DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA, 95814-2922

REPLY TO
ATTENTION OF

Environmental Resources Branch

MAR 0 1 2010

TO ALL INTERESTED PARTIES:

The draft Environmental Assessment (EA) for the North Lemmon Valley –Heppner Phase 7 Project, Washoe County Nevada, is enclosed for your review. Washoe County proposes to complete their extension of the existing Lemmon Valley water system into the Heppner residential subdivision located in the northern part of the valley. The proposed improvements would involve installation of new underground waterlines and fire hydrants along several residential streets primarily in the northern part of the subdivision. This draft EA evaluates the potential effects of the proposed action on the environmental resources in the project area.

The public review period for the draft EA will end on March 22, 2010. All comments received on the draft document will be considered and incorporated into the final EA, as appropriate. Please send any comments to U.S. Army Corps of Engineers, Sacramento District, Attn: Ms. Lynne Stevenson (CESPK-PD-R), 1325 J Street, Sacramento, California 95814. If you have any questions, Ms. Stevenson may be reached at (916) 557-6774 or email: Lynne.L.Stevenson@usace.army.mil.

Sincerely,

E. Scott Acree

Francis C. Piccola
Chief, Planning Division

Enclosure

DRAFT
ENVIRONMENTAL ASSESSMENT

NORTH LEMMON VALLEY – HEPPNER PHASE 7 PROJECT
WASHOE COUNTY, NEVADA

March 2010

US Army Corps
of Engineers ®
Sacramento District

Approved for public release; distribution is unlimited

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO ATTENTION OF

Environmental Resources Branch

FINDING OF NO SIGNIFICANT IMPACT
North Lemmon Valley – Heppner Phase 7 Project
Washoe County, Nevada

I have reviewed and evaluated the information presented in this Environmental Assessment (EA) for the North Lemmon Valley – Heppner Phase 7 Project, Washoe County, Nevada. The Phase 7 work would involve installation of waterlines and fire hydrants along several residential streets primarily in the northern part of the Heppner subdivision. This work would provide a reliable source of good quality water to the remaining 113 lots still relying solely on individual wells. In addition, completion of the system would help to stabilize the underlying groundwater level and increase fire protection to the subdivision.

During this review, the possible consequences of the work described in the EA have been studied with consideration given to environmental, social, cultural, and engineering feasibility. In evaluating the effects of the proposed project, specific attention has been given to significant environmental resources that could potentially be affected. I have also considered the views of other interested agencies, organizations, and individuals concerning the project. The effects and mitigation measures have been reviewed by the U.S. Fish and Wildlife Service and the Nevada State Historic Preservation Officer.

Based on my review of the EA and my knowledge of the project area, I am convinced that the proposed project is a logical and desirable alternative. Furthermore, I have determined that the project would have no significant effects on the environment. All construction will be implemented in compliance with applicable Federal, State, and local laws, rules, and regulations. Based on the results of the environmental evaluation and completion of interagency coordination, I have determined that the EA and Finding of No Significant Impact provide adequate documentation and that no further environmental document is required.

_____ _____

Date

Thomas C. Chapman, P.E.
Colonel, U.S. Army
District Engineer

CONTENTS

Tables

Plates

Appendixes

1.0 PURPOSE AND NEED

1.1 Proposed Action

Washoe County is proposing to complete their extension of the existing Lemmon Valley water system into the Heppner residential subdivision located in the northern part of the valley. The Phase 7 work would involve installation of waterline and fire hydrants along several residential streets primarily in the northern part of the subdivision. This work would provide a reliable source of good quality water to the remaining 113 lots still relying solely on individual wells. In addition, completion of the system would help to stabilize the underlying groundwater level and increase fire protection to the subdivision.

1.2 Location of the Project Area

Lemmon Valley is located about 10 miles north of Reno in southern Washoe County (Plate 1). The Heppner subdivision is in the northern area of the valley. Encompassing approximately 1 square mile, this rural subdivision is bounded by Matterhorn Boulevard on the east, Lemmon Drive on the south, and Oregon Boulevard on the west and north (Plate 2).

The Phase 7 project area includes Oklahoma Street, Juniper Street, Fir Street, and sections of Matterhorn Boulevard, Idaho Street, Ohio Street, and the open area between a pedestrian/bike path and private property just north of Lemmon Drive. The residential streets are paved and have adjacent shoulders covered in dirt or scattered weedy vegetation. The open area along Lemmon Drive has weedy vegetation with a few scattered shrubs.

1.3 Background

Development of the rural Heppner subdivision began in the late 1950's. At that time, there were no hydrogeologic studies of the groundwater conditions in the area. In 1971, the State of Nevada Engineer's Office determined that the groundwater aquifer in the Lemmon Valley basin was being over-pumped based on the amount of precipitation and infiltration from runoff each year. As a result, a moratorium was placed on new water development in the basin, with the exception of drilling private domestic wells (Washoe County, 2005).

Eventually, a total of 638 one-acre residential lots were developed in the Heppner subdivision, with 518 homes relying on their own domestic well and septic system for water supply and sewage treatment. (Some homes in the southeast area of the subdivision were connected to the Lemmon Valley water system prior to the moratorium.) As a result of the over-pumping, underlying groundwater levels continued to decline, and residents started to experience problems with their wells, as well as increasing levels of nitrates in the groundwater (likely from septic systems). State studies indicated that groundwater levels were declining at a rate of 1 to 2 feet per year and that these declines were likely to continue (Washoe County, 2005; 2009b).

The combination of an underlying low-yield aquifer and increasing levels of nitrates in the groundwater have generated significant hardship on the homeowners (NDEP, 2009). Some wells have failed, and at least 160 individual wells have needed to be deepened or re-drilled at increasing cost (estimated $20,000 to $30,000) to the homeowner. A number of wells are being deepened or re-drilled for the second time. In addition, high levels of nitrates in the groundwater expose the residents to potential health problems and could eventually cause environmental problems as nitrates move down-gradient in the groundwater.

In response, Washoe County evaluated potential solutions and designed the Heppner Subdivision Water System Improvement Project to address the water supply and quality problems in the Heppner subdivision. This project involved installing main and lateral waterlines under and along the residential streets, and extending the service area of the Lemmon Valley water system into the subdivision. Individual homeowners would then have the option of connecting to the water system for sufficient, good-quality water. Less pumping of groundwater could allow the underlying aquifer to recover over time, and nitrates would be diluted with increasing groundwater volume. In addition, the installation of fire hydrants would allow the City of Reno Fire Department to more effectively protect residents and property during structural and wildfires.

Because of the high cost of the overall Heppner Subdivision Water System Improvement Project, Washoe County decided to construct the project in phases, depending on the availability of funding sources. Between 2004 and early 2009, the County constructed six phases of the seven-phase project. Each phase involved installation of waterline and fire hydrants along different residential streets in the subdivision. Those areas with the greatest risk of well failure were completed first. The phases, streets, waterline alignments, and funding sources are shown on Plate 3. Phase 6 also involved construction of a water storage tank and access road north of the subdivision.

1.4 Need for Proposed Action

Construction of Phase 7 is needed to complete the extension of the existing Lemmon Valley water system into the Heppner subdivision. The residents in the remaining 113 lots along the Phase 7 pipeline alignment are at risk of well failure as underlying groundwater levels decline due to over-pumping of the aquifer. In addition, nitrates in the groundwater pose a public and environmental health risk. Installing the pipelines would allow the homeowners the option of connecting to the water system for a safe and reliable water supply. Reducing over-pumping is needed to help stabilize the declining underlying groundwater level, ensuring sufficient volume to dilute nitrates to safer levels. Finally, fire hydrants along the remaining streets are needed to ensure public safety and reduce property damage during fires.

1.5 Project Authorization

This project was authorized by the Water Resources Development Act of 1999 (Public Law 106-53), as amended, which authorized the U.S. Army Corps of Engineers (Corps) to provide design and construction assistance for water-related environmental infrastructure projects in Idaho, Montana, rural Nevada, New Mexico, rural Utah, and Wyoming. The Corps is the Federal lead agency, and Washoe County is the local sponsor for the project.

1.6 Purpose of the Environmental Assessment

This Environmental Assessment (EA) discusses the environmental resources in the project area; evaluates the effects of the alternatives (including the proposed action) on the resources; and proposes measures to avoid, minimize, or mitigate any adverse effects to less than significant. This EA is in compliance with the National Environmental Policy Act and provides full public disclosure of the effects of the proposed action.

2.0 ALTERNATIVES

2.1 No Action

Under the no action alternative, Washoe County would not complete the extension of the existing Lemmon Valley water system into the Heppner residential subdivision. The residents in the remaining 113 lots along the Phase 7 pipeline alignment would continue to be at risk of well failure and loss of domestic water supply. They could be forced to consider deepening or redrilling their wells at a substantial financial cost. Even then, there would be no guarantee that the deepened or new well would not fail again in the future.

Continued pumping of the wells at the 113 lots would not help to stabilize the declining groundwater level in the underlying aquifer or ensure a sufficient volume to dilute nitrates to safer levels. As a result, the health of those residents would continue to be at risk due to the increasing levels of nitrates in their water supply. In addition, without nearby access to fire hydrants and a reliable source of water, the residents and their property would remain at higher risk for injury or property damage during structural or wild fires.

2.2 Waterline Extension (Preferred Alternative)

The preferred alternative consists of installing new underground main and lateral waterlines, pressure-reducing station, fire hydrants, and water meters along Oklahoma Street, Juniper Street, First Street, and sections of Matterhorn Boulevard, Idaho Street, Ohio Street, and Lemmon Drive in the Heppner subdivision in north Lemmon Valley. The waterlines would connect to the existing Lemmon Valley water system. The alignments, as well as the staging areas (contractors yards), are shown on Plate 4.

2.2.1 Pre-Construction Activities

Permits and Utilities. Prior to initiation of construction, the contractor would be required to obtain all Federal, State, and local permits and approvals necessary to perform the work, including those related to surface area disturbance, stormwater discharge, air quality, and traffic safety. Specific permits and approvals related to environmental resources are discussed in Section 3.0.

The contractor would also be required to verify the depths and locations of all existing utilities in the project area. Potentially affected utility companies would be coordinated with concerning the timing and scope of the proposed work. These utilities could include Washoe County (water), NV Energy, AT&T, Waste Management, and Charter.

Mobilization and Staging. During mobilization, construction equipment would be moved to the staging areas, along with pipelines, gravels, and other construction materials. Types of equipment would include a hydraulic excavator, front end loaders, compactor, dump trucks, haul trucks, and water trucks. In addition, an area would be provided for parking of worker vehicles.

Three staging areas would be used during installation of the waterline and fire hydrants. One staging area would be located on the south side of Lemmon Drive across from the intersection of Arizona Street; the second would be located at the southwest corner of the intersection of Idaho and First Streets; and the third would be located on the east side of Oklahoma Street between Oregon Boulevard and Juniper Street (Plate 4). These areas are owned by Washoe County, and each would encompass approximately 0.5 acre of previously disturbed area with weedy vegetation and a few scattered shrubs.

During construction, the staging areas would be fenced to ensure public safety and prevent vandalism or theft in accordance with Washoe County Code requirements (Stowell, 2009b). Once construction of the project is completed, the contractor would also be required to restore the staging areas to pre-project conditions via hydroseeding with a native plant mix to prevent erosion and encourage revegetation.

2.2.2 Construction Details

Waterlines. To extend the Lemmon Valley water system, the project would include the underground installation of approximately 2.9 miles of new main and lateral waterlines under and along various residential streets in the Heppner subdivision. This waterline would total approximately 5,969 linear feet of 8-inch-diameter waterline and 9,189 feet of 6-inch waterline. The lengths and diameters of waterline for each street are shown in Table 1. The new waterlines would connect to the existing water system to provide a reliable source of good quality water.

Table 1. Lengths and Diameters of New Waterline per Roadway

Roadway	6-inch Diameter (linear ft)	8-inch Diameter (linear ft)	Total (linear ft)
Oklahoma St.	1,045		1,045
Matterhorn Blvd.	-	1,838	1,838
Ohio St.	643	643	1,286
Idaho St.	598	-	598
Fir St.	1,134	3,488	4,622
Lemmon Dr.	2,665	-	2,665
Juniper St.	3,104	-	3,104
Total	9,189	5,969	15,158

Source: Stowell, 2009a

Installation of the new main waterline under all of the streets except Lemmon Drive would include (1) clearing the roadway surface of asphalt and aggregate base; (2) excavating trenches; (3) laying bedding material; (4) placing and connecting the pipeline(s) and associated equipment in the trench; (5) covering the pipeline with bedding material; and (6) backfilling with soils and compacting the surface of the excavated area (Plate 5). Excavated soil material that is suitable for reuse would be used for onsite backfill, while surface material and unsuitable soil would be removed and disposed offsite at the regional landfill in Lockwood. Once the installation of the pipeline is completed, the disturbed sections of paved roadway would be patched with aggregate base and asphalt. Finally, the entire roadway surface would be sealed with a layer of Type II slurry (Plate 5).

Since the alignment along Lemmon Drive crosses an open area with scattered weedy vegetation, installation of the new main waterline would not involve any paved roadway work. In addition, installation of the lateral waterlines along all the roadways would cross dirt roadway shoulders and small open areas with similar vegetation. The work would include (1) clearing and grubbing the surface vegetation and debris, (2) excavating the trench, (3) laying bedding material; (4) placing and connecting the pipeline(s) and associated equipment in the trench; (5) covering the pipeline with bedding material; (6) backfilling with soils and compacting the surface of the excavated area, and (7) reseeding the disturbed area.

Pressure-Reducing Station. A new pressure-reducing station would be installed underground along Matterhorn Boulevard near the intersection with Overland Road. This station would be designed and operated to reduce the water pressure of the inflow from the waterline along Matterhorn Boulevard. This would help to maintain the desired water pressure throughout the water system. The basic components of the station would include a pre-cast concrete vault, pressure-reducing valves, and pipelines connecting to the waterline (Plate 6).

Fire Hydrants. Thirteen new fire hydrants would be installed along the waterline alignment to provide the City of Reno Fire Department with additional access to the water supply during structural or nearby wildfires. This would increase fire protection to the subdivision. These hydrants would be located at intersections and at the mid-point of

the roadways. The basic components of the hydrant would include pipelines connecting to the waterline, riser pipe, above-ground hydrant outflow structure, and concrete splash pad (Plate 5).

Service Meters. One hundred and thirteen water service meters would be installed at the ends of the water systems' lateral pipelines at the edges of the residential parcels. Once the extension is completed, each property owner would have the option of connecting to the water system instead of relying on their individual well for their water supply. However, installation of the connecting pipeline between the water meter and the residence would be the responsibility of the property owner. Currently, property allocation costs to connect to the new water system are $12,870.89 per owner (Washoe County, 2009g). The meters would be used by the Washoe County to determine residential water use for billing purposes.

2.2.3 Borrow, Stockpiling, and Disposal

Borrow Materials and Sources. Borrow materials would include such materials as drain rock, aggregate base, and gravel to be used as layering materials for trenches or road surfaces. Asphalt and slurry would also be used to repair and resurface the disturbed paved roadways. These materials would be obtained and transported to the staging areas via trucks from local commercial sources in the Reno area. Sufficient suitable soil material needed for the project would be available from the soils excavated during trenching.

Stockpiling Areas. During construction, excavated soil material would be stockpiled temporarily along the pipeline alignment at the work site. Based on testing, soils found to be suitable for reuse as backfill would be retained while unsuitable soils would be moved offsite for disposal at the regional landfill in Lockwood. Areas used for stockpiling would be limited to disturbed areas devoid of vegetation within the construction footprint.

Disposal Areas. All cleared vegetation, unsuitable soil material, asphalt waste, and other debris would be transported offsite via trucks and disposed of at an approved disposal site, depending on the type of material. The cleared vegetation and soil material would likely be transported to the regional landfill in Lockwood via the Stead transfer station (Washoe County, 2009a). The Lockwood landfill is located east of Reno in Storey County.

2.2.4 Construction Schedule

The project is anticipated to begin in May 2010 and be completed by October 2010 unless severe weather delays construction. Work would begin with installation of the pipeline along Fir Street, proceed to Juniper and the other streets in the northern part of the subdivision, and finally complete the work along Lemmon Drive. Work would be conducted during the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday. No work would be conducted on weekends or during late evening or night hours.

2.2.5 Post-Construction Activities

Demobilization and Clean Up. After all construction and roadway repair work is completed, all construction equipment, temporary fencing, unused materials, and debris would be removed from the staging areas. Then these areas would be returned to pre-project conditions, including hydroseeding with a native plant mix to minimize erosion and encourage revegetation. In addition, all work areas would be cleaned of all rubbish, excess soils, and materials; and all parts of the work would be left in a neat and presentable condition.

Operation and Maintenance. After completion of construction, the project would be operated and maintained by Washoe County as part of the existing Lemmon Valley water system. The new pipelines would be integrated into the County's radio-operated Supervisory Control and Data Acquisition (SCADA) system designed to remotely monitor the operation of the water supply system. County staff would make regular inspections and repairs, as needed, to ensure the integrity of the system. Access to the new pipelines for maintenance would be via the existing paved roadways.

3.0 AFFECTED RESOURCES AND ENVIRONMENTAL EFFECTS

The resources not considered in detail are discussed in Section 3.1. Sections 3.2-3.9 describe the significant resources in the project area, as well as any effects of the alternatives on those resources. When necessary, mitigation measures are also proposed to avoid, reduce, minimize, or compensate for any effects determined to be significant.

3.1 Resources Not Considered in Detail

Because of the nature, location, and small size of the project, there would be no effects on climate, geology and seismicity, topography, fisheries, land use, prime farmland, and environmental justice. The project could have minimal to no effect on socioeconomics; cultural resources; and hazardous, toxic, and radiological waste.

3.1.1 Socioeconomics

Lemmon Valley is located within the Reno-Sparks Metropolitan Area. The population of the Lemmon Valley-Golden Valley census-designated place was 6,855 in 2000. The ethnic makeup was 90.4 percent white and 9.6 percent other races (U.S. Census Bureau, 2000). Most of the workers in Lemmon Valley are employed in educational, health, and social services, as well as construction and retail trade. In 1999, the median household income in Lemmon Valley was $52,861 per year; the poverty rate was 5.0 percent; and the unemployment rate was 6.0 percent (U.S. Census Bureau, 2000).

Because of the nature and small size of the project, the work would not be expected to affect the socioeconomic conditions in Lemmon Valley. Without the project, the population growth, ethnic makeup, income, and poverty rate would continue to depend on factors such as social trends and overall economic conditions. Since there are

no minority or low-income populations in the project area, there would be no effects on environmental justice.

3.1.2 Cultural Resources

In February 2005, Kautz Environmental Consultants completed a Class III cultural resource inventory of the entire Heppner subdivision. This inventory was conducted under contract to the U.S. Environmental Protection Agency (EPA) as part of environmental documentation for Phase 4 (EPA, 2005). Since any existing archaeological resources along the pipeline alignments would have been destroyed when the roadways were constructed and paved, a pedestrian survey for archaeological resources was not conducted (Kimball and Kautz, 2005).

The 2005 inventory included a field reconnaissance to record the ages of the structures in the Heppner subdivision. Most of the houses were constructed in the 1970's and 1980's. Two buildings were found that may have been constructed during the late Historic period, but they have since been extensively remodeled so were not determined to be historic (Kimball and Kautz, 2005). As a result, the U.S. EPA determined that extension of the existing Lemmon Valley water system into the Heppner residential subdivision would have no effect on cultural resources. A letter dated May 11, 2005, from the Nevada State Historic Preservation Officer concurred with the U.S. EPA's "determination that historic properties would not be affected by the proposed undertaking" (Appendix A).

The entire project area for Phase 7 was included in the Area of Potential Effects for the undertaking for Phase 4. In addition, no buried or previously identified cultural resources were found during construction of all previous phases. All Phase 7 activities would take place in highly disturbed areas with nearby existing structures less than 50 years old, hence not eligible for the National Register of Historic Places. As a result, the Corps has determined that the activity has no potential to cause effects on historic properties.

During preparation of environmental documentation for Phase 6, the U.S. Bureau of Land Management sent letters dated March 9, 2006, to potentially interested Native Americans, requesting information regarding traditional cultural sites or concerns in the Heppner subdivision area. No comments were received as a result of the letters (BLM, 2006). Pursuant to 36 CFR 800.3(a)(1), the Corps has no further obligations under Section 106 of the National Historic Preservation Act of 1966, as amended.

However, if buried or previously unidentified cultural resources are located during construction of Phase 7, all work in the vicinity of the find would cease and the Nevada State Historic Preservation Officer would be contacted for additional consultation per NRS 383.150-383.190 and 36 CFR 800.13(b)(3), Post Review Discoveries.

3.1.3 Hazardous, Toxic, and Radiological Waste

A Phase 1 Environmental Site Assessment was not performed for this phase of the project because the U.S. EPA during Phase 4 determined that no sources of potential hazardous, toxic, and radiological waste (HTRW) exist in or near the Heppner subdivision (EPA, 2005). The area is a rural, residential neighborhood, which has never included any businesses, industries, or gas stations. The U.S. EPA also determined that any potential small leaks from propane gas tanks and heating oil tanks at the residences would not significantly contaminate the overall project area (EPA, 2005).

Construction of the project would involve substances that could be considered hazardous, such as fuels, lubricants, and oils. Inadvertent spills or leaks of these substances could enter surface waters via runoff or percolate into the underlying groundwater. However, all spills or leaks would be cleaned up immediately. In addition, construction of the project would follow the regulatory requirements of the Nevada Division of Environmental Protection's (NDEP) NPDES permitting process. As a result, the project would not create any new HTRW.

3.2 Vegetation and Wildlife

3.2.1 Existing Conditions

Vegetation. The primary plant communities in the project area include shrub-steppe, ruderal, and landscaping and lawns. The undeveloped residential parcels and staging areas along Fir and Oklahoma Streets are dominated by big sagebrush (*Artemisia tridentate*), typical of the shrub-steppe plant community. Associated plants are spiny hopsage (*Grayia spinosa)* and green ephedra (*Ephedra viridis*). Bottlebrush squirreltail (*Elymus elymoides*), cheatgrass (*Bromus tectorum*), and black greasewood (*Sarcobatus vermiculatus)* are also present (EPA, 2005).

Ruderal vegetation is found in repeatedly disturbed areas, including along paved roadways, unpaved parking areas, and equipment storage yards. The plant community is typically dominated by weedy species such as pineapple weed (*Matricaria discoidea*), red sand spurrey (*Spergularia rubra*), various species of mustards and filarees, and nonnative annual grasses (Corps, 2006). In the project area, this vegetation cover type is found along the roadways and staging area on the south side of Lemmon Drive. The open areas along the pedestrian/bike path and some open areas between roadways and developed residential parcels have ruderal vegetation with some scattered shrub-steppe species.

Native and nonnative trees, shrubs, lawns, and flowers are planted on developed residential parcels near residences and along the roadway rights-of-way to provide shade and enhance the quality of life. In the project area, this landscaping vegetation is found in the developed parcels adjacent to Idaho, Fir, Ohio, Juniper, and Oklahoma Streets.

Wildlife. Mountain cottontail rabbits (*Sylvilagus nuttallii)*, black-tailed jackrabbits (*Lepus californicus*), and California ground squirrels (*Spermophilus beechyi*) have been observed in the project area; coyote (*Canus latrans*) tracks have also been seen. Avian species such as the California quail (*Callipepla california*), house finches (*Carpodacus mexicanus*), house sparrows (*Passer domisticus*), and white-crowned sparrows (*Zonotrichia leucophyrs*) have been observed in the area as well. However, none of these plant communities provide high quality wildlife habitat for resident or migratory species.

The Swan Lake nature study area to the south of the project area is a popular birdwatching area for species such as burrowing owl (*Athene cunicularia*), tundra swan (*Cygnus columbianus*), and greater white-fronted goose (*Anser albifrons*). Shorebirds such as American avocet (*Recurvirostra americana*) and black-necked stilt (*Himantopus mexicanus*) are present in the spring. Virginia rail (*Rallus limicola*) and sora (*Porzana carolina*) have also been observed in the marshes (Lahontan Audubon Society, 2010b). There is no suitable aquatic habitat for any of these avian species in the project area.

3.2.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on vegetation and wildlife if it would (1) result in the substantial loss or degradation of any plant community providing wildlife habitat or (2) displace substantial numbers of resident or migratory wildlife species.

No Action. This alternative would have no effects on existing vegetation and wildlife, including any migratory birds in the project area. The plant communities and associated wildlife species would be expected to remain the same.

Waterline Extension

Vegetation. This alternative would have short-term, but no long-term effects, on two of the plant communities in the project area. Since there would be no pipeline installation or staging on residential parcels, there would be no effects on nonnative landscaping vegetation including trees, shrubs, grasses, and flowers.

Surface clearing and grubbing along the roadways would remove the ruderal vegetation and a few shrub-steppe species in the work areas. In addition, activities at the staging areas could remove or disturb existing shrub-steppe and ruderal vegetation. However, once construction is completed, the staging areas would be reseeded via hydroseeding with a native plant mix to encourage revegetation of the shrub-steppe community. In addition, weedy species would be expected to quickly revegetate the frequently disturbed areas after construction is completed. As a result, effects on vegetation would be considered less than significant.

During construction along Lemmon Drive, pedestrians and bicyclists may need to be diverted off the path onto adjacent open areas for short distances near the work area.

Since use of the path is only occasional and the open area has mainly ruderal vegetation, any effects on vegetation would be considered less than significant.

Wildlife. This alternative could have short-term effects, but no long-term effects on wildlife species in or near the project area. These effects could include disturbance and/or displacement of species by noise and construction activities. Once construction is completed, however, the removed or disturbed shrub-steppe vegetation would be restored via reseeding, and the weedy ruderal vegetation would quickly revegetate the frequently disturbed areas. As a result, any displaced wildlife species would be expected to return to the area. As a result, effects on wildlife would be considered less than significant.

3.2.3 Mitigation

Since there would be no significant effects on vegetation and wildlife, no mitigation would be required.

3.3 Threatened and Endangered Species

3.3.1 Existing Conditions

In a letter dated October 13, 2009, and reconfirmed in an email dated February 8, 2010, the U.S. Fish and Wildlife Service (USFWS) indicated that no Federally listed, proposed, or candidate species occur in or near the project area (Appendix B). In addition, the list of sensitive species for Washoe County from the Nevada's Natural Heritage Program was obtained and reviewed on February 8, 2010 (DCNR, 2004).

3.3.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect if it would (1) result in the take of a Federally listed threatened, endangered, or proposed species, or (2) adversely affect a species designated critical habitat.

No Action. This alternative would have no effect on Federally listed threatened, endangered, or proposed species or their habitat.

Waterline Extension. Since there are no Federally listed threatened, endangered, or proposed species or their habitat in or near the project area, this alternative would have no effects on these species or their habitat.

3.3.3 Mitigation

Since there would be no effects on Federally listed species or their habitat, no mitigation would be required.

3.4 Water Resources and Water Quality

3.4.1 Existing Conditions

Water Resources

Surface Water. There are no streams or other sources of surface water in the project area. The closest source of surface water is Swan Lake, located south of the project area. This is a large, shallow lake with a marshy wetland area to the west and the Reno/Stead wastewater treatment facility (WWTF) to the east. The lake's water is supplied by both precipitation and effluent from the Reno/Stead and Lemmon Valley WWTF's. Because of the seasonal variability of inflow, the amount of wetland area often varies from 100 acres to 1,000 acres yearly (Lahontan Audubon Society, 2010a).

Groundwater. Snowmelt from Peavine Mountain is the greatest contributor to the underlying groundwater; septic effluent is another significant source due to the high concentration of septic systems in the area. The volume of groundwater varies seasonally; that is, greater volume in the spring and summer months due to recharge from snowmelt runoff and precipitation, and less volume during the fairly dry fall and snowy winter. Because domestic withdrawals are currently exceeding yearly groundwater yield, the underlying groundwater level is currently declining at a rate of 1 to 2 feet per year (Washoe County, 2009b).

Water Quality

Surface Water. Water quality studies have not been conducted for Swan Lake; however, Reno/Stead and Lemmon Valley WWTF's that discharge into the lake have been closely monitored by the NDEP. The NDEP has determined that the effluent from both treatment facilities would not contribute to an exceedance of water quality standards in Swan Lake (NDEP, 2005; 2008).

Groundwater. Well monitoring in the Lemmon Valley area has indicated that the levels of nitrates in the residential wells are increasing, most likely due to recirculation of the septic effluent. Since water quality testing and treatment are not required for domestic wells, information on the quality of most wells in the Heppner subdivision is unknown. However, the Nevada Division of Water Resources performed limited tests and found that levels of nitrates in the residential wells to the north of the Lemmon Valley municipal well #7 is approaching 10 milligrams/ liter, the legal limit for nitrates (Washoe County, 2009b).

3.4.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on water resources if it would (1) substantially reduce surface or groundwater resources, (2) interfere with groundwater recharge, or (3) exceed or interfere with existing water rights.

An alternative would be considered to have a significant effect on water quality if it would (1) substantially degrade the quality of surface water resources, (2) contaminate a public water supply, or (3) substantially degrade the quality of groundwater resources.

No Action. This alternative would have no effect on surface water resources, groundwater recharge, or existing water rights in or near the project area. In addition, the quality of surface water resources would not be affected. Under no action, however, the underlying groundwater level would continue to decline due to withdrawals from the individual wells in the Heppner subdivision. In addition, the concentration of nitrates in the underlying groundwater would continue to increase as the groundwater volume decreases.

Waterline Extension

Water Resources. Since the work involves only installation of underground pipelines along paved streets and a pedestrian/bike path, this alternative would have no effect on surface water resources, groundwater recharge, or existing water rights in or near the project area. Per the project purpose, the project could result in helping to stabilize the declining groundwater level by providing the subdivision residents with another source of domestic water supply.

Water Quality. Since the nearest source of surface water is Swan Lake to the south, this alternative would have no effects on the quality of surface water in or near the project area. Per the project purpose, the project would improve the underlying groundwater quality by stabilizing the groundwater volume and decreasing the potential for small leaks from existing septic tank systems to contaminate the public water supply for the City.

3.4.3 Mitigation

Although the project would have no significant effects on water resources or quality, Washoe County would be required to obtain all permits and comply with State statutes and codes intended to protect water resources and quality as discussed below.

Construction of the project would disturb more than 1 acre of land and involve possible storm water discharges to surface waters. As a result, the NDEP would require the County to obtain an NPDES permit in accordance with the Clean Water Act, as amended. Prior to construction, the County would prepare a Storm Water Pollution Prevention Plan, which would identify best management practices (BMP's) to avoid or minimize any adverse effects of construction on surface waters during construction. The contractor would be required to implement these BMP's during construction in accordance with the NPDES permit.

In addition, the project would be required to comply with all provisions of the Nevada Revised Statutes and Nevada Administrative Codes (NAC), in particular NAC 445A.6715 to 445A.6718, inclusive, "Regulations for Public Water Systems." As a result, no additional mitigation would be required.

3.5 Air Quality

3.5.1 Existing Conditions

Regulatory Background. The Nevada Bureau of Air Pollution Control and Nevada Bureau of Air Quality Planning are responsible for ensuring compliance with Federal and State air quality regulations in all Nevada counties except Washoe and Clark Counties. In Washoe County, the County Air Quality Management District (AQMD) is responsible for ensuring compliance. The County AQMD (1) monitors ambient air quality, (2) issues emission permits for stationary sources, and (3) issues dust control permits throughout Washoe County.

The Washoe County AQMD has adopted the U.S. EPA's National Ambient Air Quality Standards in determining compliance. According to the U.S. EPA (2009), the County is classified as a "nonattainment" area because it does not meet standards for particulate matter (PM_{10}) or carbon monoxide (CO). However, the Washoe County AQMD defines this nonattainment area as the Truckee Meadows Hydrographic Basin (Washoe County, 2009c). Since Lemmon Valley is located outside of this Basin, the project area is actually in compliance with all Federal and local air quality standards for all regulated pollutants, including CO, PM_{10}, and ozone.

Pollutants and Sensitive Receptors. The primary sources of hydrocarbon emissions and fugitive dust in and near the project area are motor vehicles. Occasional regional wildfires during the summer can also degrade the air quality.

Air quality sensitive receptors include sensitive land uses and those individuals and/or wildlife that could be affected by changes in air quality due to emissions and fugitive dust from the project. Air quality sensitive land uses in and near the project area include the residential subdivision and the Swan Lake nature area. Sensitive receptors include residents, visitors, and occasional recreationists. Other sensitive receptors are wildlife in the nature area.

3.5.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on air quality if it would (1) violate any ambient air quality standard, (2) contribute on a long-term basis to an existing air quality violation, or (3) expose sensitive receptors to substantial pollutant concentrations.

No Action. This alternative would have no effect on existing air quality in the project area. Air quality would continue to be influenced by climatic conditions, occasional seasonal wild fires, and local and regional emissions from vehicles.

Waterline Extension. This alternative would have short-term effects on air quality during construction of the project. The operation of vehicles and heavy equipment

including a hydraulic excavator, front end loaders, compactor, and various types of trucks would produce emissions as hydrocarbon exhaust and PM_{10}. In addition, there would be short-term increases in PM_{10} as fugitive dust during soil excavation and operation of vehicles and heavy equipment.

However, based on the relatively low levels of emissions produced during construction of the previous phases, these short-term emissions are not expected to violate any Federal ambient air quality standards or expose any sensitive receptors to substantial pollutant concentrations. In addition, once the project is completed, air quality would return to pre-project conditions so there would be no long-term effects on air quality in the region.

3.5.3 Mitigation

Although the project would have no significant effects on air quality, Washoe County would be required to obtain any permits and comply with State statutes intended to protect air quality as discussed below.

Construction of the project would disturb more than 1 acre of ground surface, including trenches, construction rights-of-way, stockpile areas, and staging areas. As a result, the County AQMD would require the contractor to obtain a Dust Control Permit prior to initiation of construction. This permit would include BMP's to minimize the amount of emissions and PM_{10} generated during construction. These practices could include water trucks, sprinklers, fences or windbreaks, and speed limits. The contractor would be required to implement these BMP's and maintain ongoing dust controls during construction in accordance with the permit.

In addition, the project would be required to comply with all provisions of the Nevada Revised Statutes (NRS) Chapter 445B, "Air Pollution," and NRS Chapter 486A, "Alternative Fuels: Clean-Burning Fuels." Compliance with NAC Chapter 445B, "Air Controls," would also be required. As a result, no additional mitigation would be required.

3.6 Traffic

3.6.1 Existing Conditions

Regional and Local Roadways. The main thoroughfare through Lemmon Valley is Lemmon Drive. This regional roadway runs through Lemmon Valley and connects to Highway 395, providing access to other parts of Washoe County and the State. Lemmon Drive has two paved lanes and provides two-way traffic movement. Sections of the proposed pipeline would be installed adjacent to the pedestrian/bike path along the north side of Lemmon Drive.

The local roadways in the project area include Oklahoma Street, Juniper Street, Fir Street, and sections of Matterhorn Boulevard, Idaho Street, and Ohio Street. These

paved, two-way streets run primarily through the residential area. None of the streets have curbs or sidewalks. Sections of waterline would be installed along all of these local roadways.

Traffic Types and Volumes. Since the local roadways in the project area are primarily for residential use, traffic consists mostly of cars, small utility vehicles, and pickup trucks. Traffic on Lemmon Drive is heavier and includes recreational vehicles, maintenance trucks, and motorcycles, in addition to cars, pickup trucks, and small utility vehicles.

The Nevada Department of Traffic records and compiles annual average daily traffic (AADT) volumes along the highways and many roadways in Nevada. Table 2 shows the 2008 AADT at locations along Lemmon Drive near the Heppner Subdivision (NDOT, 2009).

Table 2. Traffic Volumes on Roadways near the Project Area in 2008

Roadway[1]	Location	AADT[2]
U.S. 395	Southbound off-ramp of the Lemmon Valley interchange. Exit 74.	1,400
U.S. 395	Northbound on-ramp of the Lemmon Valley interchange, 100 feet north of the cross traffic road.	2,200
U.S. 395	Northbound off-ramp of the Lemmon Valley interchange, 200 feet north of the gore[3].	9,900
U.S. 395	Southbound on-ramp of the Lemmon Valley interchange.	8,800
Lemmon Valley Dr.	East of the Lemmon Valley Dr. Exit 74, 150 feet east of the ramps.	22,000
Lemmon Valley Dr.	1.9 miles south of Red Rock Rd.	60
Buck Dr.	0.1 mile east of Lemmon Valley Dr.	6,900

[1]Lemmon Drive is also referred to as Lemmon Valley Drive.
[2]AADT = average annual daily traffic
[3]gore = small triangular piece of land
Source: NDOT, 2009

3.6.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on traffic if it would cause (1) an increase in vehicular traffic that is substantial in relation to the existing traffic on a roadway or (2) substantial deterioration of the physical condition of area roadways.

No Action Alternative. This alternative would have no effects on existing roadway traffic in the project area. The volume of traffic on nearby roadways in Lemmon Valley could increase, depending on the type and amount of new development in areas outside the Heppner subdivision.

Waterline Extension. This alternative would have short-term effects on traffic in and near the project area during construction. The project would affect the types, volume, and movement of traffic, as well as physical conditions of most of the roadways. However, once construction is completed, the roadways would be returned to pre-project conditions so there would be no long-term effects on traffic.

Construction equipment and worker vehicles would use the existing local roadways to access the staging and work areas. In addition, haul trucks could use Highway 395 to transport construction materials to the work areas, as well as remove and dispose of any unsuitable soils and other waste materials at the regional landfill in Lockwood. However, since this short-term increase in traffic would not be substantial as compared to existing traffic volumes, it would be considered less than significant.

Movement of local traffic would be affected during construction under and along Matterhorn Boulevard, Oregon Boulevard, Idaho Street, Fir Street, Ohio Street, Juniper Street, and Oklahoma Street since roadway sections would be closed for short periods during waterline installation and roadway repair. In addition, driveways along all roadways could be inaccessible for short time periods during construction. However, access for emergency vehicles and personnel along these streets would be maintained at all times. The County would notify residents and coordinate with local police, fire, and emergency services prior to all work to minimize inconvenience and ensure public safety in the area. In addition, short detour routes would be clearly marked. As a result, any effects would be reduced to less than significant.

This alternative would have short-term effects on the physical condition of all roadway surfaces except Lemmon Drive during installation of the underground waterlines. However, after the waterline installation work is completed, the disturbed areas in the roadway surfaces would be repaired, and then the entire roadway surface would be covered with a layer of slurry. Thus, these effects would be considered less than significant.

3.6.3 Mitigation

Although the project would have no significant effects on traffic, Washoe County would be required to obtain any permits and approvals intended to ensure traffic safety and protect the integrity of the County roadways as discussed below.

Prior to initiation of construction, the contractor would be required to prepare a Traffic Management Plan and have it approved by the County. This plan would identify those measures that the contractor would implement during construction to avoid or minimize any effects on traffic and ensure public safety. Depending on the work

location, these measures could include signs, flaggers, cones, barricades, traffic delineation, and designated detours.

The contractor would also be required to obtain a street excavation permit from the Washoe County Engineering Division for all work under the County roadways and right-of-way area. This permit would help to ensure that all disturbed roadway surfaces are repaired and restored properly once construction is completed. As a result, no additional mitigation would be required.

3.7 Noise

3.7.1 Existing Conditions

Regulatory Background. Noise can be defined as unwanted or excessive sound. Washoe County manages noise that is injurious to health or interferes with the enjoyment of life or property. The County Development Code (Article 414, Section 110.414.05) includes noise standards to protect residents from this type of noise. For residential neighborhoods, the maximum sound level is 65 decibels averaged over the day and night. However, construction noise is exempt from this standard between 7:00 a.m. and 7:00 p.m. on any day except Sunday (Washoe County, 2004).

Noise Sources and Sensitive Receptors. The primary sources of ambient (background) sound in the project area are motor vehicles and natural sounds such as wind and wildlife. The level of noise varies, depending on the time of day, the number and types of noise sources, and distance from the sources of noise. The level is highest along Lemmon Drive, especially during commute hours. Along the other roadways in the project area, noise levels are much lower due to only occasional traffic. Typical noise levels in decibels range from the 30's in rural areas to 60's on busy streets to 80's at construction sites (Coolmath.com, 2009).

Noise-sensitive receptors include sensitive land uses and those individuals and/or wildlife that could be affected by changes in noise sources or levels due to the project. The noise-sensitive land use in the project area is the residential area; sensitive receptors include residents, visitors, occasional recreationists, and wildlife.

3.7.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on noise if it would (1) substantially increase ambient noise levels over the long term or (2) exceed the standards in the Washoe County Development Code during non-exempt hours. The significance of noise effects is evaluated with reference to the distance from the noise source and the number of sensitive receptors affected.

No Action Alternative. This alternative would have no effects on existing noise in the project area. Existing sources and levels of noise would be expected to remain the same. Washoe County would continue to manage excessive noise per the County Code.

Waterline Extension. This alternative would have short-term effects on noise during construction of the project. The operation of vehicles and heavy equipment including a hydraulic excavator, front end loaders, compactor, and various types of trucks would generate intermittent or constant noise, increasing ambient noise levels in the project area. In addition, there would be short-term increases in noise from worker activities such as moving supplies, installing pipe connections, and area cleanup.

The effects of noise decrease as the distance from the source increases due to attenuation of sound. At the same time, the effects increase as the number of sensitive receptors increases. Thus, the effects of noise in the project area would vary, depending on the location of the work site. Along Lemmon Drive, residents, visitors, and occasional recreationists are already affected by higher noise levels associated with traffic on Lemmon Drive. As a result, the increase in noise levels due to construction along Lemmon Drive would not be considered substantial and would be less than significant.

The increases in noise levels could be considered substantial along the other roadways in the project area during construction. Residents, visitors, and wildlife could be disturbed by pipeline installation and road repair, especially when the work is being conducted nearby. However, once construction is completed, noise levels would return to pre-project conditions. Since there would be no long-term effects on noise, any substantial increases in noise levels during construction would not be considered significant.

While the Washoe County Code exempts construction noise from the 65-decibel limit, the County would require that the contractor minimize the effects of construction noise on sensitive receptors by implementing the mitigation measures identified in Section 3.7.3. In addition, the County would notify the residents prior to the work along those streets. Once the project is completed, ambient noise levels would return to pre-project conditions so there would be no long-term effects on noise in the project area.

3.7.3 Mitigation

Prior to initiation of construction, the construction contractor would implement the following measures to minimize short-term effects on noise: (1) equip construction equipment with mufflers; (2) limit days and hours of construction along the residential roadways; and (3) limit truck speeds on roads adjacent to residences. In addition, work would not be conducted before 7:00 a.m., after 7:00 p.m., or on Sundays. As a result, any adverse effects on noise would be considered less than significant, and no additional mitigation would be required.

3.8 Recreation

3.8.1 Existing Conditions

Lemmon Valley offers Heppner subdivision residents and visitors various opportunities for outdoor recreation, including a nature study area and two developed recreational facilities. The Swan Lake Nature Study Area provides an exceptional opportunity for birdwatching as the lake and marshland attract both resident and migratory bird species. Surrounding roadways provide access to the area, and a viewing boardwalk and mile of pedestrian trail provide closer views of the marsh environment and wildlife (Lahontan Audubon Society 2010a).

The two developed recreational facilities in Lemmon Valley are the Lemmon Valley Park and Lemmon Valley Horseman's Arena. The park has a community building, three small league fields, a soccer field, tennis court, basketball court, playground, and a grassed play area. The horseman's arena features one full size and one small horse arena, an announcer's stand, playground area, basketball and volleyball courts, and horseshoe pits. Both parks provide covered group picnic areas, walking paths, and picnic tables.

The only developed recreational facility in the project area is a paved pedestrian and bicycle path that runs parallel to and north of Lemmon Drive. The path is 3.5 miles long and offers opportunities for walking, jogging, and bicycling by adults and youth. Since the path is not part of a larger pathway system, use by bicyclists and pedestrians is only occasional during favorable weather. ATV's and dirt bikes are also seen using the path although signs clearly prohibit use by motorized vehicles(Stowell, 2010).

3.8.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on recreation if it would (1) result in loss of recreational facilities, (2) cause a substantial disruption in a recreational opportunity or activity, or (3) substantially diminish the quality of the recreational experience.

No Action Alternative. This alternative would have no effect on existing recreation in the project area. The recreational pedestrian/bike path, associated activities and opportunities, and quality of experience would be expected to remain the same.

Proposed Improvement. Because Swan Lake, park, and horseman's arena are located outside of the project area, this alternative would have no effects on these facilities or their use. The alternative would have short-term effects on recreationists using existing pedestrian/bike during the pipeline installation along Lemmon Drive. Access to sections of the path near work areas would be limited, and the quality of the recreational experience would be reduced by the nearby construction activity and noise.

However, no recreational facilities would be lost, and the disruption would only last for approximately 2 weeks. In addition, the diminished quality would be limited to sections of the path nearest the work areas. Thus, none of these effects would be considered substantial. In addition, well-defined dirt path also exists to the south of Lemmon Drive, and pedestrian and bicyclists could use this path instead (Stowell, 2010). As a result, any effects on recreation would be considered less than significant.

To minimize any effects, however, the City would require that the contractor implement the mitigation measures identified in Section 3.8.3. Once the project is completed, recreational activities and the quality of the recreation experience would return to pre-project conditions so there would be no long-term effects on recreation in the project area.

3.8.3 Mitigation

Since there would be no significant effects on recreation, no mitigation would be required. However, the contractor would implement the following measures to minimize any short-term effects on recreation: (1) divert pedestrians and bicyclists off the path and around the immediate work area during construction, and (2) cover all open trenches after working hours. As a result, any effects on recreation would be considered to be less than significant.

3.9 Esthetics

3.9.1 Existing Conditions

Esthetic resources are those natural resources, landforms, vegetation, and manmade structures in the regional and local environment that generate one or more sensory reactions and evaluations by viewers. The regional landscape in rural Lemmon Valley north of Reno is dominated by long, flat expanses of open areas. Foothills and mountains are seen in the distance in all directions. Occasional trees and shrubs are scattered throughout the landscape.

The local views in the project area are typical of a rural neighborhood; the streets are lined with residences and landscaped yards. Other sights include long expanses of paved roadway and ruderal vegetation on the roadside. Potential viewers include residents, visitors, recreationists, and motorists on Lemmon Drive.

3.9.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on esthetics if long-term changes in landform, vegetation, or structural features substantially increase levels of visual contrast as compared to surrounding conditions. The significance of esthetics effects is evaluated with reference to the number of viewers affected.

No Action Alternative. This alternative would have no effect on existing esthetics in the project area. The landscape and views in rural Lemmon Valley would be expected to remain the same.

Waterline Extension. This alternative would have short-term effects on esthetics. The presence of construction equipment, vehicles, and activities would change the local views. These changes would be apparent to residents and visitors along Lemmon Drive, Matterhorn Boulevard, Oregon Boulevard, Idaho Street, Fir Street, Ohio Street, Juniper Street, and Oklahoma Street. However, since these effects would be short term, they would be considered less than significant.

Construction of the project would have no long-term effect on esthetics. All water pipelines would be installed underground, and the disturbed surface would either be repaired and resurfaced (roadways) or reseeded to encourage revegetation (open areas). As a result, the local views would not change open construction and revegetation is completed.

3.9.3 Mitigation

Since effects on esthetics would be less than significant, no mitigation would be required.

4.0 CUMULATIVE EFFECTS

Cumulative effects are effects of the project considered with other past, present, or reasonably foreseeable projects in the area. These projects in or near the Heppner subdivision include only the previous phases of the Heppner Subdivision Water System Improvement Project constructed between 2004 and early 2009. There are no ongoing or reasonably foreseeable project in the area.

The previously completed phases of the water system project involved installation of underground water pipelines along other sections of paved roadway in the subdivision, as well as construction of a storage tank and access road north of the subdivision. The pipeline installation process used was the same as proposed for Phase 7.

Environmental and cultural documentation prepared for several previous phases did not identify any significant environmental or cultural effects that could not be avoided or minimized to less than significant. Thus, when the effects of the proposed project are considered with other past, present, and reasonably foreseeable projects in the area, there are no significant cumulative effects found at this time.

5.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Clean Air Act, as amended and recodified (42 U.S.C. 7401 et seq.). *Compliance*. The project is not expected to violate any Federal or State air quality standards, or hinder the attainment of air quality objectives in the local air basin. The

Corps has determined that the proposed project would have no significant adverse effects on the future air quality of the area.

Section 176(c) of this act requires that Federal agencies ensure that their activities are in conformance with Federally approved State Implementation Plans for areas designated as "non-attainment" and "maintenance." This project would not be located in either type of designated area and therefore is not subject to this provision of the act.

Clean Water Act (33 U.S.C. 1251 et seq.). *Compliance.* Since there are no wetlands or other Waters of the U.S. in the project area, the project would have no effect on these resources. Prior to construction, the contractor would be required to obtain an NDPES permit from the State since the project would disturb 1 or more acres of land and involve possible stormwater discharges to surface waters.

Endangered Species Act (16 U.S.C. 1531 et seq.). *Compliance.* In a letter dated October 13, 2009 and reconfirmed via email dated February 8, 2010, the USFWS indicated that there are no Federally listed, proposed, or candidate species in the project area (Appendix B). As a result, the project would have no effect on Federally listed or proposed species.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. *Compliance.* Since there are no minority or low-income populations in the project area, the project would have no disproportionate effects on such groups.

Farmland Protection Policy Act (7 U.S.C. 4201). *Compliance.* Since there is no prime farmland or farmland of statewide importance in the project area, the project would have no effect on these types of farmlands.

Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.). *Compliance.* Since construction would not divert, modify, impound, or otherwise control any waterway, this act does not apply to this project.

Migratory Bird Treaty Act (15 U.S.C 701-18h). *Compliance.* Prior to initiation of construction, Washoe County would be required to have a qualified biologist survey the area of disturbance to ensure that there are no active nests or young of migratory birds along the pipelines alignments or staging areas. If active nests or young are located, construction in those areas would not be initiated until the young birds have fledged.

National Environmental Policy Act (42 U.S.C. 4321 et seq.). *Partial compliance.* Comments received during the public review period will be considered and incorporated into the final EA, as appropriate. The final EA and either signed Finding of No Significant Impact (FONSI) or determination of need to prepare an Environmental Impact Statement (EIS) will result in full compliance with this act.

National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.). *Compliance.* In 2005, the entire Heppner subdivision (including the Phase 7 project area) was surveyed for cultural resources as part of the U.S. EPA's environmental documentation for Phase 4. No affected listed or eligible archeological sites or historic properties were identified. As a result, the EPA determined that extension of the existing Lemmon Valley water system into the Heppner residential subdivision would have no effect on cultural resources. A letter dated May 11, 2005, from the Nevada State Historic Preservation Officer concurred with the U.S. EPA's "determination that historic properties would not be affected by the proposed undertaking" (Appendix A).

During preparation of environmental documentation for Phase 6, the U.S. Bureau of Land Management sent letters dated March 9, 2006, to potentially interested Native Americans, requesting information regarding traditional cultural sites or concerns in the Heppner subdivision area. No comments were received as a result of the letters (BLM, 2006). Pursuant to 36 CFR 800.3(a)(1), the Corps has no further obligations under Section 106 of the National Historic Preservation Act of 1966, as amended.

6.0 PUBLIC INVOLVEMENT

The Heppner Subdivision Water System Improvement Project has a long history of public involvement by residents, landowners, citizens' groups, and other interested parties. In the 1990's, Washoe County made numerous presentations to the Lemmon Valley Association (LVA) regarding the subdivision's declining groundwater water table and effects on domestic wells. In 1997, the County met with Heppner residents to discuss potential solutions to the declining underlying water table and failing domestic wells.

At a public meeting with the LVA in 2003, the County presented several alternative plans to improve domestic water supply in the Heppner subdivision. These included a groundwater recharge alternative and a municipal water system alternative. The water system alternative was selected because (1) the recharge alternative would not prevent the underlying groundwater table from declining further and (2) the cost to the resident to connect to the water system would be the same as the cost to deepen or re-drill a well. In June 2003, Washoe County obtained grants to begin construction of the water system project.

Meetings were held in January 2005 and 2006 to review the status of the project and discuss the issues further. These meetings were attended by Washoe County and Heppner residents. The primary concerns of the residents were affordability, funding, and financing. In September and October 2007, the County held meetings with the North Valleys Citizens Advisory Board to discuss funding and financing issues. In May 2008, Heppner residents, Washoe County, and the State's Economic Development representative discussed the availability of additional grant funds (Washoe County, 2009d).

In January 2009, Washoe County and more than 120 Heppner residents discussed connection fees. It was determined that residents with wells would not have to connect

immediately. In response to the January 2009 meeting, a Heppner Community Task Force was established to address issues such as the cost of abandoning wells and connecting to the system. The first meeting of this task force was held on February 21, 2009. The task force formed working groups to work with the County to discuss affordability, funding/financing, and "urgent needs" of property owners (Washoe County, 2009e).

Washoe County sent out ballots in early June 2009, asking all Heppner residents to vote on whether the County should complete Phases 5b and 7 of the system. Of the 155 ballots returned, 119 votes favored the completion of the system (Washoe County, 2009f). The residents and other interested parties continue to hold meetings to discuss the project and voice their opinions, especially about the property owner's cost to connect to the water system. The County provides information on the six completed phases, status of Phase 7, and potential funding sources on their website at www.washoecounty.us/water/heppner.htm. Numerous newsletters, meeting minutes, and contacts are provided, and the public has been encouraged to obtain additional information or make comments during the design and construction process.

7.0 COORDINATION AND REVIEW OF THE FINAL EA

The draft EA and FONSI will be circulated for 21 days to agencies, organizations, and individuals known to have an interest in the project (Appendix C). All comments received will be considered and incorporated into the final EA, as appropriate. This project is being coordinated with the following agencies:

U.S. Fish and Wildlife Service
Nevada Division of Environmental Protection
Nevada State Health Division
Nevada State Historic Preservation Officer
Nevada Department of Transportation
Nevada Department of Wildlife
Washoe County Department of Water Resources

8.0 CONCLUSIONS

Based on the information in this EA, the proposed project would have no significant effects on the environment. No mitigation beyond avoidance, BMP's, measures proposed in this EA, and permit requirements would be required. Following the public review period, a determination will be made whether a FONSI is warranted or whether preparation of an EIS is necessary.

9.0 LIST OF PREPARERS

Aimee Kindel
Student Assistant, U.S. Army of Engineers

Sannie Osborn, PhD
Archeologist, U.S. Army Corps of Engineers

Lynne Stevenson
Environmental Manager, U.S. Army Corps of Engineers

10.0 REFERENCES

10.1 Printed Sources

Coolmath.com. 2009. Sound Pressure Levels (in decibels – dB). http://www.coolmath.com/decibels_print_out.htm.

Kimball, M. and R. Kautz. 2005. A Cultural Resources Inventory of the North Lemmon Valley Artificial Recharge Project, Heppner Subdivision, Washoe County, Nevada Report. Reno, NV.

Lahontan Audubon Society. 2010a. Area #16 – Swan Lake Nature Study Area. Reno, NV. http://www.nevadaaudubon.org/birdingguide/birdingareas/swanlake.html.

Lahontan Audubon Society. 2010b. Swan Lake Import Bird Area Fact Sheet. Reno, Nevada. http://www.nevadaaudubon.org/iba/swanlake.pdf.

Nevada Department of Conservation and Natural Resources (DCNR). 2004. Nevada Natural Heritage Program, County Rare Species Lists, March 18, 2004. Carson City, NV. http://heritage.nv.gov/lists/cowashoe.htm.

Nevada Department of Transportation (NDOT). 2009. 2008 Annual Traffic Report. http://www.nevadadot.com/reports_pubs/traffic_report/2008/pdfs/Lyon.pdf.

Nevada Division of Environmental Protection (NDEP). 2005. Fact Sheet. City of Reno Public Works Department, Reno Stead Water Reclamation Facility. http://ndep.nv.gov/docs_04/stead_121305_fs.pdf.

Nevada Division of Environmental Protection (NDEP). 2008. Fact Sheet. Washoe County Department of Water Resources. Lemmon Valley Wastewater Reclamation Facility. http://ndep.nv.gov/docs_08/nev2008507_f08.pdf.

Nevada Division of Environmental Protection (NDEP). 2009. Heppner Subdivision Water System Improvement Project. Board for Financing Water Projects. http://ndep.nv.gov/bffwp/heppner.htm.

U.S. Army Corps of Engineers (Corps). 2006. Vegetation Communities and Wildlife Report. Success Dam Seismic Remediation Project. Prepared by EDAW, Sacramento, CA.

U.S. Bureau of Land Management (BLM). 2006. Environmental Assessment, Heppner Subdivision Water Tank, Pipeline, and Access Road. Carson City Field Office. EA-NV-030-06-016, N-803345.

U.S. Census Bureau. 2000. American FactFinder. Fact Sheet, Lemmon Valley-Golden Valley CDP, Nevada. http://factfinder.census.gov.

U.S. Environmental Protection Agency (EPA). 2005. Environmental Assessment, Washoe County Department of Water Resources, North Lemmon Valley Artificial Recharge Project. Prepared by JBR Environmental Consultants, Inc. Reno, Nevada.

U.S. Environmental Protection Agency. 2009. "Currently Designated Nonattainment Areas for All Criteria Pollutants." Green Book. http://www.epa.gov/air/oaqps/greenbk/ancl.html#NEVADA.

Washoe County. 2004. Washoe County Development Code. Department of Community Development. http://www.co.washoe.nv.us/comdev_files/dc/recently_amended_pages/051104_changes_only.pdf.

Washoe County. 2005. Heppner Subdivision, Waterline Extension Project. Department of Water Resources. https://www.washoecounty.us/repository/ images/ 10/ September%202005.pdf.

Washoe County. 2009a. Illegal Dumping. http//:www.co.washoe.nv.us/health/ehs/ recycling/illegal_dumping.html.

Washoe County. 2009b. Questions Asked at the Community Meeting January 22, 2009, for the Heppner Subdivision Water System Project." Department of Water Resources. https://www.washoecounty.us/repository/files/10/FINAL%20RM%20Q%20and%20A%2003-11-09.pdf.

Washoe County. 2009c. Washoe County, Nevada, Air Quality Trends, 1999-2008. Air Quality Management Division. http://www.co.washoe.nv.us/repository/files/4/2008_Trends.pdf.

Washoe County. 2009d. Heppner Municipal Water System Update. Volume 1, Issue 1, March. Department of Water Resources. https://www.washoecounty.us/repository/images/10/FINAL%2003-12-09.pdf.

Washoe County. 2009e. Meeting Minutes, Heppner Community Task Force Meeting, Saturday, February 21, 2009. Department of Water Resources. https://www.washoecounty.us/repository/files/10/Htf%20DRAFT%20mtg%20mins%2002-21-09.pdf.

Washoe County. 2009f. Heppner Municipal Water System Update. Volume 1, Issue 3, July. Department of Water Resources. https://www.washoecounty.us/repository/files/10/Htf%20DRAFT%20mtg%20mins%2002-21-09.pdf.

Washoe County. 2009g. Connecting to the New Heppner Water System. Department of Water Resources. http://www.co.washoe.nv.us/water/connectingheppner.htm.

10.2 Personal Communications

Stowell, Joe. 2009a. Engineer, Washoe County Department of Water Resources. Email to Lynne Stevenson, Environmental Manager, Corps. August 8.

Stowell, Joe. 2009b. Engineer, Washoe County Department of Water Resources. Email to Lynne Stevenson, Environmental Manager, Corps. September 21.

Stowell, Joe. 2010. Engineer, Washoe County Department of Water Resources. Email to Lynne Stevenson, Environmental Manager, Corps. February 11.

PLATES

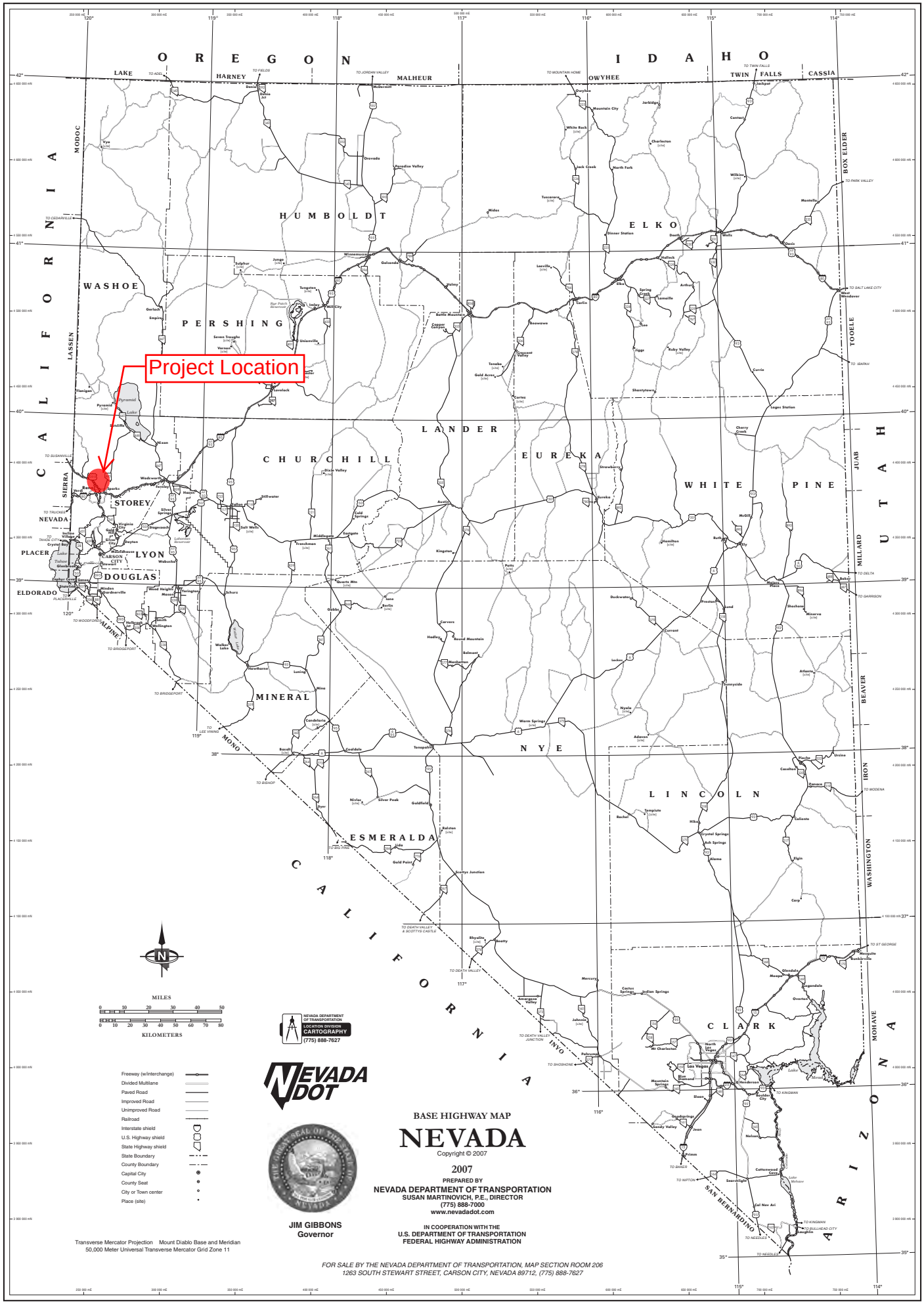
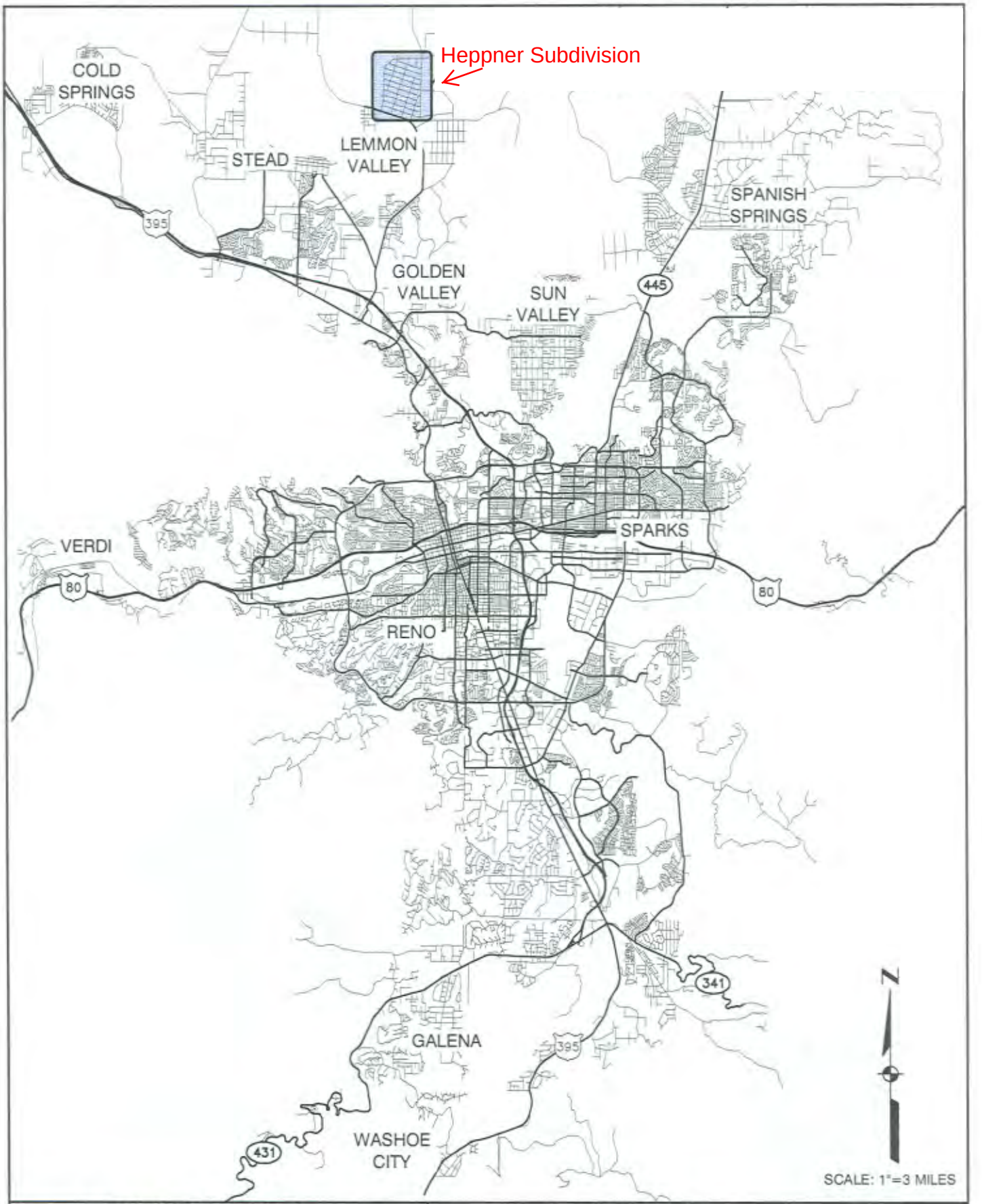


Plate 1. Project Location



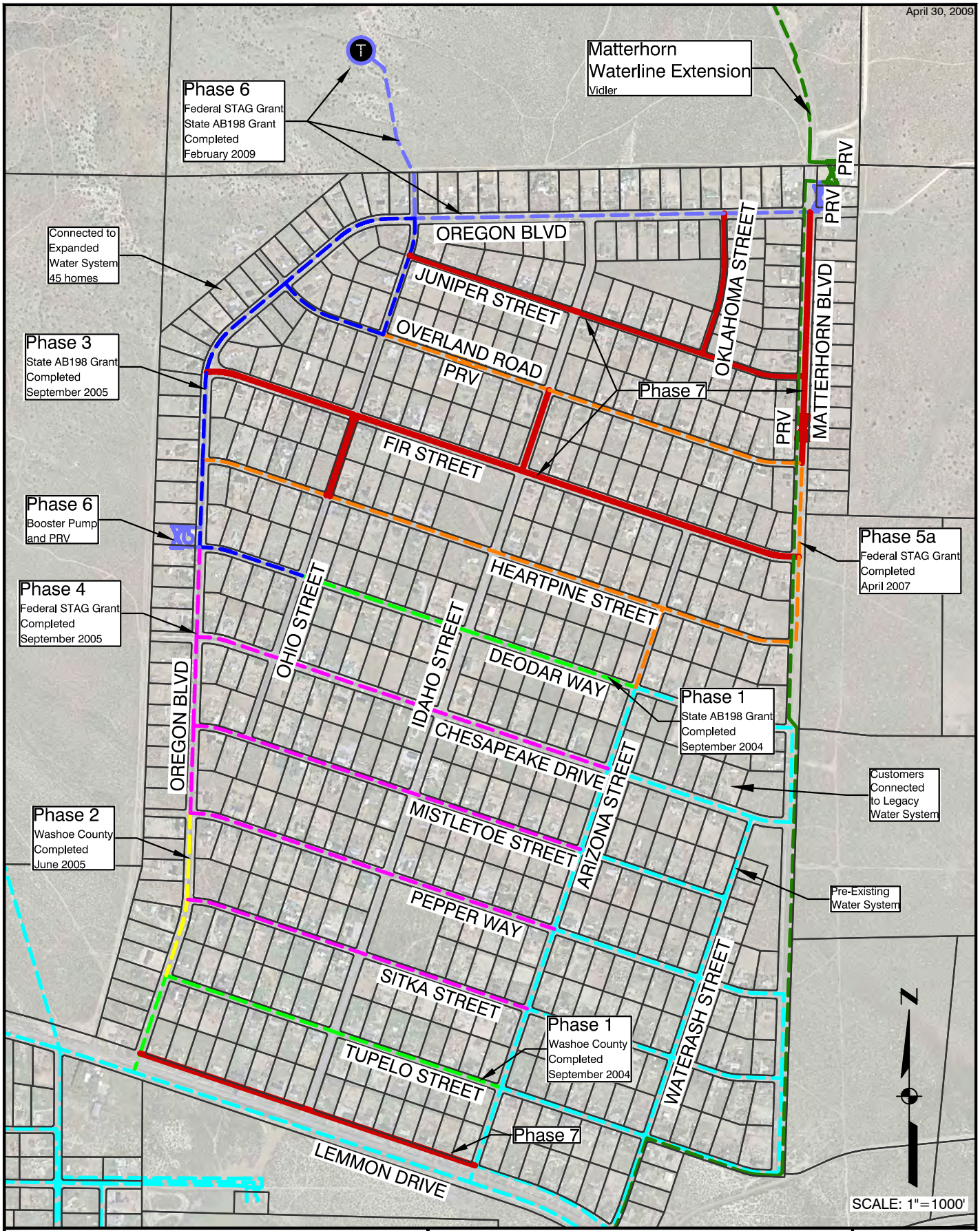
Department of Water Resources

WASHOE COUNTY DEPARTMENT OF WATER RESOURCES
4930 ENERGY WAY
RENO, NEVADA 89502
(775) 954-4600

Lemmon Valley
Water System Improvements
Heppner Waterline Extensions

Y:\Projects\2007_WRC10448.2_Heppner Phase 6_w\Drawing\Display Maps\Heppner Phasing Vicinity Map.dwg Plotted: 02 Mar 09 – 2:06pm, Layout:Figure A – Vicinity Map

Plate 2. Vicinity Map



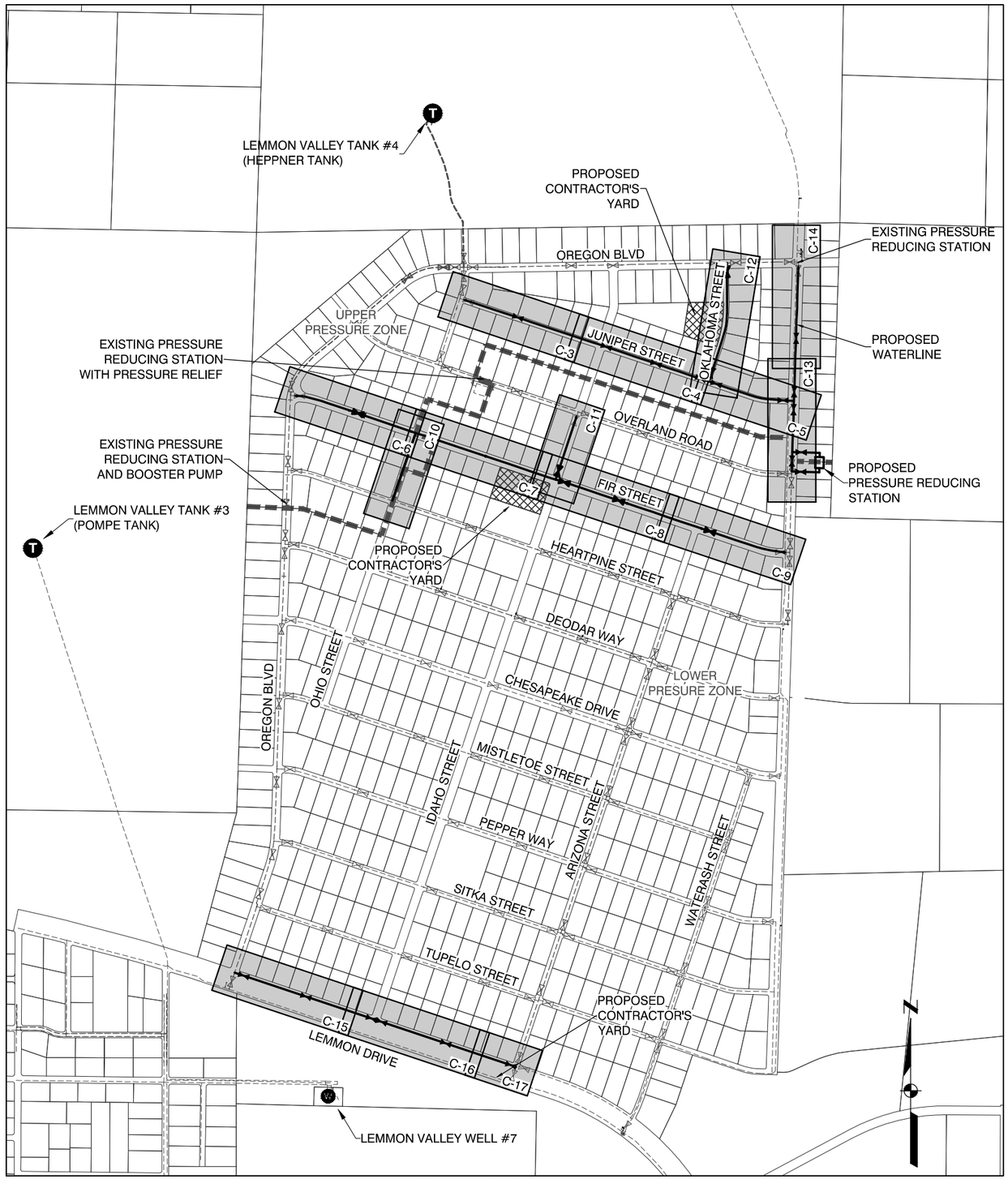
Department of Water Resources

WASHOE COUNTY
DEPARTMENT OF
WATER RESOURCES
4930 ENERGY WAY
RENO, NEVADA 89502
(775) 954-4600

Lemmon Valley
Water System Improvements
Heppner Waterline Extensions
Phasing Plan

Y:\Projects\2008_WR800122_Heppner Phase 7_w\Drawings\Display Maps\Heppner Phasing (2009-04-30).dwg Plotted: 30 Apr 09 - 9:36am, Layout:Heppner Waterline Phasing Plan

Plate 3. Project Area and Phases



SHEET KEY

T21N, R19E

SCALE: 1"=500'

Y:\Projects\2008_WR800122_Heppner Phase 7_e\Drawings\wr800122_C-02 key.dwg Plotted: 08 Feb 10 - 1:41pm, Layout:Sheet Key C-2

BASIS OF BEARING

ALL DATA ARE REFERENCED HORIZONTALLY TO THE NEVADA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD 83, EXPRESSED IN U.S. SURVEY FEET.

CONTOUR DATA ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 IN U.S. SURVEY FEET.

LEGEND

- NEW FIRE HYDRANT WITH VALVE
- EXISTING FIRE HYDRANT WITH VALVE
- NEW WATER LINE WITH VALVE
- EXISTING WATER LINE WITH VALVE
- TEST STATION
- EXISTING WELL
- NEW DOUBLE SERVICE WATER METER PIT WITH CONNECTION TO NEW WATER MAIN
- NEW SINGLE SERVICE WATER METER PIT WITH CONNECTION TO NEW WATER MAIN
- EXISTING DOUBLE SERVICE WATER METER PIT WITH CONNECTION TO NEW WATER MAIN
- EXISTING SINGLE SERVICE WATER METER PIT WITH CONNECTION TO NEW WATER MAIN
- OHE — EXISTING OVERHEAD ELECTRIC
- RIGHT OF WAY LINE
- COMBINATION AIR RELEASE VALVE
- EXISTING GAS LINE WITH VALVE
- EXISTING SEPTIC TANK
- FLUSH VALVE ASSEMBLY - TERMINUS
- FLUSH VALVE ASSEMBLY - IN-LINE
- EDGE OF PAVEMENT
- 5000 — EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- 5000 — INDEX CONTOUR
- INTERMEDIATE CONTOUR
- CAPE SEAL
- TYPE II SLURRY SEAL

NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION AS THEY APPLY TO WASHOE COUNTY, AND AS MODIFIED IN THESE CONTRACT DOCUMENTS.
2. DISTANCES SHOWN ON THE DRAWINGS ARE HORIZONTAL MEASUREMENT. PAYMENT WILL BE BASED ON HORIZONTAL MEASUREMENT.
3. EXISTING UNDERGROUND UTILITIES, INCLUDING TIE-IN LOCATIONS, ARE SHOWN IN THE PUBLIC RIGHT OF WAY IN THE APPROPRIATE LOCATIONS INDICATED ON RECORD DRAWINGS. OTHER UTILITIES AND FACILITIES MAY EXIST IN THE PUBLIC RIGHT OF WAY AND ON PRIVATE PROPERTY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE TYPE, SIZE, AND LOCATION OF UNDERGROUND FACILITIES IN THE WORK AREA. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITIES AND REPAIRING ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITIES. CALL UNDERGROUND SERVICE ALERT, (800)227-2600 OR 811, A MINIMUM OF TWO WORKING DAYS PRIOR TO DIGGING.
4. THE CONTRACTOR WILL BE REQUIRED TO CONFINE ALL CONSTRUCTION ACTIVITIES WITHIN THE PUBLIC RIGHT OF WAY. THIS INCLUDES VEHICLE AND EQUIPMENT MOVEMENT AND MATERIAL STORAGE. IF THE CONTRACTOR REQUIRES ADDITIONAL AREA FOR HIS OPERATIONS, IT SHALL BE HIS SOLE RESPONSIBILITY TO OBTAIN WRITTEN PERMISSION FROM PROPERTY OWNERS. POTENTIAL CONTRACTORS YARD LOCATIONS HAVE BEEN IDENTIFIED ON THE SHEET KEY. THE PROPERTIES ARE EITHER OWNED BY WASHOE COUNTY OR WITHIN THE PUBLIC RIGHT OF WAY. ALL CONTRACTORS YARDS SHALL CONFORM TO WASHOE COUNTY DEVELOPMENT CODE 110.310.45 "TEMPORARY CONTRACTOR'S YARDS." IN SUMMARY, THIS INCLUDES PROVIDING TEMPORARY FENCING, TARPING DOWN OR SECURING MATERIALS TO PREVENT TRANSPORT BY WIND AND TIMELINESS OF ABANDONMENT OF THE YARD. THE CONTRACTOR'S YARD SHALL BE RETURNED TO LIKE OR BETTER CONDITION WITH IN 15 DAYS OF ABANDONMENT.
5. ALIGNMENT SHOWN FOR THE NEW WATERLINE IS BASED ON LOCATIONS OF EXISTING FEATURES. MINIMUM DISTANCES MUST BE MAINTAINED BETWEEN THE NEW WATER LINE AND EXISTING UTILITIES AT SOME LOCATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY LOCATIONS OF THE EXISTING UTILITIES AND MAINTAIN THE REQUIRED MINIMUM SEPARATIONS.
6. WATER LINES SHALL BE LAID AT AN ASCENDING GRADE, AS SHOWN, SO THAT NO ISOLATED HIGH POINTS ARE CREATED.
7. NEW WATER LINES SHALL CROSS UNDER EXISTING WATER LINES UNLESS SHOWN OTHERWISE ON THE DETAILS OR DIRECTED BY THE ENGINEER. MINIMUM VERTICAL CLEARANCE BETWEEN CROSSING LINES SHALL BE 6 INCHES.
8. THRUST BLOCKS SHALL BE INSTALLED AT FITTINGS AS SHOWN OR AS DIRECTED BY THE ENGINEER.
9. TIE-INS SHALL BE MADE USING ALL BOLTED-UP JOINTS. JOINTS SHALL BE MADE USING FLANGED COMPONENTS OR MECHANICAL RESTRAINING DEVICES APPROVED BY THE ENGINEER.
10. TIE-INS WILL NOT BE PRESSURE TESTED WITH THE MAINS. COMPONENTS OF TIE-INS BETWEEN THE VALVE ON THE NEW MAIN AND THE EXISTING MAIN WILL BE VISUALLY INSPECTED UNDER LINE PRESSURE AFTER THE TIE-IN IS COMPLETED.
11. WATER SERVICE LINES AND FIRE HYDRANTS SHALL HAVE A MINIMUM COVER OF 18 INCHES AT DITCH CROSSINGS AND OTHER LOCATIONS.
12. BLIND FLANGES SHALL BE PROTECTED. WRAP FLANGE, BOLTS, THREADS, ETC. IN PLASTIC SHEETING. TAKE CARE IN POURING THRUST BLOCKS SO THAT CONCRETE AND BLIND FLANGE CAN BE REMOVED FOR FUTURE EXTENSION WITHOUT DISTURBING PIPE AND FITTINGS THAT WILL REMAIN IN SERVICE.
13. WHEN THE PLANS DIRECT THE CONTRACTOR TO **VERIFY** AN EXISTING UTILITY, THE LOCATION (BOTH HORIZONTAL AND VERTICAL), THE TYPE OF MATERIAL, THE TYPE OF CONNECTION, ETC... SHALL BE NOTED AND REPORTED TO THE ENGINEER.
14. WATER SERVICES - WHERE POSSIBLE, SINGLE WATER SERVICES ARE TO BE PLACED IN LINE WITH THE WELL FOR THE PROPERTY IT IS SERVING. PLACE DOUBLE SERVICES ON THE PROPERTY LINE BETWEEN THE PROPERTIES IT IS SERVING. METER LOCATIONS WERE CHOSEN BASED ON DISTRICT HEALTH DEPARTMENT RECORDS, SITE VISITS, AND HOMEOWNER REQUESTS. HOMEOWNERS MAY REQUEST TO REVISE THEIR METER LOCATION UNTIL ANY PORTION OF THE WATER SERVICE HAS BEEN INSTALLED. AFTER PERMANENT FACILITIES HAVE BEEN INSTALLED, IT WILL BE THE HOMEOWNERS RESPONSIBILITY TO COMPENSATE THE CONTRACTOR FOR ANY ALTERATION TO THE METER LOCATION.
15. OWNER WILL PROVIDE SURVEY COORDINATES FOR METER LOCATIONS. THE CONTRACTOR SHALL STAKE METER LOCATIONS A MINIMUM OF ONE DAY PRIOR TO ANY PERMANENT FACILITIES.

ABBREVIATIONS

AC	ASPHALT CONCRETE	LP	LOW POINT
APN	ASSESSORS PARCEL NUMBER	LT	LEFT
ARV	COMBINATION AIR RELEASE VALVE	MIN	MINIMUM
BC	BEGIN CURVE	MJ	MECHANICAL JOINT
CL	CENTERLINE	NTS	NOT TO SCALE
CMP	CORRUGATED METAL PIPE	OHE	OVERHEAD ELECTRIC
D/W	DRIVEWAY	PL	PROPERTY LINE
DI	DUCTILE IRON	PO	PUSH ON
EC	END OF CURVE	PRV	PRESSURE REGULATING VALVE
(E)	EXISTING	PVC	POLYVINYL CHLORIDE
FCA	FLANGE COUPLING ADAPTER	R	RADIUS
FH	FIRE HYDRANT	RCP	REINFORCED CONCRETE PIPE
FLG	FLANGED	RT	RIGHT
FO	FIBER OPTIC	RW, R/W	RIGHT OF WAY
G	GAS LINE / GRADE (%)	S	SLOPE (ft/ft)
GV	GATE VALVE	SD	STORM DRAIN
HP	HIGH POINT	STA	STATION
IE	INVERT ELEVATION	STL	STEEL
INTX	INTERSECTION	TB	THRUST BLOCK
L	LENGTH	TYP	TYPICAL
LF	LINEAL FOOT	W	WATER

REVISIONS

REV #	DATE	DESCRIPTION	BY

811 Know what's below. Call before you dig.

SCALE: AS SHOWN
DRAWN BY: JS
CHECKED BY: JB
DATE: February 2010

LEMMON VALLEY WATER SYSTEM IMPROVEMENTS
HEPPNER WATERLINE EXTENSIONS PHASE 7

SHEET KEY / LEGEND

95% - REVIEW SET

DEPARTMENT OF WATER RESOURCES
4930 ENERGY WAY
RENO, NEVADA 89502
(775) 954-4600

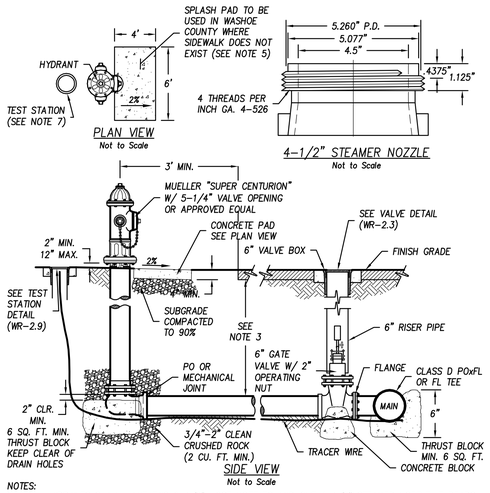
COUNTY OF WASHOE

JOB NUMBER: WR800122

SHEET 2 OF 20

C-2

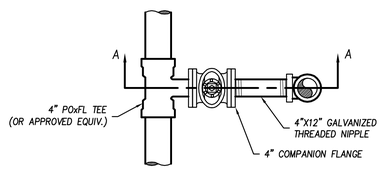
Plate 4. Pipeline Alignments and Staging Areas

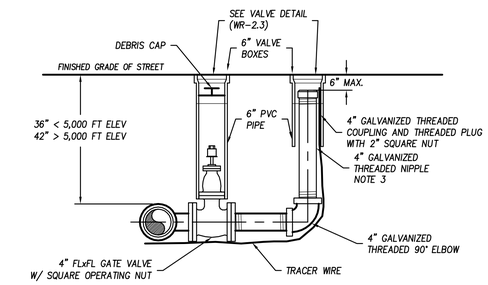


NOTES:
1. ALL HYDRANTS SHALL HAVE TWO 2-1/2" HOSE NOZZLES AND ONE 4-1/2" STEAMER NOZZLE. THREADS SHALL BE AS SHOWN.
2. OPERATING NUT SHALL BE 1-3/16" PENTAGONAL.
3. MINIMUM DEPTH OF MAIN SHALL BE 36"< 5,000 FT AND 42" > 5,000 FT.
4. NO FENCES SHALL BE ALLOWED WITHIN 3' OF ANY PORTION OF A FIRE HYDRANT.
5. CONCRETE SHALL BE MIN. 6.25 SACK, 4000 P.S.I WITH 4.5-7.5% AIR CONTENT. REINFORCING SHALL BE FIBERMESH
6. COMPACTION SHALL BE PERCENT RELATIVE COMPACTION BASED ON THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 AND WITHIN ± 2% OF OPTIMUM MOISTURE CONTENT.
7. TEST STATION MAY BE LOCATED IN SPLASH PAD.
8. ALL FITTINGS TO BE POLY WRAPPED PRIOR TO CONCRETE PLACEMENT.

FIRE HYDRANT ASSEMBLY

WR-2.6 N.T.S. 6 C-19

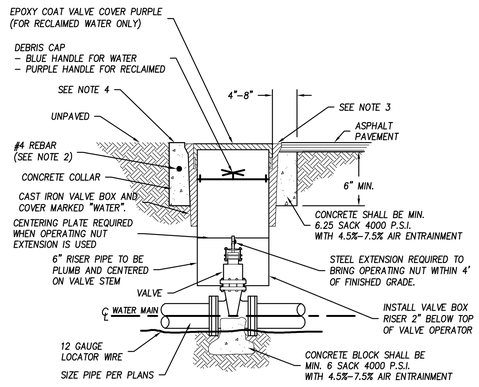




NOTES:
1. COAT ALL EXPOSED METAL WITH MASTIC
2. ALL FITTINGS TO BE POLY WRAPPED PRIOR TO CONCRETE PLACEMENT
3. GALVENIZED NIPPLE SHALL BE CONTINUOUS OR TACK WELDED AT EACH JOINT.

4" FLUSH VALVE ASSEMBLY (IN-LINE)

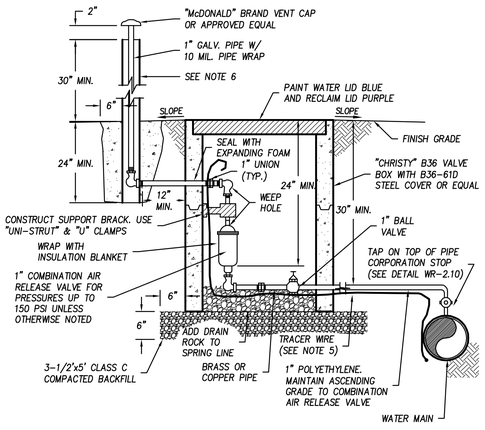
WR-2.8 N.T.S. 7 C-19



NOTES:
1. MATERIAL USED FOR SUPPORT BLOCKING SHOULD NOT PREVENT ACCESS TO THE BOLT ASSEMBLY.
2. CONCRETE SHALL MEET THE REQUIREMENTS OF SEC. 202.01 OF THE STANDARD SPECIFICATIONS. REBAR SHALL ONLY BE USED WHEN THE VALVE BOX IS LOCATED OUTSIDE OF PAVED AREAS.
3. VALVE BOXES TO BE SET 3/8"-5/8" BELOW FINISHED ROADWAY SURFACE. INSTALL OPERATING EXTENSION WITH OPERATING NUT RESTRAINING BOLT & TOP CENTERING PLATE. ANCHOR BARS & REDWOOD BLOCKS NOT REQUIRED WHEN OPERATING NUT IS AT GREATER DEPTH THAN 4' FROM FINISHED GRADE.
4. CONCRETE COLLAR TO BE LEFT 2" BELOW FINISH ASPHALT SURFACE. APPLY SS-1 TACK COAT BEFORE PAVING. SEAL A.C. SURFACE WITH SS-1 SAND. CHIP SEAL, FOG SEAL, SAND SEAL, OR SLURRY SEAL AS REQUIRED BY PLANS OR SPECS. EXTEND CONCRETE COLLAR TO GRADE WHEN NOT LOCATED IN ASPHALT PAVING.
5. CONCRETE COLLARS IN THE CITY OF RENO OR SPARKS ROADS SHALL BE BROUGHT TO GRADE ACCORDING TO THEIR RESPECTIVE REQUIREMENTS.

VALVE DETAIL

WR-2.3 N.T.S. 4 C-19

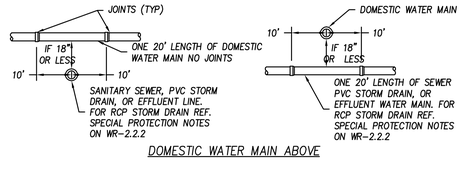


TYPICAL SECTION
Not to Scale

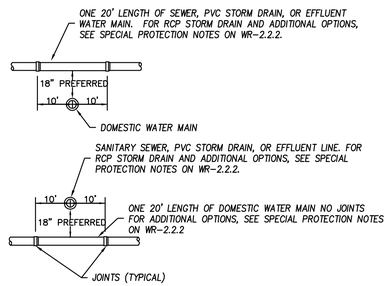
NOTES:
1. COMBINATION AIR RELEASE VALVES SHALL BE INSTALLED OUTSIDE OF PAVEMENT SECTION, SLOPE GROUND AWAY FROM VALVE BOX OR CONSTRUCT CURBING TO PROTECT FROM FLOODING BY SURFACE WATERS.
2. ALL PIPES SHALL HAVE POSITIVE SLOPE FROM MAIN LINE TO AIR/VACUUM VALVE. 30" MINIMUM TO TOP OF PIPE.
3. DESIGN ENGINEER SHALL DETERMINE THE SIZE OF THE COMBINATION AIR RELEASE ASSEMBLY.
4. EXCAVATION & BACKFILL SHALL BE AS SPECIFIED FOR "TRENCH EXCAVATION & BACKFILL" IN SECTION 305.00 OF THE SSPWC.
5. LOCATOR WIRE IS TO BE 12 GAUGE COATED COPPER WIRE OR APPROVED EQUAL.
6. EITHER USE 4" DIAMETER STEEL PIPE, FILLED WITH CONCRETE, AND PLACED IN 24" OF CONCRETE, OR USE 4"X4" REDWOOD POST, 4'-6" LONG, ATTACHING VENT PIPE WITH U-BOLTS IN TWO PLACES.

1" COMINATION AIR RELEASE ASSEMBLY

WR-2.4 N.T.S. 5 C-19



DOMESTIC WATER MAIN ABOVE



DOMESTIC WATER MAIN BELOW

WATER CROSSING SEWER DETAIL

WR-2.2 N.T.S. 3 C-19

TYPICAL SPECIAL PROTECTION FOR WATER MAIN CROSSING WITH SANITARY SEWER, PVC STORM DRAIN, OR EFFLUENT LINE

WATER MAIN CROSSING WITH RCP STORM DRAIN

WATER MAIN MUST CROSS A MINIMUM OF 18" ABOVE A RCP STORM DRAIN. IF THIS IS IMPRACTICAL AND IF THE STORM DRAIN CROSSES ABOVE THE WATER MAIN, OR BELOW BY LESS THAN 18", THE FOLLOWING SPECIAL CONSTRUCTION METHODS MAY BE USED:

A. IF THE RCP STORM DRAIN IS LESS THAN 24" DIA., THEN CONCRETE ENCASE THE JOINTS OF THE RCP STORM DRAIN 10' EITHER SIDE OF THE CROSSING AND CENTER THE WATER MAIN JOINTS.
B. IF THE RCP STORM DRAIN IS 24" DIA. OR LARGER, THEN USE JOINT SEALANTS OR JOINT GASKETS THAT MEET ASTM D3212 STANDARDS ON THE STORM DRAIN MAIN AND CENTER THE WATER MAIN JOINTS.

WATER MAIN CROSSING WITH SANITARY SEWER MAIN AND PVC STORM DRAIN

WATER MAIN MUST CROSS A MINIMUM OF 18" ABOVE A SANITARY SEWER MAIN. IF THIS IS IMPRACTICAL AND IF THE SANITARY SEWER MAIN CROSSES ABOVE THE WATER MAIN, OR BELOW BY LESS THAN 18", THE FOLLOWING SPECIAL CONSTRUCTION METHODS MAY BE USED:

A. SLEEVE THE SEWER OR STORM DRAIN MAIN WITH WATER QUALITY PIPE OR CENTER SEWER OR STORM DRAIN JOINTS WITH WATER MAIN. SEWER AND STORM DRAIN PIPES MUST HAVE WATER TIGHT JOINTS THAT COMPLY WITH ASTM D3212.

SLEEVING IS TO BE 10' EITHER SIDE OF THE WATER PIPE (A TOTAL OF 20') AND TO AVOID BEING GROUTED IN PLACE, THE MAIN INSIDE THE SLEEVE MUST HAVE A DIAMETER EQUAL TO OR GREATER THAN 2/3 THE DIAMETER OF THE SLEEVE.

WATER MAIN CROSSING WITH SANITARY SEWER LATERAL

WATER MAIN MUST CROSS A MINIMUM OF 12" ABOVE A SANITARY SEWER LATERAL. IF THIS IS IMPRACTICAL AND IF THE SANITARY SEWER LATERAL CROSSES ABOVE THE WATER MAIN, OR BELOW BY LESS THAN 12", THE FOLLOWING SPECIAL CONSTRUCTION METHODS MAY BE USED:

A. CENTER THE WATER MAIN JOINTS AND SLEEVE THE SANITARY SEWER LATERAL; OR
B. CENTER THE WATER MAIN JOINTS AND CENTER THE SANITARY SEWER LATERAL PIPE JOINTS.

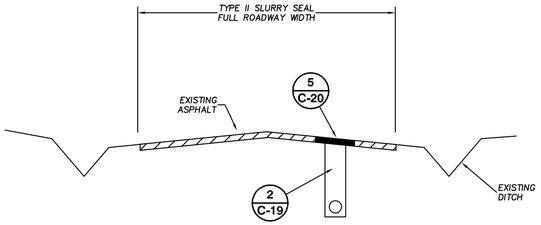
SLEEVING IS TO BE 10' EITHER SIDE OF THE WATER PIPE (A TOTAL OF 20') AND TO AVOID BEING GROUTED IN PLACE, THE LATERAL INSIDE THE SLEEVE MUST HAVE A DIAMETER EQUAL TO OR GREATER THAN 2/3 THE DIAMETER OF THE SLEEVE.

WATER SERVICE CROSSING WITH SANITARY SEWER MAIN

WATER SERVICE MUST CROSS A MINIMUM OF 18" ABOVE A SANITARY SEWER MAIN. IF THIS IS IMPRACTICAL AND IF THE SANITARY SEWER MAIN CROSSES ABOVE THE WATER SERVICE, OR BELOW BY LESS THAN 18", THE FOLLOWING SPECIAL CONSTRUCTION METHODS MAY BE USED:

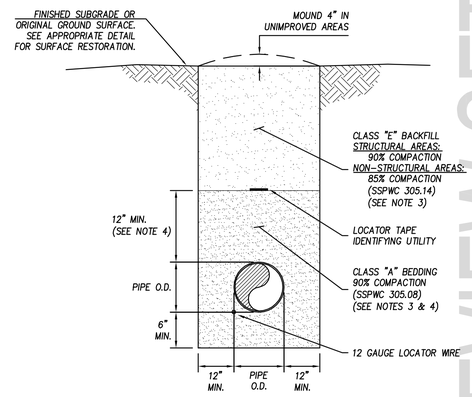
A. THE WATER SERVICE MUST BE POLYETHYLENE (PE) PIPE CONFORMING TO AWWA STANDARD C901-88 AND ASTM D2737 AND SEWER MAIN MUST BE SLEEVED OR HAVE JOINTS CENTERED OVER WATER SERVICE.

SLEEVING IS TO BE 10' EITHER SIDE OF THE WATER PIPE (A TOTAL OF 20') AND TO AVOID BEING GROUTED IN PLACE, THE MAIN INSIDE THE SLEEVE MUST HAVE A DIAMETER EQUAL TO OR GREATER THAN 2/3 THE DIAMETER OF THE SLEEVE.



SURFACE RESTORATION

N.T.S. 1 C-19



NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," (SSPWC) LATEST EDITION.
2. ALL TRENCHING ACTIVITIES SHALL CONFORM TO O.S.H.A. REGULATIONS. (SSPWC 305.06)
3. COMPACTION SHALL BE PERCENT RELATIVE COMPACTION BASED ON THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 AND WITHIN ± 2% OF OPTIMUM MOISTURE CONTENT. (SSPWC 305.14)
4. IN HIGH GROUND WATER, CLASS "C" BEDDING TO HIGH GROUNDWATER MARK TOPPED WITH MIRAFI 140N FILTER FABRIC (OR APPROVED EQUAL) MAY BE USED IN LIEU OF CLASS "A", WITH THE APPROVAL OF THE ENGINEER.

TRENCH DETAIL (WATER)

WR-2.1 N.T.S. 2 C-19

REVISIONS

REV. #	DATE	DESCRIPTION	BY

Know what's below. Call before you dig. 811

SCALE: AS SHOWN
DRAWN BY: JS
CHECKED BY: JB
DATE: February 2010

LEMMON VALLEY WATER SYSTEM IMPROVEMENTS
HEPPNER WATERLINE EXTENSIONS PHASE 7

WATER MAIN DETAILS

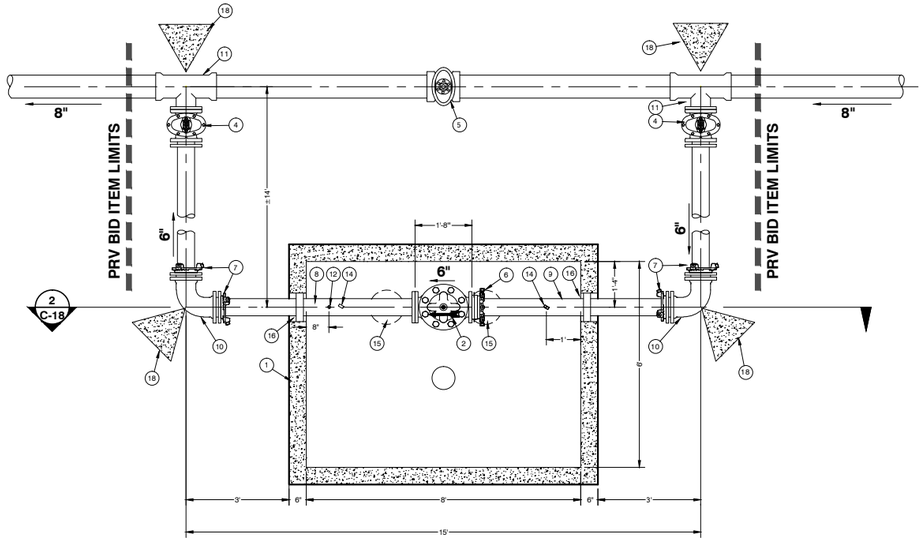
Department of WATER RESOURCES
4930 ENERGY WAY
RENO, NEVADA 89502
(775) 954-4600
Department of Water Resources
COUNTY OF WASHOE

JOB NUMBER: WR800122

SHEET 19 OF 20

C-19

Plate 5. Trenches, Fire Hydrant, and Roadway Restoration

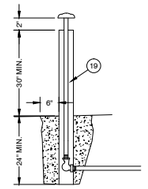


PLAN VIEW
PRESSURE REDUCING STATION

N.T.S. 1 C-18

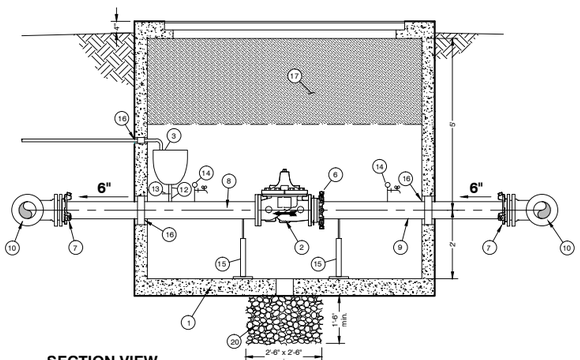
PIPE AND FITTING NOTES		
ITEM	QTY per vault	DESCRIPTION
1	1	Jensen 687 concrete vault with or approved equal. **Vault and cover to be H-20 incidental traffic rated. Adjustable torsion springs assisted cover.** 7'-0" x 16" galvanized ladder with knurled (non-skid) rungs included. Paint all exposed interior piping other than valves and epoxy coated piping as directed in Section 15160 of the Specifications.
2	1	6" CLA-VAL 92-01 Pressure Reducing Valve - Globe c/w CK2 cock (isolation valves), X101 Position Indicator, SS Tubing & Fittings, DI Body, SS Trim, Epoxy - #150 Flanged
3	1	1" CLA-VAL 361-CAV564.3 Combination Air Valve, Secure to side of vault, Piped to Atmosphere.
4	2	6" Gate Valve - Flanged x Mechanical Joint w/valve box and debris cap
5	1	6" Gate Valve - Push-on x push-on w/valve box and locking debris cap. Lock and tag closed.
6	1	6" MEGAFLANGE® 2106 or approved equal - Restrained Flange Adapter
7	4	6" MEGALUG® 1106 or approved equal - Mechanical Joint Restraint
8	1	6" x 6' Steel Spool - Flange x Plain End 1" threaded nipple (for combination air valve) ½" threaded nipple (for pressure gauge) Epoxy coat entire assembly 6" x 6' Ductile Iron Spool with additional flange coupling adapter and service taps may be used in place of epoxy coated steel spool
9	1	6" x 6' Steel Spool - Plain End x Plain End ½" threaded nipple (for pressure gauge) Epoxy coat entire assembly 6" x 6' Ductile Iron Spool with service taps may be used in place of epoxy coated steel spool
10	2	6" 90° Elbow - Mechanical Joint
11	2	8"x6" Tee - Push-on x Flanged
12	2	1" x ±6" Brass Spool - Threaded
13	1	1" Ball Valve
14	2	Inlet/Outlet Pressure Guage and Hose Bib Assembly See Detail 5, this sheet
15	2	Adjustable Pipe Stand - See Detail 4, this sheet
16		Core drill or cast openings - seal w/ LINKSEAL® Modular Seal or approved equal
17		1½" Foil Backed Foam Core Insulation. Insulate top 30" (all sides) of vault and double door assembly.
18		Thrust blocks - see Detail 4 - Sheet C-20 for sizing.
19		See vent for combination air release assembly. Detail 5, Sheet C-19

PRESSURE SETTINGS	
INLET PRESSURE	OUTLET PRESSURE
103 PSI	62 PSI



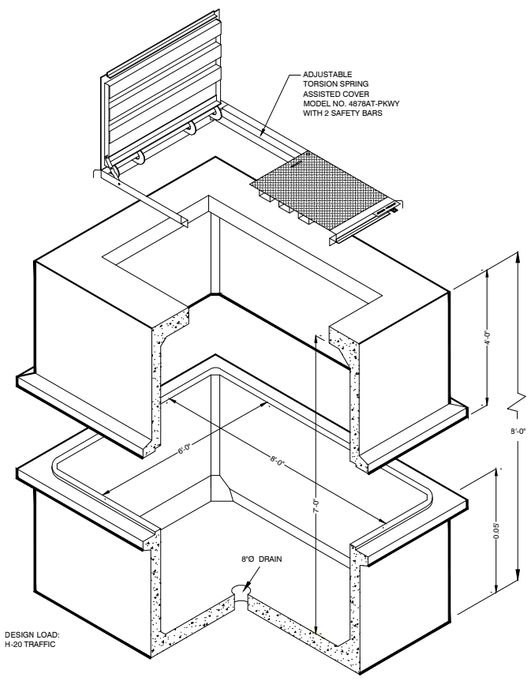
SECTION VIEW
COMBINATION AIR RELEASE VENT

N.T.S. 3 C-18



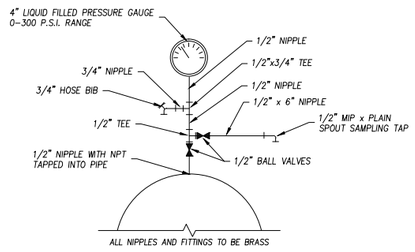
SECTION VIEW
PRESSURE REDUCING STATION

N.T.S. 2 C-18



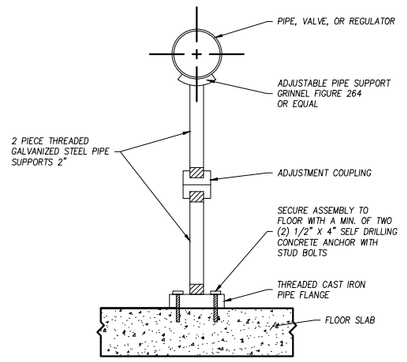
JENSEN PRE-CAST 654LA OR APPROVED EQUAL

N.T.S. 6 C-18



INLET/OUTLET PRESSURE GUAGE
AND AIR VENT ASSEMBLY

N.T.S. 5 C-18



ADJUSTABLE PIPE STAND

N.T.S. 3 C-18

REVISIONS

REV. #	DATE	DESCRIPTION	BY

Know what's below. Call before you dig.

SCALE: AS SHOWN
DRAWN BY: JS
CHECKED BY: JB
DATE: February 2010

95% - REVIEW SET

LEMMON VALLEY WATER SYSTEM IMPROVEMENTS
HEPPNER WATERLINE EXTENSIONS PHASE 7

PRESSURE REDUCING STATION DETAILS

Department of Water Resources
DEPARTMENT OF WATER RESOURCES
4930 ENERGY WAY
RENO, NEVADA 89502
(775) 954-4600

COUNTY OF WASHOE

JOB NUMBER: WR800122

SHEET 18 OF 20

C-18

APPENDIX A

Letter from Nevada SHPO Regarding Cultural Resources

STATE OF NEVADA
DEPARTMENT OF CULTURAL AFFAIRS
Nevada State Historic Preservation Office
100 N. Stewart Street
Carson City, Nevada 89701
(775) 684-3448 • Fax (775) 684-3442
www.nvshpo.org

KENNY C. GUINN
Governor

SCOTT K. SISCO
Interim Director

RONALD M. JAMES
State Historic Preservation Officer

May 11, 2005

Katherine R. Rao
Ground Water Office
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco CA 94105-3901

RE: Lemmon Valley Artificial Recharge Project, Heppner Subdivision in North Lemmon Valley, Washoe County (EPA Grant #XP-96909501).

Dear Ms. Rao:

The Nevada State Historic Preservation Office (SHPO) reviewed the subject undertaking. This cultural resource inventory report was completed following an intensive archaeological and historic inventory of the project area. No historic properties were found within the area of potential effects (APE) for the subject undertaking. As a result, the SHPO concurs with the U.S. Environmental Protection Division determination that historic properties will not be affected by the proposed undertaking.

If buried or previously unidentified resources are located during project activities, the SHPO recommends that all work in the vicinity of the find cease and this office be contacted for additional consultation per NRS 383.150-383.190.

If you have any questions concerning this correspondence, please contact me by phone at (775) 684-3443 or by E-mail at rlpalmer@clan.lib.nv.us.

Sincerely,

Rebecca L Palmer

Rebecca Lynn Palmer
Historic Preservation Specialist

APPENDIX B

Correspondence from USFWS Regarding Threatened and Endangered Species

Stevenson, Lynne L SPK

From: James_Harter@fws.gov
Sent: Monday, February 08, 2010 9:09 AM
To: Stevenson, Lynne L SPK
Subject: Re: Another ltr nec?

Lynne,
This responds to your electronic-mail of February 5, 2010, requesting an updated species list for the North Lemmon Valley Heppner Phase 7 Project. After reviewing the project area, the previous species list (File No. 2009-SL-0543) dated October 13, 2009 is still accurate for this project.

James Harter

"Stevenson, Lynne L SPK" <Lynne.L.Stevenson@usace.army.mil>

02/05/2010 11:13 AM To
<James_Harter@fws.gov>
cc
Subject
Another ltr nec?

Hello James,

At my request, your agency provided a species list for the Corps' North Lemmon Valley - Heppner Phase 7 Project in Washoe County, Nevada. The letter was dated October 13, 2009 (File No. 2009-SL-0543). Unfortunately, work was temporarily suspended on the project until this week due to my reassignment to other projects.

Nothing has changed on the project. Do I need to submit a letter requesting an updated list, or could your agency just confirm in an email that there have been no changes to the October 13 letter? Please advise.

Thank you!

Lynne

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Nevada Fish and Wildlife Office
1340 Financial Blvd., Suite 234
Reno, Nevada 89502
Ph: (775) 861-6300 ~ Fax: (775) 861-6301

October 13, 2009
File No. 2009-SL-0543

Mr. Francis Piccola
U.S. Army Corps of Engineers
Attn: Ms. Lynne Stevenson, CESPK-PD-R
1325 J Street
Sacramento, California 95814

Dear Mr. Piccola:

Subject: Species List Request for North Lemmon Valley - Heppner Phase 7 Project, Washoe County, Nevada

This responds to your letter received on September 23, 2009, requesting a species list for the North Lemmon Valley - Heppner Phase 7 Project in Washoe County, Nevada. To the best of our knowledge, no listed, proposed, or candidate species occur in the subject project area. This response fulfills the requirements of the Fish and Wildlife Service (Service) to provide a list of species pursuant to section 7(c) of the Endangered Species Act of 1973 (Act), as amended, for projects that are authorized, funded, or carried out by a Federal agency.

The Nevada Fish and Wildlife Office no longer provides species of concern lists. Most of these species for which we have concern are also on the sensitive species list for Nevada maintained by the State of Nevada's Natural Heritage Program (Heritage). Instead of maintaining our own list, we are adopting Heritage's sensitive species list and partnering with them to provide distribution data and information on the conservation needs for sensitive species to agencies or project proponents. The mission of Heritage is to continually evaluate the conservation priorities of native plants, animals, and their habitats, particularly those most vulnerable to extinction or in serious decline. Consideration of these sensitive species and exploring management alternatives early in the planning process can provide long-term conservation benefits and avoid future conflicts.

For a list of sensitive species by county, visit Heritage's website at www.heritage.nv.gov. For a specific list of sensitive species that may occur in the project area, you can obtain a data request form from the website or by contacting Heritage at 901 South Stewart Street, Suite 5002, Carson City, Nevada 89701-5245, (775) 684-2900. Please indicate on the form that your request is being obtained as part of your coordination with the Service under the Act. During your project analysis, if you obtain new information or data for any Nevada sensitive species, we request that you provide the information to Heritage at the above address. Furthermore, certain species of fish and wildlife are classified as protected by the State of Nevada (see http://www.leg.state.nv.us/NAC/NAC-503.html). Before a person can hunt, take, or possess any parts of wildlife species classified as protected, they must first obtain the appropriate license, permit, or written authorization from the Nevada Department of Wildlife (visit http://www.ndow.org or call 775-688-1500).

Based on the Service's conservation responsibilities and management authority for migratory birds under the Migratory Bird Treaty Act of 1918 (MBTA), as amended (16 U.S.C. 703 *et seq.*), we are concerned about potential impacts the proposed project may have on migratory birds in the area. Given these concerns, we recommend that any land clearing or other surface disturbance associated with proposed actions within the project area be timed to avoid potential destruction of bird nests or young, or birds that breed in the area. Such destruction may be in violation of the MBTA. Under the MBTA, nests with eggs or young of migratory birds may not be harmed, nor may migratory birds be killed. Therefore, we recommend land clearing be conducted outside the avian breeding season. If this is not feasible, we recommend a qualified biologist survey the area prior to land clearing. If nests are located, or if other evidence of nesting (*i.e.*, mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) should be delineated and the entire area avoided to prevent destruction or disturbance to nests until they are no longer active.

Please reference File No. 2009-SL-0543 in future correspondence concerning this species list. If you have any questions regarding this correspondence or require additional information, please contact me or James Harter at (775) 861-6300.

Sincerely,

Robert D. Williams
State Supervisor

APPENDIX C

Mailing List

U.S. Fish and Wildlife Service
Nevada Fish and Wildlife Office
1340 Financial Boulevard
Reno, NV 89502

NV Division of Environmental Protection
Bureau of Air Pollution Control
901 So. Stewart Street, Suite 4001
Carson City, NV 89701

Nevada State Health Division
Frontier & Rural Public Health
4150 Technology Way, Suite 100
Carson City, NV 89706

Washoe County Dept of Water Resources
4930 Energy Way
Reno, NV 89502

Washoe County Library
301 South Center Street
Reno, NV 89501

Reno Gazette Journal
P.O. Box 22000
Reno, NV 89520

Washoe County District Health Dept.
Air Quality Management Division
P.O. Box 11130
Reno, NV 89520

NV Division of Environmental Protection
Bureau of Safe Drinking Water
901 South Stewart Street, Suite 4001
Carson City, NV 89701

Nevada Department of Transportation
1263 South Stewart Street
Carson City, NV 89712

NV Division of Environmental Protection
901 South Stewart Street, Suite 4001
Carson City, NV 89701

Nevada Department of Wildlife
1100 Valley Road
Reno, NV 89512

Nevada State Clearinghouse
209 East Musser Street, Room 200
Carson City, NV 89701

Nevada State Historic Preservation Office
100 North Stewart Street
Carson City, NV 89701

Lemmon Valley Association
P.O. Box 60313
Reno, NV 89506

Washoe County Comprehensive Planning
P.O. Box 11130
Reno, NV 89520-0027

Washoe County Board of Commissioners
P.O. Box 11130
Reno, NV 89520