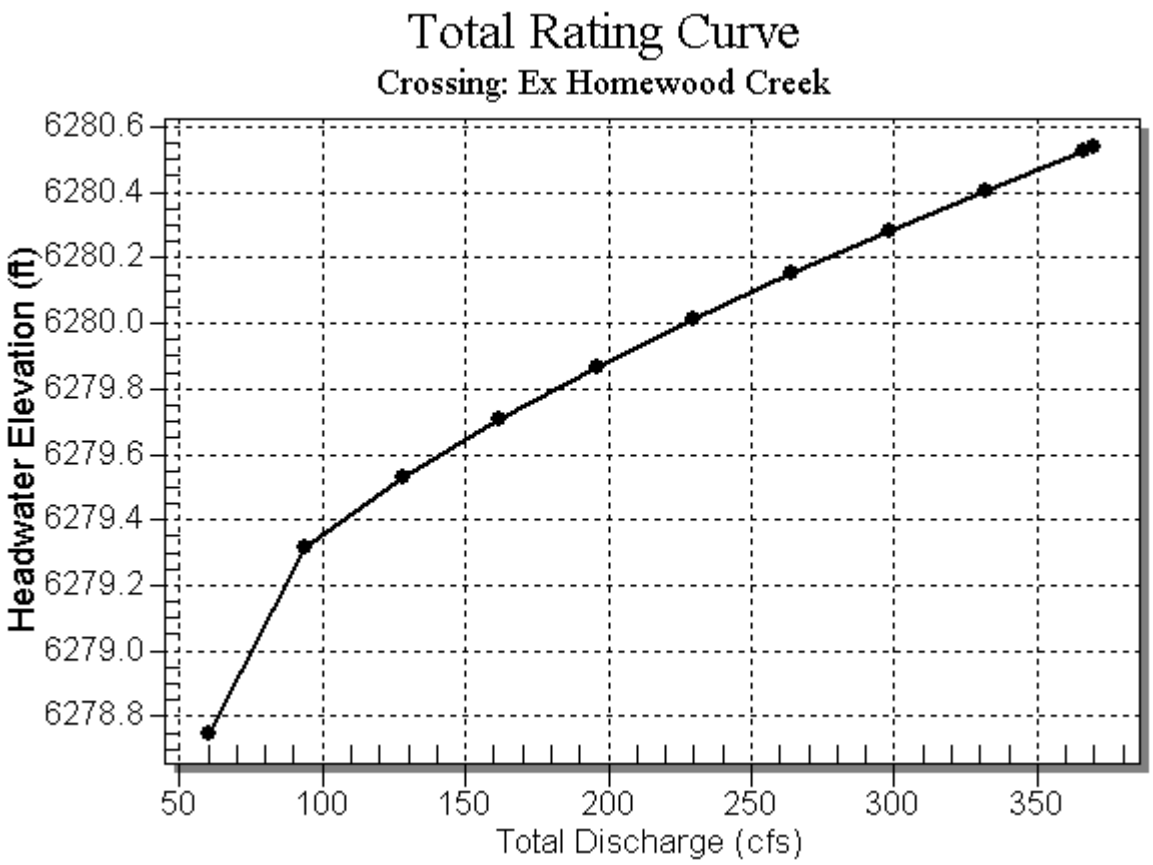


Table 2 - Culvert Summary Table: Culvert 1

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
60.00	60.00	6278.75	3.798	0.0*	5-S2n	1.151	1.964	1.182	0.887	14.253	5.970
94.00	67.02	6279.32	4.368	0.0*	5-S2n	1.234	2.080	1.239	1.154	15.094	6.945
128.00	69.50	6279.53	4.580	0.0*	5-S2n	1.263	2.121	1.270	1.380	15.225	7.684
162.00	71.54	6279.71	4.758	0.0*	5-S2n	1.287	2.155	1.294	1.581	15.352	8.285
196.00	73.33	6279.87	4.917	0.0*	5-S2n	1.308	2.185	1.314	1.762	15.474	8.797
230.00	74.96	6280.01	5.064	0.0*	5-S2n	1.328	2.208	1.333	1.930	15.562	9.243
264.00	76.47	6280.15	5.202	0.0*	5-S2n	1.345	2.225	1.350	2.086	15.650	9.640
298.00	77.87	6280.28	5.331	0.0*	5-S2n	1.362	2.241	1.363	2.233	15.768	9.999
332.00	79.21	6280.41	5.455	0.0*	5-S2n	1.378	2.257	1.378	2.371	15.854	10.327
366.00	80.49	6280.52	5.574	0.0*	5-S2n	1.393	2.271	1.393	2.503	15.913	10.630
370.00	80.63	6280.54	5.588	0.0*	5-S2n	1.395	2.273	1.395	2.518	15.919	10.664

* theoretical depth is impractical. Depth reported is corrected.

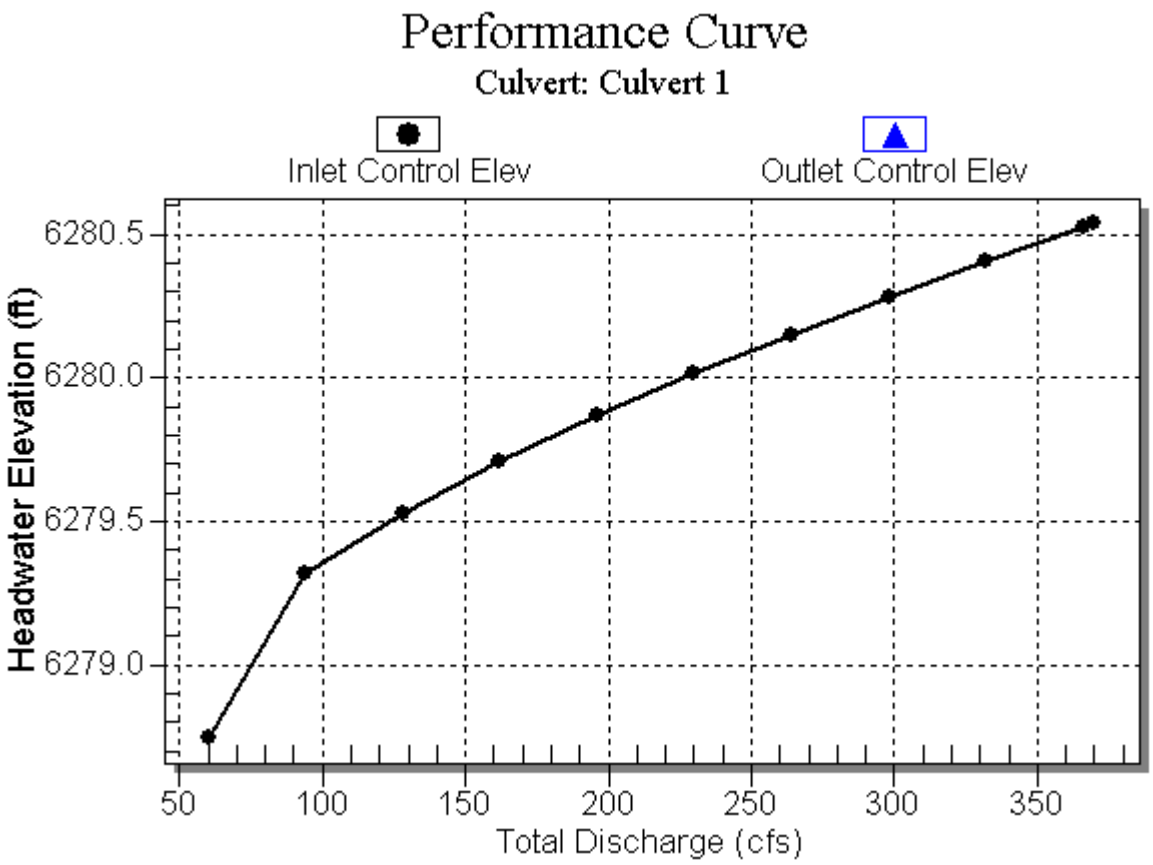
****

Inlet Elevation (invert): 6274.95 ft, Outlet Elevation (invert): 6270.33 ft

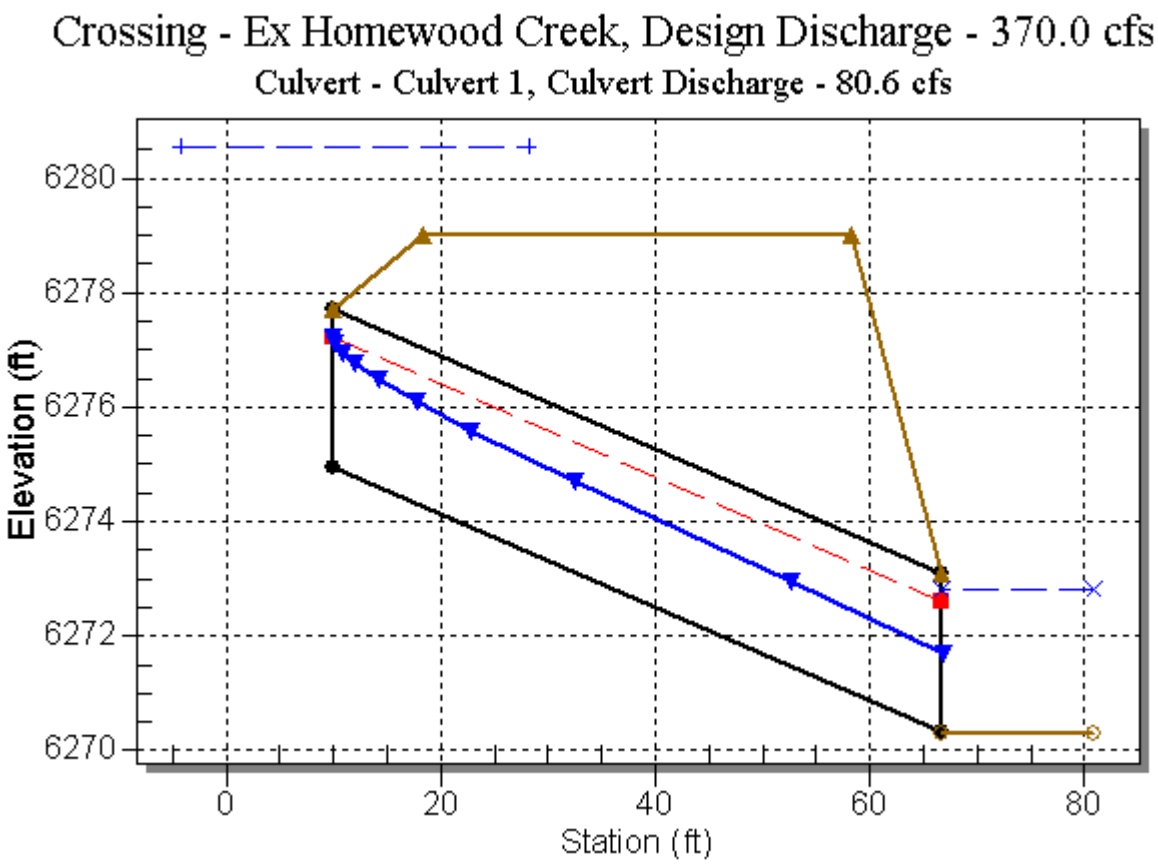
Culvert Length: 56.84 ft, Culvert Slope: 0.0816

****

Culvert Performance Curve Plot: Culvert 1



Water Surface Profile Plot for Culvert: Culvert 1



Site Data - Culvert 1

Site Data Option: Culvert Invert Data

Inlet Station: 10.00 ft

Inlet Elevation: 6274.95 ft

Outlet Station: 66.65 ft

Outlet Elevation: 6270.33 ft

Number of Barrels: 1

Culvert Data Summary - Culvert 1

Barrel Shape: Pipe Arch

Barrel Span: 49.00 in

Barrel Rise: 33.00 in

Barrel Material: Steel or Aluminum

Embedment: 0.00 in

Barrel Manning's n: 0.0240

Inlet Type: Conventional

Inlet Edge Condition: Mitered

Inlet Depression: NONE

Table 3 - Downstream Channel Rating Curve (Crossing: Ex Homewood Creek)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
60.00	6271.19	0.89	5.97	3.21	1.18
94.00	6271.45	1.15	6.95	4.18	1.22
128.00	6271.68	1.38	7.68	4.99	1.25
162.00	6271.88	1.58	8.29	5.72	1.27
196.00	6272.06	1.76	8.80	6.38	1.28
230.00	6272.23	1.93	9.24	6.98	1.30
264.00	6272.39	2.09	9.64	7.55	1.31
298.00	6272.53	2.23	10.00	8.08	1.32
332.00	6272.67	2.37	10.33	8.58	1.33
366.00	6272.80	2.50	10.63	9.06	1.34
370.00	6272.82	2.52	10.66	9.11	1.34

Tailwater Channel Data - Ex Homewood Creek

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 10.00 ft

Side Slope (H:V): 1.50 (_:1)

Channel Slope: 0.0580

Channel Manning's n: 0.0500

Channel Invert Elevation: 6270.30 ft

Roadway Data for Crossing: Ex Homewood Creek

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 50.00 ft

Crest Elevation: 6279.00 ft

Roadway Surface: Paved

Roadway Top Width: 40.00 ft

Homewood/Ellis Creek: Compliance Record for Lahontan WDR Monitoring Site E-1 (1989- 2008)

Sample Date	Discharge	Total Phosphorous	Total Nitrogen	Total Suspended Solids	Turbidity	PH	Temperature	Specific Conductivity	Dissolved Oxygen	NOTES
WQO/Unit	cfs	0.008 mg/L	0.15 mg/L	mg/L	20 NTU		Celsius	95 umhos/cm	mg/L	
02/16/89	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/20/92	NS	NS	NS	NS	0.10	NS	NS	NS	NS	
05/18/92	NS	NS	NS	NS	0.20	NS	NS	NS	NS	
07/20/92	NS	NS	NS	NS	0.30	NS	NS	NS	NS	
07/19/93	NS	NS	NS	NS	NS	NS	NS	NS	NS	
09/06/94	NS	NS	NS	NS	0.30	NS	NS	NS	NS	
06/14/95	NS	0.020	NS	NS	NS	NS	NS	NS	NS	
06/25/95	NS	0.010	0.05	24.0	2.80	NS	NS	NS	NS	
07/06/95	NS	0.050	0.05	19.0	3.00	NS	NS	NS	NS	
07/23/95	NS	0.005	0.10	2.0	0.60	NS	NS	NS	NS	
08/05/95	NS	0.005	0.01	2.0	0.10	NS	NS	NS	NS	
08/28/95	NS	0.030	0.05	2.0	0.15	NS	NS	NS	NS	
01/16/96	NS	0.020	0.05	3.0	0.20	NS	NS	NS	NS	
04/01/96	NS	0.010	0.02	0.5	0.10	NS	NS	NS	NS	
04/16/96	NS	0.080	0.03	0.5	0.11	NS	NS	NS	NS	
04/24/96	NS	0.060	0.01	0.8	0.11	NS	NS	NS	NS	
05/02/96	NS	0.360	0.40	3.0	0.18	NS	NS	NS	NS	
05/10/96	NS	0.010	0.01	1.0	0.19	NS	NS	NS	NS	
05/16/96	NS	0.130	0.40	5.0	0.30	NS	NS	NS	NS	
05/23/96	NS	0.010	0.01	1.0	0.30	NS	NS	NS	NS	
05/31/96	NS	0.070	0.01	1.0	0.15	NS	NS	NS	NS	
04/17/97	NS	0.030	0.05	6.0	0.10	NS	NS	NS	NS	
05/07/97	NS	0.020	0.10	0.5	0.14	NS	NS	NS	NS	
05/16/97	NS	0.020	0.10	3.0	0.20	NS	NS	NS	NS	
05/22/97	NS	0.010	0.10	1.0	0.13	NS	NS	NS	NS	
05/30/97	NS	0.010	0.10	5.0	0.30	NS	NS	NS	NS	
06/04/97	NS	0.010	0.10	2.0	0.25	NS	NS	NS	NS	
06/13/97	NS	0.010	0.10	1.0	0.16	NS	NS	NS	NS	
06/20/97	NS	0.010	0.10	0.5	0.16	NS	NS	NS	NS	
06/27/97	NS	0.010	0.10	0.5	0.10	NS	NS	NS	NS	
05/11/98	NS	0.030	0.10	3.0	2.10	NS	NS	NS	NS	
06/01/98	NS	0.010	0.10	14.0	2.00	NS	NS	NS	NS	
06/09/98	NS	0.090	0.10	0.5	0.29	NS	NS	NS	NS	
06/19/98	NS	0.020	0.10	6.0	1.10	NS	NS	NS	NS	
06/29/98	NS	0.020	0.10	2.0	0.70	NS	NS	NS	NS	
07/02/98	NS	0.030	0.10	2.0	0.30	NS	NS	NS	NS	
04/18/01	NS	0.010	0.21	2.5	0.24	NS	NS	NS	NS	
04/25/01	NS	0.010	0.11	2.5	0.57	NS	NS	NS	NS	
05/02/01	NS	0.020	0.25	2.5	0.36	NS	NS	NS	NS	
05/09/01	NS	0.010	0.25	2.5	0.51	NS	NS	NS	NS	
05/25/01	NS	0.010	0.25	2.5	0.05	NS	NS	NS	NS	
05/31/01	NS	0.010	0.25	2.5	0.05	NS	NS	NS	NS	
06/08/01	NS	0.010	0.25	2.5	0.18	NS	NS	NS	NS	
06/13/01	NS	0.010	0.03	2.5	0.28	NS	NS	NS	NS	
04/25/02	NS	0.005	0.07	2.5	0.30	NS	NS	NS	NS	
05/16/02	NS	0.050	0.25	22.0	3.10	NS	NS	NS	NS	
05/24/02	NS	0.005	0.25	5.0	0.38	NS	NS	NS	NS	
05/30/02	NS	0.040	0.25	5.0	3.60	NS	NS	NS	NS	
06/05/02	NS	0.020	0.03	5.0	1.20	NS	NS	NS	NS	
06/12/02	NS	0.005	0.03	5.0	0.40	NS	NS	NS	NS	
06/19/02	NS	0.005	0.25	5.0	0.10	NS	NS	NS	NS	
06/11/03	NS	0.005	0.03	6.0	1.10	NS	NS	NS	NS	
06/18/03	NS	0.005	0.03	5.0	2.00	NS	NS	NS	NS	
04/28/04	NS	NS	0.14	19.0	3.80	NS	NS	NS	NS	
05/05/04	NS	0.040	0.11	18.0	4.30	NS	NS	NS	NS	
05/12/04	NS	0.020	0.03	2.5	0.40	NS	NS	NS	NS	
05/19/04	NS	0.005	0.07	2.5	0.40	NS	NS	NS	NS	
05/26/04	NS	0.005	0.03	2.5	0.50	NS	NS	NS	NS	
06/02/04	NS	0.010	0.05	6.0	0.40	NS	NS	NS	NS	
06/09/04	NS	0.005	0.03	25.0	0.40	NS	NS	NS	NS	
06/16/04	NS	0.010	0.03	2.5	0.70	NS	NS	NS	NS	
06/23/04	NS	0.005	0.03	2.5	0.40	NS	NS	NS	NS	
07/01/04	NS	0.005	0.03	2.5	0.40	NS	NS	NS	NS	
06/01/05	NS	0.010	0.06	8.0	0.30	NS	NS	NS	NS	
06/08/05	NS	0.010	0.03	2.5	0.40	NS	NS	NS	NS	
06/15/05	NS	0.010	0.03	7.0	0.50	NS	NS	NS	NS	
05/24/06	NS	0.010	0.03	6.0	1.30	NS	NS	NS	NS	
06/14/06	NS	0.010	0.03	2.5	0.80	NS	NS	NS	NS	
06/20/06	NS	0.010	0.03	7.0	1.30	NS	NS	NS	NS	
03/30/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/04/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/10/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/19/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/25/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/02/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/09/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/16/07	5	<0.01	0.16	3.0	0.77	6.72	1.20	24.80	10.20	
05/24/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/31/07	7.5	<0.01	<0.07	<1	0.16	7.05	8.90	21.80	8.88	
06/07/07	4.58	<0.01	0.10	<1	0.26	7.45	8.90	25.00	5.33	
06/13/07	3.7	0.025	<0.07	2.0	0.42	7.87	12.50	26.60	8.87	
06/20/07	1.66	<0.01	0.21	<1	0.27	6.70	11.60	32.90	8.92	
06/26/07	0.9	<0.01	<0.07	<1	0.27	6.56	11.80	34.00	NS	
03/31/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/07/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/14/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access

04/21/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/28/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/05/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/12/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/19/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/20/08	0	NS	NS	NS	NS	NS	NS	NS	NS	storm event/Field notes state no runoff visible
06/02/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
06/09/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
06/09/08	3.5	NS	NS	NS	NS	NS	NS	NS	NS	no access
06/16/08	NS	0.011	0.20	4.0	0.42	NS	NS	NS	NS	no access
06/23/08	3	0.015	0.16	<1	0.10	NS	NS	NS	NS	no access
06/30/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/01/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/08/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/15/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/22/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/04/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/05/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/18/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/25/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
06/03/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
06/10/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
06/17/09	2	0.014	<0.070	<1	0.16	NS	NS	NS	NS	
06/24/09	<1	0.018	<0.070	<1	0.32	NS	NS	NS	NS	
# of Site Visits for Period of Record	112	112	112	112	112	112	112	112	112	
# of Samples Taken for the Period of Record	10	67	67	65	76	6	6	6	5	
# of Samples at or Above Standard		54	14		0			0		
% Non-compliance for Period of Record		81	21		0			0		

Homewood/Ellis Creek: Compliance Record for Lahontan WDR Monitoring Site E-2 (1989- 2008)

Sample Date	Discharge	Total Phosphorous	Total Nitrogen	Total Suspended Solids	Turbidity	PH	Temperature	Specific Conductivity	Dissolved Oxygen	NOTES
	cfs	0.008 mg/L	0.15 mg/L	mg/L	20 NTU		Celsius	95 umhos/cm	mg/L	
02/16/89	NS	0.030	0.50	25	0.05	NS	NS	NS	NS	
04/20/92	NS	NS	NS	NS	0.10	NS	NS	NS	NS	
05/18/92	NS	NS	NS	NS	0.20	NS	NS	NS	NS	
07/20/92	NS	NS	NS	NS	NS	NS	NS	NS	NS	
07/19/93	NS	NS	NS	NS	0.10	NS	NS	NS	NS	
09/06/94	NS	0.030	NS	NS	0.20	NS	NS	NS	NS	
06/14/95	NS	0.020	NS	NS	NS	NS	NS	NS	NS	
06/25/95	NS	0.100	0.05	62	6.50	NS	NS	NS	NS	
07/06/95	NS	0.030	0.05	11	2.30	NS	NS	NS	NS	
07/23/95	NS	0.010	0.10	1	0.40	NS	NS	NS	NS	
08/05/95	NS	0.005	0.01	1	0.20	NS	NS	NS	NS	
08/28/95	NS	0.030	0.05	1	0.10	NS	NS	NS	NS	
01/16/96	NS	0.030	0.05	9	0.40	NS	NS	NS	NS	
04/01/96	NS	0.010	0.01	1	0.20	NS	NS	NS	NS	
04/16/96	NS	0.080	0.01	3	0.14	NS	NS	NS	NS	
04/24/96	NS	0.060	0.01	2	0.14	NS	NS	NS	NS	
05/02/96	NS	0.100	0.40	6	0.27	NS	NS	NS	NS	
05/10/96	NS	0.005	0.01	1	0.26	NS	NS	NS	NS	
05/16/97	NS	0.090	0.40	27	3.50	NS	NS	NS	NS	
05/23/97	NS	0.010	0.01	2	0.30	NS	NS	NS	NS	
05/30/97	NS	0.010	0.01	1	0.20	NS	NS	NS	NS	
04/17/97	NS	0.010	0.05	7	0.09	NS	NS	NS	NS	
05/07/97	NS	0.030	0.10	1	0.20	NS	NS	NS	NS	
05/16/97	NS	0.030	0.10	2	0.37	NS	NS	NS	NS	
05/22/97	NS	0.010	0.10	4	0.25	NS	NS	NS	NS	
05/30/97	NS	0.010	0.10	3	0.20	NS	NS	NS	NS	
06/04/97	NS	0.010	0.10	8	0.56	NS	NS	NS	NS	
06/13/97	NS	0.010	0.10	1	0.14	NS	NS	NS	NS	
06/20/97	NS	0.010	0.10	1	0.14	NS	NS	NS	NS	
06/27/97	NS	0.030	0.10	1	0.11	NS	NS	NS	NS	
05/11/98	NS	0.050	0.10	2	2.60	NS	NS	NS	NS	
06/01/98	NS	0.050	0.10	30	2.50	NS	NS	NS	NS	
06/09/98	NS	0.100	0.10	5	1.30	NS	NS	NS	NS	
06/19/98	NS	0.020	0.10	1	0.30	NS	NS	NS	NS	
06/29/98	NS	0.020	0.10	1	0.50	NS	NS	NS	NS	
07/02/98	NS	0.030	0.10	2	0.32	NS	NS	NS	NS	
04/18/01	NS	0.020	0.08	3	0.35	NS	NS	NS	NS	
04/25/01	NS	0.020	0.08	3	0.35	NS	NS	NS	NS	
05/02/01	NS	0.010	0.25	3	0.43	NS	NS	NS	NS	
05/09/01	NS	0.020	0.25	8	1.10	NS	NS	NS	NS	
05/25/01	NS	0.010	0.25	3	0.12	NS	NS	NS	NS	
05/31/01	NS	0.010	0.25	3	0.05	NS	NS	NS	NS	
06/08/01	NS	0.010	0.25	3	0.21	NS	NS	NS	NS	
11/21/01	NS	0.020	0.25	3	0.51	NS	NS	NS	NS	
04/25/02	NS	0.060	0.09	6	0.50	NS	NS	NS	NS	
05/11/02	NS	NS	NS	3	0.30	NS	NS	NS	NS	
05/16/02	NS	0.040	0.25	12	2.50	NS	NS	NS	NS	
05/24/02	NS	0.010	0.25	5	0.67	NS	NS	NS	NS	
05/30/02	NS	0.090	0.25	5	5.80	NS	NS	NS	NS	
06/05/02	NS	0.005	0.03	5	2.40	NS	NS	NS	NS	
06/12/02	NS	0.005	0.03	5	0.40	NS	NS	NS	NS	
06/19/02	NS	0.020	0.25	5	0.20	NS	NS	NS	NS	
05/29/03	NS	0.040	0.13	21	5.20	NS	NS	NS	NS	
06/11/03	NS	0.005	0.03	6	1.00	NS	NS	NS	NS	
06/18/03	NS	0.005	0.03	3	1.30	NS	NS	NS	NS	
04/07/04	NS	0.010	0.11	3	0.90	NS	NS	NS	NS	
04/14/04	NS	NS	0.03	3	0.50	NS	NS	NS	NS	
04/21/04	NS	0.050	0.03	3	0.30	NS	NS	NS	NS	
04/28/04	NS	NS	0.13	31	4.90	NS	NS	NS	NS	
05/05/04	NS	0.040	0.09	23	6.00	NS	NS	NS	NS	
05/12/04	NS	0.020	0.03	3	0.70	NS	NS	NS	NS	
05/19/04	NS	0.010	0.06	3	0.50	NS	NS	NS	NS	
05/26/04	NS	0.005	0.03	6	0.70	NS	NS	NS	NS	
06/02/04	NS	0.020	0.06	3	0.30	NS	NS	NS	NS	
06/09/04	NS	0.005	0.03	3	0.60	NS	NS	NS	NS	
06/16/04	NS	0.020	0.03	3	0.60	NS	NS	NS	NS	
06/23/04	NS	0.120	0.03	3	0.10	NS	NS	NS	NS	
07/01/04	NS	0.020	0.03	3	0.30	NS	NS	NS	NS	
04/27/05	NS	0.010	0.13	10	0.05	NS	NS	NS	NS	
05/04/05	NS	0.010	0.18	3	1.00	NS	NS	NS	NS	
05/12/05	NS	0.010	0.46	3	0.40	NS	NS	NS	NS	
05/16/05	NS	0.250	0.15	180	3.30	NS	NS	NS	NS	
05/18/05	NS	0.070	0.07	52	5.50	NS	NS	NS	NS	
05/25/05	NS	0.040	0.03	11	0.40	NS	NS	NS	NS	
06/01/05	NS	0.030	0.03	22	0.50	NS	NS	NS	NS	
06/08/05	NS	0.010	0.03	32	1.60	NS	NS	NS	NS	
06/15/05	NS	0.010	0.03	6	1.20	NS	NS	NS	NS	
04/12/06	NS	0.010	0.03	3	0.50	NS	NS	NS	NS	
04/26/06	NS	0.010	0.11	16	2.40	NS	NS	NS	NS	
05/10/06	NS	0.010	0.08	3	1.00	NS	NS	NS	NS	
05/18/06	NS	0.010	0.25	12	4.10	NS	NS	NS	NS	
05/24/06	NS	0.010	0.03	6	1.80	NS	NS	NS	NS	
06/14/06	NS	0.010	0.03	3	0.80	NS	NS	NS	NS	
06/20/06	NS	0.010	0.03	3	1.00	NS	NS	NS	NS	
03/29/07	4.1	0.012	0.14	NS	0.30	8.28	2.00	61.60	11.05	
04/04/07	7.6	0.039	0.12	10	3.60	7.66	4.50	57.70	11.02	
04/10/07	9.1	0.030	0.17	7	0.18	7.06	4.20	53.70	10.57	
04/19/07	6.7	<0.010	0.30	<1	2.20	6.79	4.00	9.68	10.00	
04/25/07	3.7	<0.01	0.20	1	0.50	5.28	5.70	58.50	11.32	
05/02/07	24.7	0.011	0.17	1	0.99	6.57	2.80	47.70	10.56	
05/09/07	10.9	0.014	<0.07	<1	0.27	6.31	6.60	49.20	9.20	
05/16/07	12.1	<0.01	<0.07	4	0.88	6.49	7.90	42.10	10.16	
05/24/07	17.5	<0.01	<0.07	2	0.10	7.75	8.20	42.60	11.25	

05/31/07	8.6	<0.01	<0.07	<1	0.42	7.14	10.40	40.20	9.72	
06/07/07	5.5	0.130	<0.07	1	0.50	7.21	7.50	46.70	9.67	
06/10/07	1.3	<0.01	<0.07	<1	0.17	7.58	10.80	67.40	8.58	
06/21/07	0.8	<0.01	0.10	<1	0.28	6.38	10.40	78.80	9.45	
06/26/07	0.5	0.011	0.10	<1	0.29	6.84	10.00	90.50	NS	

03/31/08	0.3	0.028	0.19	<1	0.11	NS	NS	NS	NS	
04/07/08	0.5	<.01	0.35	<10	<.1	NS	NS	NS	NS	
04/14/08	1.0	0.010	0.60	<10	5.40	NS	NS	NS	NS	
04/21/08	1.0	<.01	0.07	<1	0.78	NS	NS	NS	NS	
04/28/08	3.0	0.049	0.47	46	13.00	NS	NS	NS	NS	
05/05/08	4.5	NS	0.23	19	5.20	NS	NS	NS	NS	
05/12/08	5.0	0.016	0.23	8	1.80	NS	NS	NS	NS	
05/19/08	8.9	0.048	0.09	25	8.00	NS	NS	NS	NS	
05/20/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	storm
05/26/08	3.0	<.01	0.03	1	0.27	NS	NS	NS	NS	
06/02/08	4.0	0.027	0.05	2	0.65	NS	NS	NS	NS	
06/09/08	3.3	<.01	<.07	1	0.69	NS	NS	NS	NS	
06/09/08	4.0	NS	NS	NS	NS	NS	NS	NS	NS	
06/16/08	NS	0.012	0.08	2	0.36	NS	NS	NS	NS	
06/23/08	3.5	<.01	0.05	2	0.15	NS	NS	NS	NS	
06/30/08	1.0	<.01	<.07	1	1.10	NS	NS	NS	NS	
04/01/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/08/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/15/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/22/09	4.5	0.029	0.22	10	3.20	NS	NS	NS	NS	
04/27/09	2.5	0.075	<0.07	1	0.63	NS	NS	NS	NS	
05/04/09	5.0	0.060	<0.07	10	1.70	NS	NS	NS	NS	
05/05/09	10.0	0.180	0.16	120	14.00	NS	NS	NS	NS	
05/11/09	4.0	0.033	<0.07	3	0.64	NS	NS	NS	NS	
05/18/09	5.0	0.018	<0.07	14	1.60	NS	NS	NS	NS	
05/25/09	3.0	0.021	0.11	2	0.45	NS	NS	NS	NS	
06/03/09	3.0	0.012	0.24	2	0.90	NS	NS	NS	NS	
06/10/09	2.5	<0.010	0.19	<1	0.39	NS	NS	NS	NS	
06/17/09	2.0	<0.010	<0.07	<1	0.27	NS	NS	NS	NS	
06/24/09	2.0	0.052	<0.07	<1	0.23	NS	NS	NS	NS	
# of Site Visits for Period of Record	128	128	128	128	128	128	128	128	128	
# of Samples Taken for the Period of Record	39	100	102	103	120	14	14	14	13	
# of Samples at or Above Standard		92	31		0			0		
% Non-compliance for Period of Record		92	30		0			0		

Madden Creek: Compliance Record for Lahontan WDR Monitoring Site M-1 (1989- 2008)

Sample Date	Discharge	Total Phosphorous	Total Nitrogen	Total Suspended Solids	Turbidity	PH	Temperature	Specific Conductivity	Dissolved Oxygen	NOTES
WQS / Unit	cfs	0.015 mg/L	0.18 mg/L	mg/L	20 NTU		Celsius	95 umhos/cm	mg/L	
02/16/89	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/20/92	NS	NS	NS	NS	NS	NS	NS	NS	NS	
05/18/92	NS	NS	NS	NS	0.20	NS	NS	NS	NS	
07/20/92	NS	NS	NS	NS	0.20	NS	NS	NS	NS	
07/19/93	NS	NS	1.20	NS	0.10	NS	NS	NS	NS	
09/06/94	NS	NS	NS	NS	0.50	NS	NS	NS	NS	
06/14/95	NS	NS	0.01	2.0	0.20	NS	NS	NS	NS	
06/25/95	NS	0.020	0.05	8.0	1.50	NS	NS	NS	NS	
07/06/95	NS	0.110	0.05	4.0	1.30	NS	NS	NS	NS	
07/23/95	NS	0.005	0.05	NS	NS	NS	NS	NS	NS	
08/05/95	NS	0.005	0.01	2.0	0.20	NS	NS	NS	NS	
08/28/95	NS	0.010	0.05	0.5	0.15	NS	NS	NS	NS	
04/01/96	NS	0.010	0.02	0.5	0.10	NS	NS	NS	NS	
04/24/96	NS	0.070	0.01	1.1	0.15	NS	NS	NS	NS	
05/02/96	NS	0.040	0.40	0.5	0.15	NS	NS	NS	NS	
05/10/96	NS	0.005	0.01	1.0	0.15	NS	NS	NS	NS	
05/16/96	NS	0.030	0.50	28.0	3.40	NS	NS	NS	NS	
05/23/96	NS	0.010	0.40	NS	NS	NS	NS	NS	NS	
05/31/96	NS	0.060	0.01	0.5	0.13	NS	NS	NS	NS	
04/17/97	NS	0.010	0.05	4.0	0.11	NS	NS	NS	NS	
05/07/97	NS	0.030	0.10	2.0	0.23	NS	NS	NS	NS	
05/16/97	NS	0.020	0.01	0.5	0.22	NS	NS	NS	NS	
05/22/97	NS	0.010	0.10	2.0	0.15	NS	NS	NS	NS	
05/30/97	NS	0.010	0.10	5.0	0.15	NS	NS	NS	NS	
06/04/97	NS	0.020	0.10	4.0	0.26	NS	NS	NS	NS	
06/13/97	NS	0.010	0.10	0.5	0.13	NS	NS	NS	NS	
06/20/97	NS	0.070	0.10	0.5	0.13	NS	NS	NS	NS	
06/27/97	NS	0.010	0.10	0.5	0.10	NS	NS	NS	NS	
05/11/98	NS	0.040	0.10	3.0	2.10	NS	NS	NS	NS	
06/01/98	NS	0.010	0.10	4.0	0.40	NS	NS	NS	NS	
06/09/98	NS	0.010	0.10	0.5	0.34	NS	NS	NS	NS	
06/19/98	NS	0.010	0.10	1.0	0.40	NS	NS	NS	NS	
06/29/98	NS	0.010	0.10	0.5	0.50	NS	NS	NS	NS	
07/02/98	NS	0.030	0.10	4.0	0.34	NS	NS	NS	NS	
04/18/01	NS	0.010	0.23	2.5	0.24	NS	NS	NS	NS	
04/25/01	NS	0.010	0.22	2.5	0.28	NS	NS	NS	NS	
05/02/01	NS	0.010	0.25	2.5	0.31	NS	NS	NS	NS	
05/09/01	NS	0.020	0.25	2.5	0.41	NS	NS	NS	NS	
05/25/01	NS	0.010	0.25	2.5	0.05	NS	NS	NS	NS	
05/31/01	NS	0.010	0.25	2.5	0.15	NS	NS	NS	NS	
06/08/01	NS	0.010	0.25	2.5	0.29	NS	NS	NS	NS	
06/13/01	NS	0.010	0.03	2.5	0.24	NS	NS	NS	NS	
04/25/02	NS	0.005	0.08	2.5	0.10	NS	NS	NS	NS	
05/30/02	NS	0.010	0.25	5.0	0.60	NS	NS	NS	NS	
06/05/02	NS	0.040	0.03	5.0	0.60	NS	NS	NS	NS	
06/12/02	NS	0.010	0.03	5.0	0.30	NS	NS	NS	NS	
06/19/02	NS	0.005	0.25	5.0	0.20	NS	NS	NS	NS	
06/11/03	NS	0.005	0.03	2.5	0.60	NS	NS	NS	NS	
06/18/03	NS	0.005	0.03	2.5	0.60	NS	NS	NS	NS	
05/12/04	NS	0.010	0.03	2.5	0.40	NS	NS	NS	NS	
05/19/04	NS	0.005	0.08	2.5	0.40	NS	NS	NS	NS	
05/26/04	NS	0.005	0.03	2.5	0.40	NS	NS	NS	NS	
06/02/04	NS	0.005	0.30	2.5	0.50	NS	NS	NS	NS	
06/16/04	NS	0.010	0.03	2.5	0.60	NS	NS	NS	NS	
06/23/04	NS	0.005	0.03	2.5	0.40	NS	NS	NS	NS	
06/30/04	NS	0.005	0.03	2.5	0.30	NS	NS	NS	NS	
07/01/04	NS	0.005	0.25	2.5	0.30	NS	NS	NS	NS	
05/25/05	NS	0.020	0.03	5.0	1.00	NS	NS	NS	NS	
06/01/05	NS	0.020	0.03	5.0	1.00	NS	NS	NS	NS	
06/08/05	NS	0.010	0.03	2.5	0.40	NS	NS	NS	NS	
06/15/05	NS	0.010	0.03	2.5	0.60	NS	NS	NS	NS	
06/14/06	NS	0.010	0.03	2.5	0.60	NS	NS	NS	NS	
06/20/06	NS	0.010	0.03	2.5	0.50	NS	NS	NS	NS	
03/29/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/04/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/11/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/19/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/25/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/02/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/09/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/16/07	8.72	<0.01	0.11	<1	0.71	7.00	1.70	26.40	9.37	
05/24/07	27.37	<0.01	<0.07	<1	0.26	7.78	5.30	25.70	11.52	
05/31/07	8.02	<0.01	<0.07	<1	<0.1	6.90	10.80	23.60	8.24	
06/07/07	10.65	<0.01	1.60	<1	0.50	7.72	9.50	25.10	5.48	
06/13/07	6.14	0.021	<0.07	1.0	0.30	7.27	16.40	24.80	7.44	
06/20/07	2.00	<0.01	0.16	<1	0.99	6.28	11.70	25.80	7.11	
06/26/07	0.93	<0.01	0.10	<1	0.22	6.41	18.80	27.60	NS	

03/31/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/07/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/14/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/21/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
04/28/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/05/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/12/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/19/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
05/20/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	storm event
06/02/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
06/09/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	no access
06/09/08	1.50	NS	NS	NS	NS	NS	NS	NS	NS	
06/16/08	NS	<.01	0.05	2.0	0.26	NS	NS	NS	NS	
06/23/08	3.00	<.01	0.07	<1	0.41	NS	NS	NS	NS	
06/30/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/01/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/08/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/15/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/22/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/27/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
05/04/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
05/05/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
05/11/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
05/18/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
05/25/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
06/03/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
06/10/09	4.00	<0.010	0.19	<1	0.10	NS	NS	NS	NS	
06/17/09	2.50	0.031	<0.070	<1	0.34	NS	NS	NS	NS	
06/24/09	2.50	0.021	<0.070	<1	0.43	NS	NS	NS	NS	
# of Site Visits for Period of Record	106	106	106	106	106	106	106	106	106	
# of Samples Taken for the Period of Record	12	59	65	57	70	7	7	7	6	
# of Samples at or Above Standard		19	17		0			0		
% Non-compliance for Period of Record		32	26		0			0		

Madden Creek attachment: Annual Mean by Year for WDR Monitoring Site M-1 (1992 - 2009)

Sample Year	Total Phosphorous	Total Nitrogen	Total Suspended Solids*
WQO.Unit	0.015 mg/l	0.18 mg/l	
1992	NS	NS	NS
1993	NS	1.2	NS
1994	NS	NS	NS
1995	0.025	0.037	2.75
1996	0.032	0.19	5.3
1997	0.021	0.08	2.1
1998	0.018	0.1	2.16
2001	0.011	0.22	2.5
2002	0.014	0.03	4.5
2003	0.005	0.03	2.5
2004	0.006	0.09	2.5
2005	0.015	0.03	3.8
2006	0.01	0.03	2.5
2007	0.007	0.31	0.57
2008	<.5	0.06	1.25
2009	0.034	0.09	<1

Madden Creek attachment: Annual Mean by Year for WDR Monitoring Site M-2 (1995 - 2009)

Sample Year	Total Phosphorous	Total Nitrogen	Total Suspended Solids*
WQO.Unit	0.015 mg/l	0.18 mg/l	
1995	0.035	0.04	9
1996	0.037	0.07	2.1
1997	0.16	0.02	3.4
1998	0.025	0.09	2.8
2001	0.022	0.97	3.8
2002	0.02	0.03	3.8
2003	0.01	0.03	5.3
2004	0.018	0.07	4.5
2005	0.02	0.13	14.9
2006	0.01	0.08	6.6
2007	0.034	0.26	1.8
2008	0.028	0.22	5.5
2009	0.026	0.103	4.9

Homewood Creek attachment: Annual Mean by Year for WDR Monitoring Site E-1 (1995 - 2009)

Sample Year	Total Phosphorous	Total Nitrogen	Total Suspended Solids*
WQO.Unit	0.008 mg/l	0.15 mg/l	60 mg/L 90th percentile
1995	0.02	0.05	9.8
1996	0.083	0.06	1.8
1997	0.014	0.09	2.2
1998	0.033	0.1	4.58
2001	0.013	0.23	2.5
2002	0.019	0.16	7.07
2003	0.005	0.03	5.5
2004	0.12	0.06	8.3
2005	0.01	0.04	5.83
2006	0.01	0.03	5.17
2007	0.008	0.1	1.2
2008	0.013	0.18	2.3
2009	0.016	<0.07	<1

Homewood Creek attachment: Annual Mean by Year for WDR Monitoring Site E-2 (1989 - 2009)

Sample Year	Total Phosphorous	Total Nitrogen	Total Suspended Solids*
WQO.Unit	0.008 mg/l	0.15 mg/l	60 mg/L 90th percentile
1989	0.03	0.5	25
1992	NS	NS	NS
1993	NS	NS	NS
1994	0.03	NS	NS
1995	0.033	0.05	15.2
1996	0.048	0.08	3.6
1997	0.022	0.11	4.7
1998	0.045	0.1	6.8
2001	0.015	0.21	3.2
2002	0.033	0.04	5.7
2003	0.017	0.06	9.8
2004	0.031	0.05	6.5
2005	0.034	0.09	24.5
2006	0.01	0.08	6.3
2007	0.011	0.11	2.1
2008	0.022	0.16	6.8
2009	0.045	0.103	14.7

*Total Suspended Solids are reported but are not comparable to TRPA Suspended Sediment Concentrations (SCC) or Total Dissolved Solids (TDS), which is the constituent required by Lahontan WDRs

Madden Creek: Compliance Record for Lahontan WDR Monitoring Site M-2 (1989- 2008)

Sample Date	Discharge	Total Phosphorous	Total Nitrogen	Total Suspended Solids	Turbidity	PH	Temperature	Specific Conductivity	Dissolved Oxygen	NOTES
	cfs	0.015 mg/L	0.18 mg/L	mg/L	20 NTU		Celsius	95 umhos/cm	mg/L	
02/16/89	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/20/92	NS	NS	NS	NS	NS	NS	NS	NS	NS	
05/18/92	NS	NS	NS	NS	0.20	NS	NS	NS	NS	
07/20/92	NS	NS	NS	NS	NS	NS	NS	NS	NS	
07/19/93	NS	NS	NS	NS	0.10	NS	NS	NS	NS	
09/06/94	NS	NS	NS	NS	0.20	NS	NS	NS	NS	
06/14/95	NS	NS	0.01	1.0	0.50	NS	NS	NS	NS	
06/25/95	NS	0.080	0.05	47.0	4.50	NS	NS	NS	NS	
07/06/95	NS	0.040	0.05	4.0	1.30	NS	NS	NS	NS	
07/23/95	NS	0.005	0.05	1.0	0.20	NS	NS	NS	NS	
08/05/95	NS	0.020	0.01	0.5	0.20	NS	NS	NS	NS	
08/28/95	NS	0.030	0.05	0.5	0.11	NS	NS	NS	NS	
01/16/96	NS	0.010	0.10	3.0	0.20	NS	NS	NS	NS	
04/01/96	NS	0.005	0.01	0.5	0.20	NS	NS	NS	NS	
04/16/96	NS	0.070	0.01	0.8	0.21	NS	NS	NS	NS	
04/24/96	NS	0.070	0.01	3.8	0.19	NS	NS	NS	NS	
05/02/96	NS	0.040	0.40	8.0	0.26	NS	NS	NS	NS	
05/10/96	NS	0.020	0.01	0.1	0.25	NS	NS	NS	NS	
05/23/96	NS	0.010	0.01	0.5	0.30	NS	NS	NS	NS	
05/31/96	NS	0.070	0.01	0.5	0.10	NS	NS	NS	NS	
04/17/97	NS	0.010	0.05	4.0	0.25	NS	NS	NS	NS	
05/07/97	NS	0.030	0.05	3.0	0.26	NS	NS	NS	NS	
05/16/97	NS	0.020	0.05	3.0	0.30	NS	NS	NS	NS	
05/22/97	NS	0.010	0.01	2.0	0.30	NS	NS	NS	NS	
05/30/97	NS	0.010	0.01	3.0	0.15	NS	NS	NS	NS	
06/04/97	NS	0.020	0.01	14.0	0.47	NS	NS	NS	NS	
06/13/97	NS	0.010	0.01	0.5	0.14	NS	NS	NS	NS	
06/20/97	NS	0.010	0.01	0.5	0.15	NS	NS	NS	NS	
06/27/97	NS	0.020	0.01	0.5	0.13	NS	NS	NS	NS	
05/11/98	NS	0.060	0.01	6.0	1.70	NS	NS	NS	NS	
06/01/98	NS	0.010	0.01	4.0	0.60	NS	NS	NS	NS	
06/09/98	NS	0.010	0.01	2.0	1.30	NS	NS	NS	NS	
06/19/98	NS	0.020	0.50	1.0	0.20	NS	NS	NS	NS	
06/29/98	NS	0.020	0.01	3.0	0.50	NS	NS	NS	NS	
07/02/98	NS	0.030	0.01	1.0	0.26	NS	NS	NS	NS	
04/18/01	NS	0.010	0.19	2.5	0.31	NS	NS	NS	NS	
04/25/01	NS	0.010	0.18	2.5	0.33	NS	NS	NS	NS	
05/02/01	NS	0.010	0.03	2.5	0.27	NS	NS	NS	NS	
05/09/01	NS	0.030	7.30	14.0	1.70	NS	NS	NS	NS	
05/25/01	NS	0.010	0.25	2.5	0.05	NS	NS	NS	NS	
05/31/01	NS	0.010	0.25	2.5	0.10	NS	NS	NS	NS	
06/08/01	NS	0.010	0.25	2.5	0.18	NS	NS	NS	NS	
06/13/01	NS	0.100	0.03	2.5	0.21	NS	NS	NS	NS	
11/21/01	NS	0.010	0.25	2.5	0.42	NS	NS	NS	NS	
04/25/02	NS	0.010	0.03	2.5	0.20	NS	NS	NS	NS	
05/10/02	NS	NS	NS	2.5	0.30	NS	NS	NS	NS	
05/16/02	NS	0.005	0.03	2.5	1.10	NS	NS	NS	NS	
05/24/02	NS	0.005	0.03	2.5	0.34	NS	NS	NS	NS	
05/30/02	NS	0.010	0.03	5.0	0.50	NS	NS	NS	NS	
06/05/02	NS	0.100	0.03	5.0	1.00	NS	NS	NS	NS	
06/12/02	NS	0.005	0.03	5.0	0.20	NS	NS	NS	NS	
06/19/02	NS	0.005	0.03	5.0	0.20	NS	NS	NS	NS	
05/29/03	NS	0.020	0.03	11.0	1.60	NS	NS	NS	NS	
06/11/03	NS	0.005	0.03	2.5	0.90	NS	NS	NS	NS	
06/18/03	NS	0.005	0.03	2.5	0.40	NS	NS	NS	NS	
04/07/04	NS	NS	0.13	6.0	1.10	NS	NS	NS	NS	
04/14/04	NS	NS	0.14	2.5	0.05	NS	NS	NS	NS	
04/21/04	NS	0.100	0.10	2.5	0.40	NS	NS	NS	NS	
04/28/04	NS	NS	0.14	14.0	2.10	NS	NS	NS	NS	
05/05/04	NS	0.030	0.14	13.0	2.20	NS	NS	NS	NS	
05/12/04	NS	0.010	0.03	2.5	0.05	NS	NS	NS	NS	
05/19/04	NS	0.005	0.06	2.5	0.20	NS	NS	NS	NS	
05/26/04	NS	0.005	0.03	2.5	0.40	NS	NS	NS	NS	
06/02/04	NS	0.005	0.03	2.5	0.40	NS	NS	NS	NS	
06/09/04	NS	0.005	0.03	2.5	0.60	NS	NS	NS	NS	
06/16/04	NS	0.010	0.03	2.5	0.60	NS	NS	NS	NS	
06/23/04	NS	0.005	0.04	2.5	0.10	NS	NS	NS	NS	
07/01/04	NS	0.005	0.03	2.5	0.30	NS	NS	NS	NS	
04/27/05	NS	0.010	0.22	2.5	0.30	NS	NS	NS	NS	
05/04/05	NS	0.010	0.31	2.5	0.50	NS	NS	NS	NS	
05/12/05	NS	0.010	0.11	2.5	0.40	NS	NS	NS	NS	
05/16/05	NS	0.080	0.26	48.0	6.20	NS	NS	NS	NS	
05/18/05	NS	0.030	0.10	23.0	2.70	NS	NS	NS	NS	
05/25/05	NS	0.010	0.06	26.0	0.30	NS	NS	NS	NS	
06/01/05	NS	0.010	0.05	22.0	0.50	NS	NS	NS	NS	
06/08/05	NS	0.010	0.03	2.5	0.70	NS	NS	NS	NS	
06/15/05	NS	0.010	0.03	5.0	0.40	NS	NS	NS	NS	
04/12/06	NS	0.010	0.08	2.5	0.30	NS	NS	NS	NS	
04/26/06	NS	0.010	0.08	27.0	1.30	NS	NS	NS	NS	
05/10/06	NS	0.010	0.06	2.5	0.60	NS	NS	NS	NS	
05/18/06	NS	0.010	0.25	7.0	1.30	NS	NS	NS	NS	
05/24/06	NS	0.010	0.03	2.5	1.60	NS	NS	NS	NS	
06/14/06	NS	0.010	0.03	2.5	0.50	NS	NS	NS	NS	
06/20/06	NS	0.010	0.03	2.5	0.40	NS	NS	NS	NS	
03/29/07	NS	0.014	0.23	NS	<0.10	7.97	2.00	52.40	11.64	
04/04/07	16.7	0.014	0.48	<1	0.65	7.79	4.40	51.40	11.80	
04/10/07	28.5	0.011	0.20	<1	<0.1	7.20	4.50	47.00	11.02	
04/19/07	28.0	<0.01	0.20	<1	0.23	6.78	2.40	49.00	10.73	
04/25/07	23.6	0.140	0.15	1.0	0.40	5.17	5.50	48.00	10.78	
05/02/07	80.2	0.012	0.30	2.0	0.47	6.89	2.40	42.20	11.51	
05/09/07	13.7	0.023	<0.07	<1	0.42	6.20	6.10	44.10	9.46	
05/17/07	32.1	<0.01	<0.07	1.0	0.51	7.05	7.90	38.00	9.74	
05/24/07	NS	<0.01	<0.07	<1	0.16	7.42	8.80	39.00	11.51	
05/31/07	59.0	<0.01	<0.07	<1	0.13	6.98	11.40	34.80	9.36	
06/07/07	34.8	<0.01	0.23	3.0	0.27	7.52	7.70	38.30	10.62	

06/13/07	12.5	0.023	<0.07	2.0	0.17	6.80	12.80	38.20	8.66	
06/20/07	10.0	<0.01	<0.07	<1	0.37	6.53	13.00	43.20	8.78	
06/26/07	11.1	<0.01	<0.07	<1	<0.1	6.87	12.40	42.90	ns	
03/31/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/07/08	1.0	<.01	0.32	<10	<.10	NS	NS	NS	NS	
04/14/08	3.0	<.01	0.35	<10	0.16	NS	NS	NS	NS	
04/21/08	3.5	<.01	0.28	<1	<.1	NS	NS	NS	NS	
04/28/08	6.0	0.015	0.13	8.0	2.30	NS	NS	NS	NS	
05/05/08	8.0	0.015	0.19	8.0	2.70	NS	NS	NS	NS	
05/12/08	10.0	0.012	0.14	8.0	2.00	NS	NS	NS	NS	
05/19/08	16.0	0.100	0.06	10.0	3.20	NS	NS	NS	NS	
05/20/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	
05/26/08	5.0	<.01	0.23	2.0	<.1	NS	NS	NS	NS	
06/02/08	17.0	0.017	0.46	2.0	0.77	NS	NS	NS	NS	
06/09/08	18.0	<.01	<.07	2.0	0.38	NS	NS	NS	NS	
06/09/08	17.0	NS	NS	NS	NS	NS	NS	NS	NS	
06/16/08	NS	<.01	<.07	3.0	0.31	NS	NS	NS	NS	
06/23/08	6.0	0.010	0.08	4.0	0.23	NS	NS	NS	NS	
06/30/08	2.5	<.01	<.07	8.0	<.1	NS	NS	NS	NS	
04/01/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/08/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/15/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/22/09	8.0	0.076	0.21	4.0	1.50	NS	NS	NS	NS	
04/27/09	6.0	0.021	<0.070	2.0	0.40	NS	NS	NS	NS	
05/04/09	15.0	0.044	0.20	9.0	2.00	NS	NS	NS	NS	
05/05/09	30.0	0.024	0.11	27.0	6.80	NS	NS	NS	NS	
05/11/09	12.0	0.015	<0.070	2.0	0.37	NS	NS	NS	NS	
05/18/09	12.0	0.011	<0.070	5.0	1.10	NS	NS	NS	NS	
05/25/09	7.5	0.017	0.14	<1	0.19	NS	NS	NS	NS	
06/03/09	7.0	<0.010	0.16	3.0	0.62	NS	NS	NS	NS	
06/10/09	6.0	0.037	0.14	1.0	0.33	NS	NS	NS	NS	
06/17/09	4.0	<0.010	<0.070	1.0	0.42	NS	NS	NS	NS	
06/24/09	3.5	0.026	<0.070	<1	0.43	NS	NS	NS	NS	
# of Site Visits for Period of Record	128	128	128	128	128	128	128	128	128	
# of Samples Taken for the Period of Record	36	95	100	102	112	14	14	14	13	
# of Samples at or Above Standard		40	27		0			0		
% Non-compliance for Period of Record		42	27		0			0		

North Base Area: Compliance Record for Lahontan WDR Monitoring Site P-1 (1995- 2008)

Sample Date	Discharge	Total Phosphorous	Total Nitrogen	Total Suspended Solids	Turbidity	PH	Temperature	Specific Conductivity	Dissolved Oxygen	NOTES
		1	5		200					
	cfs	mg/L	mg/L	mg/L	NTU		Celsius	umhos/cm	mg/L	
06/14/95	NS	0.43	0.24	374	93	NS	NS	NS	NS	
01/16/96	NS	0.15	0.05	68	4.6	NS	NS	NS	NS	
04/01/96	NS	0.06	0.01	9	5.2	NS	NS	NS	NS	
05/22/97	NS	0.29	0.1	184	56	NS	NS	NS	NS	
06/04/97	NS	0.14	0.1	NS	NS	NS	NS	NS	NS	
04/18/01	NS	0.12	0.025	44	8.9	NS	NS	NS	NS	
11/21/01	NS	0.11	0.25	2.5	4.1	NS	NS	NS	NS	
04/25/02	NS	0.2	0.025	6	2.5	NS	NS	NS	NS	
05/10/02	NS	0.16	0.16	NS	0.1	NS	NS	NS	NS	
11/10/03	NS	NS	0.43	22	22	NS	NS	NS	NS	
12/05/03	NS	NS	0.025	8	20	NS	NS	NS	NS	
12/20/03	NS	NS	0.025	38	120	NS	NS	NS	NS	
02/18/04	NS	NS	0.07	370	38	NS	NS	NS	NS	
04/07/04	NS	NS	0.025	20	14	NS	NS	NS	NS	
04/14/04	NS	0.32	0.025	NS	NS	NS	NS	NS	NS	
04/21/04	NS	NS	0.06	320	50	NS	NS	NS	NS	
05/05/04	NS	0.88	0.025	280	66	NS	NS	NS	NS	
05/11/04	NS	0.29	0.25	100	36	NS	NS	NS	NS	
04/27/05	NS	0.9	0.025	330	12	NS	NS	NS	NS	
05/16/05	NS	0.18	0.09	150	14	NS	NS	NS	NS	
05/18/05	NS	0.15	0.13	74	40	NS	NS	NS	NS	
04/03/06	NS	0.22	0.025	120	52	NS	NS	NS	NS	
04/12/06	NS	0.14	0.025	53	39	NS	NS	NS	NS	
04/26/06	NS	0.23	0.025	58	23	NS	NS	NS	NS	
05/10/06	NS	0.1	0.025	12	7.5	NS	NS	NS	NS	
05/18/06	NS	0.16	0.25	19	18	NS	NS	NS	NS	
06/13/06	NS	0.3	0.43	63	32	NS	NS	NS	NS	
03/29/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/04/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/10/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/19/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/25/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	
05/02/07	0.22	0.14	0.69	59.00	25.00	6.37	5.8	111.8	7.45	
05/09/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	
05/16/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	
05/24/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	
05/31/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	
06/07/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	
06/13/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	
06/20/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	
06/26/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	
03/31/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/07/08	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
04/14/08	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
04/21/08	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
04/28/08	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
05/05/08	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
05/12/08	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
05/19/08	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
05/20/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	
06/02/08	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
06/09/08	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
06/09/08	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
06/22/08	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
06/30/08	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
04/01/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/08/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/15/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/22/09	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
04/27/09	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
05/04/09	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
05/05/09	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
05/11/09	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
05/18/09	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
05/25/09	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
06/03/09	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
06/10/09	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
06/17/09	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
06/24/09	0.00	NS	NS	NS	NS	NS	NS	NS	NS	
# of Site Visits for Period of Record	**69**	**69**	**69**	**69**	**69**	**69**	**69**	**69**	**69**	
# of Samples Taken for the Period of Record	**24**	**22**	**28**	**25**	**26**	**1**	**1**	**1**	**1**	
# of Samples at or Above Standard		**0**	**0**		**0**					
% Non-compliance for Period of Record		**0**	**0**		**0**					

North Base Area: Compliance Record for Lahontan WDR Monitoring Site P-1 (1995-2008)

	Land Treatment		Surface Waters		
Sample Date	Total Phosphorous	Total Nitrogen	Total Phosphorous	Total Nitrogen	
	1.0 mg/L	5.0 mg/L	0.1 mg/L	0.5 mg/L	
06/14/95	0.43	0.24	0.43	0.24	
01/16/96	0.15	0.05	0.15	0.05	
04/01/96	0.06	0.01	0.06	0.01	
05/22/97	0.29	0.1	0.29	0.1	
06/04/97	0.14	0.1	0.14	0.1	
04/18/01	0.12	0.025	0.12	0.025	
11/21/01	0.11	0.25	0.11	0.25	
04/25/02	0.2	0.025	0.2	0.025	
05/10/02	0.16	0.16	0.16	0.16	
11/10/03	NS	0.43	NS	0.43	
12/05/03	NS	0.025	NS	0.025	
12/20/03	NS	0.025	NS	0.025	
02/18/04	NS	0.07	NS	0.07	
04/07/04	NS	0.025	NS	0.025	
04/14/04	0.32	0.025	0.32	0.025	
04/21/04	NS	0.06	NS	0.06	
05/05/04	0.88	0.025	0.88	0.025	
05/11/04	0.29	0.25	0.29	0.25	
04/27/05	0.9	0.025	0.9	0.025	
05/16/05	0.18	0.09	0.18	0.09	
05/18/05	0.15	0.13	0.15	0.13	
04/03/06	0.22	0.025	0.22	0.025	
04/12/06	0.14	0.025	0.14	0.025	
04/26/06	0.23	0.025	0.23	0.025	
05/10/06	0.1	0.025	0.1	0.025	
05/18/06	0.16	0.25	0.16	0.25	
06/13/06	0.3	0.43	0.3	0.43	
03/29/07	NS	NS	NS	NS	
04/04/07	NS	NS	NS	NS	
04/10/07	NS	NS	NS	NS	
04/19/07	NS	NS	NS	NS	
04/25/07	NS	NS	NS	NS	
05/02/07	0.14	0.69	0.14	0.69	
05/09/07	NS	NS	NS	NS	
05/16/07	NS	NS	NS	NS	
05/24/07	NS	NS	NS	NS	
05/31/07	NS	NS	NS	NS	
06/07/07	NS	NS	NS	NS	
06/13/07	NS	NS	NS	NS	
06/20/07	NS	NS	NS	NS	
06/26/07	NS	NS	NS	NS	
03/31/08	NS	NS	NS	NS	
04/07/08	NS	NS	NS	NS	
04/14/08	NS	NS	NS	NS	
04/21/08	NS	NS	NS	NS	
04/28/08	NS	NS	NS	NS	
05/05/08	NS	NS	NS	NS	
05/12/08	NS	NS	NS	NS	
05/19/08	NS	NS	NS	NS	
05/20/08	NS	NS	NS	NS	
06/02/08	NS	NS	NS	NS	
06/09/08	NS	NS	NS	NS	
06/09/08	NS	NS	NS	NS	
06/22/08	NS	NS	NS	NS	
06/30/08	NS	NS	NS	NS	
4/1/09	NS	NS	NS	NS	
4/8/09	NS	NS	NS	NS	
4/15/09	NS	NS	NS	NS	
4/22/09	NS	NS	NS	NS	
4/27/09	NS	NS	NS	NS	
5/4/09	NS	NS	NS	NS	
5/5/09	NS	NS	NS	NS	
5/11/09	NS	NS	NS	NS	
5/18/09	NS	NS	NS	NS	
5/25/09	NS	NS	NS	NS	
6/3/09	NS	NS	NS	NS	
6/10/09	NS	NS	NS	NS	
6/17/09	NS	NS	NS	NS	
6/24/09	NS	NS	NS	NS	end 2nd Q 2009

South Base: Compliance Record for Lahontan WDR Monitoring Site P-2 (1995- 2008)

Sample Date	Discharge	Total Phosphorous	Total Nitrogen	Total Suspended Solids	Turbidity	PH	Temperature	Specific Conductivity	Dissolved Oxygen	NOTES
		0.008	0.15		20			95		
	cfs	mg/L	mg/L	mg/L	NTU		Celsius	umhos/cm	mg/L	
06/14/95	0.3	0.220	290.00	60.0	NS	NS	NS	NS	NS	
01/16/96	0.1	0.050	57.00	4.1	NS	NS	NS	NS	NS	
04/01/96	0.1	0.010	9.00	5.2	NS	NS	NS	NS	NS	
05/22/97	0.2	0.100	160.00	72.0	NS	NS	NS	NS	NS	
06/04/97	0.2	0.100	NS	NS	NS	NS	NS	NS	NS	
04/18/01	0.1	0.025	14.00	7.2	NS	NS	NS	NS	NS	
11/21/01	0.2	0.250	14.00	14.0	NS	NS	NS	NS	NS	
04/25/02	0.1	1.000	NS	NS	NS	NS	NS	NS	NS	
05/10/02	0.2	0.250	NS	NS	NS	NS	NS	NS	NS	
11/10/03	NS	0.080	49.00	48.0	NS	NS	NS	NS	NS	
12/05/03	NS	0.040	2.50	24.0	NS	NS	NS	NS	NS	
12/20/03	NS	0.250	18.00	42.0	NS	NS	NS	NS	NS	
03/18/04	NS	0.100	320.00	51.0	NS	NS	NS	NS	NS	
04/21/04	NS	0.060	180.00	98.0	NS	NS	NS	NS	NS	
05/11/04	0.2	0.250	71.00	35.0	NS	NS	NS	NS	NS	
04/27/05	0.0	0.025	5.00	3.6	NS	NS	NS	NS	NS	
05/16/05	0.1	0.025	17.00	15.0	NS	NS	NS	NS	NS	
05/18/05	0.1	0.080	25.00	15.0	NS	NS	NS	NS	NS	
05/10/06	0.0	0.025	2.50	2.6	NS	NS	NS	NS	NS	
06/13/06	0.1	0.025	9.00	11.0	NS	NS	NS	NS	NS	
03/29/07	0.0	0.047	0.27	NS	2.40	7.65	3.70	91.50	9.80	
04/04/07	0.1	0.130	0.34	8.0	12.00	7.08	4.20	84.80	10.77	
04/10/07	0.1	0.027	0.17	1.0	2.60	6.52	4.30	93.00	9.58	
04/19/07	0.0	<0.010	0.30	<1	0.49	6.92	2.90	64.10	11.32	
04/25/07	3.0	0.170	0.14	8.0	5.30	5.12	3.90	91.40	9.54	
05/02/07	0.3	0.025	0.20	7.0	9.10	6.20	4.20	48.80	8.48	
05/09/07	0.0	0.027	0.21	11.0	7.20	6.34	6.30	91.20	8.75	
05/17/07	<1	0.023	<0.07	23.0	3.30	6.45	7.20	100.90	10.24	
05/24/07	<1	<0.01	<0.07	<1	1.40	6.84	8.40	100.50	10.80	
05/31/07	<1	<0.01	<0.07	<1	1.40	6.98	10.80	103.50	0.93	
06/07/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no flow
06/13/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no flow
06/20/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no flow
06/26/07	NS	NS	NS	NS	NS	NS	NS	NS	NS	no flow
03/31/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/07/08	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/14/08	0.1	0.039	0.38	<10	7.40	NS	NS	NS	NS	
04/21/08	0.0	0.017	0.23	<1	4.70	NS	NS	NS	NS	
04/28/08	0.2	0.040	0.11	4.0	9.80	NS	NS	NS	NS	
05/05/08	0.0	0.026	0.16	NS	5.20	NS	NS	NS	NS	
05/12/08	0.0	0.014	0.20	4.0	3.70	NS	NS	NS	NS	
05/19/08	0.0	NS	NS	NS	NS	NS	NS	NS	NS	no flow
05/20/08	0.0	NS	NS	NS	NS	NS	NS	NS	NS	no flow
06/02/08	0.0	NS	NS	NS	NS	NS	NS	NS	NS	no flow
06/09/08	0.0	NS	NS	NS	NS	NS	NS	NS	NS	no flow
06/09/08	0.0	NS	NS	NS	NS	NS	NS	NS	NS	no flow
06/22/08	0.0	NS	NS	NS	NS	NS	NS	NS	NS	no flow
06/30/08	0.0	NS	NS	NS	NS	NS	NS	NS	NS	no flow
04/01/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/08/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/15/09	NS	NS	NS	NS	NS	NS	NS	NS	NS	
04/22/09	0.3	0.014	<0.070	5.0	5.30	NS	NS	NS	NS	
04/27/09	0.0	NS	NS	NS	NS	NS	NS	NS	NS	
05/04/09	0.1	0.047	0.12	<1	6.70	NS	NS	NS	NS	
05/05/09	0.0	NS	NS	NS	NS	NS	NS	NS	NS	
05/11/09	0.0	NS	NS	NS	NS	NS	NS	NS	NS	
05/18/09	0.0	NS	NS	NS	NS	NS	NS	NS	NS	
05/25/09	0.0	NS	NS	NS	NS	NS	NS	NS	NS	
06/03/09	0.0	NS	NS	NS	NS	NS	NS	NS	NS	
06/10/09	0.0	NS	NS	NS	NS	NS	NS	NS	NS	
06/17/09	0.0	NS	NS	NS	NS	NS	NS	NS	NS	
06/24/09	0.0	NS	NS	NS	NS	NS	NS	NS	NS	
# of Site Visits for Period of Record	62	62	62	62	62	62	62	62	62	
# of Samples Taken for the Period of Record	45	34	30	26	17	10	10	10	10	
# of Samples at or Above Standard		34	27		0					
% Non-compliance for Period of Record		100	90		0					

South Base: Compliance Record for Lahontan WDR Monitoring Site P-2 (1995-2008)

	Land Treatment		Surface Waters		
Sample Date	**Total Phosphorous**	**Total Nitrogen**	**Total Phosphorous**	**Total Nitrogen**	
	1.0 mg/L	**5.0 mg/L**	**0.1 mg/L**	**0.5 mg/L**	
06/14/95	0.220	290.00	0.220	290.00	
01/16/96	0.050	57.00	0.050	57.00	
04/01/96	0.010	9.00	0.010	9.00	
05/22/97	0.100	160.00	0.100	160.00	
06/04/97	0.100	NS	0.100	NS	
04/18/01	0.025	14.00	0.025	14.00	
11/21/01	0.250	14.00	0.250	14.00	
04/25/02	1.000	NS	1.000	NS	
05/10/02	0.250	NS	0.250	NS	
11/10/03	0.080	49.00	0.080	49.00	
12/05/03	0.040	2.50	0.040	2.50	
12/20/03	0.250	18.00	0.250	18.00	
03/18/04	0.100	320.00	0.100	320.00	
03/21/04	0.060	180.00	0.060	180.00	
05/11/04	0.250	71.00	0.250	71.00	
04/27/05	0.025	5.00	0.025	5.00	
05/16/05	0.025	17.00	0.025	17.00	
05/18/05	0.080	25.00	0.080	25.00	
05/10/06	0.025	2.50	0.025	2.50	
06/13/06	0.025	9.00	0.025	9.00	
03/29/07	0.047	0.27	0.047	0.27	
04/04/07	0.130	0.34	0.130	0.34	
04/10/07	0.027	0.17	0.027	0.17	
04/19/07	<0.010	0.30	<0.010	0.30	
04/25/07	0.170	0.14	0.170	0.14	
05/02/07	0.025	0.20	0.025	0.20	
05/09/07	0.027	0.21	0.027	0.21	
05/17/07	0.023	<0.07	0.023	<0.07	
05/24/07	<0.01	<0.07	<0.01	<0.07	
05/31/07	<0.01	<0.07	<0.01	<0.07	
06/07/07	NS	NS	NS	NS	
06/13/07	NS	NS	NS	NS	
06/20/07	NS	NS	NS	NS	
06/26/07	NS	NS	NS	NS	
03/31/08	NS	NS	NS	NS	
04/07/08	NS	NS	NS	NS	
04/14/08	0.039	0.38	0.039	0.38	
04/21/08	0.017	0.23	0.017	0.23	
04/28/08	0.040	0.11	0.040	0.11	
05/05/08	0.026	0.16	0.026	0.16	
05/12/08	0.014	0.20	0.014	0.20	
05/19/08	NS	NS	NS	NS	
05/20/08	NS	NS	NS	NS	
06/02/08	NS	NS	NS	NS	
06/09/08	NS	NS	NS	NS	
06/09/08	NS	NS	NS	NS	
06/22/08	NS	NS	NS	NS	
06/30/08	NS	NS	NS	NS	
04/01/09	NS	NS	NS	NS	
04/08/09	NS	NS	NS	NS	
04/15/09	NS	NS	NS	NS	
04/22/09	0.014	<0.070	0.014	<0.070	
04/27/09	NS	NS	NS	NS	
05/04/09	0.047	0.12	0.047	0.12	
05/05/09	NS	NS	NS	NS	
05/11/09	NS	NS	NS	NS	
05/18/09	NS	NS	NS	NS	
05/25/09	NS	NS	NS	NS	
06/03/09	NS	NS	NS	NS	
06/10/09	NS	NS	NS	NS	
06/17/09	NS	NS	NS	NS	
06/24/09	NS	NS	NS	NS	end 2nd Q 2009

* = "Phosphate, not phosphorus, values tested (Phosphorus is required in the board order)
Note that Nitrate, not nitrogen, is required in the board order

NS=not sampled

= values over surface water limit
= values oever land treatment limit

HMR WATER QUALITY – QUANTIFICATION OF DESIGN BENEFITS

PREPARED BY DR. MARK GRISMER, PE
FINAL DRAFT – MAY 26, 2010

Overview

Meeting Lake Tahoe water quality improvement targets requires new tools, new approaches and a level of accountability currently under development. Here we compare analyses of possible sediment/fines/nutrient loadings from the proposed Homewood Mountain Resort (HMR) Ski Area Master Plan Project (Project) on the Lake Tahoe West Shore for standard 20-year/1-hour (20-yr) Best Management Practices (BMP) design and alternative project design approaches using a combined upslope-urban local watershed model. With this approach, we hope to suggest a means by which treatment/loading assumptions can be tested and performance evaluated that will set a robust starting point for what is intended to be a model water quality protection and improvement program for the Lake Tahoe Basin.

As with all modeling efforts, the accuracy these types of assessments depend on available data, the types of assumptions made in the calculations and the understanding of the functionality of the treatment elements within the stormwater quality 'treatment train'. This modeling effort transcends typical approaches in that we model across different climatic and soil moisture regimes, thus producing a model output that more closely approximates natural variability. Thus, the intent is to provide more realistic data that can be used as a foundation for post project monitoring and assessment.

Here, we employ the adjusted PRISM (Parameter-elevation Regressions on Independent Slopes Model)) precipitation data from past wet and dry year examples (1995 & 2006 (wet), and 1994 & 2003 (dry) water years or WYs, respectively), measured upslope infiltration and sediment yield results from rainfall simulations studies, and assumed urban area loadings based on Loading Simulation Program in C++ or (LSPC)[1] sediment yield coefficients and results of urban runoff studies by Heyveart et al. (2008). These latter loading factors are our best first approximation and can be modified as additional field data and information applicable to the HMR Ski Area Master Plan Area (project area) become available. We suggest that the process described in this document may be the most robust approach to existing conditions calculations that has been done in the Lake Tahoe-Truckee region. The foundation for this claim is that we have used real-time water quality data from the site, and we have linked that to actual climate data from wet and dry years in order to estimate the variance between types of WYs. We have also used field-data adjusted smaller BMP functionality parameter values related to soil storage capacities and infiltration rates under wet and dry conditions in order to incorporate additional confidence in the values stated. This approach, as far as we know, has not been used before and sets a standard that we believe will offer a clear understanding of a starting point for water quality improvement designs for the project area.

An extremely important component of completing the work we have started here is monitoring of the actual implemented project and adjustment and refinement of system elements if needed. This is the accountability portion of the project. We are developing an applied adaptive management

[1] LSPC is the model used for the Lake Tahoe Basin Total Maximum Daily Load (TMDL) sediment reduction estimates and thus provides a high level of robustness and TMDL connectivity to this analysis.

strategy that will identify exactly how the performance of the systems are actually measured so that we can test our assumptions about model factors and adjust these factors, or systems to obtain the output needed, if adjustment becomes necessary.

Perhaps the most important element of our design, besides the robust estimates of performance that this document presents, is the fact that we have designed the system to treat more than the 'TRPA design storm' or the 20-yr storm. We recognize that episodic, high flow runoff events typically cause a greater impact than a 1–inch, 1-hour rainstorm, as was experienced in October 2009 where a 2+ inch storm resulted in a great deal of water quality degradation in the Lake Tahoe Basin. As Basin climate change continues, Coates (2010) noted that the relative frequency of larger storms is increasing as is the proportion of rain relative to snow events suggesting that larger capacity and more robustly designed stormwater collection/treatment systems will be required. Further we believe, based on a large body of data and observation, that the 20-yr storm design criteria may be inadequate to meet water quality protection needs, and therefore, the Project has increased the stormwater treatment system capacities beyond that of the standard design criteria.

What is the benefit of the proposed Stormwater Management program (SWMP) for the Project Alternatives vs. implementation of the standard 20-yr design requirement?

Dr. Mark Grismer PE and Michael Hogan (MS) of Integrated Environmental Restoration Services (IERS) worked with the information generated by Nichols Consulting Engineers (Nichols) describing existing conditions, the minimum 20-yr design storm SWMP and the proposed SWMP for Alternatives 1, 3 and 5 (Project SWMP) as a starting point for localized catchment modeling of the four redevelopment areas within the overall project area referred to as the North, South and Mid-Mountain Base Areas, and the Tahoe Skibowl Road Area. The Project SWMP design includes deployment of such LID (Low Impact Design approaches) elements as rainwater cisterns, pervious pavers and bio-retention areas for stormwater treatment together with upslope soil rehabilitation and larger capacity infiltration galleries than that required by the 20-yr storm BMP SWMP design. In the 20-yr BMP SWMP design, the higher infiltration rates within the underground galleries as suggested by TRPA specifications are accepted for modeling purposes, though in the Project SWMP design modeling, smaller, more realistic rates are employed. In both cases, all infiltration rates associated with LID type strategies (e.g. pervious pavers), basins and galleries are reduced by 50% under repeated wet conditions (e.g. sequential storms, spring snowmelt) in order to represent the effects of actual antecedent moisture conditions.

We consider four WYs in the modeling analyses and the daily precipitation data for these years was developed from the SNOTEL/PRISM modified Tahoe City data taken from the Pollutant Load Reduction Model (PLRM) cell #144. We examined the rainfall records used in the previous TMDL analyses (1993-2004) and identified the 1993-94 and 1994-95 water years as "dry" and "very-wet" years as well as 2002-03 and 2005-06 as more recent similarly "dry" and "wet" water years. For comparison purposes, Figure 1 illustrates the accumulated precipitation for Tahoe City and HMR. Note that the adjusted precipitation at HMR always exceeds that at Tahoe City by ~13 to ~35% for wet and dry WYs, respectively. Additionally, the storm distributions during each of these years vary, which in turn affects the amount of runoff and sediment loading generated. In Figure 1, observe that steeper step-wise increases are associated with repeated storm events. Note that the rainfall of recent "dry" years is similar to the 1993-94, though more rapid accumulations of precipitation occur early, mid and later in the WY. Similarly, though the Thanksgiving to New

Years rains of 2005 were substantial and resulted in significant stormwater contamination and slope failures in and around the Tahoe and Truckee region, the net accumulation is less than that of the 1995 WY.

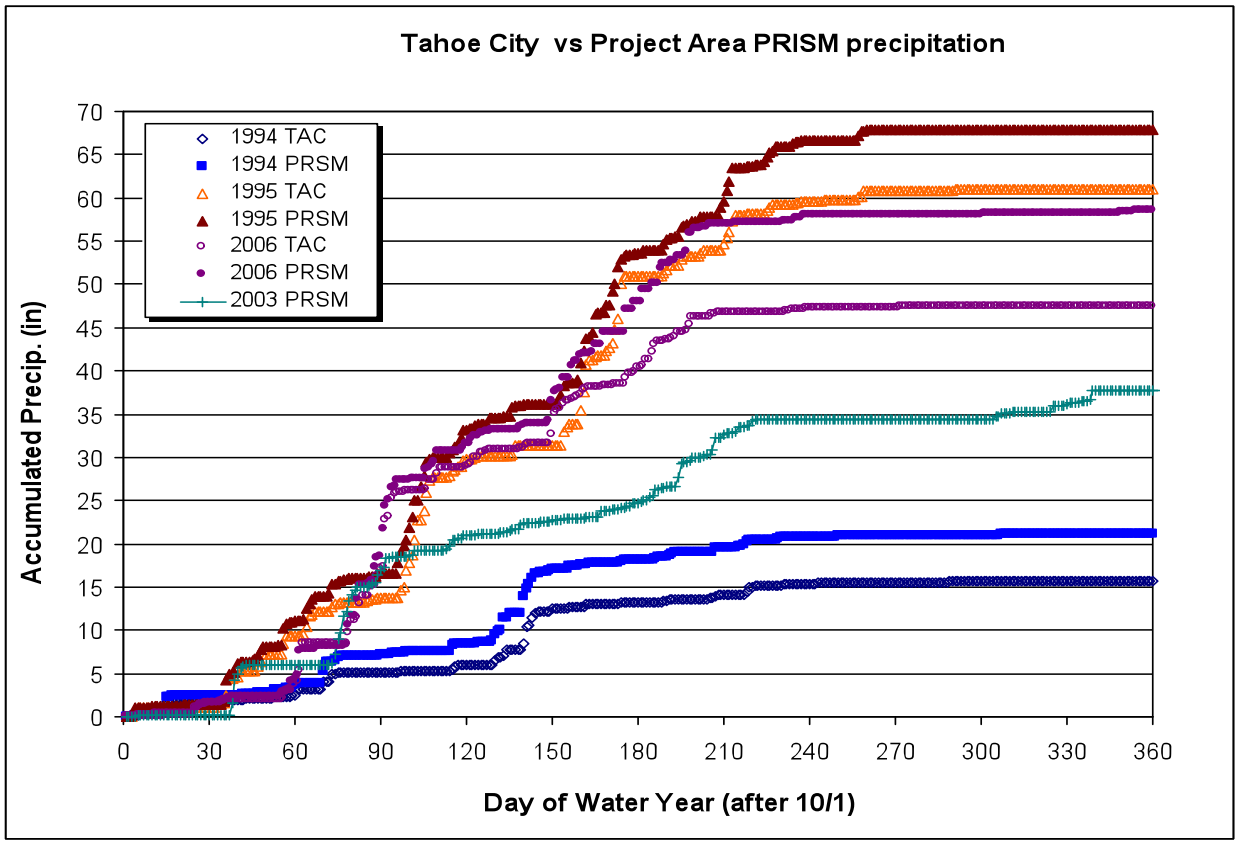


Figure 1. Comparison of Tahoe City (TAC) accumulated precipitation with PLRM estimates at the Project Area.

Excess Runoff and Sediment Load Modeling Calculations

Comparison of the Project *vs.* the 20-yr BMP SWMP's and existing conditions hydrology calculations provides a clear understanding of the benefits of the Project in terms of volume of water and sediment, fines and nutrient loads leaving the four redevelopment areas during wet and dry WY precipitation conditions. This stormwater management analysis relies on three tracks of information associated in part with some of the TMDL-related studies of 2007-2008. First, we assembled the sediment yield results developed from rainfall simulations at the project area to determine the sediment loads from the upslope areas. We combined this with the sediment yield factors (sediment loading factors per unit runoff) used in the Homewood Creek LSPC TMDL modeling to represent the urban areas, and finally, used the more complete runoff, sediment, nutrients and flow measurements completed by Desert Research Institute (DRI) researchers (Heyveart et al., 2008) for 2007-2008 to represent the nutrient loadings (see Figure 2). The DRI study was in the Brockway – Crystal Bay area of the Lake Tahoe north shore and represents actual field runoff and sediment behavior and characteristics over an extended period of time. While that data may not be completely representative of the west shore conditions, it is the only complete event driven data set of urban runoff available within the Lake Tahoe Basin, and thus allows a

more accurate foundation for analysis than previously available. Complete flow and concentrations measurements were captured by DRI for 12 storm events through January 2008. From these data, the sediment and nutrient loads per runoff event can be determined and related as shown in Figure 2. From the basic regression relationships and computation of sediment loads, associated nutrient loads can be estimated.

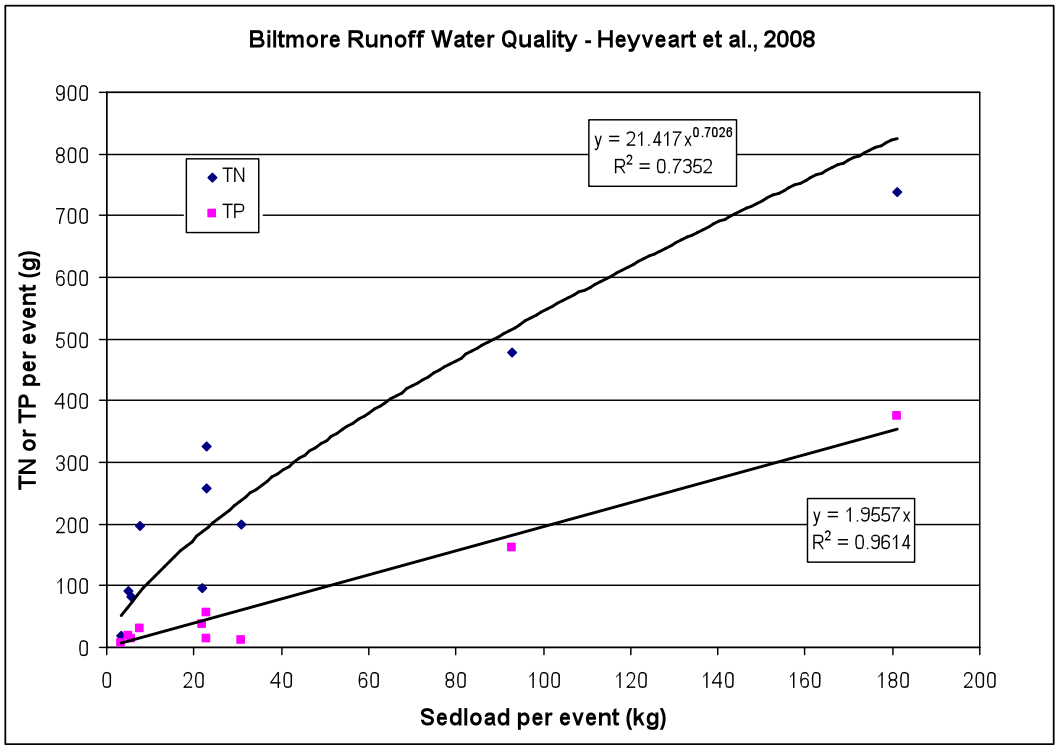


Figure 2. Relationships between nutrient and sediment loads per runoff event in 2007-08 at the Brockway-Crystal Bay area.

The second part of this analysis involved developing a routing/water-balance model of stormwater runoff from the redevelopment areas using modified rainfall records as described above. For comparison purposes, runoff areas between the three conditions were the same, although existing conditions have smaller impervious or somewhat different actual areas or locations. Annual stormwater infiltration, storage and runoff quantities are affected by daily changes in rainfall, snowmelt and available facility capacities throughout the year, with generally less capacity available during spring snowmelt periods and/or during sequential storm periods due to nearly saturated soil conditions.

Table 1 summarizes the net excess stormwater volumes and Table 2 lists the Project improvement compared to the existing conditions and the 20-yr BMP SWMP conditions. Excess stormwater runoff, that is, that volume not infiltrated or otherwise captured, is greatest from the 20-yr BMP conditions because they reflect the increased impervious surface areas as compared to existing conditions. This is particularly evident at the North and South Base areas and much less so at the Mid-Mountain Base and Tahoe Skibowl Road areas. At the Mid-Mountain and Tahoe Skibowl Road areas, the 20-yr BMP design does not include the uphill runoff that may enter the project area and must be contained by the redevelopment SWMP that is included in the Project SWMP analysis. As a result there is a net greater excess runoff from the 20-yr BMP SWMP than that from the Project SWMP at the Mid-Mountain Base area. In the Tahoe Skibowl Road area, there is

sufficient "over-design" under Project SWMP conditions to contain the uphill runoff such that there is still a slight improvement over 20-yr BMP SWMP conditions (3.3-7.8% improvement). Stormwater management under existing conditions was assumed to meet the 20-yr BMP criteria for the redevelopment areas based on current impervious coverage with the exception of the South Base area where information was available about stormwater vaults installed in 2006 and the capacities. As a result, we focus our comparisons between the Project and 20-yr BMP SWMP conditions to indicate the value of the Project as compared to the 20-yr BMP SWMP conditions because they reflect known conditions as yet to be implemented.

Table 1. Annual excess stormwater volumes leaving redevelopment areas for Existing, 20-yr BMP and Project SWMP designs in the wet (1995 & 2006) and dry (1994 & 2003) WY analyses.

Project Area	Existing Conditions (ft^3)				20-yr BMP SWMP (ft^3)				Project SWMP (ft^3)			
	1994WY	1995WY	2003WY	2006WY	1994WY	1995WY	2003 WY	2006WY	1994WY	1995WY	2003WY	2006 WY
North Base Area	86,621	1,063,148	431,469	1,085,104	176,359	1,423,567	612,899	1,444,862	11,130	696,946	240,951	662,489
South Base Area	12,311	431,985	151,781	419,998	91,653	762,996	326,481	771,149	6,420	380,941	132,462	352,956
Mid-Mtn Base Area	9,094	121,508	46,399	116,377	10,871	156,245	59,657	163,245	19,404	145,140	50,629	119,981
Tahoe Skibowl Rd	44,495	359,373	153,662	336,298	58,588	466,268	201,326	462,409	54,127	450,751	189,746	426,323
Overall	**154,514**	**1,978,010**	**785,314**	**1,959,783**	**339,466**	**2,811,071**	**1,202,365**	**2,843,670**	**93,076**	**1,675,773**	**615,791**	**1,563,755**

Table 2. Decrease in stormwater volumes leaving development areas for Project over 20-yr BMPs SWMP designs in the wet (1995 & 2006) and dry (1994 & 2003) WY analyses.

Project Area	Project SWMP (ft^3)							
	1994 WY	% Change	1995 WY	% Change	2003 WY	% Change	2006 WY	% Change
North Base Area	165,229	93.7%	726,621	51.0%	371,948	60.7%	782,373	54.1%
South Base Area	85,233	93.0%	382,055	50.1%	194,019	59.4%	418,193	54.2%
Mid-Mtn Base Area	-8,533	-78.5%	11,105	7.1%	9,028	15.1%	43,264	26.5%
Tahoe Skibowl Rd	4,461	7.6%	15,517	3.3%	11,580	5.8%	36,086	7.8%
Overall	**248,384**	**73.2%**	**1,137,293**	**40.5%**	**588,577**	**49.0%**	**1,281,922**	**45.1%**

Analogous to Tables 1 and 2, Tables 3 and 4 summarize the annual sediment loads for the redevelopment areas associated with the 20-yr BMP and Project SWMP designs. First considering dry WYs and focusing on the North and South Base areas, as they are the more substantial areas of the overall Project affecting loading and are adequate to illustrate the concepts, we show accumulated sediment loading in Figures 3a & 3b for the dry 1994 and 2003 WYs, respectively. In the 1994 WY, stormwater sediment load exceeds the 20-yr BMP SWMP capacities during 5-7 events at the two redevelopment areas as compared to only the one major event for the Project SWMP design capacities. As a result, the Project SWMP loads are 5.5% and 9.1% of the 20-yr BMP SWMP loads for the North and South Base areas, respectively. Note that the 2003 WY had greater overall precipitation as compared to the 1994 WY and this is reflected in greater loads under both SWMP designs. The occurrence of excess stormwater sediment loading events was roughly 3 times more often under the 20-yr BMP SWMP design conditions.

During the wet water years, stormwater runoff from the redevelopment areas would occur less than half as frequently (<10) under Project SWMP design conditions as compared to that for the 20-yr BMP SWMP conditions. Most stormwater runoff from the redevelopment areas occurs under Project SWMP conditions only for a substantial rain on snow event of 5.37 inches on New Year's Eve of 2005 and after sequential ~ 2 inch rain-on-snow days in January 1995 (recall that the 20-yr, 1-hr design storm event is 1.0 inches). Although fines (<16 μm) fractions of the total sediment load from the upslope areas above the North & South Base areas are between 40-55%, those from the redevelopment areas are assumed to be far greater, perhaps as high as 90%, but no such data is available for the HMR project area. Finally, additional tables analogous to Tables 3 and 4 as well figures analogous to Figures 3 and 4 can be generated from the modeling effort for the nutrient loads assuming applicability of the information of Figure 2 to the project area.

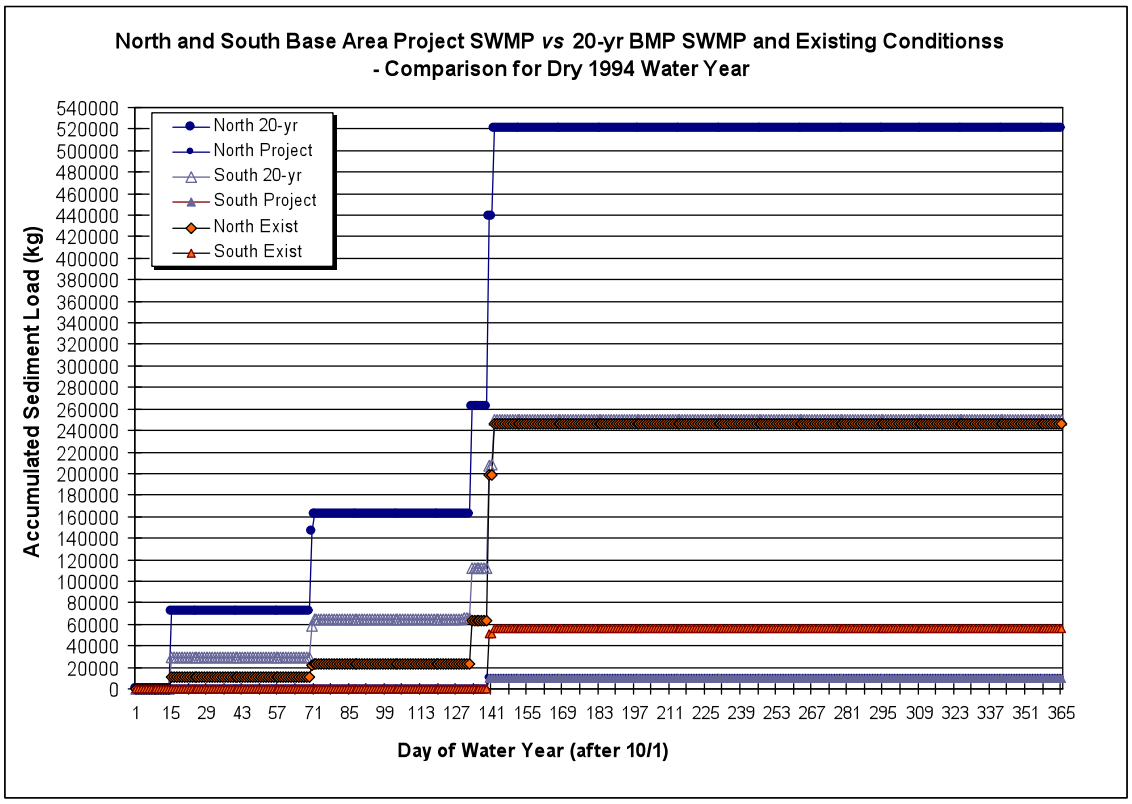
Figure 5 illustrates the possible accumulated nutrient loads from the North Base area under 20-yr BMP and Project SWMP conditions for the very-wet 1995 WY. While the graphs illustrate the basic concepts, the loads should be viewed with caution as they are based on the data shown in Figure 2 for the north Lake area rather than the west-shore. In the HMR redevelopment areas, the total land areas and sediment loads upon which these nutrient loads are estimated are much greater than that encountered at Brockway-Crystal Bay and likely beyond the event load data range shown in Figure 2. Nonetheless, they provide the reader some insight in the possible nutrient load variability that may be found at the HMR development areas.

Table 3. Annual excess stormwater sediment loads leaving development areas for Existing, 20-yr BMP and Project SWMP designs in the wet (1995 & 2006) and dry (1994 & 2003) WY analyses.

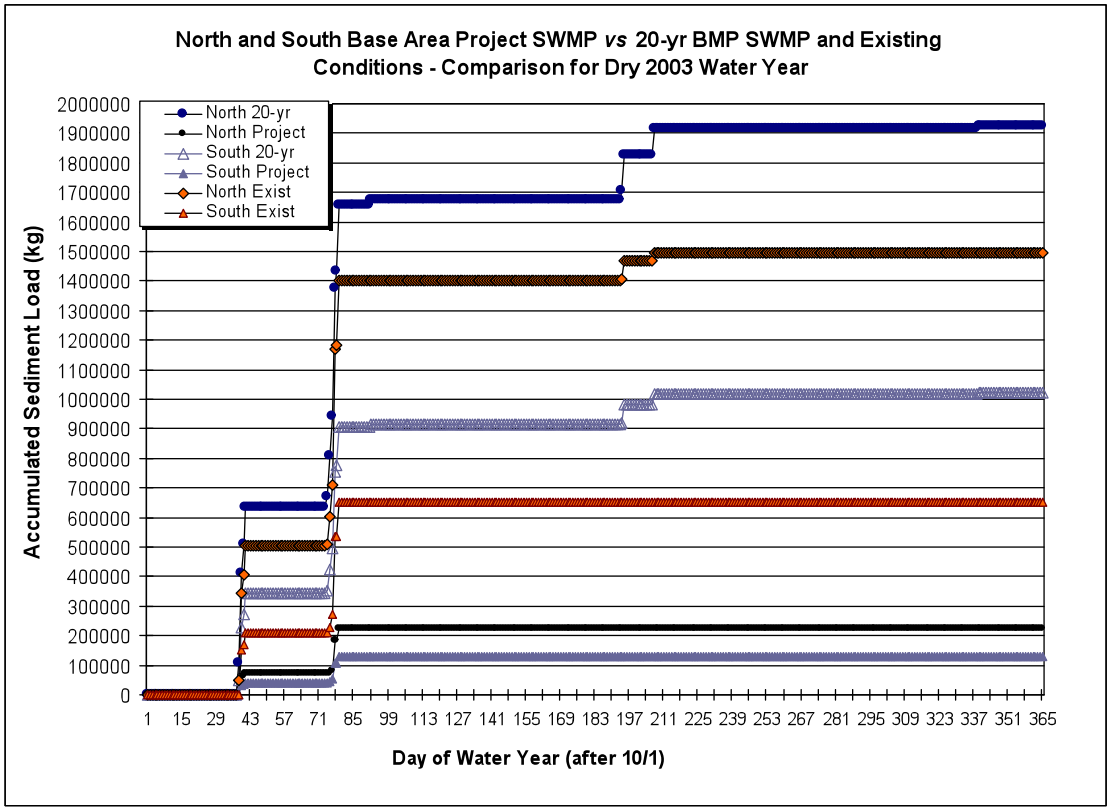
Project Area	Existing Conditions (kg)				20-yr BMP SWMP (kg)				Project SWMP (kg)			
	1994WY	1995WY	2003WY	2006WY	1994WY	1995WY	2003WY	2006WY	1994WY	1995WY	2003WY	2006WY
North Base Area	246,584	3,749,270	1,496,700	3,715,798	520,583	4,489,815	1,925,338	4,387,778	10,339	652,201	222,518	646,511
South Base Area	56,549	1,851,045	651,730	1,800,059	249,545	2,420,741	1,023,528	2,411,095	9,479	372,205	131,627	368,548
Mid-Mtn Base Area	15,353	475,818	166,708	461,902	21,493	491,426	177,498	497,680	28,649	187,886	68,063	162,855
Tahoe Skibowl Rd	98,685	1,324,050	522,235	1,260,036	100,199	1,209,091	492,269	1,125,043	72,542	510,820	219,642	491,384
Overall	**419,165**	**7,402,179**	**2,839,377**	**7,239,801**	**893,813**	**8,613,068**	**3,620,637**	**8,423,602**	**123,003**	**1,725,107**	**643,854**	**1,671,304**

Table 4. Decrease in stormwater sediment loads leaving development areas for Project over 20-yr BMPs SWMP designs in the wet (1995 & 2006) and dry (1994 & 2003) WY analyses.

Project Area	Project SWMP (kg)							
	1994WY	% Change	1995WY	% Change	2003WY	% Change	2006WY	% Change
North Base Area	510,243	98.0%	3,837,614	85.5%	1,702,820	88.4%	3,741,267	85.3%
South Base Area	240,065	96.2%	2,048,536	84.6%	891,901	87.1%	2,042,547	84.7%
Mid-Mtn Base Area	-7,156	-33.3%	303,540	61.8%	109,435	61.7%	334,825	67.3%
Tahoe Skibowl Rd	27,657	27.6%	698,271	57.8%	272,627	55.4%	633,659	56.3%
Overall	**772,804**	**86.5%**	**6,889,956**	**80.0%**	**2,978,786**	**82.3%**	**6,754,304**	**80.2%**

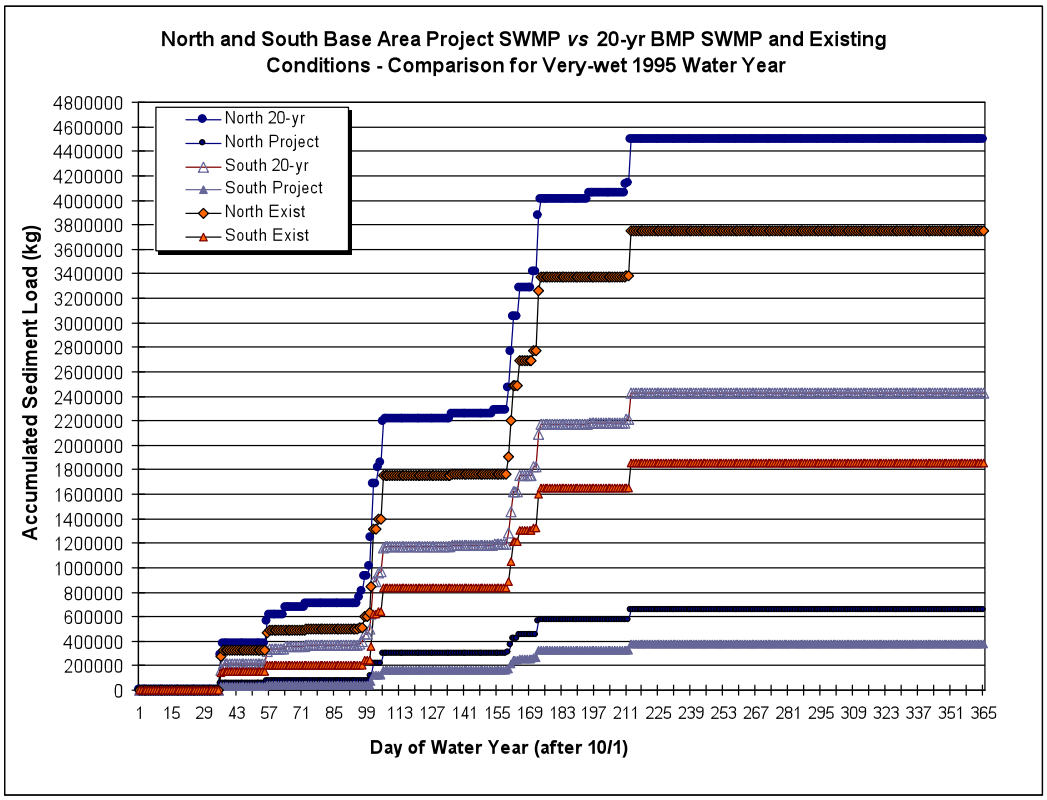


(3a)

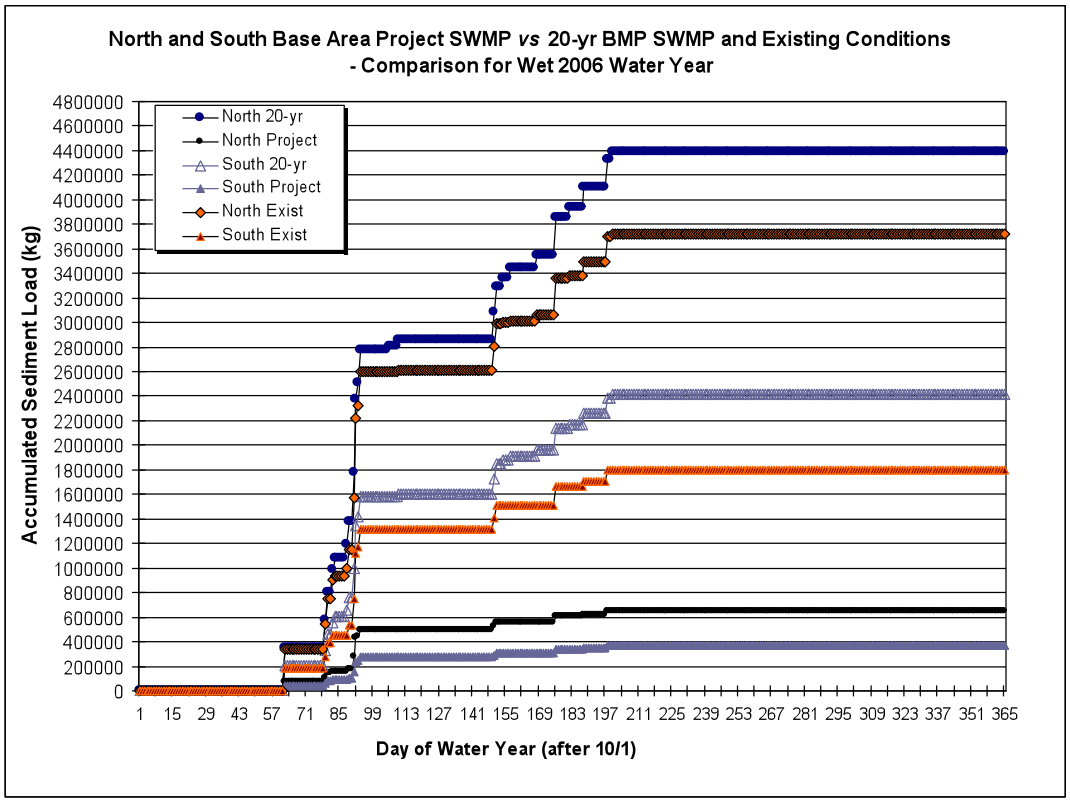


(3b)

Figure 3. Accumulated possible sediment loads leaving redevelopment areas under dry WY conditions for the North and South Base areas.

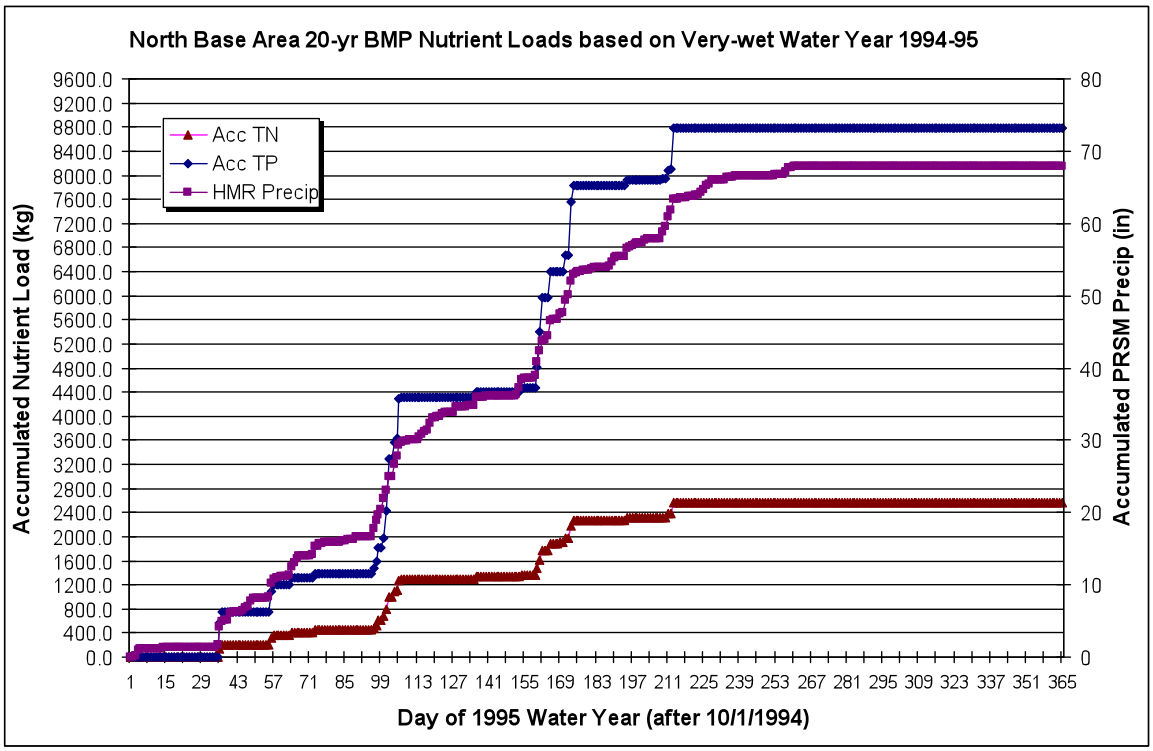


(4a)

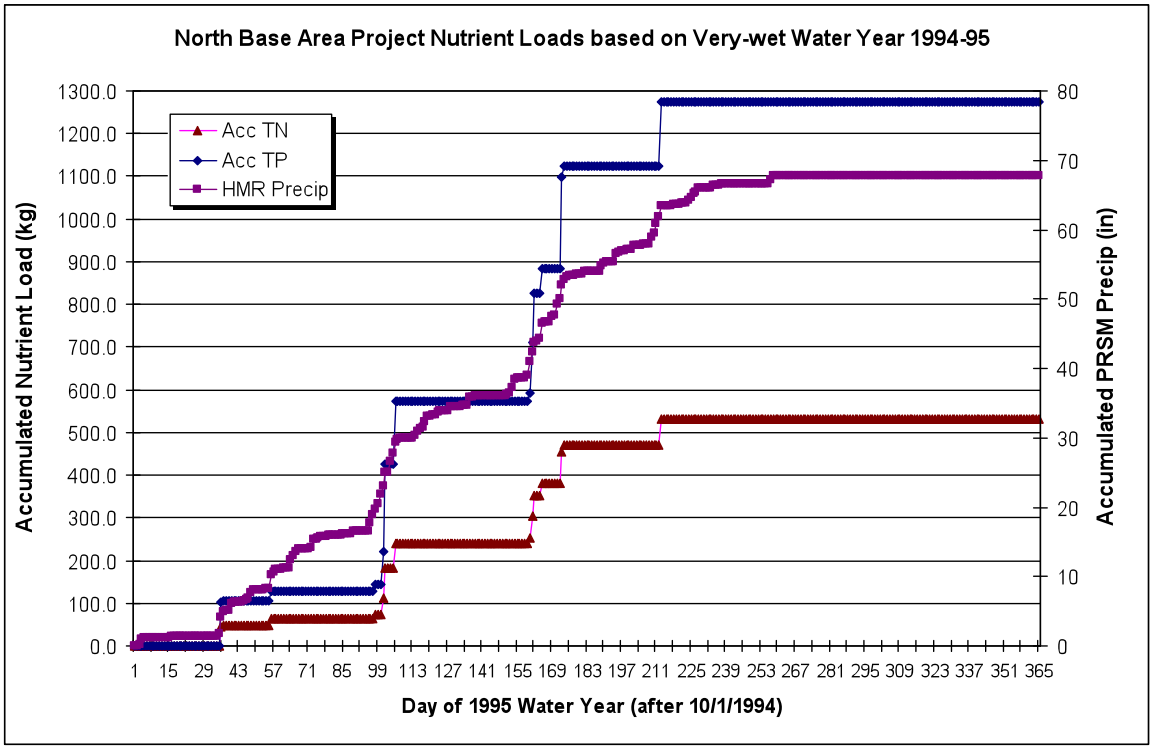


(4b)

Figure 4: Accumulated possible sediment loads leaving the redevelopment areas under wet WY conditions for the North and South Base areas.



(5a)



(5b)

Figure 5: Possible accumulated nutrient loads leaving the North Base redevelopment area under 20-yr BMP SWMP (a) and Project SWMP (b) conditions for the very-wet 1994 WY.

Summary

The stormwater runoff and treatment efficiency that can be expected from the Project SWMP is presented here in a manner similar to that for the Boulder Bay project on the Lake Tahoe north shore. Using measured infiltration and sediment yield data and daily climate data for a range of WYs and conditions, we have calculated and compared the runoff from 20-yr BMP SWMP and Project SWMP design conditions. While simple summary statements are difficult to make, given the complexity of storms, antecedent soil moisture conditions and other variables, the data shows that in wetter years, which represent worst-case scenarios, sediment and presumably fine sediment loads from the Project SWMP design are 80-86% less than those produced by the standard 20-yr BMP SWMP design.

Citations

Coates, R. 2010. Climate change in the Tahoe basin: regional trends, impacts and drivers. Climatic Change DOI 10.1007/s10584-010-9828-3. April.

Heyveart, A.C., A.T. Parra, C.C. Strasenburgh and R.P. Townsend. 2008. Brockway Project Area Stormwater Runoff and Characterization Study. UN- Desert research Institute, Reno, NV. March.

HOMEWOOD MOUNTAIN RESORT

WATER SUPPLY ASSESSMENT

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HOMEWOOD
Mountain Resort

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October 2010

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Appendix A: Project Maps

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1.0 INTRODUCTION

The purpose of the Homewood Mountain Resort Water Supply Assessment (Assessment) is to determine the existing water supply and demand, the projected water demand of the Homewood Mountain Resort (HMR) Master Plan Project (project), and the ability of the supply to meet the projected water demand. This Assessment will be utilized in the preparation of the joint Environmental Impact Report (EIR)/ Environmental Impact Statement (EIS) being prepared by Placer County and the Tahoe Regional Planning Agency (TRPA) for the HMR project. This Assessment was not prepared to act as a formal Senate Bill (SB) 610 Water Supply Assessment, but it does comply with the requirements of a SB 610 Water Supply Assessment.

There are two water supply alternatives analyzed in this water supply assessment for the proposed project. This Assessment will present water supply and demand projections separately for each alternative. Under Alternative 1, a hypothetical scenario is analyzed wherein the Tahoe City Public Utility District (TCPUD) would be the sole water provider for the entire project area. Note that such a scenario has not been presented to the TCPUD nor approved by the TCPUD Board of Directors, however, it is included in this Assessment for purposes of analyzing a range of alternatives in terms of water supply. In Alternative 2, Madden Creek Water Company (Madden Creek) and TCPUD would supply water to certain portions of the project area as is currently the case. A further explanation of these alternatives can be found in Section 3.0.

The Truckee River Operating Agreement (TROA) governs diversions of surface water from the Truckee River Basin and the Lake Tahoe Basin as the result of the settlement of litigation among various parties. The TROA was executed by the State of Nevada and State of California in September 2008, but has not yet been implemented. The TROA provides for a quantified allocation for each state. The State Water Resources Control Board (SWRCB) has held processing of applications for water rights in the Lake Tahoe Basin in abeyance pending the implementation of the TROA. The amount of water available for appropriation will be determined pursuant to the TROA. Once the allocations are finalized, it can be expected that the SWRCB will resume processing water rights applications in the Lake Tahoe Basin. The water use of the proposed project will comply with the TROA.

2.0 PROJECT DESCRIPTION

2.1 Project Location

The proposed project area is located in Placer County, California on the Homewood (Township 14 North/Range 16 East, Sections 1, 2, 11, and 12) 7.5-minute United States Geological Survey (USGS) quadrangle and is located in the Madden Creek and Homewood Creek Watersheds.

Vegetation communities in this region include annual grasslands and forbs, upper montane mixed chaparral, Jeffrey pine, and mixed conifer. Elevation ranges from approximately 6,230 to 7,400 feet within the proposed project area. Slopes in the proposed project areas range from 1 to 30%.

Long, relatively mild winters and short, dry summers characterize the climate of the region. Precipitation normally falls in the form of snow during the winter months. During the summer, there are infrequent thunderstorms. The western side of the Lake Tahoe Basin receives about 32 inches of average annual total precipitation. Climate characteristics that can affect water supply and management in the proposed project area are provided in Table 1.

Table 1. Climatic Data

Data Description	Jan	Feb	Mar	Apr	May	June
Average Max. Temperature (Fahrenheit)(2)	38.6	40.3	44.0	50.6	59.7	68.8
Average Min. Temperature (Fahrenheit)(2)	19.0	20.1	22.9	27.0	32.8	38.7
Average Total Precipitation (inches)(2)	6.01	5.41	4.06	2.14	1.16	0.67
Average Total Snowfall (inches)(2)	43.1	37.6	34.6	15.8	3.6	0.2
Estimated Evapotranspiration (acre-inch/month)(3)	0.37	0.33	0.86	3.1	4.48	2.72
Data Description	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Average Max. Temperature (Fahrenheit)(2)	77.8	77.2	69.9	59.0	46.7	40.4
Average Min. Temperature (Fahrenheit)(2)	44.3	43.9	39.1	32.4	25.7	21.0
Average Total Precipitation (inches)(2)	0.25	0.32	0.62	1.81	3.71	5.55
Average Total Snowfall (inches)(2)	0.0	0.0	0.3	2.6	16.1	35.7
Estimated Evapotranspiration (acre-inch/month)(3)	0.27	0.37	0.67	1.47	0.87	0.31

Notes:
1.) UWMP = Urban Water Management Plan
2.) Period of Record Monthly Climate Summary for Tahoe City, Period of Record: January 1, 1914 – March 31, 2005, Western Regional Climate Center.
3.) West Yost & Associates, 1994, "Groundwater Resources Investigation of the Tahoe City Sub-regional Service Area," pp. 42, Table 4-1 (Estimated Actual Evapotranspiration).

Source: TCPUD UWMP (2006)

2.2 Project Description

The proposed project includes a mixed-use base area to the north, a residential base area to the south, a mid-mountain lodge and beginner ski area, irrigated landscape, and snowmaking operations (Appendix A – Figure A1: Preliminary Conceptual Master Plan). These development areas are described in further detail below.

North Base Area. This area is approximately 16 acres and will include up to 36 residential condominiums, up to 20 fractional ownership units, up to 30 penthouse condominium units, and up to 75 traditional hotel rooms. Additionally, up to 40 two-bedroom for sale condominiums, up to 13 workforce housing units, and up to 25,000 square feet (sf) of commercial floor area (CFA) and 30,000 sf skier services will be included.

South Base Area. This area is approximately 6 acres and will include up to 99 residential condominiums. The residential condominiums will be spread throughout the South Base area in three buildings that will not exceed three stories. The residential units will replace the current children's facilities, ski school, and day lodge buildings.

APN 097-060-022 (located between North and South Base Areas). Plans propose to develop up to 16 townhomes above Sacramento Road on a 2.5 acre Planned Development lot located on a portion of APN 097-060-022.

Mid-Mountain. The Mid-Mountain will include: a new approximately 15,000 sf day lodge with a gondola terminal; a new "learn to ski" lift; a food and beverage facility with outdoor dining; small sundry outlet; and an outdoor swimming facility for use during the summer months. Additionally, a rubber tire vehicle maintenance facility will replace the existing full vehicle shop/maintenance facility.

Irrigation. The irrigation area consists of approximately 7.83 acres of irrigated landscape located throughout the project site. The north base and south base areas will include 5.36 acres and 2.22 acres respectively of low, medium and high water use landscape. The mid mountain area will include 0.25 acres of medium water use landscape.

Snowmaking Operations. The water supply for snowmaking is a separate, non-potable source. The water supply for snowmaking will be supplied by the TCPUD-owned McKinney Well (this well is not part of the public, potable water system) for the South Base region, and the HMR-owned North Base Well for the North Base region. Based on the current snowmaking evaluation, the on-site wells appear to have sufficient capacity for the proposed snowmaking plan, although there may be a periodic need to access public water supply during optimal weather conditions to enable higher efficiency snowmaking productivity. Since the main water supply source is not part of the public potable water system, and would not place a demand on the potable water supply, it will not be further discussed in this Assessment.

2.3 Project Land Use Summary

The proposed project lies within TRPA Plan Area Statement (PAS) 157- Homewood/Tahoe Ski Bowl and PAS 159 – Homewood/Commercial. TRPA PASs serve as the General and Community Plan for this region. Currently, the property is exclusively used for ski and concessions operation. Seasonal summer uses include wedding receptions, concerts, farmers market, and other events.

PAS 157 land use is classified as "recreation." This area currently contains existing facilities that support downhill skiing. The PAS encourages continual "opportunities for downhill skiing within guidelines prepared through ski area master plans and scenic restoration plans." The proposed improvements are permissible uses pursuant to TRPA Code of Ordinances Chapters 18 and 51, and are permitted in PAS 157.

PAS 159 land use is classified as "tourist." This area is a mixture of small commercial services, two marinas, a sea plane base, motel facilities, and some residential use. The area is 90% built out and the land coverage and disturbance is high. The proposed improvements are permissible uses pursuant to TRPA Code of Ordinances Chapters 18 and 51, and are permitted in PAS 159.

3.0 WATER SUPPLY ALTERNATIVES

There are two water supply alternatives for the proposed project. This Assessment will present water supply and demand projections separately for each alternative.

Alternative 1

In Alternative 1, TCPUD would be the sole water provider for the entire project area, which includes the development areas of the North Base, South Base, APN 097-060-022, and Mid-Mountain as well as the irrigation operations. Note that Alternative 1 does not have the concurrence of the TCPUD at this time but is included in this Assessment in order to provide a range of water supply alternatives. Based on the project description (Section 2), Alternative 1 will create the following connections for the TCPUD:

North Base:
- 36 residential condominiums
- 20 fractional ownership units
- 30 penthouse condominium units
- 75 traditional hotel rooms
- 40 two-bedroom for sale condominiums
- 13 workforce housing units
- 25,000 sf retail/commercial (CFA)
- 30,000 sf skier services

South Base:
- 99 residential condominiums

APN 097-060-022 (located between North and South Base Areas):
- 16 townhomes

Mid-Mountain:
- 15,000 sf day lodge (CFA)
- Maintenance Facility (equivalent to 1 dwelling unit)

Irrigation Operations:
- 7.83 acres of low, medium and high water use landscape plants.

Alternative 1 - Project Totals: **7.83 acres irrigated landscape**
330 dwelling units
70,000 sf CFA

Alternative 2

In Alternative 2, MCWC and TCPUD would supply water to portions of the project area (Appendix A – Figure A2: Service Boundary Exhibit). MCWC would provide water to the North Base as is currently the case. TCPUD would provide water to the South Base, APN 097-060-022, and Mid-Mountain (collectively referred to as the South Base herein). Based on the project description (Section 2), Alternative 2 will create the following connections for MCWC and TCPUD:

MCWC Service Connections

North Base:

- 36 residential condominiums
- 20 fractional ownership units
- 30 penthouse condominium units
- 75 traditional hotel rooms
- 40 two-bedroom for sale condominiums
- 13 workforce housing units
- 25,000 sf retail/commercial (CFA)
- 30,000 sf skier services

Irrigation Operations:

- North Base includes 5.36 acres of low, medium and high water use landscape plants.

Alternative 2 - Project Totals for MCWC:	**5.36 acres irrigated landscape** **214 dwelling units** **55,000 sf CFA**

TCPUD Service Connections

South Base:

- 99 residential condominiums

APN 097-060-022 (located between North and South Base Areas):

- 16 townhomes

Mid-Mountain:

- 15,000 sf day lodge (CFA)
- Maintenance Facility (equivalent to 1 dwelling unit)

Irrigation Operations:

- South Base & Mid Mountain include 2.47 acres of low, medium and high use landscape plants.

Alternative 2 - Project Totals for TCPUD:	**2.47 acres irrigated landscape** **116 dwelling units** **15,000 sf CFA**

4.0 WATER SUPPLY

Pursuant to Water Code section 10910(d), this section of the Assessment identifies and quantifies the existing and planned sources of water available to the water supplier in 5-year increments for the 20-year projection period.

(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

4.1 Surface Water Supply

TCPUD Supply

Up until the late 1980's, the TCPUD diverted most of its domestic water directly from Lake Tahoe. In response to stricter water quality requirements for surface water diversions that came about in the late 1980's (i.e. the Surface Water Treatment Rule), the TCPUD chose to reduce its dependence on surface diversions and begin a program to develop groundwater sources. With the exception of seasonal diversions from Lake Tahoe to augment supply for the McKinney/Quail Sub-district, the TCPUD now relies on groundwater to meet normal demands.

In 1995, West Yost & Associates and Luhdorff and Scalmanini prepared a report titled, "Groundwater Resources Investigation of the Tahoe City Subregional Service Area," hereinafter referred to as Groundwater Resources Investigation. The existing TCPUD wells were found to be adequate to provide sufficient pumping capacity to satisfy the ultimate build-out annual demands for the McKinney/Quail Sub-district (TCPUD 2006). The TCPUD has, however, experienced problems in meeting summer peak water demands in this area. This sub-district was served exclusively from the Crystal Way Well until the summer of 2004. The well was installed in 1996 and put online in 1997. Since placed into service, the well experienced a continual drop in both static and dynamic pumping levels until 2003 when air became entrained during pump operation (TCPUD 2006).

To provide additional supply, in late 2004 the TCPUD installed and operated an interim surface water treatment system for the treatment of surface water from Lake Tahoe. Currently, the Crystal Way Well is sufficient to meet demands through the winter season. The TCPUD operated the interim surface water treatment plant successfully to meet summer peak demands in 2004 and 2005. The TCPUD 5-year Capital Plan earmarks funds for planning, design, and construction of a permanent surface water treatment plant by 2010. TCPUD plans on running the interim surface water treatment system as necessary to meet peak summer demands until a permanent treatment facility is brought online

(TCPUD 2006). Once created, this surface treatment facility will have regulated flows based on Public Law 101-618 (Settlement Act), and the TROA (TCPUD 2006). Section 204 of the Settlement Act would limit California's total gross diversions in the Lake Tahoe Basin to 23,000 AF/Y. The particular water rights for each California water supplier that would draw on Lake Tahoe surface waters are currently being evaluated. At this time, the TCPUD is granted Lake Tahoe surface water diversions, and does operate in accordance with the Settlement Act; however, the portion of diverted California waters (23,000 AF/Y) to be allocated specifically to TCPUD has not been finalized (Laliotis 2009). TCPUD expects to receive a sufficient amount of diversions to meet their projected demands (Laliotis 2009).

MCWC Supply

MCWC does not utilize surface water. Groundwater is the sole water source for MCWC.

4.2 Groundwater Supply

Water Code 10910 limits groundwater discussion to the basin or basins that will serve the proposed project. Additional requirements are found in:

Water Code 10631(b):

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater.

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater that is projected to be pumped by the urban water supplier for the past 5 years.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier.

Water Code 10910(f)(5): An analysis of the sufficiency of the groundwater from the basin…to meet the projected water demand associated with the proposed project.

Basin Characteristics

The Tahoe Valley Groundwater Basin is located within the larger structural feature commonly referred to as the Lake Tahoe Basin. It is bounded on the east by the western shore of the Lake, and on the west by the Sierra Nevada, with an approximate north-south boundary that lies about 0.5 mile west of Dollar Point and 2 miles west of Meeks Bay. Elevations within the sub-basin range from 6,225 feet at lake level rising to above 6,400 feet in the west (DWR 2003).

Groundwater recharge in the proposed area is primarily from infiltration of precipitation into faults and fractures in bedrock, into the soil and decomposed granite that overlies much of the bedrock, and into unconsolidated basin-fill deposits. Groundwater is recharged over the entire extent of the flow path, except where the land surface in impermeable or where the groundwater table coincides with land surface (Thodal 1997).

TCPUD Supply

As required by Code Section 10631(b)(2) and (3), Table 2 provides a summary of the volume of water produced from the Crystal Way Well between 2000 and 2004, and identifies the USGS groundwater basin designations.

Table 2. TCPUD Well Production

Supply System USGS Basin Designation Water Supply	2000(2) (AF/Y)(3)	2001(2) (AF/Y)	2002(2) (AF/Y)	2003 (AF/Y)	2004 (AF/Y)
McKinney/Quail North Lahontan 6-5.02					
Crystal Way Well	293	284	274	245	185
Subtotal	293	284	274	245	185

Notes:
1.) UWMP = Urban Water Management Plan.
2.) From West Yost & Associates, 2003, "Urban Water Management Plan," pp. 4-3, Table 4-1.
3.) AF/Y = acre-feet per year.

Source: TCPUD UWMP (2006)

As shown in Table 2, all TCPUD groundwater is pumped from the Crystal Way Well, which draws from the North Lahontan USGS Groundwater Basin. The North Lahontan USGS Groundwater Basin is not an Adjudicated Groundwater Basin. According to Bulletin 118-80, "No basins in the Northern Lahontan Hydrologic Study Area are identified as subject to critical conditions of overdraft." Bulletins 160-93 and 160-98, California's Water Plan Update, reiterated the statement of no evidence of overdraft. Bulletin 160-98 added that no overdrafts are expected in the North Lahontan Hydrologic Study Area, even in drought years, by 2020 (TCPUD 2006). The TCPUD Water Master Plan projects the annual demand to be 750 gallons per day (GPD), or 0.84 AF/Y per connection (TCPUD 2002).

MCWC Supply

Based on the information provided by MCWC on December 21, 2007 and the fact that the MCWC currently meets the water demand of their customers (160 connections), it can be concluded that their water supply is sufficient to produce 134 AF/Y (based on the TCPUD projected annual demand per connection of 0.84 AF/Y).

4.2.1 Groundwater Management Plan

TCPUD

The TCPUD completed a Water Master Plan Update in April 2002 (TCPUD 2002). The 2002 Water Master Plan serves as the primary guidance document for managing TCPUD water systems, including its groundwater supplies.

MCWC

Based on available information, MCWC has not produced a Groundwater Management Plan.

4.3 Water Supply Entitlements, Rights, or Service Contracts

All water rights in California are subject to a constitutional and statutory requirement of both beneficial use and reasonable method of use. Riparian rights are water rights associated with land that is bordered or crossed by a natural watercourse. HMR has the right to use water from two surface streams on riparian land (Madden Creek, an unnamed west to east running watercourse (terminal near Grandview Avenue), and/or Homewood Creek). The HMR property also adjoins Lake Louise. The project could use water from these surface water sources for beneficial uses (such as irrigation and snowmaking).

An appropriative water right is a right to divert surface water either for direct use on property that is not riparian to the surface water source or to storage for later use on non-riparian property. Priority of appropriative rights is based on the basic adage, "first in time, first in right." HMR is the owner of Application No. 18934/Permit No. 14398, which would divert from Madden Creek for direct beneficial use in the amount of 1.5 cubic feet per second (cfs) from January 1 to December 31 of each year. The application also requested 30 AF/Y for storage to be collected between January 1 and June 15 of each season. The proposed use was domestic and recreational.

The TROA governs diversions of surface water from the Truckee River Basin and the Lake Tahoe Basin as the result of the settlement of litigation among various parties. The TROA was executed by the State of Nevada and State of California in September 2008, but has not yet been implemented. The TROA provides for a quantified allocation for each state. The State Water Resources Control Board (SWRCB) has held processing of applications for surface water rights in the Lake Tahoe Basin in abeyance pending the implementation of the TROA. The amount of water available for appropriation will be determined pursuant to the TROA. Once the allocations are finalized, it can be expected that the SWRCB will resume processing water rights applications in the Lake Tahoe Basin.

5.0 PROJECT DEMAND ANALYSIS

This section documents the water demand for existing uses and planned future uses for the proposed project. Water Code 10910(2) states that if the projected water demand associated with the proposed project was accounted for in the most recently adopted Urban Water Management Plan (UWMP), the water supplier may incorporate the requested information from the UWMP in the assessment. The TCPUD UWMP accounts for the McKinney/Quail Sub-district, but it does not include projections for the proposed project. To calculate the future water demand in this area, the proposed project's projected annual demand will be added to the McKinney/Quail Sub-district projected annual demand found in the TCPUD UWMP.

The projections for the McKinney/Quail Sub-district are based on the projected annual demand values presented in the TCPUD Water Master Plan, which is 750 gallons per day (GPD), or 0.84 AF/Y per connection (TCPUD 2002).

To determine the projected water demand, per dwelling unit and per 1,000 sf of CFA, for the HMR project, an analysis of three similar resort projects (The First Ascent, 22 Station, and the Resort at Squaw Creek Midrise projects) located in Squaw Valley (6.5 miles north of the project area) was performed. This analysis used meter data from 2005 to 2009 to calculate the annual demands for domestic and commercial use. Through this analysis, it was determined that a domestic water demand of 0.14 AF/Y per dwelling unit, and a commercial water demand of 0.07 AF/Y per 1,000 sf CFA would be appropriate demand rates for a resort in the Tahoe Basin with a similar magnitude of development.

The number of water service connections in the proposed project area correlates well with the number of developed parcels. Parcel development is strictly regulated and limited by TRPA. As stated in the California State Water Plan Update, Bulletin 160-98, "Future development in the Lake Tahoe Basin is strictly limited by the bi-state Tahoe Regional Planning Agency to protect the basin's environmental quality." In addition, parcel acquisition and ownership by governmental agencies (e.g. California Tahoe Conservancy and the United States Forest Service) limits the number of parcels available for development. The proposed project's connections were not included in the TCPUD UWMP because the project was not yet proposed at the time the TCPUD UWMP was created.

Landscape irrigation demands were estimated for each area by the project landscape architect, L+P Design Works, using the State of California Department of Water Resources Statewide Integrated Water Management Program Water Budget Workbook.

Alternative 1

Based on the annual water demand in this region calculated by TCPUD in their Water Master Plan (0.84 AF/Y)(TCPUD 2002), the projected water demand for the McKinney/Quail Sub-district is 385 AF/Y. The projected values for the proposed project, shown in Table 3, were calculated using the demand rates described above (Residential – 0.14 AF/Y per unit and Commercial – 0.07 AF/Y per 1,000 sf CFA). In addition to residential and commercial water demand for the proposed project, water will be used for irrigation operations. Based on schematic design (as discussed in Section 2.2), 10.8 AF/Y of water will be required for irrigation. This value is included in the projected water demand shown in Table 3.

Table 3. Projected Annual Demand for the McKinney/Quail Sub-district

	Annual Demand (AF/Y)		
Service Area	**2009**	**2010**	**2011**
McKinney/Quail Sub-district	381	385	385
Proposed Project (residential)	n/a	n/a	46
Proposed Project (commercial)	n/a	n/a	5
Proposed Project (irrigation)	n/a	n/a	11
Proposed Project Subtotal	n/a	n/a	62
Total Annual Demand (AF/Y)			**447**

Based on the information presented in Table 3, the proposed project will require 62 AF/Y. When added to the future projected annual demand for the McKinney/Quail Sub-district (385 AF/Y), the total projected annual water demand for the McKinney/Quail Sub-district, including the proposed project and associated irrigation operations, is 447 AF/Y.

Alternative 2

North Base - MCWC Service Area.

Based on the annual water demand in this region calculated by TCPUD in their Water Master (0.84 AF/Y)(TCPUD 2002), the projected water demand for the MCWC Service Area is 134 AF/Y. The projected values for the proposed project, shown in Table 4, were calculated using the demand rates described above (Residential – 0.14 AF/Y per unit and Commercial – 0.07 AF/Y per 1,000 sf CFA). In addition to residential and commercial water demand for the proposed project, water will be used for irrigation operations. Based on schematic design (as discussed in Section 2.2), 8.3 AF/Y of water will be required for irrigation. This value is included in the projected water demand shown in Table 4.

Table 4. Projected Annual Demand for MCWC Service Area

	Annual Demand (AF/Y)		
Service Area	**2009**	**2010**	**2011**
MCWC	134	134	134
Proposed Project - North Base (residential)	n/a	n/a	30
Proposed Project - North Base (commercial)	n/a	n/a	4
Proposed Project - North Base (irrigation)	n/a	n/a	8
Proposed Project - North Base Subtotal	n/a	n/a	42
Total Annual Demand (AF/Y)			**176**

Based on information presented in Table 4, the proposed project (North Base Area) will require 42 AF/Y. When added to the future projected annual demand for the MCWC Service Area (134 AF/Y), the total projected annual water demand for the MCWC Service Area is 176 AF/Y.

South Base & Mid Mountain - TCPUD Service Area (McKinney/Quail Sub-district).

Based on the annual water demand in this region calculated by TCPUD in their Water Master Plan (0.84 AF/Y)(TCPUD 2002), the projected water demand for the McKinney/Quail Sub-district is 385 AF/Y. The projected values for the proposed project, shown in Table 5, were calculated using the demand rates described above (Residential – 0.14 AF/Y per unit and Commercial – 0.07 AF/Y per 1,000 sf CFA). In addition to residential and commercial water demand for the proposed project, water will be used for irrigation operations. Based on schematic design (as discussed in Section 2.2), 2.45 AF/Y of water will be required for irrigation. This value is included in the projected water demand shown in Table 5.

Table 5. Projected Annual Demand for the McKinney/Quail Sub-district

	Annual Demand (AF/Y)		
Service Area	**2009**	**2010**	**2011**
McKinney/Quail Sub-district	381	385	385
Proposed Project - South Base (residential)	n/a	n/a	16
Proposed Project - South Base (commercial)	n/a	n/a	1
Proposed Project - South Base (irrigation)	n/a	n/a	3
Proposed Project - South Base Subtotal	n/a	n/a	20
Total Annual Demand (AF/Y)			**405**

Based on information presented in Table 5, the proposed project (South Base & Mid Mountain Areas) will require 20 AF/Y. When added to the future projected annual demand for the McKinney/Quail Sub-district (385 AF/Y), the total projected annual water demand for the McKinney/Quail Sub-district, including the proposed project (South Base Area and irrigation operations), is 405 AF/Y.

5.1 Dry Year Demands

5.1.1 Contingency Plans and Water Conservation

TCPUD

The TCPUD intends to continue the practice of augmenting groundwater supply with surface water diversions. The TCPUD 5-year Capital Plan (see Section 7 of the 2005 UWMP) includes funding for a permanent treatment system for surface water diversions. The permanent treatment system will be designed to increase reliability to meet projected demands during a normal water year, a single dry water year, and multiple dry water years.

Additionally, TCPUD has included the following water conservation measures in their UWMP:

- Water survey programs for single-family residential and multi-family residential customers
- Residential plumbing retrofit
- All plumbing fixtures for new construction shall meet the following low flow requirements as per Water Conservation Ordinance No. 106:
    - Toilets: 1.6 gallons/flush
    - Showers: 3.5 gallons/minute
    - Faucets: 4 gallons/minute
    - Water pressure shall not exceed 60 psi at ground floor level
- System water audits, leak detection, and repair
- Metering with commodity rates for all new connections and retrofit of existing connections

- Large landscape conservation programs and incentives
- High-efficiency washing machine rebate programs
- Public information programs
- School education programs
- Conservation programs for commercial, industrial, and institutional accounts
- Conservation pricing
- Water conservation coordinator
- Water waste prohibitions
- Residential ultra-low-flush toilet replacement programs

In 1981, due to low surface flows and groundwater conditions, TCPUD adopted Resolution No. 81-51 (Appendix B) declaring water shortages in two of its service areas and enforcing restrictions on water use. TCPUD also follows a Contingency Plan (Appendix C). Table 6 lists the phases of water restrictions that TCPUD adopted to deal with a water shortage.

Table 6. Regulations and Restrictions on Water Use in the Event of a Water Shortage

Phase	Action
General	All Phases - Discontinue Water Service to chronic water wasters, subject to standard shut-off/turn on fee
I	Strict Inside Water Conservation such as: • Washing only full loads of dishes and laundry • Avoid use of garbage disposal • Don't run water while brushing teeth • Check plumbing and repair leaking toilets, faucets Limit Outside Watering, don't water during peak hours, no flooding or ponding. No watering of native shrubs, growth.
II	No Outside Watering Depending on service area, TCPUD may have to install a temporary lake pump. Truck potable water to storage tanks if lake intakes are not adequate.
III	Water Rationing (rolling outages).
Notes: 1.) UWMP = Urban Water Management Plan.	

Source: TCPUD UWMP (2006)

In the event that Phase II is enforced or the shortage is expected to last longer than a few days, TCPUD would install temporary lake pumps. An emergency operations agreement has been established with the Department of Health Services (DHS) to allow the existing lake diversions to be used. Chlorination equipment with metering pumps would be installed on each of the intakes to meet DHS requirements. TCPUD keeps this equipment and hypochlorite solution in stock at all times. The lake intakes with the chlorination equipment can be activated in one day, if needed.

MCWC

Based on available information, MCWC has not identified a Water Conservation or Contingency Plan.

6.0 COMPARISON OF PROJECTED WATER SUPPLIES AND DEMANDS

Alternative 1

Based on operating history, and without implementation of water conservation measures, the existing McKinney/Quail groundwater supply system is inadequate to meet current peak demands during the summer. During the summer months, the TCPUD augments water supply in the McKinney/Quail Sub-district with surface water diversions from Lake Tahoe. The TCPUD intends to continue the practice of augmenting groundwater supply with surface water diversions. The TCPUD 5-year Capital Plan includes funding for a permanent treatment system for surface water diversions. The permanent treatment system will be designed to increase reliability to meet projected demands during a normal water year, a single dry water year, and multiple dry water years. Table 7 shows the water supply and demand comparison for the McKinney/Quail Sub-district.

Table 7. Water Supply and Demand Comparison for McKinney/Quail Sub-district

	2009 (AF/Y)	2010 (AF/Y)	2011 (AF/Y)
Current Supply Total	185	185	185
Demand Total (including the proposed project)	381	385	447
Difference (deficiency compensated by surface water)	196	200	262

The projected annual water demand (2011 and beyond) for the McKinney/Quail Sub-district (which includes the proposed project) is 447 AF/Y. The TCPUD Crystal Way Well production in 2004 was 185 AF/Y (TCPUD 2006). Treated surface water from Lake Tahoe augments supply to meet the current demand. TCPUD plans to continue utilizing surface water from Lake Tahoe to meet the demands of the proposed project. The particular water rights for each California water supplier that would draw on Lake Tahoe surface waters are currently being evaluated. At this time, the TCPUD is granted Lake Tahoe surface water diversions, and does operate in accordance with the Settlement Act; however, the portion of diverted California waters (23,000 AF/Y) to be allocated specifically to TCPUD has not been finalized (Laliotis 2009). TCPUD expects to receive a sufficient amount of diversions to meet their projected demands (Laliotis 2009). This amount will be adequate in meeting the required 447 AF/Y. Therefore, based on available information, the TCPUD would be capable of supplying water to the McKinney/Quail Sub-district (including the proposed project).

Alternative 2

MCWC Service Area

Table 8 shows the water supply and demand comparison for the MCWC Service Area.

Table 8. Water Supply and Demand Comparison for MCWC Service Area

	2009 (AF/Y)	2010 (AF/Y)	2011 (AF/Y)
Current Supply Total	134	134	134
Demand Total (including the proposed project)	134	134	176
Difference	0	0	42

The projected annual water demand for the MCWC Service Area (which includes the proposed project - North Base Area) is 176 AF/Y. MCWC utilizes groundwater to supply their service area. Based on available information, MCWC has not disclosed the details of groundwater supply in their service area; however, based on the fact that they are currently meeting the water demand of their customers (160 connections), it can be assumed that their supply is 134 AF/Y. To meet the water demand for the proposed project (North Base Area), MCWC will need additional production capacity and storage to meet demand and be capable of supplying the additional water to the proposed project area (increase of 42 AF/Y). Based on available information, MCWC should be able to add production capacity and storage to meet the demand of the MCWC Service Area (including the proposed project).

TCPUD Service Area – McKinney/Quail Sub-district

Based on operating history, and without implementation of water conservation measures, the existing McKinney/Quail groundwater supply system is inadequate to meet current peak demands during the summer. During the summer months, the TCPUD augments water supply in the McKinney/Quail Sub-district with surface water diversions from Lake Tahoe. The TCPUD intends to continue the practice of augmenting groundwater supply with surface water diversions. The TCPUD 5-year Capital Plan includes funding for a permanent treatment system for surface water diversions. The permanent treatment system will be designed to increase reliability to meet projected demands during a normal water year, a single dry water year, and multiple dry water years. Table 9 shows the water supply and demand comparison for McKinney/Quail Sub-district for Alternative 2.

Table 9. Water Supply and Demand Comparison for TCPUD Service Area

	2009 (AF/Y)	2010 (AF/Y)	2011 (AF/Y)
Current Supply Total	185	185	185
Demand Total (including the proposed project)	381	385	405
Difference (deficiency compensated by surface water)	196	200	220

The projected annual water demand for the McKinney/Quail Sub-district (which includes the proposed project) is 405 AF/Y. The TCPUD Crystal Way Well production in 2004 was 185 AF/Y (TCPUD 2006). Treated surface water from Lake Tahoe augments supply to meet the current demand. TCPUD plans to continue utilizing surface water from Lake Tahoe to meet the demands of the proposed project. The particular water rights for each California water supplier that would draw on Lake Tahoe surface waters are currently being evaluated. At this time, the TCPUD is granted Lake Tahoe surface water diversions, and does operate in accordance with the Settlement Act; however, the portion of diverted California waters (23,000 AF/Y) to be allocated specifically to TCPUD has not been finalized (Laliotis 2009). TCPUD expects to receive a sufficient amount of diversions to meet their projected demands (Laliotis 2009). This amount is adequate in meeting the required 405 AF/Y. Therefore, based on available information, the TCPUD is capable of supplying water to the McKinney/Quail Sub-district (including the proposed project).

7.0 REFERENCES

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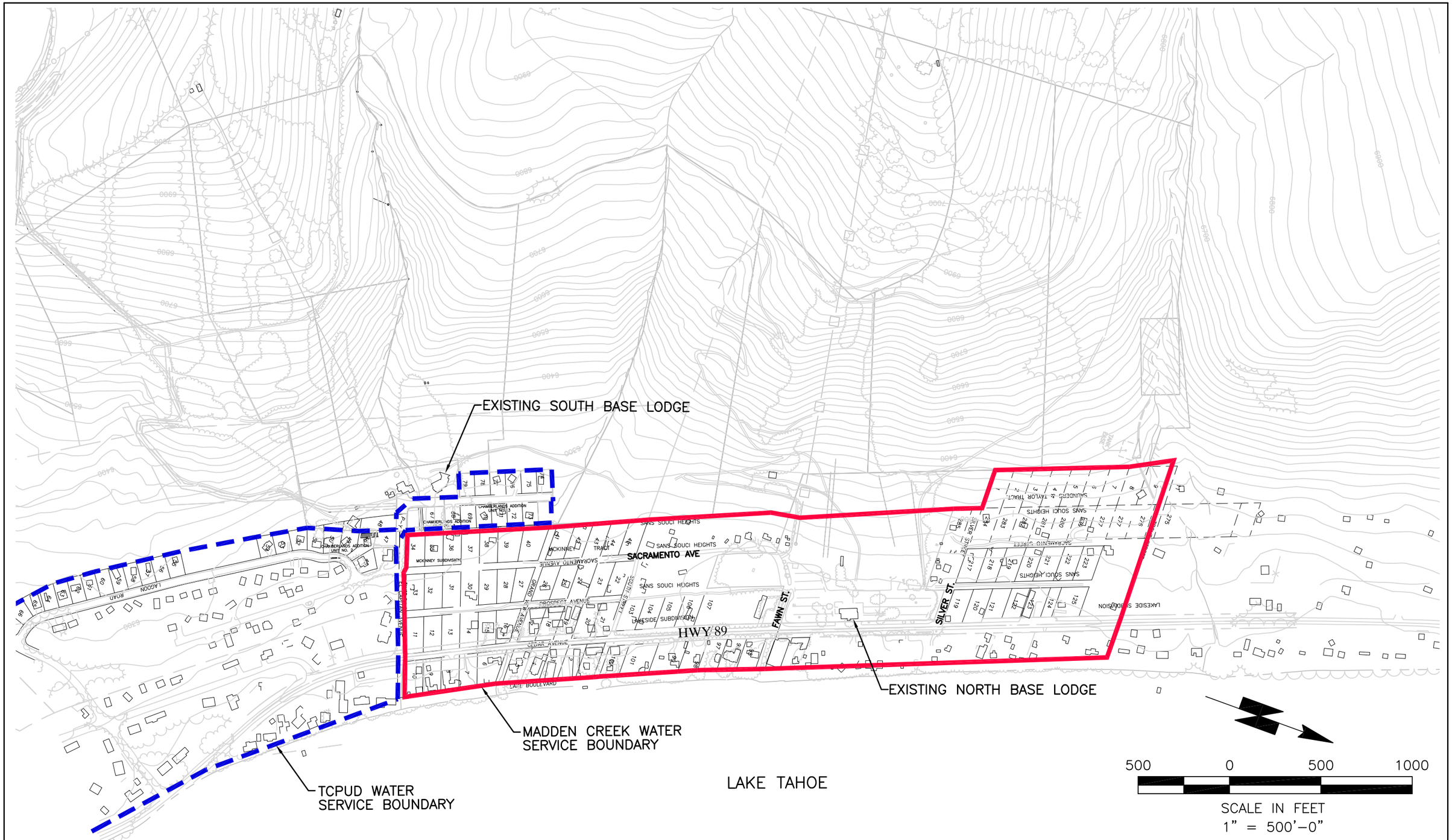
APPENDIX A

PROJECT MAPS

A1 – PRELIMINARY CONCEPTUAL MASTER PLAN

A2 – TCPUD/MADDEN CREEK WATER COMPANY SERVICE BOUNDARY EXHIBIT

Double Trouble
Cedar Ridge
Exhibition
Quail Chair
The Face
Gondola
Ore Car
Residential
Tahoe Ski Bowl Way
Residential
Residential
Lagoon Road
Sacramento Ave
Tahoe Ski Bowl Way
Sacramento Ave
Skier Services / Residential
Hotel Lodge
Parking
Workforce Housing
Shuttle Stop
Shuttle Stop
Ice Skate Pond
Museum
Retail / Residential
Residential
Silver Street
South Street
Shuttle Stop
Hwy 89
Hwy 89
Homewood Marina
West Shore Cafe Marina
Obexers Marina
HOMEWOOD
Mountain Resort
Preliminary Conceptual Master Plan
HKS
HILL GLAZIER STUDIO
DESIGNWORKSHOP
N
0
50
100
200 feet
*preliminary conceptual plan only; subject to change



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HOMEWOOD VILLAGE RESORT
TCPUD/MADDEN CREEK WATER CO.
SERVICE BOUNDARY EXHIBIT

FIGURE
A2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
CKC	A514.02.14		09-28-09	

APPENDIX B

RESOLUTION 81-51

RESOLUTION NO. 81-51
of
TAHOE CITY PUBLIC UTILITY DISTRICT

APPROVING AND AUTHORIZING INTERIM MEASURES, LIMITING AND RESTRICTING WATER USE AND SETTING TIME AND PLACE OF HEARING ON DECLARATION OF WATER SHORTAGE EMERGENCY CONDITION.

WHEREAS, due to below-normal precipitation and above-average consumption the DISTRICT is currently experiencing a water shortage condition, and

WHEREAS, the DISTRICT has undertaken interim measures to limit and restrict water use and consumption due to these conditions, and

WHEREAS, these interim measures may not be sufficient to avoid depleting the DISTRICT water supplies to the extent that there may be insufficient water for human consumption, sanitation and fire protection purposes, and

WHEREAS, California Water Code Section 350 and following establishes a procedure for hearing and declaration of a water shortage emergency condition and the adoption of appropriate regulations and restrictions on delivery and consumption of water in order to conserve the water supply for the greatest public good,

NOW THEREFORE, be it resolved by the Board of Directors of TAHOE CITY PUBLIC UTILITY DISTRICT as follows:

1. That the Board of Directors of this District hereby, approves and authorizes the undertaking and implementation of such interim water conservation measures as may be deemed necessary or advisable to limit and restrict the delivery and consumption of water in the District or any of the areas served thereby, including, without limitation restrictions and limitations on times of use, location, type of use, quantity, domestic use, (excluding watering of landscape, yards and vegetation) together with sanitation and fire protection to be accorded first priority.

2. That this Resolution is supplemental to all existing District ordinances, resolutions, rules or regulations applicable to and imposing limitations or restrictions upon water use or consumption, including discontinuance of service in the event of waste of water or water use practices resulting in waste, excessive or unnecessary water use.

3. That on the 6th day of August 1981 at the hour of 6:30 o'clock pm of said day at 380 N. Lake Blvd., Tahoe City, California a hearing will be held by this Board of Directors to consider the necessity of declaring a water shortage emergency condition and thereupon to adopt such regulations and restrictions on delivery and consumption of water as may be deemed necessary in the discretion of the Board in order to conserve its water supply for the greatest public benefit [illegible] particular regard to domestic use, sanitation and fire

APPENDIX C

TCPUD CONTINGENCY PLAN

The purpose of a contingency plan for the District is to be prepared to take actions to protect public health and minimize further contamination should the aquifer directly tapped by a District well become contaminated.

When contamination is discovered in or very near a District well, the first step will be to evaluate the risk to public health from the level of contaminants discovered. If the contamination levels are sufficient to post acute health risks, the public and medical authorities should be notified immediately and the well should be shut down. If the levels of contamination are higher than regulatory MCL's, but there is no danger of acute health risk, repeat sampling and analysis should be performed according to the requirements of Title 22, Chapter 15 of the State Water Code. If contamination is verified by repeat analysis, the well must remain off-line until remediation is complete. Sufficient backup well capacity and storage should be maintained in the water system to enable service to continue without interruption in the event that a well has to be removed from service.

Contamination of an aquifer means that a contaminant has been found in the groundwater at or above the standards permitted in the Safe Drinking Water Act and Title 22 of the California Administrative Code. If contamination of an aquifer occurs, the contingency plan will be implemented. The contingency plan may also be implemented if monitoring data indicate that a standard will likely be exceeded in the future. The contingency plan consists of the following elements:

A. Establishment of Standby Capacity

One or more of the following measures should be put in place to provide for an emergency water supply should it become necessary to shut down one of the District's production wells.

1. Establish standby well capacity for emergency use if certain District well(s) have to be temporarily shut down, or facilities constructed to allow transfer of water from one District area or aquifer to another while contamination is being eliminated.

2. Establish an emergency operations agreement with the DHS for emergency use of a District surface water supply source.

3. Develop a Memorandum of Understanding (MOU) and physical system connection to an adjoining water utility distribution system to receive emergency supply for an interim period.

B. Assessment of Contamination

For any contamination at levels above or even near state or EPA MCL's, steps should be taken to assess the extent of contamination and protect the aquifer from further contamination.

1. The first step would be to evaluate historical monitoring data and the known potential contamination sources. Compare the characteristics of contaminants from the potential contamination sources to the contaminants detected in the monitoring or production well. Also evaluate historical groundwater level data and aquifer property data to estimate the gradient and rate of movement of contamination from potential sources to the well.

2. If the analysis results indicate that the contamination may be coming from a known source, monitoring wells should be installed along the expected flow path to confirm the source and the continuity and extent of the contamination plume.

3. If the contamination does not appear to be coming from a known source, a stepwise expanding grid of monitoring wells should be installed to determine the direction and location of the contamination source.

4. Once the contamination source has been located, wells, impoundments, or anything else that could be increasing the spread of the contaminants should be identified and shut down or modified as necessary. Then the source of the contamination should be contained as prescribed by the Lahontan Regional Water Quality Control Board (Regional Board) in as timely a manner as possible.

5. If the source of contamination cannot be determined with a reasonable amount of effort and expense, it may be necessary to abandon the affected well and replace that production capacity with a new well located away from the affected aquifer.

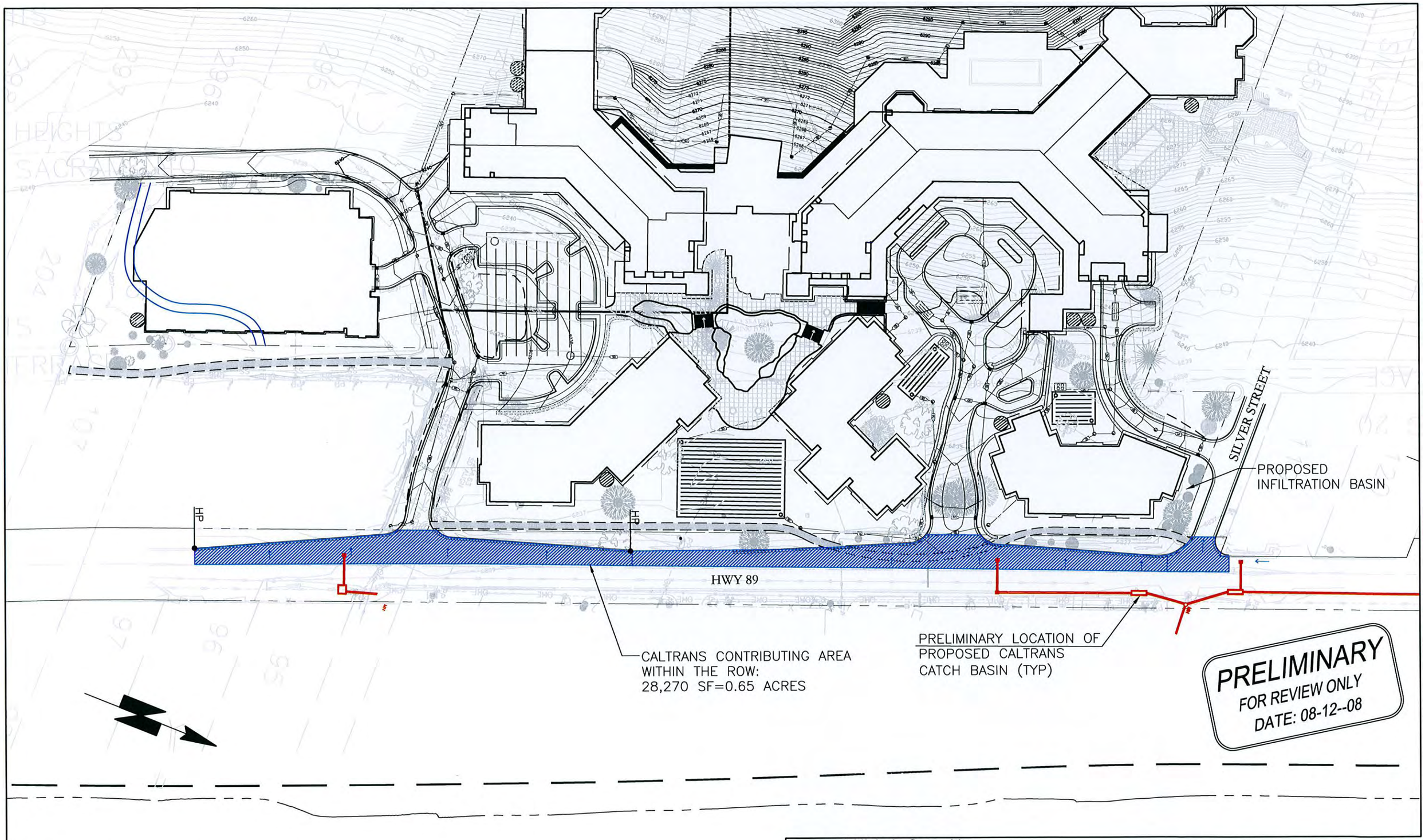
C. Remediation

Once a contamination source has been identified, the District should notify the Regional Board and request a prompt remediation by the party responsible for the source of the contamination.

1. Work with the Regional Board, DHS, and County Environmental Health Department and the party responsible for the contamination to quickly develop a satisfactory remediation plan.

2. Install additional monitoring facilities as needed to continue monitoring the extent of contamination.

3. If the contamination is from non-point sources, work with the Regional Board and other agencies to establish additional special programs in affected areas to mitigate impacts on water quality.



100 0 100 200

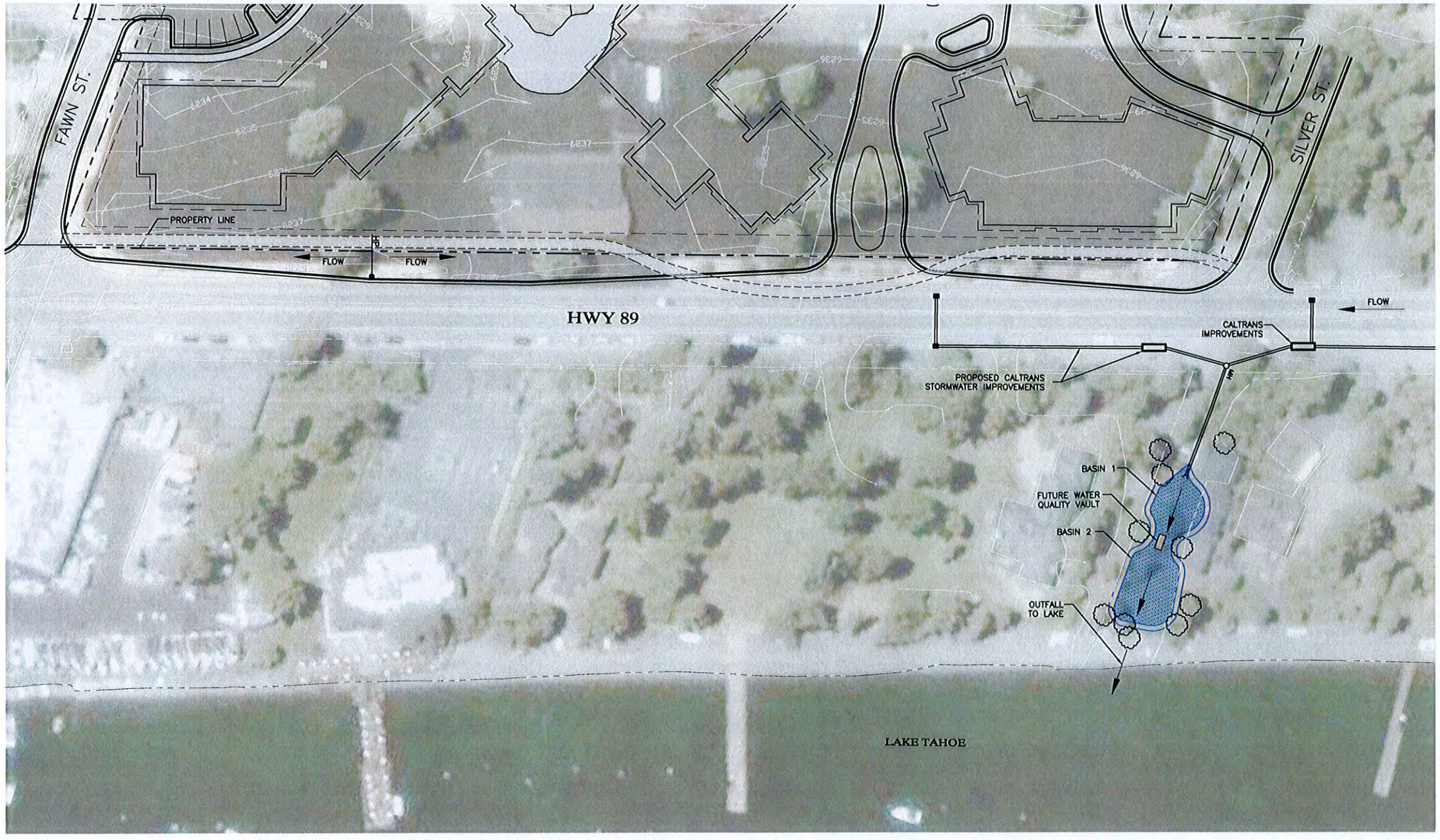
SCALE IN FEET
1" = 100'-0"

Nichols Consulting
Engineers, Chtd.
1885 S. Arlington Ave., Suite 111
Reno, NV 89509
(775) 329-4955

HOMEWOOD VILLAGE RESORTS
CALTRANS CONTRIBUTING FLOW AREA
NORTH BASE

SHEET 1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
CKC	A514.02.14		AUGUST 2008	



40 0 40 80

SCALE IN FEET
1" = 40'-0"

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PRELIMINARY
FOR PLANNING PURPOSES ONLY
DATE:11-02-09

REVISIONS

No.	Date	CHKD	APPD

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DRAWN:
CHECKED:
JOB No: 1"=40'
SCALE:
DATE: 11/02/09

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HOMEWOOD VILLAGE REOSRTS, LLC

HOMEWOOD VILLAGE RESORTS, LCC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

CALTRANS SILVER STREET
SCHEMATIC BASIN
TREATMENT EXHIBIT

SHEET 1 OF 1

JMA Ventures, LLC
P.O. Box 3938
Truckee, CA. 96160

530.582.6080 main
530.582.1851 fax

JMA VENTURES, LLC

David A. Tirman
Executive Vice President
Direct: (530) 582.6085
dtirman@jmaventuresllc.com

6 January 2011

Mr. David Landry
Senior Planner
Tahoe Regional Planning Agency
128 Market Street
P.O. Box 5310
Stateline, NV. 89449

Re: Homewood Mountain Resort Master Plan

Dear David:

Please accept this letter as one of commitment on the part of Homewood Mountain Resort (HMR) to work collaboratively with Caltrans on the eventual implementation of Environmental Improvement Project (EIP) #996. This particular EIP entails water quality improvement projects along the Homewood stretch of State Route (SR) 89 that are a part of a more expansive Caltrans road improvement project. The specific Caltrans project stretches from the El Dorado County line northwards 9 miles to Homewood in Placer County. The Homewood EIP will include new stormwater treatment facilities and erosion control features.

In terms of specifics, HMR commits, as a part of the approved Homewood Ski Area Master Plan proposal, to fund the additional cost that would be above and beyond the facilities that Caltrans would normally install; this in order to provide a higher level storm water treatment facility. The EIP project not only includes a high level stormwater treatment vault but also a series of vegetated swales & basins designed to further treat SR 89 runoff. The vegetated treatment area and vault would be located in an existing road easement that is in alignment with Silver Street to the east of SR 89.

It is our understanding that the Caltrans project is currently estimated to start construction in 2012. HMR's participation in the implementation of the EIP will be dependent upon final approval of the HMR Ski Area Master Plan, final agreement with Caltrans, and final permit documentation. We trust that this letter serves to provide satisfactory evidence of HMR's commitment to help implement the Homewood-Caltrans related EIP #996.

Sincerely,

David A. Tirman
Executive Vice President

L+P DesignWorks
Landscape Architecture + Planning
10246 Donner Pass Road, Suite B4 + Truckee, CA 96161
Telephone 530/ 587.9139 + Fax 530/587.9100

To: Whom it may concern
From: John Pruyn, RLA, ASLA
Re: **Narrative Concerning Landscape Water Usage at Homewood Resort**
Date: 13 May 2010

As directed by JMA Ventures Inc., L+P DesignWorks offers the following summary of the method and approach used to calculate the estimated landscape water usage at the proposed renovation of Homewood Resort. It is important to note that the estimated water use of 10.8 acre/ ft. should decline significantly after the first two growing seasons in which plants are able to establish. It is also important to note that the several proposed water harvesting areas for the project have not been calculated into the landscape water usage at this time, and therefore, there is further potential of decreasing the current estimation of 10.8 acre/ft. Assumptions have been made in the calculations regarding an appropriate final design and correct implementation to ensure water conservation while maintaining plant health.

Area take-offs were performed in AutoCad by defining hydrozones on a digital survey for each areas of the mountain requiring irrigation- north lodge, south lodge, and mid-mountain. The hydrozones were broken down into three groups based on their Plant Water Use Type- high, medium, and low. Areas of high visibility or use such as near site and building entries were labeled as 'high'; areas of lesser visibility received a 'medium'; and re-vegetated areas further out from activities and including areas of slope disturbance were labeled as 'low'. The latter hydrozone accounted for the most area for the project site and should not depend on irrigation after 2-3 years if the proper native and adapted seed mixture(s) , water application, mulch, and amended soil are applied. The 'medium' zone is the second largest zone and consists of transitional planting which includes native and adapted species from both 'high' and 'low' hydrozones. The smallest zone is the 'high' zone which may include more ornamental planting or turf areas, spray irrigation for perennial/ annual plantings, and larger size plants. These areas are limited to high activity areas and entries.

Plant Water Use Types are further defined by a Plant Factor of 0.0-1.0. 'Low' varies between 0-0.3, 'medium' between 0.4-0.6, and 'high' between 0.7-1.0. A recreational turf grass, for example, would receive a factor of 1.0 and would not decrease much over time, whereas a native drought-tolerant plant would receive a factor of 0.2 and would decrease after a period of time. The factors for each are then multiplied by their hydrozone area for an estimated total water use in gallons per acre/ ft. For this project and stage in the design process, an average was used for each plant factor range. However, we believe they can be even lower if the proper plant species, soil amendment, water and mulch applications are applied.

The approach for the Homewood Resort Project in calculating landscape water usage was from a landscape rehabilitation focus. We understood that the proposed project is ultimately trying to achieve a very natural and native visual experience while achieving erosion control, fire safety, water quality and water conservation. With that in mind, we assumed that 100 percent of plant species including seed mixtures ultimately specified for the project will be native or adapted species approved by the TRPA, the majority of which are drough-tolerant after establishment. Samples of species we assumed for hydrozones are listed below.

High Hydrozone Species:

Quaking Aspen
River Birch
Dogwood species
Willow species
Cherry species
Crabapple species
Pine species
Incense Cedar
Thimbleberry
Native perennial/ annual beds
Native grasses/ wildflowers
Small turf area
Lilac species

Medium Hydrozone Species:

Pine species
Incense Cedar
Dogwood species
Willow species
Currant species
Spiraea species
Manzanita
Tobacco Brush
Sage species
Lilac species
Blue Elderberry
Rabbit Brush
Bitter Brush
Thimbleberry
Wild Rose
Native grasses/ wildflowers

Low Hydrozone Species:

Pine Species
Wild Rose
Bitter Brush
Rabbit Brush
Sage species
Currant species
Manzanita
Tobacco Brush
Native grass mix
Native wildflower mix

LICENSED LANDSCAPE ARCHITECT
JOHN P. PRUYN LIC. # 4368
Signature
3-31-11
Renewal Date
13 May 2010
Date
STATE OF CALIFORNIA

North Base Area

Estimated Total Water Use
Equation:
ETWU = (ET_o) x (0.62) x [(PF x HA/IE) + SLA]

Enter values in Pale Blue Cells		
Tan Cells Show Results		
Messages and Warnings		
Enter Irrigation Efficiency (equal to or greater than 0.71)	0.83	
Irrigation Efficiency Default Value	0.71	

Plant Water Use Type	Plant Factor
Low	0 - 0.3
Medium	0.4 - 0.6
High	0.7 - 1.0
SLA	1.00

Hydrozone	Plant Water Use Type (s) (low, medium, high)	Plant Factor (PF)	Hydrozone Area (HA) (ft^2)	PF x HA (ft^2)
1	High	0.80	0	0
2	High	0.70	45,734	32,014
3	Medium	0.40	171,605	68,642
4	Low	0.30	0	0
5	Low	0.10	16,280	1,628
				0
				0
				0
				0
				0
				0
				0
				0
				0
				102,284
	SLA	0	0	0
		Sum	233,619	

Results

MAWA =	3,599,368	ETWU=	2,712,369	Gallons	**ETWU complies with MAWA**
			362,592	Cubic Feet	
			3,626	HCF	
			8.32	Acre-feet	
			2.71	Millions of Gallons	

South Base Area

Estimated Total Water Use
Equation:
ETWU = (ET_o) x (0.62) x [(PF x HA/IE) + SLA]

Enter values in Pale Blue Cells	
Tan Cells Show Results	
Messages and Warnings	
Enter Irrigation Efficiency (equal to or greater than 0.71)	0.83
Irrigation Efficiency Default Value	0.71

Plant Water Use Type	Plant Factor
Low	0 - 0.3
Medium	0.4 - 0.6
High	0.7 - 1.0
SLA	1.00

Hydrozone	Plant Water Use Type (s) (low, medium, high)	Plant Factor (PF)	Hydrozone Area (HA) (ft^2)	PF x HA (ft^2)
1	High	0.80	0	0
2	High	0.70	8,249	5,774
3	Medium	0.40	38,368	15,347
4	Low	0.30	0	0
5	Low	0.10	49,895	4,990
				0
				0
				0
				0
				0
				0
				0
				0
				0
				26,111
	SLA	0	0	0
		Sum	96,512	

Results

MAWA =	1,486,960	ETWU=	692,413	Gallons	**ETWU complies with MAWA**
			92,563	Cubic Feet	
			926	HCF	
			2.12	Acre-feet	
			0.69	Millions of Gallons	

Mid Mountain Area

Estimated Total Water Use
Equation:
ETWU = (ET_o) x (0.62) x [(PF x HA/IE) + SLA]

Enter values in Pale Blue Cells	
Tan Cells Show Results	
Messages and Warnings	
Enter Irrigation Efficiency (equal to or greater than 0.71)	0.83
Irrigation Efficiency Default Value	0.71

Plant Water Use Type	Plant Factor
Low	0 - 0.3
Medium	0.4 - 0.6
High	0.7 - 1.0
SLA	1.00

Hydrozone	Plant Water Use Type (s) (low, medium, high)	Plant Factor (PF)	Hydrozone Area (HA) (ft^2)	PF x HA (ft^2)
1	High	0.80	0	0
2	High	0.70	0	0
3	Medium	0.40	10,952	4,381
4	Low	0.30	0	0
5	Low	0.10	0	0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				4,381
	SLA	0	0	0
		Sum	10,952	

Results

MAWA =	168,737	ETWU=	116,170	Gallons	**ETWU complies with MAWA**
			15,530	Cubic Feet	
			155	HCF	
			0.36	Acre-feet	
			0.12	Millions of Gallons	

EXISTING QUAIL CHAIR LIFT

EXISTING MADDEN CHAIR LIFT

EXISTING CHILDREN'S SKI SCHOOL

EXISTING SOUTH BASE LODGE

EXISTING SURFACE PARKING

TAHOE SKI BOWL WAY

EXISTING MAINTENANCE FACILITY

LAGOON ROAD

SACRAMENTO AVE

EL CAPITAN AVE

HWY 89

SACRAMENTO AVE

EXISTING PUMP HOUSE

EXISTING SURFACE PARKING

EXISTING LIFT/OPS BUILDING

SILVER ST.

FAWN ST.

EXISTING GRAVEL PARKING

EXISTING NORTH BASE LODGE

EXISTING SURFACE PARKING

LAKE TAHOE

200 0 200 400

SCALE IN FEET
1" = 200'-0"

811 Know what's below. Call before you dig.

DATE: _____

REVISIONS				
No.	Date		CHKD	APPD

DESIGNED: CKC
DRAWN: CKC
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JOB No: A514.02.14
SCALE: AS NOTED
DATE: 08-21-08

Nichols Consulting Engineers, Chtd.
Engineering & Environmental Services
1885 S. Arlington Ave., Suite #111
Reno, NV 89509
Ph: (775) 329-4955
Fx: (775) 329-5098

HOMEWOOD VILLAGE RESORTS, LLC

HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

EXISTING SITE PLAN

SHEET 1 OF 3

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EXISTING QUAIL CHAIR LIFT

PROPOSED GONDOLA

NEW TAHOE SKI BOWL EXTENSION (TO 11 SINGLE FAMILY UNITS)

11 SINGLE FAMILY UNITS

RESIDENTIAL

SKIER SERVICES

HOTEL/LODGE

RESIDENTIAL

TAHOE SKI BOWL WAY

SKATING POND

FRACTIONAL

SACRAMENTO AVE

PROPOSED SOUTH BASE AREA

LAGOON ROAD

SACRAMENTO AVE

PARKING/ WORKFORCE HOUSING

DROPOFF/SHORTTERM PARKING

FAWN ST.

SILVER ST.

EL CAPITAN AVE

HWY 89

RESIDENTIAL

PROPOSED NORTH BASE AREA (MIXED USE)

LAKE TAHOE

200 0 200 400

SCALE IN FEET
1" = 200'-0"

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JOB No: A514.02.14
SCALE: AS NOTED
DATE:

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Engineering & Environmental Services
1885 S. Arlington Ave., Suite #111
Reno, NV 89509
Ph: (775) 329-4955
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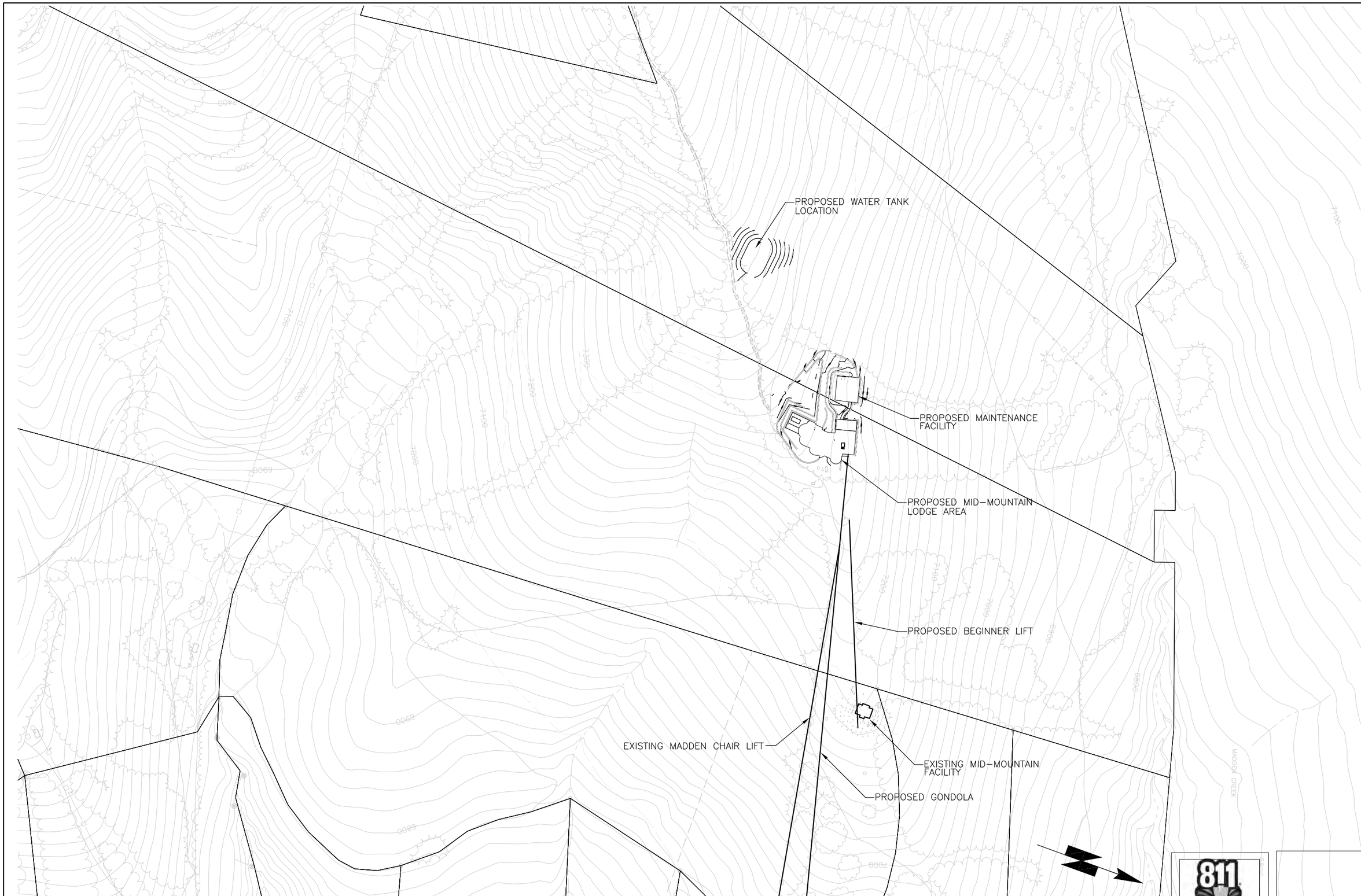
HOMEWOOD VILLAGE RESORTS, LLC

HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

OVERALL SITE PLAN

SHEET 2 OF 3



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HOMEWOOD VILLAGE RESORTS, LLC

HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

MID-MOUNTAIN SITE PLAN

SHEET 3 OF 3

EXISTING QUAIL CHAIR LIFT

PROPOSED GONDOLA

NEW TAHOE SKI BOWL EXTENSION (TO 11 SINGLE FAMILY UNITS)

11 SINGLE FAMILY UNITS

RESIDENTIAL

SKIER SERVICES

HOTEL/LODGE

RESIDENTIAL

TAHOE SKI BOWL WAY

SKATING POND

FRACTIONAL

SACRAMENTO AVE SEZ AND 10' OFFSET

PROPOSED SOUTH BASE AREA

PARKING/ WORKFORCE HOUSING

SILVER ST.

LAGOON ROAD

DROPOFF/SHORTTERM PARKING

FAWN ST.

SACRAMENTO AVE

EL CAPITAN AVE

HWY 89

RESIDENTIAL

PROPOSED NORTH BASE AREA (MIXED USE)

LAKE TAHOE

200 0 200 400

SCALE IN FEET
1" = 200'-0"

811 Know what's below. Call before you dig.

DATE: _____

REVISIONS				
No.	Date		CHKD	APPD

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HOMEWOOD VILLAGE RESORTS, LLC

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P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

OVERALL SITE PLAN

SHEET 4 OF 4

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EXISTING QUAIL CHAIR LIFT

PROPOSED GONDOLA

NEW TAHOE SKI BOWL EXTENSION (TO 11 SINGLE FAMILY UNITS)

11 SINGLE FAMILY UNITS

RESIDENTIAL

SKIER SERVICES

HOTEL/LODGE

RESIDENTIAL

TAHOE SKI BOWL WAY

SKATING POND

FRACTIONAL

PROPOSED SOUTH BASE AREA

SACRAMENTO AVE

LAGOON ROAD

SACRAMENTO AVE

PARKING/ WORKFORCE HOUSING

DROPOFF/SHORTTERM PARKING

FAWN ST.

SILVER ST.

EL CAPITAN

HWY 89

RESIDENTIAL

PROPOSED NORTH BASE AREA (MIXED USE)

LAKE TAHOE

Modified Mix of Uses Alternative

200 0 200 400

SCALE IN FEET

1" = 200'-0"

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REVISIONS

Nichols Consulting Engineers, Chtd.
Engineering & Environmental Services

HOMEWOOD VILLAGE RESORTS, LLC

HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 7838
TRUCKEE, CALIFORNIA 96160

OVERALL SITE PLAN

SHEET 2 OF 3

EXISTING QUAD CHAIR LIFT

PROPOSED GONDOLA

NEW TAHOE SKI BOWL EXTENSION (TO 11 SINGLE FAMILY UNITS)

11 SINGLE FAMILY UNITS

RESIDENTIAL

SKIER SERVICES

HOTEL/LODGE

RESIDENTIAL

TAHOE SKI BOWL WAY

SKATING POND

FRACTIONAL

PROPOSED SOUTH BASE AREA

SACRAMENTO AVE

LAGOON ROAD

SACRAMENTO AVE

PARKING/ WORKFORCE HOUSING

DROPOFF/SHORTTERM PARKING

FAWN ST.

SILVER ST.

EL CAPITAN AVE

HWY 89

RESIDENTIAL

PROPOSED NORTH BASE AREA (MIXED USE)

LAKE TAHOE

No Code or Plan Amendments for Density and Building Height Alternative

200 0 200 400

SCALE IN FEET

1" = 200'-0"

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No.	Date	Chkd	Appd

DESIGNED: CEC
DRAWN: CEC
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JOB No. A614.08.14
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Nichols Consulting Engineers, Chtd.
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1885 S. Arlington Ave., Suite B111
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HOMEWOOD VILLAGE RESORTS, LLC

HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

OVERALL SITE PLAN

SHEET 2 OF 3

CEP – Requests & Credentials:

- **Commodities & Code Amendments:** TRPA staff is recommending that 23,237 sq ft of CFA, 50 Tourist Accommodation Bonus Units (TABU), and 12 Multi-Residential Bonus Units (MRBU) be reserved for the Homewood Mountain Resort proposal. The proposed project requests code amendments for height at the North Base for the lodge/hotel building, for mixed-use density at the North Base, as well as for timeshare/residential design. **Placer County – a plan amendment is required to add multi-residential is required.*

- **EIP Implementation:** Includes, but not limited to, Project #632 (Homewood Ski Area Master Plan), #86 (Scenic Roadway Unit 11 – Homewood), and #775 (Homewood Area Pedestrian Facilities). Participation in project #855 (“Y” Realignment).

- **Distinguishable characteristics:** Homewood’s proposal truly embraces what is commonly referred to as the “***TRIPLE BOTTOM LINE***” or environmental, social, and economic benefits. Homewood’s master plan concept will showcase <u>Environmental Benefits</u> such as Water Quality Improvements and utilizing Renewable Energy (micro-hydro and solar generation); <u>Social Benefits</u> such as Transportation Improvements (dial-a-ride, water taxi, bicycle bank, etc.) and Cultural Events (permanent amphitheater for Lake Tahoe music Festival); and <u>Economic Benefits</u> such as establishing a year-round community/retail center for the West Shore. ***Although it is also important to note** that Homewood Mountain Resort has already made contributions to the Triple Bottom Line environmentally (like road restoration and fuels reduction), socially (hosting the Lake Tahoe Music Festival and implementing dial-a-ride already), and economically (continuing the ski operation and related jobs during this process).

Preliminary Conceptual Mountain Plan

HOMEWOOD
Mountain Resort ***Master Plan***

Project Location: 5145 West Lake Blvd., Homewood, CA

Proposed Conceptual Mid-Mountain Lodge

Project Description:

JMA Ventures and Homewood Mountain Resort proposes to improve the existing ski area both on-mountain and at the existing North and South Base Areas.

The North Base is proposed to include a 50-60 room lodge-hotel as well as a small neighborhood retail village to be used by West Shore residents and visitors alike. The South Base concept calls for a residential area to compliment the existing neighborhood. In addition to upgrading the existing chairlift and snowmaking systems, the on-mountain improvements showcase a proposed full service mid-mountain lodge facility that can be accessed all year by a new 8-passenger high-speed gondola.

The project proposes state-of-the-art forest health/fire protection measures, watershed management, and storm water runoff management. The plans will utilize the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) design standards as a template for the planning and development of both base areas. The north base mixed-use development is also participating in a new LEED pilot program for Neighborhood Development; one of only a few resort projects nationwide.

Existing Site Context/Conditions:

- **Existing on-site Land Use(s):** Recreation with accessory uses, and seasonal uses. The property is exclusively used for a ski operation along with its accessory food & beverage and rental/retail uses. Seasonal uses include wedding receptions, the Lake Tahoe Music Festival's "Summer Concert Series", and a farmers market.
- **Adjacent/Surrounding Land Uses:** Predominantly Residential, followed by Commercial/Tourist. Both of these land use designations typically flank the SR89 corridor.
- **Current Site Details:** Total existing coverage on the entire property is +/- 1.8 million sq ft, whereas the base allowable is just over 4 million sq ft. There are no existing Tourist Accommodation Units (TAUs), Residential Units (RUs), or any Commercial Floor Area (CFA) on the property. Parking lots are predominantly paved, with the exception of the Gravel "overflow" Lot at the North base. It is important to note that both the existing North Base and South Base areas are dominated by surface parking.
- **Linkages, etc.:** There is no official "linkage" on property to the TCPUD bike path system, although the North Base is used extensively as a thoroughfare for local and guest pedestrian bike or foot traffic. The TART bus system has two bus stops, servicing both base areas (sheltered across from the North Lodge). Numerous roads and trails on the property are used by locals and guests to access backcountry lakes, etc. for recreation.
- **Natural Features:** Include, but aren't limited to > Watersheds (Homewood Mountain contains all or a portion of 3 watersheds); Alpine Lakes – such as Quail Lake and more than half of Lake Louise; creeks and associated tributaries – such as Madden, Quail, and Ellis; Mixed-Conifer type forests, all of which are on mountainous terrain ranging from a base elevation of +/-6200 ft to a top elevation of roughly 7800 feet.

Aerial Photograph of Existing Mountain

Proposed Site Context/Conditions:

- **North Base:** Approximately 42 Residential Condos distributed among three 2-story residential buildings, 30 of which are planned to be fractional ownership. The main hotel lodge includes approximately 30 Penthouse Condo Units (Upper Floors of Hotel), 50-60 Traditional Hotel Rooms, and approximately 40 two-bedroom for sale Condo-Hotel Units. The North Base also includes a request for up to 25,000 sq ft of CFA and up to 12 workforce housing apartments designed to front the residential neighborhood and help mask the day skier parking structure. The North Base is approximately 18 acres in size.
- **South Base:** 120 Residential Condos in a series of 2-story plus roof-top unit residential buildings are planned for the 6+ acre South Base lot. There will also be a small rubber tire maintenance facility at the South Base, replacing the existing full vehicle shop/maintenance facility. The proposed plan relocates all existing day-skier access to the North Base area helping to further reinforce the sense of a neighborhood residential area.
- **Between Base Areas (above Sacramento):** 11 Single Family Building Envelopes on the 2.5 acre Planned Development lot.
- **Mid-Mountain:** The mid-mountain will also include a new 14,000+/- sq ft day lodge with a gondola terminal, food & beverage facility, outdoor dining, small sundry outlet, and an outdoor swimming facility for use during the summer months. The new mid-mountain lodge replaces the white tent structure and the existing concrete foundation located near the mid-mountain. The full service vehicle shop/maintenance facility is proposed to be rebuilt in the mid-mountain area
- **Parking at Base Areas:** Parking spaces provided at North Base include approximately 300 day skier spaces in a 3 level structured parking deck, roughly 60 limited surface parking spaces at the retail and day skier drop-off area, and approximately 450 underground parking directly below the building footprint of the hotel/lodge structure., The South Base will include approximately 177 parking spaces directly below the residential building footprints. This takes advantage of the excavation required for the building foundations and allows for more pervious landscape surface around the buildings (in lieu of surface parking).
- **Linkages, etc.:** The project will integrate a TCPUD bike path into the North Base layout. The 8-passenger gondola will bring locals up to an outdoor pool facility. Existing TART stops will be furnished with shelters, and Dial-a-Ride, Shuttle, and Water Taxi services will help improve alternative transportation options while reducing VMT.

Preliminary Conceptual Base Plan

CEP – Requests & Credentials:

- **Commodities & Code Amendments:** TRPA staff is recommending that 23,237 sq ft of CFA, 50 Tourist Accommodation Bonus Units (TABU), and 12 Multi-Residential Bonus Units (MRBU) be reserved for the Homewood Mountain Resort proposal. The proposed project requests code amendments for height at the North Base for the lodge/hotel building, for mixed-use density at the North Base, as well as for timeshare/residential design. **Placer County – a plan amendment is required to add multi-residential is required.*

- **EIP Implementation:** Includes, but not limited to, Project #632 (Homewood Ski Area Master Plan), #86 (Scenic Roadway Unit 11 – Homewood), and #775 (Homewood Area Pedestrian Facilities). Participation in project #855 (“Y” Realignment).

- **Distinguishable characteristics:** Homewood’s proposal truly embraces what is commonly referred to as the “***TRIPLE BOTTOM LINE***” or environmental, social, and economic benefits. Homewood’s master plan concept will showcase <u>Environmental Benefits</u> such as Water Quality Improvements and utilizing Renewable Energy (micro-hydro and solar generation); <u>Social Benefits</u> such as Transportation Improvements (dial-a-ride, water taxi, bicycle bank, etc.) and Cultural Events (permanent amphitheater for Lake Tahoe music Festival); and <u>Economic Benefits</u> such as establishing a year-round community/retail center for the West Shore. ***Although it is also important to note** that Homewood Mountain Resort has already made contributions to the Triple Bottom Line environmentally (like road restoration and fuels reduction), socially (hosting the Lake Tahoe Music Festival and implementing dial-a-ride already), and economically (continuing the ski operation and related jobs during this process).

Preliminary Conceptual Mountain Plan

HOMEWOOD *Mountain Resort* ***Master Plan***

Project Location: 5145 West Lake Blvd., Homewood, CA

Proposed Conceptual Mid-Mountain Lodge

Project Description:

JMA Ventures and Homewood Mountain Resort proposes to improve the existing ski area both on-mountain and at the existing North and South Base Areas.

The North Base is proposed to include a 50-60 room lodge-hotel as well as a small neighborhood retail village to be used by West Shore residents and visitors alike. The South Base concept calls for a residential area to compliment the existing neighborhood. In addition to upgrading the existing chairlift and snowmaking systems, the on-mountain improvements showcase a proposed full service mid-mountain lodge facility that can be accessed all year by a new 8-passenger high-speed gondola.

The project proposes state-of-the-art forest health/fire protection measures, watershed management, and storm water runoff management. The plans will utilize the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) design standards as a template for the planning and development of both base areas. The north base mixed-use development is also participating in a new LEED pilot program for Neighborhood Development; one of only a few resort projects nationwide.

Existing Site Context/Conditions:

- **Existing on-site Land Use(s):** Recreation with accessory uses, and seasonal uses. The property is exclusively used for a ski operation along with its accessory food & beverage and rental/retail uses. Seasonal uses include wedding receptions, the Lake Tahoe Music Festival's "Summer Concert Series", and a farmers market.
- **Adjacent/Surrounding Land Uses:** Predominantly Residential, followed by Commercial/Tourist. Both of these land use designations typically flank the SR89 corridor.
- **Current Site Details:** Total existing coverage on the entire property is +/- 1.8 million sq ft, whereas the base allowable is just over 4 million sq ft. There are no existing Tourist Accommodation Units (TAUs), Residential Units (RUs), or any Commercial Floor Area (CFA) on the property. Parking lots are predominantly paved, with the exception of the Gravel "overflow" Lot at the North base. It is important to note that both the existing North Base and South Base areas are dominated by surface parking.
- **Linkages, etc.:** There is no official "linkage" on property to the TCPUD bike path system, although the North Base is used extensively as a thoroughfare for local and guest pedestrian bike or foot traffic. The TART bus system has two bus stops, servicing both base areas (sheltered across from the North Lodge). Numerous roads and trails on the property are used by locals and guests to access backcountry lakes, etc. for recreation.
- **Natural Features:** Include, but aren't limited to > Watersheds (Homewood Mountain contains all or a portion of 3 watersheds); Alpine Lakes – such as Quail Lake and more than half of Lake Louise; creeks and associated tributaries – such as Madden, Quail, and Ellis; Mixed-Conifer type forests, all of which are on mountainous terrain ranging from a base elevation of +/-6200 ft to a top elevation of roughly 7800 feet.

Aerial Photograph of Existing Mountain

Proposed Site Context/Conditions:

- **North Base:** Approximately 42 Residential Condos distributed among three 2-story residential buildings, 30 of which are planned to be fractional ownership. The main hotel lodge includes approximately 30 Penthouse Condo Units (Upper Floors of Hotel), 50-60 Traditional Hotel Rooms, and approximately 40 two-bedroom for sale Condo-Hotel Units. The North Base also includes a request for up to 25,000 sq ft of CFA and up to 12 workforce housing apartments designed to front the residential neighborhood and help mask the day skier parking structure. The North Base is approximately 18 acres in size.
- **South Base:** 120 Residential Condos in a series of 2-story plus roof-top unit residential buildings are planned for the 6+ acre South Base lot. There will also be a small rubber tire maintenance facility at the South Base, replacing the existing full vehicle shop/maintenance facility. The proposed plan relocates all existing day-skier access to the North Base area helping to further reinforce the sense of a neighborhood residential area.
- **Between Base Areas (above Sacramento):** 11 Single Family Building Envelopes on the 2.5 acre Planned Development lot.
- **Mid-Mountain:** The mid-mountain will also include a new 14,000+/- sq ft day lodge with a gondola terminal, food & beverage facility, outdoor dining, small sundry outlet, and an outdoor swimming facility for use during the summer months. The new mid-mountain lodge replaces the white tent structure and the existing concrete foundation located near the mid-mountain. The full service vehicle shop/maintenance facility is proposed to be rebuilt in the mid-mountain area
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- **Linkages, etc.:** The project will integrate a TCPUD bike path into the North Base layout. The 8-passenger gondola will bring locals up to an outdoor pool facility. Existing TART stops will be furnished with shelters, and Dial-a-Ride, Shuttle, and Water Taxi services will help improve alternative transportation options while reducing VMT.

Preliminary Conceptual Base Plan

TAHOE REGIONAL PLANNING AGENCY
P.O. Box 5310
Stateline, Nevada 89449-5310
Phone: (775) 588-4547
www.trpa.org

COUNTY OF PLACER – Comm. Dev. Resource Agency
3091 County Center Drive, Suite 190
Auburn, CA 95603
Phone: (530) 745-3132
www.placer.ca.gov/planning

This notice is being issued jointly by the County of Placer, California (Placer County) and the Tahoe Regional Planning Agency (TRPA) and meets CEQA and TRPA noticing requirements for a Notice of Preparation.

NOTICE OF PREPARATION

To: California State Clearinghouse
Nevada State Clearinghouse
Responsible and Trustee Agencies
Interested Parties and Organizations
Affected Property Owners (within 300 feet of the proposed Homewood Mountain Resort boundaries)

Subject: Notice of Preparation of a Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) for the Homewood Mountain Resort Master Plan Project, 5154 West Lake Boulevard, Placer County, Homewood, California.

Lead Agencies:

Tahoe Regional Planning Agency
P.O. Box 5310
128 Market Street
Stateline, NV 89448
Contact: David Landry, Project Manager
Phone: (775) 588-4547, ext. 214
Fax: (775) 588-4527
Email: dlandry@trpa.org

County of Placer
Community Development Resource Agency
Environmental Coordination Services
3091 County Center Drive, Suite 190
Auburn, CA 95603
Contact: Maywan Krach, Community Development Technician
Phone: (530) 745-3132
Fax: (530) 745-3003
Email: cdraecs@placer.ca.gov

Project Title: Homewood Mountain Resort Master Plan (HMR Master Plan)

Project Applicant: Homewood Village Resorts, LLC

Public Scoping:

The County of Placer (Placer County) and the Tahoe Regional Planning Agency (TRPA) are preparing a joint EIR/EIS to inform agency decision makers about the potential environmental effects of the proposed HMR Master Plan. This joint document will serve as an EIR prepared by the County of Placer pursuant to the California Environmental Quality Act (CEQA) and an EIS prepared by TRPA pursuant to its Compact and Chapter 5 of the Code of Ordinances. This notice meets the CEQA and TRPA noticing requirements

for a Notice of Preparation (NOP). The purpose of this NOP is to inform agencies and the general public that this environmental document is being prepared for this project and to invite specific comments on its scope and content.

The views of interested persons, organizations, and agencies as to the scope and content of the information to be included and analyzed in the EIR/EIS are requested. Agencies should comment on the elements of the environmental information that are relevant to their statutory responsibilities in connection with the proposed project. The project description, location, alternatives to be evaluated in the EIR/EIS, and potential environmental effects of the proposed project and alternatives (to the extent known) are provided below and contained in Attachment A, *Initial Study and Checklist.*

In compliance with the time limits mandated by TRPA and CEQA, responses should be sent at the earliest possible date, but not later than by **October 2, 2008** to the TRPA or Placer County contact person listed above. If you represent a public agency, private firm or other entity, please indicate a contact person on your response. Duplicate responses to both lead agencies are not required.

In addition to the opportunity to submit written comments, public scoping meetings are being conducted to provide an opportunity to learn more about the proposed project and to express oral comments about the content of the EIR/EIS. The scoping meetings will be held at the following times and locations:

Wednesday, September 10, 2008
Meeting Begins at 9:30 AM
TRPA Advisory Planning Commission
TRPA Board Rooms
128 Market Street
Stateline, NV 89449

Tuesday, September 23, 2008
4:00 PM to 6:00 PM
Public Scoping Workshop
Granlibakken Resort
725 Granlibakken Road
Tahoe City, CA 96145

Signature:_____ **Date:** August 29, 2008

David Landry, Environmental Review Services, TRPA

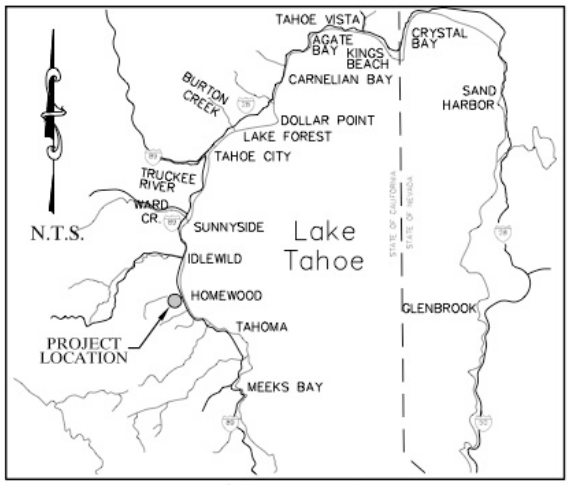
Signature:_____ **Date:** August 28, 2008

Gina Langford, Community Development Resource Agency, Environmental Coordination, Placer County

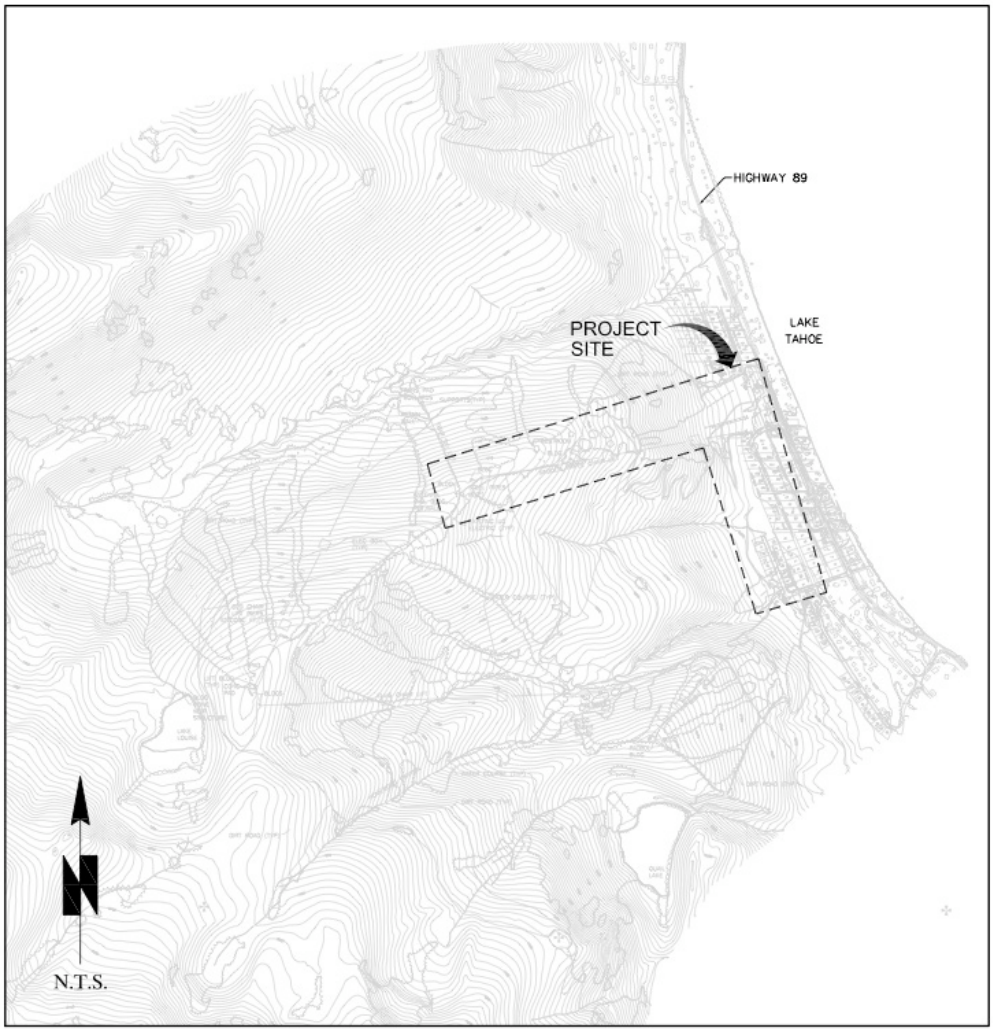
Summary: Homewood Village Resorts, LLC seeks the study and approval of the HMR Master Plan in order to develop and upgrade a mixed-use base area to the north, a residential base area to the south, and a mid-mountain lodge and support facilities. The HMR Master Plan is a mixed-use project developed under the guidelines included in TRPA Community Enhancement Program, August 2007. During the past several years, Homewood Village Resorts, LLC held a number of workshops with residents of the West Shore communities, homeowner's associations, and civil organizations with over 1,000 persons participating and providing input to the development of the HMR Master Plan concept. Additionally, Homewood Village Resorts, LLC met with TRPA and Placer County staff to discuss the concept and incorporate place-based planning and visioning input received during the preparation of TRPA's Regional Plan Update.

Project Location: The 1,200-acre HMR Master Plan area lies in the Tahoe region of the Sierra Nevada Mountains west of Lake Tahoe and is located approximately six miles south of Tahoe City within Placer County, California. The HMR Master Plan area is bound by State Route (SR) 89 and Lake Tahoe to the east, Ellis Peak to the southwest, and Blackwood Ridge to the north. The project area is typically accessed via Interstate 80 to West Lake Boulevard (SR 89). The TRPA assessor parcel numbers for the proposed project include: 097-060-024, 097-140-003, 097-140-033 and 097-130-034. Figure 1 illustrates the extent of the project location.

Project Location Map **Figure 1**



VICINITY MAP



PROJECT OBJECTIVES

The HMR Master Plan has been developed to optimize the quality of the existing winter ski experience and improve the year-round use of the site while responding to changes in technology, market trends and user preferences.

The overall density of the proposed HMR Master Plan is guided by three principles or objectives that developed as a result of extensive input from the West Shore communities. These principles include:

- Consistency with the scale and character of Homewood, California;
- Enhance the lifestyle and property values of west shore residents; and
- Generate sufficient revenues to support the proposed environmental and fire safety improvements and ensure the continued viability of the ski operations.

DETAILED PROJECT DESCRIPTION

The HMR Master Plan is a conceptual plan to redevelop a mixed-use base area to the north, a residential base area to the south, and a mid-mountain lodge and beginner ski area. The proposed project is shown on the mapping in Attachment B and includes the following:

North Base Area. The approximately 18-acre north base area will include up to 16 residential condominiums, up to 40 fractional ownership units, up to 30 penthouse condominium units (upper floors of the hotel), and up to 75 traditional hotel rooms. Additionally, up to 40 two-bedroom for sale condominium/hotel units (up to 20 of which will have one-room lock-offs), and up to 25,000 square feet of commercial floor space and up to 12 workforce housing units will be requested. An approximately 28,000 square foot base mountain facility will replace existing day skier services and will include food and beverage service, adult and children's ski school services, rental, shop, locker facilities, restrooms, first aid, and mountain administration and operations offices.

There will be approximately 810 parking spaces provided at the North Base, including approximately 300 day use parking spaces in a three-level parking structure, approximately 60 limited surface parking spaces at the retail and skier drop off area, and around 450 underground parking spaces directly below the building foot print of the hotel and skier services facility. The commercial floor space and workforce housing are designed to front the residential neighborhood and a day skier parking structure.

The up to 75 room hotel/lodge will be a high quality boutique-style hotel, coupled with high level amenities to attract guests. The boutique-style hotel rooms will be combined with up to 40 proposed two-

bedroom condominium/hotel units (up to 20 with one-room lock-offs). The condominium/hotel units will be individually owned and owners will be offered full services.

The top floor of the hotel/lodge building will include approximately 30 individually owned, penthouse condominium units. The lodge will also include a full service restaurant and a spa and fitness facility. In addition to the lodge building, another 16 residential condominiums and up to 40 fractional ownership units will be spread between 1, 2 and 3-story buildings throughout the north base. Some of these units will be located in mixed-use buildings above the village retail space.

Also proposed are 12 workforce housing apartments with two bedrooms each with the ability to sleep up to four employees in each apartment unit.

The north base proposal has been accepted into and will be designed under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) for Neighborhood Pilot Program.

South Base Area. The approximately 6-acre south base area will include up to 99 residential condominiums. The residential condominiums will be spread throughout the south base area in four buildings that will not exceed three stories. The residential units will replace the current children's facilities, ski school and day lodge buildings. Additionally, a rubber tire vehicle maintenance facility will replace the existing full vehicle shop/maintenance facility with all snow based equipment being relocated to a new mid-mountain located facility.

All existing South Base day-skier access will be relocated to the North Base to reinforce the sense of a neighborhood residential area. There will be up to 177 underground parking spaces located directly below the residential footprints, which utilizes the excavation required for the building foundations and allows for more pervious landscape surfaces around the buildings in lieu of surface parking.

The south base will be transformed into a mini village to serve existing area residents and new homeowners and although not part of the LEED pilot program will be designed using the LEED criteria as a template. During peak seasons, the area will include a restaurant in one of the residential buildings that will also be restricted to south base residents.

Between North and South Base Areas. Above Sacramento Road there is a 2.5-acre Planned Development lot where 11 single-family building envelopes will be developed by Homewood Village Resorts, LLC. The street will terminate at the single-family area and will be used by only the seven existing homes and the 11 new residents.

Mid-Mountain: The mid-mountain will include: a new approximately 15,000 square foot day-use lodge with a gondola terminal; a new learn to ski lift; a food & beverage facility with outdoor dining; small sundry outlet; and an outdoor swimming facility for use during the summer months. The new mid-mountain lodge replaces the white tent structure and the existing concrete foundation located near the mid-mountain. As part of the new development, the existing composting toilet/restroom will be removed and replaced with connection to public sewer system as required by Placer County Health and Human Services Department. The snow based vehicle shop/maintenance facility (coverage relocated from the south base area) will be relocated to the mid-mountain. Two water storage tanks will also be located at mid-mountain above the vehicle shop/maintenance facility.

Accessory buildings. Several small accessory buildings will be associated with snowmaking operations (e.g., new/updated pump houses) and micro-hydro generation. There will be retaining walls and slope stabilization associated with various buildings. All buildings are designed to minimize cut and fill slopes and overall impacts.

Roads. On-site roads that are not decommissioned and restored will be used for mountain operations during summer. The private extension of Tahoe Ski Bowl Way may be used year round. Off-site roads to be evaluated for improvements include SR89, Silver, Fawn, Sacramento, and Tahoe Ski Bowl Way. Per County standards, roadways plans shall include appropriate street improvements (e.g., existing pavement limits and proposed), existing and proposed right-of-way, and any necessary measures (e.g., drainage facilities, cut and fill slopes, street cross sections)

Utilities. Power lines (32 KV or less) will be installed underground within the project area and along the SR 89 corridor. An overhead power utility corridor currently exists, and will be utilized for future sub-surface placement of electric power, in collaboration with Sierra Pacific Power Company. HMR will participate in the funding for planning and construction of the sub-surface electric lines within the proposed development boundary.

Linkages, etc. The project will integrate a TCPUD bike path into the North Base area. A proposed 8-passenger gondola will bring guests up to the mid-mountain area. The existing TART stops will be furnished with shelters, and proposed dial-a-ride, shuttle, and water taxi services will expand alternative transportation options to reduce vehicle miles traveled (VMTs). Offsite improvements necessary to mitigate identified impacts, if any, will also be included in the environmental analysis.

People at One Time (PAOT). TRPA requires an allocation of PAOTs for expansion of ski areas that include increased uphill lift capacity. At present, HMR does not expect to increase uphill lift capacity.

However, as options for transporting skiers to and around the mountain are evaluated, it may be necessary to increase uphill capacity to improve skier flow on the mountain. Should increased lift capacity be proposed, a PAOT allocation would be required for the Master Plan.

Additional Recreation. A new outdoor amphitheater is proposed for hosting outdoor concert events and will serve as the permanent home of the Lake Tahoe Music Festival. A cross-country ski connection, which is an extension of the old Olympic course, is proposed. Other recreational opportunities include existing downhill skiing and snowboarding, fishing, and walking trails. Proposed recreation includes ice skating, a community swimming pool, biking, and an antique miniature golf course during the summer months where the ice pond is located.

Restoration and Water Quality. Water quality improvements will be coordinated with Caltrans water quality improvements and Placer County Homewood Erosion Control Project to treat runoff from SR 89, local streets, and HMR. HMR is exploring the potential for reuse of this treated water. Homewood creek, which is currently collected and piped under the north-south extension of Tahoe Ski Bowl Way will be day-lighted and riparian habitat restored. The current conceptual plan includes removal of the culvert, widening of the overall stream cross-section and increasing flow length through incorporation of additional meanders within the stream channel. A bridge will be used to cross the stream while allowing for maximum stream function. Native vegetation will be used exclusively and will mimic the species composition currently in place in the undisturbed portions of the creek.

Up to 500,000 square feet of existing coverage is planned to receive BMP retrofits and water quality improvements. State grant monies in the amount of $650,000 have been awarded to Homewood to study potential mitigation measures for reducing sediment runoff in the Homewood watersheds. The monies will be used to continue the on-mountain restoration and revegetation projects. Approximately 50,000 square feet of restoration and revegetation work is planned for the summer of 2008.

Alternative Transportation Plan. The Alternative Transportation Plan, one of a series of transportation strategies, is planned to include the year-round, winter and summer program elements. These elements are listed below.

Year-Round

- Extension of West Shore Bike Trail
- Employee Shuttle Bus
- Employee Public Bus Transit Fares
- Scheduled Shuttle Service

- North Base-South Base Shuttle Service
- Electric/Hybrid Car Rental Service
- Free "Bicycle Share" Service

Winter Program

- Winter West shore Dial-a-Ride Service
- Skier Intercept Shuttle Service

Summer Program

- Water Taxi Service
- Summer West Shore Dial-A-Ride Service

Additional transportation strategies of the HMR Master Plan include:

- Intercept Existing Vehicle Trips
- Accommodate Summer Boat Trailer Parking on Skier Lots
- Day Skier Parking Control
- Transportation Information Exchange
- Partnering to Achieve Regional Transportation Solutions

Land Coverage. Homewood Mountain has over 1,780,000 square feet of TRPA verified existing land coverage. Over 400,000 square feet of this coverage is hard coverage associated with parking and ski facilities, lodges, etc., while the balance represents roads and trails on the mountain. In 2006 and 2007, HMR restored approximately 100,000 square feet of roads and trails on the mountain and plans to continue to restore unnecessary roads and trails. A significant percentage of this restored coverage will be permanently retired. The balance will be banked for possible use on the resort, or transfer to desirable uses as permitted by the TRPA Code of Ordinances.

Reservation of Commodities. Homewood has requested that up to 25,000 square feet of commercial floor space, 50 tourist accommodation bonus units (TABU) and 12 multi-residential bonus units (MRBU) be reserved by TRPA under the Community Enhancement Program for implementation of the proposed Master Plan.

Environmental Improvement Project (EIP). EIP implementation includes, but is not limited to Project Number 632 (Homewood Ski Area Master Plan), Project Number 86 (Scenic Roadway Unit 11-Homewood), and Project number 775 (Homewood Area Pedestrian Facilities) and participation in Project Number 855 ("Y" Realignment).

Code/Plan Amendments. TRPA will require a Code of Ordinance Amendment for height and density. TRPA and Placer County will require Plan Area Amendments for plan area boundaries, allowable uses, height and density, and special policies.

POTENTIAL ALTERNATIVES

Project Scoping is conducted to develop the scope and content of the information to be included and analyzed in the EIR/EIS. TRPA Code of Ordinances Subsection 5.8.A(2) requires that an EIS study, develop and describe appropriate alternatives to recommended courses of action for any project that involves unresolved conflicts concerning alternative uses of available resources. Alternatives for evaluation in the EIR/EIS will be developed in consultation with Placer County and TRPA staff based on input received from the members of the TRPA Advisory Planning Commission and general public. Potential alternatives to the project may include, but not be limited to, the following:

- No Action**:** No redevelopment of the existing site would occur. The project site would retain existing conditions with the requirement that BMPs be installed.
- No Code or Plan Amendments for Building Height or Density: Uses consistent with existing height and density restrictions would be developed.
- Modified Mix of Uses: A mixed-use Master Plan with an alternative mix of uses or numbers of residential units, commercial, or ski resort uses.

In addition to the list of alternatives above, there is a potential that the proposed HMR Master Plan site plan above may have to be modified based on potential land capability conflicts. The results from soil borings taken in the existing gravel lot located at the north base indicate that a portion of the gravel lot may be Stream Environment Zone (SEZ). If the TRPA land capability verification process concludes that the area of concern is SEZ, the HMR Master Plan facilities located in the affected area would have to be relocated to avoid the mapped SEZ and its setbacks. A revised site plan to show the potential HMR Master Plan change for the affected area will be available online (www.trpa.org) and at the public scoping meetings listed on page 2 of this document.

LAND USES (TRPA PLAN AREAS, PLACER COUNTY ZONING, ETC.)

Currently, the project area is exclusively used for a ski operation along with its accessory food & beverage and rental/retail uses. Seasonal summer uses such as wedding receptions, concerts and farmers markets and other special uses have occurred on an annual basis. The majority of the resort is located in

TRPA Plan Area Statement (PAS) 157 "Homewood/Ski Homewood Area." A portion of the project area is located in TRPA PAS 158 "McKinney Tract". The Placer County General Plan Land Use Classification is Recreation with a Mitigation Management Strategy. The Placer County West Shore Area General Plan also addresses appropriate development within TRPA Plan Areas 157 and 158. The surrounding land uses are predominantly Residential with the remaining uses being largely Commercial/Tourist. Both of these land use designations are typically concentrated along the adjacent SR 89 corridor. Since the project area is best characterized as a "mountain," the topography has a wide-range of values, although the actual project (proposed development) areas range from reasonably flat (1 to 10%) upwards to slopes equal to or less than 30%. Special features onsite include, but are not limited to, Watersheds (Homewood Mountain contains all or a portion of 3 watersheds), Lakes (Quail Lake and more than half of Lake Louis), and Mixed-Conifer forests.

POTENTIAL ENVIRONMENTAL EFFECTS

Potential environmental effects associated with the Proposed Project are disclosed in the *Initial Study and Checklist* prepared by Placer County (Attachment A). All environmental effects and potential impacts will be explored further during project scoping and during preparation of the EIR/EIS. In addition to the environmental effects outlined in the attached Initial Study and Checklist, the EIR/EIS will also evaluate cumulative effects and attainment of the TRPA Environmental Threshold Carrying Capacities.

Cumulative Effects. The EIR/EIS will identify and describe recently approved and reasonably anticipated projects in the Homewood area and vicinity of the proposed project or alternatives (e.g., USDA Forest Service projects and other development projects located on the north shore), and region-wide planning efforts currently underway (e.g., Pathway 2007, the total maximum daily load requirements for Lake Tahoe). The EIR/EIS will evaluate the combined effects of these activities with related impacts of the project or project alternatives. This Chapter will also include a discussion of potential project impacts on global climate change.

TRPA Threshold Carrying Capacities. The EIR/EIS will include assessment of the project's compliance with and contribution to the attainment of threshold carrying capacities adopted by TRPA.

INTENDED USES OF THE EIR/EIS

Placer County and TRPA will use this EIR/EIS to disclose potential environmental effects, and mitigation measures and alternatives that may reduce the significance of potential effects, when considering the project or alternatives for approval. State responsible and trustee agencies and federal cooperating agencies may also use this EIR/EIS, as needed, for subsequent discretionary actions. Information provided in the EIR/EIS will also be used by agencies in their permitting process, including but not limited to: TRPA and Placer County construction permits, Placer County and Caltrans encroachment permits, Lahontan Regional Water Quality Control Board National Pollutant Discharge Elimination System and 401 wetland certification permits, California Department of Fish and Game Streambed Alteration Agreements, and U.S. Army Corps of Engineers wetland permits.

ATTACHMENT A PLACER COUNTY INITIAL STUDY AND CHECKLIST

COUNTY OF PLACER
Community Development Resource Agency

John Marin, Agency Director

ENVIRONMENTAL COORDINATION SERVICES

Gina Langford, Coordinator

3091 County Center Drive, Suite 190 ● Auburn ● California 95603 ● 530-745-3132 ● fax 530-745-3003 ● www.placer.ca.gov/planning

INITIAL STUDY & CHECKLIST

This Initial Study has been prepared to identify and assess the anticipated environmental impacts of the following described project application. The document may rely on previous environmental documents (see Section C) and site-specific studies (see Section I) prepared to address in detail the effects or impacts associated with the project.

This document has been prepared to satisfy the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.) and the State CEQA Guidelines (14 CCR 15000 et seq.) CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects.

The Initial Study is a public document used by the decision-making lead agency to determine whether a project may have a significant effect on the environment. If the lead agency finds substantial evidence that any aspect of the project, either individually or cumulatively, may have a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial, the lead agency is required to prepare an EIR, use a previously-prepared EIR and supplement that EIR, or prepare a Subsequent EIR to analyze the project at hand. If the agency finds no substantial evidence that the project or any of its aspects may cause a significant effect on the environment, a Negative Declaration shall be prepared. If in the course of analysis, the agency recognizes that the project may have a significant impact on the environment, but that by incorporating specific mitigation measures the impact will be reduced to a less than significant effect, a Mitigated Negative Declaration shall be prepared.

A. BACKGROUND:

Project Title: **Homewood Mountain Resort Master Plan**	Plus# PSUB T20070812
Entitlements: Major Subdivision, Conditional Use Permit, Design Review	
Site Area: 1,200 acres	APN: 097-060-024, 097-140-003, 097-140-033, 097-130-034
Location: The project site is located approximately six miles south of Tahoe City within Placer County and is accessed off West Lake Boulevard (State Route 89) in the West Lake Tahoe Area.	
Project Description: The applicant is requesting approval of a Minor Use Permit, Tentative Subdivision Map, Plan Amendment*, and Design Review to develop the following: A. Mixed-use base area (North), a residential base area (South), and a mid-mountain lodge 1. Up to 16 Residential Condos, up to 40 fractional ownership units, up to 30 Penthouse Condo Units (Upper Floors of Hotel), up to 75 Traditional Hotel Rooms, up to 40 two-bedroom for sale Condo-Hotel Units on the 18+ acre North Base lot (parcel 10). This lot will also be requesting up to 25,000 s.f. of CFA and 12 workforce/employee housing units, and 28,000 square foot base mountain facility (skier services) 2. Up to 99 Residential Condos on the 6+ acre South Base lot (parcel 15 & portion parcel 11) 3. 11 Single Family Building Envelopes on the 2.5 acre Planned Development lot above Sacramento Road (portion parcel 6) 4. The mid-mountain will include a new 15,000+/- s.f. day lodge with a gondola terminal, food & beverage facility, outdoor dining, small sundry outlet, and an outdoor swimming facility for use during the summer months. The new mid-mountain lodge replaces the white tent structure and the existing concrete foundation located near the mid-mountain. B. +/- 810 parking spaces provided at North Base (includes structured, limited surface, and underground	

parking), and +/- 177 parking spaces at South Base (all underground)

C. Structures included in development – refer to "A" above. There will also be a small rubber tire maintenance facility at the South Base and a full vehicle shop/maintenance facility located at the mid-mountain. Other small accessory buildings will be associated with snow-making (new/updated pump houses), micro-hydro generation, etc. There are plans for two water storage tanks above the mid-mountain maintenance facility. There will be retaining walls associated with various buildings - designed to minimize cut slopes and overall impacts

D. Project proposes to deconstruct all existing structures at base areas as well as mid-mountain (Placer County Museums has been contacted). On-site roads that are not restored will be used for mountain operations seasonally (possibly one year-round private extension of Tahoe Ski Bowl Way). Off-site roads being evaluated are SR89, Silver, Fawn, Sacramento, and Tahoe Ski Bowl Way

E. TCPUD Bike Path – will be incorporated into the North Base layout. Final location has not been determined

F. Outdoor concert events – permanent home of Lake Tahoe Music Festival at a new outdoor amphitheatre

G. Cross country ski connection – extension of old Olympic course(s) onto Homewood Mountain property

*Plan Amendments required: TRPA will require a Code of Ordinance Amendment for height and density. TRPA and Placer County will require Plan Area Amendments for plan area boundaries, allowable uses, height and density, and special policies.

Project Site:

- Currently, the property is exclusively used for a ski operation along with its accessory food & beverage and rental/retail uses. Seasonal summer uses have also been renewed (wedding receptions, concerts, farmers market). The property is zoned Plan Area Statement (PAS)-157 "Homewood/Ski Homewood Area" and the General Plan Land Use Classification is Recreation (Management Strategy = Mitigation).
- Surrounding land uses are predominantly Residential with the remaining uses being largely Commercial/Tourist. Both of these land use designations typically are concentrated along the State Route 89 corridor.
- Since the property is best characterized as a "mountain," the topography has a wide-range of values, although the actual project (proposed development) areas range from reasonably flat (1 to 10%) upwards to slopes equal to or less than 30%
- Special features onsite include, but aren't limited to, Watersheds (Homewood Mountain contains all or a portion of 3 watersheds), Lakes (Quail Lake and more than half of Lake Louis), and Mixed-Conifer forests

B. ENVIRONMENTAL SETTING:

Location	Zoning	General Plan/Community Plan	Existing Conditions & Improvements
Site	PAS 157 - Homewood (Recreation), PAS 158 – McKinney Tract (Residential), and PAS 159 - Homewood/Commercial (Tourist)	Placer County West Shore Area General Plan and TRPA Plan Area Guidance	Ski Resort, Parking Area, and Residential
North	PAS 160 – Homewood/Residential	TRPA Plan Area Guidance	Residential and Undeveloped
South	PAS 152- McKinney Lake (Conservation) and PAS 156 – Chambers Landing (Residential)	TRPA Plan Area Guidance	Maritime Museum, Residential, and Undeveloped
East	PAS 158 – McKinney Tract (Residential) and PAS 159 - Homewood/Commercial	TRPA Plan Area Guidance	Timeshares and Residential
West	PAS 157 Homewood (Recreation)	TRPA Plan Area Guidance	Undeveloped

C. PREVIOUS ENVIRONMENTAL DOCUMENT:

The County has determined that an Initial Study shall be prepared in order to determine whether the potential exists for unmitigatable impacts resulting from the proposed project. Relevant analysis from the County-wide General Plan and Community Plan Certified EIRs, and other project-specific studies and reports that have been generated to date, were used as the database for the Initial Study. The decision to prepare the Initial Study utilizing the analysis contained in the General Plan and Specific Plan Certified EIRs, and project-specific analysis summarized herein, is sustained by Sections 15168 and 15183 of the CEQA Guidelines.

Section 15168 relating to Program EIRs indicates that where subsequent activities involve site-specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and

the activity, to determine whether the environmental effects of the operation were covered in the earlier Program EIR. A Program EIR is intended to provide the basis in an Initial Study for determining whether the later activity may have any significant effects. It will also be incorporated by reference to address regional influences, secondary effects, cumulative impacts, broad alternatives, and other factors that apply to the program as a whole.

The following documents serve as Program-level EIRs from which incorporation by reference will occur:

- ➔ Placer County General Plan EIR

Section 15183 states that "projects which are consistent with the development density established by existing zoning, community plan or general plan policies for which an EIR was certified shall not require additional environmental review, except as may be necessary to examine whether there are project-specific significant effects which are peculiar to the project or site." Thus, if an impact is not peculiar to the project or site, and it has been addressed as a significant effect in the prior EIR, or will be substantially mitigated by the imposition of uniformly applied development policies or standards, then additional environmental documentation need not be prepared for the project solely on the basis of that impact.

The above stated documents are available for review Monday through Friday, 8am to 5pm, at the Placer County Community Development Resource Agency, 3091 County Center Drive, Auburn, CA 95603. For Tahoe projects, the document will also be available in our Tahoe Division office, 565 West Lake Blvd., Tahoe City, CA 96145.

D. EVALUATION OF ENVIRONMENTAL IMPACTS:

The Initial Study checklist recommended by the State of California Environmental Quality Act (CEQA) Guidelines is used to determine potential impacts of the proposed project on the physical environment. The checklist provides a list of questions concerning a comprehensive array of environmental issue areas potentially affected by the project (see CEQA Guidelines, Appendix G). Explanations to answers are provided in a discussion for each section of questions as follows:

a) A brief explanation is required for all answers including "No Impact" answers.

b) "Less Than Significant Impact" applies where the project's impacts are insubstantial and do not require any mitigation to reduce impacts.

c) "Less Than Significant with Mitigation Measures" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The County, as lead agency, must describe the mitigation measures, and briefly explain how they reduce the effect to a less-than-significant level (mitigation measures from earlier analyses may be cross-referenced).

d) "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

e) All answers must take account of the entire action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts [CEQA Guidelines, Section 15063(a)(1)].

f) Earlier analyses may be used where, pursuant to the tiering, Program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or Negative Declaration [CEQA Guidelines, Section 15063(c)(3)(D)]. A brief discussion should be attached addressing the following:

   - ➔ **Earlier analyses used** – Identify earlier analyses and state where they are available for review.
   - ➔ **Impacts adequately addressed** – Identify which effects from the above checklist were within the scope of, and adequately analyzed in, an earlier document pursuant to applicable legal standards. Also, state whether such effects were addressed by mitigation measures based on the earlier analysis.
   - ➔ **Mitigation measures** – For effects that are checked as "Less Than Significant with Mitigation Measures," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

g) References to information sources for potential impacts (i.e. General Plans/Community Plans, zoning ordinances) should be incorporated into the checklist. Reference to a previously-prepared or outside document should include a reference to the pages or chapters where the statement is substantiated. A source list should be attached and other sources used, or individuals contacted, should be cited in the discussion.

I. AESTHETICS – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Have a substantial adverse effect on a scenic vista? (PLN)	**X**			
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a state scenic highway? (PLN)	**X**			
3. Substantially degrade the existing visual character or quality of the site and its surroundings? (PLN)	**X**			
4. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area? (PLN)	**X**			

Discussion- All Items:
The applicant has provided photographic simulations of the proposed project that primarily contemplate visual impacts as viewed from Lake Tahoe. Staff is also concerned with visual impacts of the project as viewed from State Route 89 and other surrounding properties. No mitigation measures have been proposed by the applicant, with the exception of mention that a landscape plan will be presented at a later date. This project may result in an impact upon existing scenic vistas, particularly as viewed from Lake Tahoe and State Route 89. This project has the potential to adversely impact the visual character of the site depending upon the building design, locations, materials, lighting and landscaping. These impacts will be discussed and further evaluated in the EIR for this project.

II. AGRICULTURAL RESOURCE – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide or Local Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? (PLN)				**X**
2. Conflict with General Plan or other policies regarding land use buffers for agricultural operations? (PLN)				**X**
3. Conflict with existing zoning for agricultural use, or a Williamson Act contract? (PLN)				**X**
4. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland (including livestock grazing) to non-agricultural use? (PLN)				**X**

Discussion- All Items:
The proposed project is located within a zoning designation that and envisions ski resort development. To a certain extent, tree removal is expected to allow for this type of development. The project area is not designated for agricultural use, thus this project will not result in an impact upon these resources.

III. AIR QUALITY – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Conflict with or obstruct implementation of the applicable air quality plan? (APCD)	X			
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation? (APCD)	X			
3. Result in a cumulatively considerable net increase of any criteria for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (APCD)	X			
4. Expose sensitive receptors to substantial pollutant concentrations? (APCD)	X			
5. Create objectionable odors affecting a substantial number of people? (APCD)	X			

Discussion- Item III-1:
Depending on the preliminary project analysis, the air quality impacts resulting from the proposed project may result in a cumulatively considerable net increase in the region and conflict with the objectives in Placer County Air Quality Plan to attain the federal and state ambient air quality standards. This potential will be evaluated and discussed in the EIR.

Discussion- Items III-2,3:
This proposed project is located in the Lake Tahoe Air Basin portion of Placer County. This area is designated as non-attainment for the state particulate matter standard. Depending on the project analysis, the air pollution emissions generated from the proposed project will exceed the Placer County Air Pollution Control District (District's) threshold for ozone precursors and particulate matters. The exceedance may result a cumulatively considerable net increase to the Lake Tahoe air basin. The detailed air quality impacts will be evaluated and discussed in the EIR.

Discussion- Items III-4,5:
Based upon the preliminary project analysis, the project may potential expose nearby residents to substantial pollutant concentrations, or create objectionable odors. However, this potential will be mitigated to the less than significant result and will be evaluated and discussed in the EIR.

IV. BIOLOGICAL RESOURCES – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish & Game or U.S. Fish & Wildlife Service? (PLN)			X	
2. Substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number of restrict the range of an endangered, rare, or threatened species? (PLN)	X			

3. Have a substantial adverse effect on the environment by converting oak woodlands? (PLN)				X
4. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations or by the California Department of Fish & Game or U.S. Fish & Wildlife Service? (PLN)	X			
5. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? (PLN)	X			
6. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (PLN)	X			
7. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (PLN)	X			
8. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (PLN)	X			

Discussion- Item IV-1:
The project submittal includes a number of reports from Sue Fox, Principal Biologist for Wildlife Resource Consultants which were a result on surveys conducted on August 3, and 10, 2007. These reports include remote camera surveys for furbearers (e.g. pine martens), the results of a survey for spotted owls, a survey of northern goshawk (Accipiter gentilis), willow flycatcher (Epidonax traillii), osprey (Pandion haliaetus), amphibians, and bats. Also included were the results of the protocol surveys for northern goshawk, spotted owl, osprey, willow flycatcher, mountain yellow-legged frog, bats, and fur bearers such as pine martens. These results indicated the only species detected during the surveys were pine marten and osprey.

Discussion- Items IV-2,4,5,6:
The project has identified areas of Stream Environment Zone (SEZ). Due to the limitations for development in these zones imposed by the Tahoe Regional Planning Agency (TRPA), no development will be allowed to occur in these areas. The applicant is preparing to process an appeal to TRPA of the SEZ delineation for this site. The results of this may impact the development that is to occur near these SEZs.

The project has the potential to result in an increase in run off into the creeks on the site and ultimately into Lake Tahoe as a result of new impervious surfaces. The impacts of this runoff and its potential impact upon the habitat of fish and wildlife species will be further evaluated in the EIR prepared for this project. Additionally, the project description includes a proposal to daylight a creek on the site. The impacts to wildlife and fish migratory patterns will need to be evaluated in the EIR.

A study will need to be conducted that identifies any wetlands on the site, as defined by Section 404 of the Clean Water Act. Any potential impacts of this project upon the wetlands identified will need to be evaluated in the EIR.

Discussion- Item IV-3:
No oak woodlands are located in proximity to the project site and therefore it will not have an impact on their communities.

Discussion- Items IV-7,8:
The proposed project will result in a substantial amount of tree removal (approximately 452 trees) Accordingly the impacts of this removal will be better defined and addressed in the EIR that will be prepared for this project.

V. CULTURAL RESOURCES – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Substantially cause adverse change in the significance of a historical resource as defined in CEQA Guidelines, Section 15064.5? (PLN)			X	
2. Substantially cause adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines, Section 15064.5? (PLN)			X	
3. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (PLN)			X	
4. Have the potential to cause a physical change, which would affect unique ethnic cultural values? (PLN)			X	
5. Restrict existing religious or sacred uses within the potential impact area? (PLN)			X	
6. Disturb any human remains, including these interred outside of formal cemeteries? (PLN)			X	

Discussion- All Items:
The supplemental material submitted by the applicant contains a report from Susan Lindstrom, Ph.D., Archeological Consultant which indicates that there is a low likelihood to discover cultural resources on the subject property. No mitigation measures are required.

VI. GEOLOGY & SOILS – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Expose people or structures to unstable earth conditions or changes in geologic substructures? (ESD)	X			
2. Result in significant disruptions, displacements, compaction or overcrowding of the soil? (ESD)	X			
3. Result in substantial change in topography or ground surface relief features? (ESD)		X		
4. Result in the destruction, covering or modification of any unique geologic or physical features? (ESD)				X
5. Result in any significant increase in wind or water erosion of soils, either on or off the site? (ESD)		X		
6. Result in changes in deposition or erosion or changes in siltation which may modify the channel of a river, stream, or lake? (ESD)		X		
7. Result in exposure of people or property to geologic and geomorphological (i.e. Avalanches) hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards? (ESD)	X			
8. Be located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? (ESD)	X			

9. Be located on expansive soils, as defined in Table 18, 1-B of the Uniform Building Code (1994), creating substantial risks to life or property? (ESD)				**X**

Discussion- Items VI-1,2:
This project proposal will result in the disturbance of approximately 36.2-acres of the 1270-acre site for the development of the Homewood Master Resort. This includes the construction of various residential, tourist and commercial buildings totaling approximately 1,161,148 square feet. Parking lots and circulation areas will be constructed with the project.

Grading activities are associated with the installation of the buildings and parking areas, retaining walls, roadway improvements, and underground utilities. To construct the proposed improvements, potentially significant disruption of soils may occur, including excavation/compaction for roadways, building pads and various utilities. The project grading is expected to be approximately 194,700 cubic yards of cut to 51,300 cubic yards of fill. The project proposes soil cuts of up to 27' maximum at 3:1 and fills of up to approximately 20' feet maximum with all resulting finished grades to be no steeper than 2:1 at locations identified on the preliminary grading plan. According to the Geologic Hazards and Preliminary Geotechnical Evaluation by Kleinfelder, dated November 1, 2007, the maximum recommended inclination of both cut and fill slopes is 3:1 for maximum heights of 20'.

Construction of the proposed improvements may significantly disrupt the soils on the project site. The EIR for this project will include an analysis of the potential for unstable earth conditions, soil disruptions, displacements, and compaction of the soil and provide mitigation measures to reduce these potential impacts.

Discussion- Item VI-3:
The project proposes soil cuts and fills of up to approximately 27 feet maximum with retaining walls up to 16 feet in height, as identified on the preliminary grading plan. To construct the improvements proposed, substantial change in topography or ground surface relief features may occur. The proposed project's impacts associated with topography and relief features will be mitigated to a less than significant level by implementing the following mitigation measures:

Mitigation Measures- Item VI-3:
MM VI.1 The applicant shall prepare and submit Improvement Plans, specifications and cost estimates (per the requirements of Section II of the Land Development Manual [LDM] that are in effect at the time of submittal) to the Engineering and Surveying Department (ESD) for review and approval. The plans shall show all conditions for the project as well as pertinent topographical features both on- and off-site. All existing and proposed utilities and easements, on-site and adjacent to the project, which may be affected by planned construction, shall be shown on the plans. All landscaping and irrigation facilities within the public right-of-way (or public easements), or landscaping within sight distance areas at intersections, shall be included in the Improvement Plans. The applicant shall pay plan check and inspection fees. Prior to plan approval, all applicable recording and reproduction cost shall be paid. The cost of the above-noted landscape and irrigation facilities shall be included in the estimates used to determine these fees. It is the applicant's responsibility to obtain all required agency signatures on the plans and to secure department approvals. If the Design/Site Review process and/or DRC review is required as a condition of approval for the project, said review process shall be completed prior to submittal of Improvement Plans. Record drawings shall be prepared and signed by a California Registered Civil Engineer at the applicant's expense and shall be submitted to the ESD prior to acceptance by the County of site improvements.

MM VI.2 All proposed grading, drainage improvements, vegetation and tree removal shall be shown on the Improvement Plans and all work shall conform to provisions of the County Grading Ordinance (Ref. Article 15.48, Placer County Code) that are in effect at the time of submittal. No grading, clearing, or tree disturbance shall occur until the Improvement Plans are approved and all temporary construction fencing has been installed and inspected by a member of the DRC. All cut/fill slopes shall be at 2:1 (horizontal:vertical) unless a soils report supports a steeper slope and the Engineering and Surveying Department (ESD) concurs with said recommendation.

The applicant shall revegetate all disturbed areas. Revegetation undertaken from April 1 to October 1 shall include regular watering to ensure adequate growth. A winterization plan shall be provided with project Improvement Plans. It is the applicant's responsibility to assure proper installation and maintenance of erosion control/winterization during project construction. Where soil stockpiling or borrow areas are to remain for more than one construction season, proper erosion control measures shall be applied as specified in the Improvement Plans/Grading Plans. Provide for erosion control where roadside drainage is off of the pavement, to the satisfaction of the ESD.

Submit to the ESD a letter of credit or cash deposit in the amount of 110% of an approved engineer's estimate for winterization and permanent erosion control work prior to Improvement Plan approval to guarantee protection against erosion and improper grading practices. Upon the County's acceptance of improvements, and satisfactory completion of a one-year maintenance period, unused portions of said deposit shall be refunded to the project applicant or authorized agent.

If, at any time during construction, a field review by County personnel indicates a significant deviation from the proposed grading shown on the Improvement Plans, specifically with regard to slope heights, slope ratios, erosion control, winterization, tree disturbance, and/or pad elevations and configurations, the plans shall be reviewed by the DRC/ESD for a determination of substantial conformance to the project approvals prior to any further work proceeding. Failure of the DRC/ESD to make a determination of substantial conformance may serve as grounds for the revocation/modification of the project approval by the appropriate hearing body.

MM VI.3 Submit to the Engineering and Surveying Department (ESD), for review and approval, a geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The report shall address and make recommendations on the following:

A) Road, pavement, and parking area design
B) Structural foundations, including retaining wall design (if applicable)
C) Grading practices
D) Erosion/winterization
E) Special problems discovered on-site, (i.e., groundwater, expansive/unstable soils, etc.)
F) Slope stability

Once approved by the ESD, two copies of the final report shall be provided to the ESD and one copy to the Building Department for their use. If the soils report indicates the presence of critically expansive or other soils problems which, if not corrected, may lead to structural defects, a certification of completion of the requirements of the soils report will be required for subdivisions, prior to issuance of Building Permits. This certification may be completed on a Lot by Lot basis or on a Tract basis. This shall be so noted in the CC&Rs and on the Informational Sheet filed with the Final Map(s). It is the responsibility of the developer to provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report.

Discussion- Item VI-4:
There are no identified unique geologic or physical features at this site that may be destroyed, covered or modified.

Discussion- Items VI-5,6:
This resort project proposal will result in the construction of various residential, tourist and commercial buildings totaling approximately 1,161,148 square feet. The disruption of soils on this property increases the risk of erosion and creates a potential for contamination of stormwater runoff with disturbed soils or other pollutants introduced through typical grading practices. The construction phase will create significant potential for erosion as disturbed soil may come in contact with wind or precipitation that could transport sediment to the air and/or adjacent waterways. Discharge of concentrated runoff in the post-development condition may also contribute to the erosion potential impact in the long-term. Erosion potential and water quality impacts are always present and occur when protective vegetative cover is removed and soils are disturbed. It is primarily the shaping of building pads, grading for parking areas, roadways, and trenching for utilities that are responsible for accelerating erosion and degrading water quality. This disruption of soils on the site has the potential to result in significant increases in erosion of soils both on and off the site. The proposed project's impacts associated with deposition or soil erosion or changes in siltation will be mitigated to a less than significant level by implementing the following mitigation measures:

Mitigation Measures- Items VI-5,6:
Refer to text in MM VI.1
Refer to text in MM VI.2
Refer to text in MM VI.3

MM VI.4: Staging Areas: Stockpiling and/or vehicle staging areas shall be identified on the Improvement Plans and located as far as practical from existing dwellings and protected resources in the area.

MM VI.5 Water quality Best Management Practices (BMPs), shall be designed according to the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development/ Redevelopment, and/or for Industrial and Commercial, (and/or other similar source as approved by the Engineering and Surveying Department (ESD)).

Construction (temporary) BMPs for the project include, but are not limited to: Fiber Rolls, Stabilized Construction Entrance, Storm Drain Inlet Protection, Silt Fence, cutoff trenches, revegetation, soil stabilization, and straw/pine needle wattles.

Storm drainage from on- and off-site impervious surfaces (including roads) shall be collected and routed through specially designed catch basins, vegetated swales, vaults, infiltration basins, water quality basins, filters, etc. for entrapment of sediment, debris and oils/greases or other identified pollutants, as approved by the ESD. BMPs shall be designed at a minimum in accordance with the Placer County Guidance Document for Volume and Flow-Based Sizing

of Permanent Post-Construction Best Management Practices for Stormwater Quality Protection. Post-development (permanent) BMPs for the project include, but are not limited to: above and below ground onsite infiltration basin(s), sand/oil interceptors.

No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals. All BMPs shall be maintained as required to insure effectiveness. The applicant shall provide for the establishment of vegetation, where specified, by means of proper irrigation. Proof of on-going maintenance, such as contractual evidence, shall be provided to ESD upon request. Maintenance of these facilities shall be provided by the project owners/permittees unless, and until, a County Service Area is created and said facilities are accepted by the County for maintenance. Contractual evidence of a monthly parking lot sweeping and vacuuming, and catch basin cleaning program shall be provided to the ESD upon request. Failure to do so will be grounds for discretionary permit revocation. Prior to Improvement Plan or Final Map approval, easements shall be created and offered for dedication to the County for maintenance and access to these facilities in anticipation of possible County maintenance.

Discussion- Items VI-7,8:
According to the Geologic Hazards and Preliminary Geotechnical Evaluation by Kleinfelder, dated November 1, 2007, this site is located in a region traditionally characterized by moderate seismic activity. A major seismic event on faults in the vicinity may cause moderate shaking at the site. The site is located within Seismic Zone 3 of the California Building Code. If structures are constructed according to the current edition of the California Building Code, the likelihood of severe damage due to ground shaking should be minimal.

Apparent avalanche run-out chutes were observed on the west side of Lake Louise in the Kleinfelder Report. These features are not located on the subject site, but a potential exists for avalanches to occur on the subject site. Multiple areas of rock outcrop, steep slopes and soil creep were observed on the subject site. A potential for seismically-induced rock fall exists. An abandoned mine (Noonchester) and two mine shafts are located just off-site to the south of Quail Lake.

The EIR for this project will include an analysis of the impacts associated with exposure of people or property to geologic and geomorphological hazards, as well as geological units/soils that are unstable and provide mitigation measures to address any impacts of the proposed project.

Discussion- Item VI-9:
According to the Geologic Hazards and Preliminary Geotechnical Evaluation by Kleinfelder, dated November 1, 2007, it appears that expansive soils are not present at this location.

VII. HAZARDS & HAZARDOUS MATERIALS – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Create a significant hazard to the public or the environment through the routine handling, transport, use, or disposal of hazardous or acutely hazardous materials? (EHS)	X			
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (EHS)	X			
3. Emit hazardous emissions, substances, or waste within one-quarter mile of an existing or proposed school? (APCD)		X		
4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (EHS)			X	
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? (PLN)				X

6. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing in the project area? (PLN)				X
7. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? (PLN)	X			
8. Create any health hazard or potential health hazard? (EHS)		X		
9. Expose people to existing sources of potential health hazards? (EHS)			X	

Discussion- Items VII-1,2:
The project is proposing a new gondola and maintenance facility, these facilities include backup generators and above ground storage tanks for diesel fuel. There is the potential for spillage from handling hazardous waste such as diesel fuel, which creates a significant hazard to the public or the environment. Additionally, routine and repair maintenance of the ski lifts, gondola, snowmaking equipment and vehicle maintenance in the maintenance facility can create a significant hazard to the public through upset and accident conditions involving the release of hazardous materials into the environment. The project will include an outdoor swimming facility at the mid-mountain lodge facility which will use chemicals in their day to day operation. There is a potential for spillage of the chemicals and a possibility of a chemical release to the environment. The EIR prepared for the project will evaluate these potential impacts.

Discussion- Item VII-3:
Based upon the preliminary project analysis, the project may results in substantial air toxic emissions such as diesel engine exhausts. However, this impact may be reduced to less than significant level after implementation of the following mitigation measures.

Discussion- Items VII-4,9:
A Phase I Environmental Site Assessment (ESA) was prepared for the site which determined that the project site does not have any agricultural or past mining uses. However, the ESA indicated that the site has a low concentration of methyl tertiary butyl ether (MTBE) in monitoring well #4 which is located in the north parking lot. MTBE is a gasoline additive that is highly miscible, flammable, volatile and colorless liquid which was used in gasoline to enhance oxygenization and reduce “knocking” noise in automobiles. This site once had an underground storage tank (UST) which leaked fuel into the groundwater and surrounding soils. The UST site was officially closed with groundwater monitoring required by the Lahontan Regional Water Quality Control Board (LWRQCB) in 2004. Groundwater monitoring is necessary for this site as MTBE is a long lasting compound that does not easily breakdown. The low level of MTBE is still a concern for LWRQCB as this agency is tasked with the protection of the waters for the State of California. Typically, it takes between 25 to 50 years for MTBE to degrade naturally to acceptable safety levels. In this case, LWRQCB has noted that there is a downward trend in the MTBE levels. As the monitoring of MTBE is routine and under the review of LWRQCB, this impact is less than significant with no mitigation measures required.

Discussion- Items VII-5,6:
The project is not located in proximity to an airstrip or airport. The closest airport to the project site will be the Truckee Airport, approximately 16 miles northeast of the project site.

Discussion- Item VII-7:
The project is located in a heavily wooded area that contains the potential for wild fire danger. The applicant has begun a fuel load reduction program at the site to address this immediate concern. Additionally, the project description provides mention of utilizing the snow making operations at the site to assist in combating a wildfire. Regardless, the EIR prepared for the project will provide a more detailed discussion of the applicant’s proposal for their fuel load reduction plan and other methods for addressing the potential for a catastrophic wild fire.

Discussion- Item VII-8:
The project proposes to build several large residential and commercial buildings and is likely to have a stormwater detention system. Stormwater detention systems have the potential to allow for the breeding of mosquitoes and this is a potentially significant impact. The potential to allow for the breeding of mosquitoes will be mitigated to less than significant level by implementing the following mitigation measure.

Mitigation Measures- Item VII-8:
MM VII.1 In order to discourage the breeding of mosquitoes which have the potential to cause disease to humans and other hosts, the project proponent shall abide by the Placer Mosquito Abatement District (PMAD) construction guidelines for stormwater detention systems. PMAD shall review the improvement plans.

VIII. HYDROLOGY & WATER QUALITY – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Violate any potable water quality standards? (EHS)			X	
2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lessening of local groundwater supplies (i.e. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (EHS)	X			
3. Substantially alter the existing drainage pattern of the site or area? (ESD)		X		
4. Increase the rate or amount of surface runoff? (ESD)		X		
5. Create or contribute runoff water which would include substantial additional sources of polluted water? (ESD)	X			
6. Otherwise substantially degrade surface water quality?(ESD)	X			
7. Otherwise substantially degrade ground water quality? (EHS)	X			
8. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard boundary or Flood Insurance Rate Map or other flood hazard delineation map? (ESD)	X			
9. Place within a 100-year flood hazard area improvements which would impede or redirect flood flows? (ESD)	X			
10. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (ESD)	X			
11. Alter the direction or rate of flow of groundwater? (EHS)	X			
12. Impact the watershed of important surface water resources, including but not limited to Lake Tahoe, Folsom Lake, Hell Hole Reservoir, Rock Creek Reservoir, Sugar Pine Reservoir, French Meadows Reservoir, Combie Lake, and Rollins Lake? (EHS, ESD)	X			

Discussion- Item VIII-1:
The project is not likely to violate any potable water quality standards as it will be utilizing potable water from both Madden Creek Water Company and the Tahoe City Public Utility District. In the preceeding Section Hazards & Hazardous Materials, Item VII, the discussion mentioned the low-level MTBE (methyl tertiary butyl ether) which has occurred in one of the existing monitoring wells. Because the levels are low and the well is under standard monitoring by the Lahontan Regional Water Quality Control Board, this is not considered to be a significant hazard. No mitigation measures are required.

Discussion- Items VIII-2,11:
The project as proposed will increase the amount of impervious surfaces on the property which is currently undeveloped and this may interfere with groundwater recharge. Additionally, the resort maintains several wells which are used for snowmaking and other water supply purposes. The EIR for the project will discuss these issues and the potential for altering of the direction or rate of flow of groundwater, and the project's potential for depleting groundwater supplies.

Discussion- Item VIII-3:
A preliminary drainage report was prepared by Nichols Consulting Engineers, dated November 2007. Currently, the 1270-acre site generally drains to the east towards Lake Tahoe. According to the Stream Channel and Baseline Surface Water Assessment by Kleinfelder, dated November 12, 2007, there are three major watersheds within the project area. They are Madden Creek, Ellis Creek, and Quail Lake Creek. The project does propose minor changes to the drainage pattern of the site. Impacts associated with alterations to the drainage patterns of the site will be mitigated to a less than significant level by implementing the following mitigation measures:

Mitigation Measures- Item VIII-3:
Refer to text in MM VI.1
Refer to text in MM VI.2

MM VIII.2 Prepare and submit with the project Improvement Plans, a drainage report in conformance with the requirements of Section 5 of the LDM and the Placer County Storm Water Management Manual that are in effect at the time of submittal, to the Engineering and Surveying Department for review and approval. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include: A written text addressing existing conditions, the effects of the improvements, all appropriate calculations, a watershed map, increases in downstream flows, proposed on- and off-site improvements and drainage easements to accommodate flows from this project. The report shall identify water quality protection features and methods to be used both during construction and for long-term post-construction water quality protection. "Best Management Practice" (BMP) measures shall be provided to reduce erosion, water quality degradation, and prevent the discharge of pollutants to stormwater to the maximum extent practicable.

Discussion- Item VIII-4:
This project will create new impervious surfaces on portions of the property that are currently undeveloped and thus will likely increase the rate and amount of surface runoff from the site. The preliminary drainage reports prepared by Nichols Consulting Engineers, dated November 2007 shows that, with mitigation measures, the post project flows do not increase. All proposed on-site infiltration basins will be designed to accommodate the Lahontan 20-year volume or the Placer County 100-year mitigation volume, whichever is greater. Impacts associated with increases in runoff will be mitigated to a less than significant level by implementing the following mitigation measures:

Mitigation Measures- Item VIII-4:
Refer to text in MM VI.1
Refer to text in MM VI.2
Refer to text in MM VIII.1

Discussion- Items VIII-5,6:
The proposed project involves 36.2-acres of earth disturbance. The construction of the proposed improvements has the potential to degrade water quality. Stormwater runoff naturally contains numerous constituents; however, as the intensity of land use by man increases, the constituent concentrations typically increase to levels that potentially impact water quality. Pollutants associated with stormwater include (but are not limited to) suspended solids, nutrients, sediments, oils/greases, construction waste, metals, pesticides, herbicides, fertilizers, VOC's, pathogens, etc. The proposed project has the potential to result in the generation of new dry-weather runoff containing said pollutants and also has the potential to increase the concentration and/or total load of said pollutants in wet weather stormwater runoff. Erosion potential and water quality impacts are always present during construction and occur when protective vegetative cover is removed and soils are disturbed. In this case, it is primarily the grading associated with the site improvements, utilities, driveways and structure pads that may contribute to erosion and water quality degradation. The EIR for this project will include an analysis of the potential impacts associated with water quality and provide mitigation measures to address any impacts of the proposed project.

Discussion- Items VIII-7:
The project will be required to utilize stormwater best management practices (BMP) to prevent erosion, ease stormwater runoff and downstream drainage impacts. The increase in impervious surfaces has the potential to

degrade water quality by introducing oils, greases, and sediments into the stormwater runoff. The EIR should discuss and demonstrate that specific types of BMP's will provide adequate mitigation for the project's impacts to water quality both during and after construction. The EIR for this project will include an analysis of the hydrology/hydrologic and water quality impacts and provide mitigation measures to address any impacts of the proposed project.

Discussion- Items VIII-8,9,10:
Portions of the project site are within a 100-year flood hazard area as defined and mapped by the Federal Emergency Management Agency (FEMA) on panel 06061C0225F, June 8, 2007. Improvements are proposed within this 100-year flood hazard area and flood flows could be impeded or redirected. The site map shows buildings located within the flood hazard area and therefore there are potentially significant impacts due to exposing people or structures to a significant risk or loss, injury, or death, including flooding as a result or failure of a levee or dam. The EIR for this project will include an analysis of the flood hazard impacts and provide mitigation measures to address any impacts of the proposed project.

Discussion- Item VIII-12:
According to the Stream Channel and Baseline Surface Water Assessment by Kleinfelder, dated November 12, 2007, there are three major watersheds within the project area: Madden Creek, Ellis Creek, and Quail Lake Creek. All these watersheds drain to Lake Tahoe, an important surface water resource. The EIR for this project will include an analysis of the potential impacts to this important surface water resource and provide mitigation measures to address any impacts of the proposed project.

IX. LAND USE & PLANNING – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Physically divide an established community? (PLN)				X
2. Conflict with General Plan/Community Plan/Specific Plan designations or zoning, or Plan policies adopted for the purpose of avoiding or mitigating an environmental effect? (EHS, ESD, PLN)	X			
3. Conflict with any applicable habitat conservation plan or natural community conservation plan or other County policies, plans, or regulations adopted for purposes of avoiding or mitigating environmental effects? (PLN)	X			
4. Result in the development of incompatible uses and/or the creation of land use conflicts? (PLN)			X	
5. Affect agricultural and timber resources or operations (i.e. impacts to soils or farmlands and timber harvest plans, or impacts from incompatible land uses)? (PLN)			X	
6. Disrupt or divide the physical arrangement of an established community (including a low-income or minority community)? (PLN)				X
7. Result in a substantial alteration of the present or planned land use of an area? (PLN)	X			
8. Cause economic or social changes that would result in significant adverse physical changes to the environment such as urban decay or deterioration? (PLN)				X

Discussion- Items IX-1,6,8:
The proposed project is a revitalization of an existing ski resort area. There is a residential component of this project, but the ski resort area itself is not expanding in area such that it would divide an established community or its physical arrangement. There will be improvements made to update the components of the resort, similar to what many surrounding resorts have been doing in recent years.

Discussion- Items IX-2,4,5:
The proposed project will result in a change to the project site and the area where it is located. The potential impacts of this change will be further identified and discussed in the EIR that will be prepared for this project. Additionally, the deviations from the planning requirements of TRPA and Placer County (current zoning does not allow for multi-family uses) will be addressed throughout the Community Enhancement Program (CEP) that this project has applied to be part of.

Discussion- Item IX-3:
The proposed project could have an impact upon wetland areas that may be present on the site. The applicant will be required to have a wetlands delineation completed for the site and the impacts of the project (if any) will be evaluated in the discussion in the EIR prepared for the project.

Discussion- Item IX-7:
The Westshore Area General Plan does contemplate future commercial development associated with alpine skiing. Tourist Accommodation Uses, Single Family Residential, Employee Housing, and Alpine Ski Facilities are also considered uses allowed with the approval of a Minor Use Permit. The project will result in an impact to the present land use of the area in that the project description anticipates creating a bed base for this resort that will result in longer stays and more usage during the week and off season periods. The EIR to be prepared for the project will address these issues.

X. MINERAL RESOURCES – Would the project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. The loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (PLN)				**X**
2. The loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (PLN)				**X**

Discussion- All Items:
There are no known mineral resources of state significance present at this site.

XI. NOISE – Would the project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan, Community Plan or noise ordinance, or applicable standards of other agencies? (PLN)	**X**			
2. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? (PLN)	**X**			
3. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (PLN)	**X**			
4. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (PLN)				**X**

5. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? (PLN)				**X**

Discussion- Items XI-1,2,3:
The project will result in the approval of land use designations which will allow for the expansion of the existing ski resort, infrastructure to accommodate these features including a mid-mountain lodge, various commercial uses, facilities and upgrades, snowmaking, utilities, maintenance/access roadways, parking structure, etc. This project also includes a variety of new residential units as well as providing a permanent location for the Lake Tahoe Music Festival. Accordingly, the project has the potential to expose people to noise levels in excess of standards published in the Westshore Area General Plan Noise Element and the Placer County General Plan. The project has the potential to create a substantial permanent and temporary increase in ambient noise levels in the project vicinity. The Environmental Impact Report for this project should include an analysis of the noise impacts of the project to nearby sensitive receptors, any acoustical analysis should include the requirements of the Westshore Area General Plan Noise Element and provide mitigations to address any impacts of the proposed project.

Discussion- Items XI-4,5:
The project is not located in proximity to an airstrip or airport. The closest airport to the project site would be the Truckee Airport, approximately 25 miles north. Accordingly, there will be no noise impact generated by an airport or airstrip.

XII. POPULATION & HOUSING – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Induce substantial population growth in an area, either directly (i.e. by proposing new homes and businesses) or indirectly (i.e. through extension of roads or other infrastructure)? (PLN)	**X**			
2. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? (PLN)				**X**

Discussion- Item XII-1:
The proposed project will create job opportunities and new residences. The current project proposal does not identify the number of new employees that this project will generate. Accordingly, this will be addressed in the EIR that is to be prepared for this project.

Discussion- Item XII-2:
The project seeks to introduce new housing and will not result in the removal of existing housing units.

XIII. PUBLIC SERVICES – Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental services and/or facilities, the construction of which may cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services?

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Fire protection? (EHS, ESD, PLN)	**X**			
2. Sheriff protection? (EHS, ESD, PLN)	**X**			

3. Schools? (EHS, ESD, PLN)	X			
4. Maintenance of public facilities, including roads? (EHS, ESD, PLN)	X			
5. Other governmental services? (EHS, ESD, PLN)	X			

Discussion- All Items:
The probable environmental effects of the various project elements will include an increase in the demand for fire/emergency medical and law enforcement services with the construction of additional development. There will be an increase in student enrollment and an increased burden on public facilities with the construction of additional development. The EIR for this project will include an analysis of the public service impacts and provide mitigation measures to address any impacts of the proposed project.

XIV. RECREATION – Would the project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (PLN)	X			
2. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? (PLN)	X			

Discussion- All Items:
The project itself will create new and expanded recreation activities for the area. However, the project submittal does not provide discussion as to how the project will impact other surrounding public and private recreation areas. The EIR prepared for the project will address these issues.

XV. TRANSPORTATION & TRAFFIC – Would the project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. An increase in traffic which may be substantial in relation to the existing and/or planned future year traffic load and capacity of the roadway system (i.e. result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? (ESD)	X			
2. Exceeding, either individually or cumulatively, a level of service standard established by the County General Plan and/or Community Plan for roads affected by project traffic? (ESD)	X			
3. Increased impacts to vehicle safety due to roadway design features (i.e. sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (ESD)	X			
4. Inadequate emergency access or access to nearby uses? (ESD)	X			
5. Insufficient parking capacity on-site or off-site? (ESD, PLN)	X			

6. Hazards or barriers for pedestrians or bicyclists? (ESD)	X			
7. Conflicts with adopted policies supporting alternative transportation (i.e. bus turnouts, bicycle racks)? (ESD)	X			
8. Change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? (ESD)	X			

Discussion- All Items:
Development of this project will increase traffic volumes on area roadways, contributing towards a cumulative impact on the transportation system. The proposed project creates site-specific impacts on local transportation systems that are potentially significant when analyzed against the existing baseline traffic conditions and roadway segment/intersection existing LOS. Additionally, the cumulative effect of an increase in traffic has the potential to create significant impacts to the area's transportation system. The probable environmental effects of the various project elements include traffic and circulation patterns that might be temporarily affected during construction, an increase in potential hazards because of design or incompatible uses, and potential inadequate emergency access or access to nearby uses. Traffic volumes on study roadways will increase and potentially create impacts to congestion. There may be a potential for inadequate parking capacity/supply. Increased demands on roadway facilities covered by the Countywide Traffic Fee Program will occur. There is a potential to increase transit delay associated with existing and/or proposed transit services provided internal and external to the project as well as conflicts with policies supporting alternative transportation. There may be potential conflicts with pedestrian and bicycle uses, change in air traffic patterns, exceedance of established level of service standards. The EIR for this project will include an analysis of the transportation and circulation impacts and provide mitigation measures to address any impacts of the proposed project.

XVI. UTILITIES & SERVICE SYSTEMS – Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? (ESD)	X			
2. Require or result in the construction of new water or wastewater delivery, collection or treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (EHS, ESD)	X			
3. Require or result in the construction of new on-site sewage systems? (EHS)				X
4. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (ESD)	X			
5. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? (EHS)	X			
6. Require sewer service that may not be available by the area's waste water treatment provider? (EHS, ESD)	X			
7. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs in compliance with all applicable laws? (EHS)	X			

Discussion- Items XVI-1,2,4,6:
The existing facilities at this site produce approximately 45,000 gpd (gross peak day) wastewater flows. This project will add 25,400 gpd of wastewater flow to the wastewater conveyance and treatment systems. This parcel is currently served by TCPUD-TTSA and proposes upgrades to the existing service connection.

An analysis of both the sewer conveyance and treatment plant capacities must be completed due to the proposed increase in density. The probable environmental effects of the various project elements include the need for new wastewater conveyance and stormwater drainage facilities and potential upgrades to the wastewater treatment plant and any existing stormwater drainage facilities.

This project will also result in the construction of new water and wastewater collection and delivery facilities. The EIR for this project will include an analysis of the water, wastewater and storm water utility system impacts and of the construction of the mid-mountain lodge facility in terms of sewer and water collection and delivery systems. and provide mitigation measures to address any impacts of the proposed project.

Discussion- Item XVI-3:
The project will not require or result in the construction of new on-site sewage disposal systems. The Tahoe Regional Planning Agency does not allow the construction of new on-site sewage disposal systems within the Tahoe basin.

Discussion- Item XVI-5:
The EIR will discuss the source of water, the quantity of water available and the potential water sources to be utilized for all aspects of the project, including snowmaking. The EIR will address the Tahoe City Public Utility District (TCPUD) and Madden Creek Water Company's ability to serve this project for potable water service.

Discussion- Item XVI-6:
The EIR will discuss TCPUD's ability and willingness to provide sewer service for this project. The EIR will also discuss the ability and willingness of the Truckee Tahoe Sanitary Agency and Truckee Sanitary District's ability to serve the proposed project at full buildout.

Discussion- Item XVI-7:
Solid waste in the project area is collected by Tahoe Truckee Sierra Disposal (TTSD) and processed at the Eastern Regional Materials Facility (MRF). The MRF is owned by Placer County and operated by TTSD under contract with the County. At the MRF, recyclables are recovered and the residual waste is disposed at Lockwood Landfill in Nevada.

The EIR will provide an estimate of the amount of solid waste generated during construction and after project completion for each sector (residential, commercial, industrial, and institutional). The analysis will also calculate the percent increase in waste received over current conditions and determine if the increase in waste will significantly affect the processing capabilities of the MRF or exceed its permit limits.

If the waste generated by the project creates a potentially significant impact, mitigation measures will be required as part of the EIR (e.g. construction waste recycling and on-site recycling programs).

E. MANDATORY FINDINGS OF SIGNIFICANCE:

Environmental Issue	Yes	No
1. Does the project have the potential to degrade the quality of the environment, substantially impact biological resources, or eliminate important examples of the major periods of California history or prehistory?	**X**	
2. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	**X**	
3. Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	**X**	

F. OTHER RESPONSIBLE AND TRUSTEE AGENCIES whose approval is required:

☒ California Department of Fish and Game	☒ Local Agency Formation Commission (LAFCO)
☒ California Department of Forestry	☐ National Marine Fisheries Service
☐ California Department of Health Services	☒ Tahoe Regional Planning Agency
☐ California Department of Toxic Substances	☒ U.S. Army Corp of Engineers
☒ California Department of Transportation	☒ U.S. Fish and Wildlife Service
☐ California Integrated Waste Management Board	☐ _____
☒ California Regional Water Quality Control Board	☐ _____

G. DETERMINATION – The Environmental Review Committee finds that:

The proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required (i.e. Project, Program, Subsequent, or Master EIR).

H. ENVIRONMENTAL REVIEW COMMITTEE (Persons/Departments consulted):

Planning Department, Steve Buelna, Chairperson
Engineering and Surveying Department, Sarah K. Gillmore
Engineering and Surveying Department, Wastewater, Ed Wydra
Department of Public Works, Transportation
Environmental Health Services, Grant Miller
Air Pollution Control District, Yu-Shuo Chang
Flood Control Districts, Andrew Darrow
Facility Services, Parks, Vance Kimbrell
Placer County Fire/CDF, Bob Eicholtz/Brad Albertazzi

Signature Gina Langford Date February 15, 2008
Gina Langford, Environmental Coordinator

I. SUPPORTING INFORMATION SOURCES: The following public documents were utilized and site-specific studies prepared to evaluate in detail the effects or impacts associated with the project. This information is available for public review, Monday through Friday, 8am to 5pm, at the Placer County Community Development Resource Agency, Environmental Coordination Services, 3091 County Center Drive, Suite 190, Auburn, CA 95603. For Tahoe projects, the document will also be available in our Tahoe Division office, 565 West Lake Blvd., Tahoe City, CA 96145.

County Documents	☒ Community Plan
	☒ Environmental Review Ordinance
	☒ General Plan
	☒ Grading Ordinance
	☒ Land Development Manual
	☐ Land Division Ordinance
	☒ Stormwater Management Manual
	☒ Tree Ordinance
	☐ _____
Trustee Agency Documents	☐ Department of Toxic Substances Control
	☐ _____
	☐ _____

Site-Specific Studies	Planning Department	☒ Acoustical Analysis
		☒ Biological Study
		☒ Cultural Resources Pedestrian Survey
		☒ Cultural Resources Records Search
		☐ Lighting & Photometric Plan
		☐ Paleontological Survey
		☐ Tree Survey & Arborist Report
		☒ Visual Impact Analysis
		☐ Wetland Delineation
		☐ _____
		☐ _____
	Engineering & Surveying Department, Flood Control District	☐ Phasing Plan
		☒ Preliminary Grading Plan
		☒ Preliminary Geotechnical Report
		☒ Preliminary Drainage Report
		☒ Stormwater & Surface Water Quality BMP Plan
		☒ Traffic Study
		☐ Sewer Pipeline Capacity Analysis
		☐ Placer County Commercial/Industrial Waste Survey (where public sewer is available)
		☐ Sewer Master Plan
		☒ Utility Plan
		☒ Tentative Map
		☐ _____
	Environmental Health Services	☐ Groundwater Contamination Report
		☐ Hydro-Geological Study
		☒ Phase I Environmental Site Assessment
		☐ Soils Screening
		☐ Preliminary Endangerment Assessment
		☐ _____
		☐ _____
	Air Pollution Control District	☐ CALINE4 Carbon Monoxide Analysis
		☐ Construction Emission & Dust Control Plan
		☐ Geotechnical Report (for naturally occurring asbestos)
		☐ Health Risk Assessment
		☐ URBEMIS Model Output
		☐ _____
		☐ _____
	Fire Department	☐ Emergency Response and/or Evacuation Plan
		☐ Traffic & Circulation Plan
		☐ _____
	Mosquito Abatement District	☐ Guidelines and Standards for Vector Prevention in Proposed Developments
		☐ _____

ATTACHMENT B PROPOSED MASTER PLAN MAPPING

EXISTING QUAIL CHAIR LIFT

EXISTING MADDEN CHAIR LIFT

EXISTING CHILDREN'S SKI SCHOOL

EXISTING SOUTH BASE LODGE

EXISTING SURFACE PARKING

TAHOE SKI BOWL WAY

EXISTING MAINTENANCE FACILITY

LAGOON ROAD

SACRAMENTO AVE

EL CAPITAN AVE

HWY 89

SACRAMENTO AVE

EXISTING PUMP HOUSE

EXISTING SURFACE PARKING

EXISTING LIFT/OPS BUILDING

SILVER ST.

FAWN ST.

EXISTING GRAVEL PARKING

EXISTING NORTH BASE LODGE

EXISTING SURFACE PARKING

LAKE TAHOE

200 0 200 400

SCALE IN FEET
1" = 200'-0"

811 Know what's below. Call before you dig.

DATE: _____

REVISIONS				
No.	Date		CHKD	APPD

DESIGNED: CKC
DRAWN: CKC
CHECKED:
JOB No: A514.02.14
SCALE: AS NOTED
DATE: 08-21-08

Nichols Consulting Engineers, Chtd.
Engineering & Environmental Services
1885 S. Arlington Ave., Suite #111
Reno, NV 89509
Ph: (775) 329-4955
Fx: (775) 329-5098

HOMEWOOD VILLAGE RESORTS, LLC

HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

EXISTING SITE PLAN

SHEET 1 OF 3

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EXISTING QUAIL CHAIR LIFT

PROPOSED GONDOLA

NEW TAHOE SKI BOWL EXTENSION (TO 11 SINGLE FAMILY UNITS)

11 SINGLE FAMILY UNITS

RESIDENTIAL

SKIER SERVICES

HOTEL/LODGE

RESIDENTIAL

TAHOE SKI BOWL WAY

SKATING POND

FRACTIONAL

SACRAMENTO AVE

PROPOSED SOUTH BASE AREA

LAGOON ROAD

SACRAMENTO AVE

PARKING/ WORKFORCE HOUSING

DROPOFF/SHORTTERM PARKING

FAWN ST.

SILVER ST.

EL CAPITAN AVE

HWY 89

RESIDENTIAL

PROPOSED NORTH BASE AREA (MIXED USE)

LAKE TAHOE

200 0 200 400

SCALE IN FEET
1" = 200'-0"

811 Know what's below. Call before you dig.

DATE: _____

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REVISIONS

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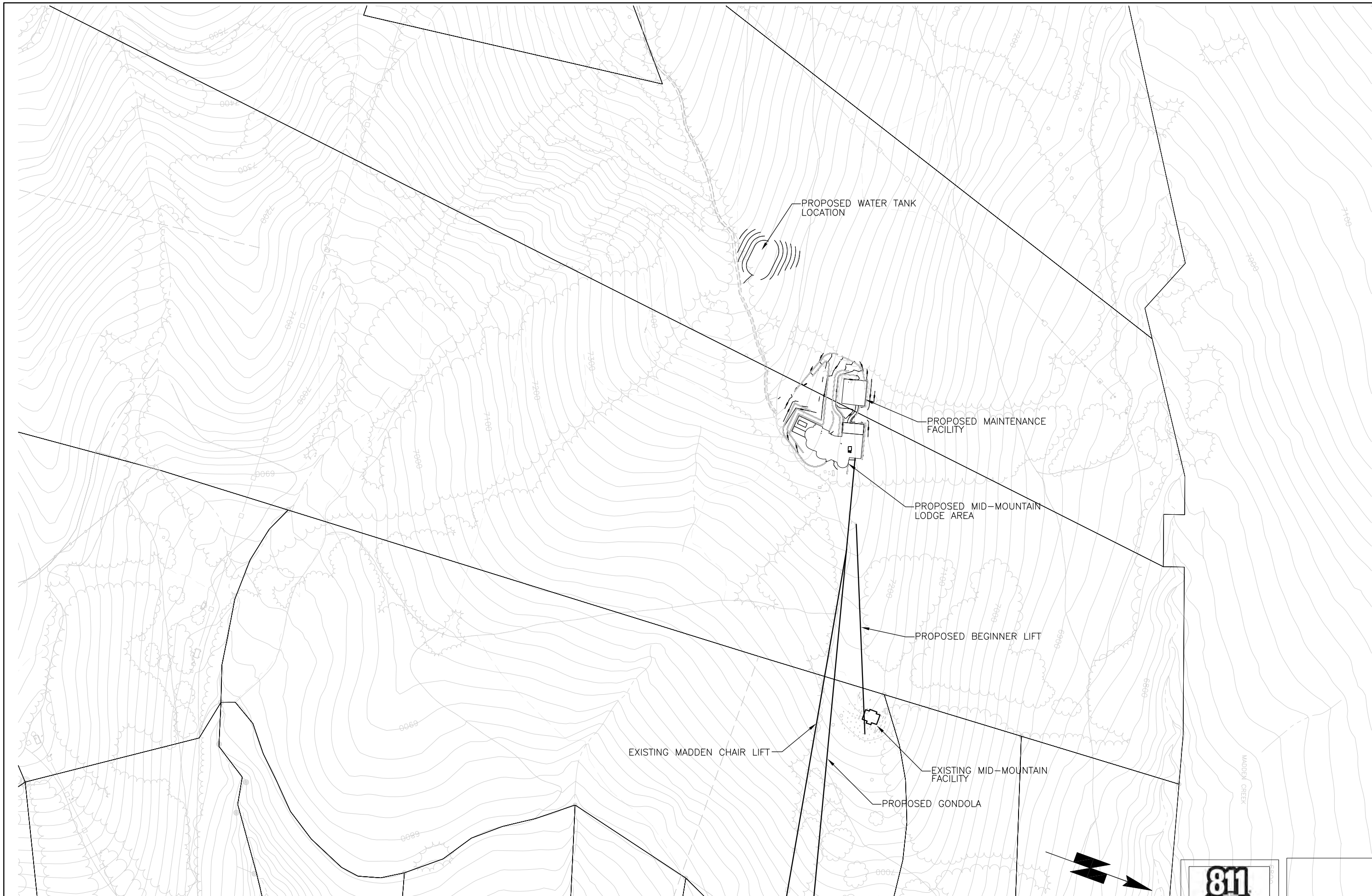
TRUCKEE, CALIFORNIA 96160

OVERALL SITE PLAN

SHEET 2 OF 3



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DATE: _____

REVISIONS				
No.	Date		CHKD	APPD

DESIGNED: CKC
DRAWN: CKC
CHECKED:
JOB No: A514.02.14
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DATE: 08-27-08

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MID-MOUNTAIN SITE PLAN

SHEET 3 OF 3