

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas 1
Kern River Gas Transmission
Company
Apex Expansion Project
Docket No. CP10-14-000

TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared a draft environmental impact statement (EIS) for the Apex Expansion Project proposed by Kern River Gas Transmission Company (Kern River) in the above-referenced docket. Kern River requests authorization to expand its natural gas pipeline system in Wyoming, Utah, and Nevada, to transport an additional 266 million cubic feet per day of natural gas from existing receipt points in southwestern Wyoming, to existing delivery connections in southern Nevada.

The draft EIS assesses the potential environmental effects of the construction and operation of the Apex Expansion Project in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA). The FERC staff concludes that approval of the proposed project would have some adverse environmental impact; however, these impacts would be reduced to less-than-significant levels with the implementation of Kern River's proposed mitigation and the additional measures we recommend in the draft EIS.

The Bureau of Land Management (BLM), the Forest Service (USFS), and the Bureau of Reclamation (Reclamation) participated as cooperating agencies in the preparation of the EIS. Cooperating agencies have jurisdiction by law or special expertise with respect to resources potentially affected by the proposal and participate in the NEPA analysis. The cooperating agencies will adopt and use the EIS to consider the issuance of right-of-way grants on federally administered lands. While the conclusions and recommendations presented in the draft EIS were developed with input from the cooperating agencies, the agencies will present their own conclusions and recommendations in their respective Records of Decision for the project.

The draft EIS addresses the potential environmental effects of the construction and operation of the following project facilities:

- approximately 28 miles of 36-inch-diameter natural gas pipeline loop¹ extending southwest in Utah from Morgan County, through Davis to Salt Lake County;
- one new 30,000 horsepower compressor station (known as the Milford Compressor Station) in Beaver County, Utah;
- modifications to four existing compressor stations to add additional compression: the Coyote Creek Compressor Station located in Uinta County, Wyoming; the Elberta Compressor Station located in Utah County, Utah; the Fillmore Compressor Station located in Millard County, Utah; and the Dry Lake Compressor Station located in Clark County, Nevada;
- six mainline valves; and
- three pig² launcher and two pig receiver facilities.

The draft EIS has been placed in the public files of the FERC and is available for public viewing on the FERC's website at www.ferc.gov. A limited number of copies are available for distribution and public inspection at:

Federal Energy Regulatory Commission
Public Reference Room
888 First Street, NE, Room 2A
Washington, DC 20426
(202) 502-8371

Copies of the draft EIS have been mailed to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; local newspapers and libraries in the project area; intervenors to the FERC's proceeding; and potentially affected landowners and other interested individuals and groups. Paper copy versions of this EIS were mailed to those specifically requesting them; all others received a CD version.

¹ A loop is a segment of pipe that is usually installed adjacent to an existing pipeline and connected to it at both ends. The loop allows more gas to be moved through the system.

² A pig is an internal tool that can be used to clean and dry a pipeline and/or to inspect it for damage or corrosion.

Route Variations Recommended by FERC in the Draft EIS

Some landowners are receiving the draft EIS because their property has been identified as potentially being affected by the Mueller Park or Salt Lake III Route Variations recommended by FERC staff to avoid or lessen environmental impacts along Kern River's proposed pipeline route. Refer to sections 3.5.6 and 3.5.7 of the draft EIS for discussions of the Mueller Park and Salt Lake III Route Variations, respectively. The Commission staff wants to ensure that all potentially affected landowners have the opportunity to participate in the environmental review process. Therefore, staff is soliciting comments to assist with the environmental analysis of these route variations, which will be presented in the final EIS.

Comment Procedures and Public Meetings

Any person wishing to comment on the draft EIS may do so. To ensure consideration of your comments on the proposal in the final EIS, it is important that the Commission receive your comments before May 17, 2010.

For your convenience, there are four methods you can use to submit your comments to the Commission. In all instances, please reference the project docket number (CP10-14-000) with your submission. The Commission encourages electronic filing of comments and has dedicated eFiling expert staff available to assist you at (202) 502-8258 or efiling@ferc.gov. Please carefully follow these instructions so that your comments are properly recorded.

- 1) You may file your comments electronically by using the Quick Comment feature, which is located on the Commission's website at www.ferc.gov under the link to Documents and Filings. A Quick Comment is an easy method for interested persons to submit text-only comments on a project;
- 2) You may file your comments electronically by using the eFiling feature, which is located on the Commission's website at www.ferc.gov under the link to Documents and Filings. eFiling involves preparing your submission in the same manner as you would if filing on paper, and then saving the file on your computer's hard drive. You will attach that file as your submission. New eFiling users must first create an account by clicking on "Sign up" or "eRegister." You will be asked to select the type of filing you are making. A comment on a particular project is considered a "Comment on a Filing;"

- 3) You may file a paper copy of your comments at the following address:

Kimberly D. Bose, Secretary
 Federal Energy Regulatory Commission
 888 First Street, NE, Room 1A
 Washington, DC 20426

- 4) In lieu of sending written or electronic comments, the Commission invites you to attend one of the public comment meetings its staff will conduct in the project area to receive comments on the draft EIS. Interested groups and individuals are encouraged to attend and present oral comments on the draft EIS. Transcripts of the meetings will be prepared. **All meetings will begin at 7:00 p.m., and are scheduled as follows:**

Date	Location
Tuesday, April 27, 2010	Millcreek Junior High School 245 East 1000 South Bountiful, UT 84010 801-402-6200
Wednesday, April 28, 2010	Morgan County Courthouse Auditorium 48 West Young Street Morgan, UT 84050 801-845-4027

Although your comments will be considered by the Commission, simply filing comments will not serve to make the commentor a party to the proceeding. Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (18 CFR Part 385.214).³ Only intervenors have the right to seek rehearing of the Commission's decision.

Affected landowners and parties with environmental concerns may be granted intervenor status upon showing good cause by stating that they have a clear and direct

³ Interventions may also be filed electronically via the Internet in lieu of paper. See the previous discussion on filing comments electronically.

interest in this proceeding which would not be adequately represented by any other parties. **You do not need intervenor status to have your comments considered.**

Questions?

Additional information about the project is available from the Commission's Office of External Affairs, at **(866) 208-FERC** or on the FERC (www.ferc.gov) using the eLibrary link. Click on the eLibrary link, click on "General Search," and enter the docket number excluding the last three digits in the Docket Number field (i.e., CP10-14-000). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnline Support@ferc.gov or toll free at (866) 208-3676; for TTY, contact (202) 502-8659. The eLibrary link also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription that allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to www.ferc.gov/esubscribenow.htm.

Kimberly D. Bose
Secretary

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ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
API	American Petroleum Institute
AQCR	air quality control region
ASME	American Society of Mechanical Engineers
ATWS	additional temporary workspace
BA	Biological Assessment
BACT	best available control technology
Bcf/d	billion cubic feet per day
BGEPA	Bald and Golden Eagle Protection Act
bgs	below ground surface
BLM	U.S. Department of Interior, Bureau of Land Management
BLM-CCFO	BLM-Cedar City Field Office
BLM-SLFO	BLM-Salt Lake City Office
BMP	best management practice
BO	Biological Opinion
CAA	Clean Air Act
CAAA	1990 Clean Air Act Amendments
CC DAQEM	Clark County Department of Air Quality and Environmental Management
CCC	Civilian Conservation Corps
CEQ	Council on Environmental Quality
Certificate	Certificate of Public Convenience and Necessity
cf/d	cubic feet per day
CFR	Code of Federal Regulations
CH ₄	methane
cm ²	square centimeters
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ -eq	carbon dioxide equivalents
COE	U.S. Army Corps of Engineers
Commission	Federal Energy Regulatory Commission
CRP	Conservation Reserve Program
CWA	Clean Water Act
CWMU	Cooperative Wildlife Management Unit

ACRONYMS AND ABBREVIATIONS (CONTINUED)

CZMA	Coastal Zone Management Act of 1972
dBA	decibels on the A-weighted scale
DEP	Division of Environmental Protection
DOE	U.S. Department of Energy
DWR	Division of Wildlife Resources
EFH	essential fish habitat
EIA	U.S. Energy Information Administration
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
EPAct 2005	Energy Policy Act of 2005
ESA	Endangered Species Act of 1973
ESD	emergency shut down
F	Fahrenheit
FERC	Federal Energy Regulatory Commission
FERC's Plan	<i>FERC Upland Erosion Control, Revegetation and Maintenance Plan</i>
FERC's Procedures	<i>FERC Wetland and Waterbody Construction and Mitigation Procedures</i>
FWS	U.S. Department of Interior, U.S. Fish and Wildlife Service
g	gravity
GHG	greenhouse gas
GIS	geographic information system
GWP	global warming potential
HAP	hazardous air pollutant
HCA	high-consequence area
HDD	horizontal directional drilling
HEL	highly erodible land
HFC	hydrofluorocarbons
HFE	hydrofluorinated ethers
hp	horsepower
HUC	hydrolic unit code
ISO	International Organization for Standardization
Kern River	Kern River Gas Transmission Company
Kern River's Plan	<i>Upland Erosion Control, Revegetation and Maintenance Plan</i>
Kern River's Procedures	<i>Wetland and Waterbody Construction and Mitigation Procedures</i>

ACRONYMS AND ABBREVIATIONS (CONTINUED)

KRMP	Kern River milepost
kV	kilovolt
L _{dn}	day-night sound level
L _{eq}	equivalent sound level
LNP	Legacy Nature Preserve
LRMP	Land and Resource Management Plan
M	magnitude
m ³	cubic meters
MACT	Maximum Achievable Control Technology
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MAOP	maximum allowable operating pressure
MBTA	Migratory Bird Treaty Act
Memorandum	Memorandum of Understanding on Natural Gas Transportation Facilities
Mcf/d	million cubic feet per day
mg	milligrams
MGD	million gallons per day
MLA	Mineral Leasing Act
MLV	mainline valve
MMBtu/hour	million British thermal units per hour
MP	milepost
MW	megawatt
mya	million years ago
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NDCNR	Nevada Department of Conservation and Natural Resources
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NF	National Forest
NF ₃	nitrogen trifluoride
NGA	Natural Gas Act
NGPSA	Natural Gas Pipeline Safety Act
NHPA	National Historic Preservation Act of 1966
NMFS	National Marine Fisheries Service
NNSR	Nonattainment New Source Review

ACRONYMS AND ABBREVIATIONS (CONTINUED)

NO ₂	nitrogen oxide
NOA	notice of availability
NOI	<i>Notice of Intent to Prepare an Environmental Impact Statement for the Apex Expansion Project, Request for Comments on Environmental Issues, and Notice of Joint Public Scoping Meetings</i>
N _{ox}	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NSA	noise-sensitive area
NSPO	non-standard parallel offset
NSPS	New Source Performance Standards
NSR	New Source Review
NWI	National Wetlands Inventory
O ₃	ozone
OEP	Office of Energy Projects
OPS	Office of Pipeline Safety
OSHA	Occupational Safety and Health Administration
PEM	palustrine emergent wetlands
PFC	perfluorocarbons
PFO	palustrine forested
PGA	peak horizontal ground acceleration
PHMSA	Pipeline and Hazardous Materials Safety Administration
PIF	Partners in Flight
PM ₁₀	particulate matter with an aerodynamic diameter less than 10 microns
PM _{2.5}	particulate matter with an aerodynamic diameter less than 2.5 microns
POD	Plan of Development
ppm	parts per million
PRMP	Paleontological Resource Management Plan
Project	Apex Expansion Project
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
psig	pounds per square inch (gauge)
PSS	palustrine scrub-shrub
Reclamation	U.S. Department of Interior, Bureau of Reclamation

ACRONYMS AND ABBREVIATIONS (CONTINUED)

Reclamation Plan	<i>Reclamation Plan for the Proposed Apex Expansion Project</i>
RICE	Reciprocating Internal Combustion Engine
RMP	BLM Resource Management Plan
ROD	Record of Decision
RPS	Renewable Portfolio Standards
SCADA	supervisory control and data acquisition
SDWA	Safe Drinking Water Act
SF ₆	sulfur hexafluoride
SHPO	State Historic Preservation Office
SI ICE	spark-ignition internal-combustion engines
SIO	Scenic Integrity Objectives
SMS	Scenery Management System
SO ₂	sulfur dioxide
SO ₃	sulfur trioxide
SPCC Plan	Spill Prevention, Control and Countermeasure Plan
SSURGO	Soil Survey Geographic Database
STATSGO	State Soil Geographic Database
SWPPP	Storm Water Pollution Prevention Plan
tpy	tons per year
UDAQ	Utah Division of Air Quality
UDEQ	Utah Department of Environmental Quality
UDNR	Utah Department of Natural Resources
UDOT	Utah Department of Transportation
UDWR	Utah Division of Wildlife
UGS	Utah Geological Survey
USC	United States Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFS	U.S. Department of Agriculture, U.S. Forest Service
USGCRP	U.S. Global Change Research Program
USGS	United States Geological Survey
UTA	Utah Transit Authority
UWCNF	Uinta-Wasatch-Cache National Forest
VOC	volatile organic compound

ACRONYMS AND ABBREVIATIONS (CONTINUED)

VRM	Visual Resource Management
WDEQ	Wyoming Department of Environmental Quality
WFZ	Wasatch Fault Zone
WLMP	Wasatch Loop Milepost
WMA	wildlife management area
WPDES	Wyoming Pollutant Discharge Elimination System
µg	micrograms

EXECUTIVE SUMMARY

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared this draft Environmental Impact Statement (EIS) to fulfill requirements of the National Environmental Policy Act of 1969 (NEPA) and the Commission's implementing regulations under Title 18 of the Code of Federal Regulations, Part 380 (18 CFR 380). On November 2, 2009, Kern River Gas Transmission Company (Kern River) filed an application with the Commission pursuant to Section 7(c) of the Natural Gas Act (NGA) and Part 157 of the Commission's regulations for a Certificate of Public Convenience and Necessity to construct, operate, and maintain an interstate natural gas pipeline and associated ancillary and aboveground facilities, collectively known as the Apex Expansion Project (Project). The purpose of this document is to inform the public and the permitting agencies about the potential adverse and beneficial environmental impacts of the proposed Project and its alternatives, and to recommend mitigation measures that would avoid or reduce adverse impacts.

The FERC is the federal agency responsible for authorizing interstate natural gas transmission facilities under the NGA, and is the lead federal agency for the preparation of this EIS in compliance with the requirements of NEPA. The U.S. Department of Interior, Bureau of Land Management (BLM) and the Bureau of Reclamation (Reclamation), and the U.S. Department of Agriculture, U.S. Forest Service (USFS) are cooperating agencies for the development of this EIS. A cooperating agency has jurisdiction by law or has special expertise with respect to environmental resource issues associated with the Project.

The BLM is the federal agency responsible for issuing right-of-way grants for natural gas pipelines across federal lands affected by this Project. Right-of-way grants are issued under Section 28 of the Mineral Leasing Act and 43 CFR 2880 to any qualified individual, business, or government entity. The BLM would decide whether or not to issue Kern River a right-of-way grant to cross all federal land based on this EIS; however, the BLM would not issue a right-of-way grant until the heads of the BLM, USFS, and Reclamation had concurred with respect to use of lands under their respective jurisdictions. Where concurrence is not reached, the Secretary of the Interior, after consultation with the heads of the BLM, USFS, and Reclamation, would decide whether or not to issue a right-of-way grant.

PROPOSED ACTION

The purpose of the Apex Expansion Project is to transport an additional 266 million cubic feet per day (MMcf/d) of natural gas on Kern River's existing pipeline system from southwestern Wyoming to Nevada. Dependent upon Commission approval, Kern River proposes to begin construction in the fall of 2010 and place the facilities into operation in November 2011. Kern River proposes to construct and operate:

- approximately 28 miles of 36-inch-diameter natural gas transmission pipeline loop¹ extending southwest in Utah from Morgan County, through Davis County to Salt Lake County;
- one new 30,000-horsepower compressor station (known as the Milford Compressor Station) in Beaver County, Utah;
- modifications to four existing compressor stations to add additional compression (the Coyote Creek Compressor Station located in Uinta County, Wyoming; the Elberta Compressor

¹ A pipeline "loop" is a segment of pipeline that is installed adjacent to or in the vicinity of an existing pipeline and connected to the existing pipeline at both ends. A loop increases the volume of gas that can be transported through that portion of the system.

Station located in Utah County, Utah; the Fillmore Compressor Station located in Millard County, Utah; and the Dry Lake Compressor Station located in Clark County, Nevada);

- six mainline valves; and
- three pig launcher and two pig receiver facilities.²

In addition to Kern River's proposed facilities, a non-jurisdictional electric transmission line to the Milford Compressor Station would be constructed by PacifiCorp. Although the 1.4-mile electric transmission line does not fall under the FERC's jurisdiction, we³ include it in our environmental review.

PUBLIC INVOLVEMENT

On March 13, 2009, the FERC began its pre-filing review of the Apex Expansion Project and established a pre-filing docket number (PF09-07-000) to place information related to the Project into the public record. The cooperating agencies agreed to conduct their environmental reviews of the proposed Project in conjunction with the Commission's pre-filing process.

Kern River initially contacted federal and state agencies to inform them about the Project and the FERC's pre-filing process. Subsequently, Kern River hosted three public open houses and two stakeholder meetings in communities in the vicinity of the proposed Project, from March 23 through March 27, 2009. These open houses and meetings were conducted to inform landowners, government officials, and the general public about the Project. Attendees were invited to ask questions and submit any concerns. The FERC staff participated in the open houses and provided information regarding the environmental review process.

As part of our pre-filing review, we issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Apex Expansion Project, Request for Comments on Environmental Issues and Notice of Joint Public Scoping Meetings (NOI)* on May 19, 2009. The NOI was published in the Federal Register and sent to affected landowners; federal, state, and local government agencies; elected officials; environmental and public interest groups; Native American tribes; local libraries; newspapers; and other interested parties. In response to our notice, public site visits, and two public scoping meetings held along the proposed pipeline route, we received numerous comments from landowners, concerned citizens, public officials, and government agencies regarding the proposed Project. These comments expressed concerns with the location of the proposed pipeline and the effects of the proposed Project on resources and land uses, including soils, geology, waterbodies, wetlands, wildlife, vegetation, threatened and endangered species, safety, alternatives, air quality, noise, and state- and federally managed lands. This draft EIS is being mailed to the Commission's environmental mailing list included in Appendix A.

PROJECT IMPACTS AND MITIGATION

Construction and operation of the Apex Expansion Project could result in numerous impacts on the environment. We evaluated the impacts of the Project, as reduced by Kern River's proposed mitigation, on geology, soils, groundwater, surface water, wetlands, vegetation, wildlife, fisheries, special status species, land use, visual resources, socioeconomics, cultural resources, air quality, noise, and safety. Where necessary, we recommended additional mitigation to minimize or avoid these impacts. We also considered the cumulative impacts of this Project with other past, present, and reasonably foreseeable actions in the Project area.

² A pipeline "pig" is a device used to clean or inspect the pipeline. A pig launcher/receiver is an aboveground facility where pigs are inserted or retrieved from the pipeline.

³ The pronouns "we," "us," and "our" refer to the environmental staff of the FERC's Office of Energy Projects.

Based on scoping comments, agency consultations, and our independent evaluation of resource impacts, the major issues identified in our analysis are in regard to: geologic hazards, paleontological resources, vegetation, wildlife habitat, federally listed species, the Uinta Wasatch Cache National Forest (UWCNF), recreational areas and roadless areas within the UWCNF, and visual resources. Our analysis of these issues is summarized below and is discussed in detail in the appropriate resource sections in section 4. Where necessary, we recommended additional mitigation measures to minimize or avoid these impacts. Section 5.2 of the EIS contains our conclusions and a compilation of our recommended mitigation measures.

Geology, Paleontology, and Soils

Potential geologic hazards in the Project area include faults, landslides, soil liquefaction, and seismicity. The Project would cross four faults, one of which, the Warm Springs Fault is considered to be active. Kern River has also designed for these hazards through avoidance of landslide-prone areas and through the use of special construction materials within seismically active areas. For example, potential hazards associated with constructing and operating the pipeline in an area of an active fault would be mitigated through the use of pipe with extra wall thickness and the placement of granular/sand backfill material underneath and surrounding the pipeline near the fault.

To protect paleontological resources at seven sites identified along the proposed pipeline, Kern River would utilize its previously prepared Paleontological Resource Management Plan (PRMP) that was developed for the 2003 Kern River Expansion Project. The PRMP contains procedures for obtaining pre-construction approvals, monitoring of identified significant fossil locations during construction, and procedures for unanticipated discovery of fossils during construction.

To minimize general construction-related effects to soils, Kern River would implement the measures described in Kern River's Upland Erosion Control, Revegetation, and Maintenance Plan (Kern River's Plan); Kern River's Wetland and Waterbody Construction and Mitigation Procedures (Kern River's Procedures); Kern River's Reclamation Plan; and Kern River's Spill Prevention, Control, and Countermeasure Plan. These measures would control erosion and increase the potential success of revegetation efforts.

Waterbody Crossings, Water Use, and Wetlands

The pipeline would cross 12 perennial and several intermittent and ephemeral waterbodies. All waterbodies with water present at the time of construction would be crossed via dry crossing methods such as flume crossings or a conventional bore. Waterbody crossings would be conducted in accordance with all federal and state regulations and permit requirements, and Kern River would minimize impacts by following measures identified in its Procedures and our additional recommended measures.

Kern River proposes to withdraw approximately 14.9 million gallons of water from two rivers, one reservoir, and municipal sources for hydrostatic testing and dust abatement purposes. Kern River would not use biocides, chemical de-watering agents, or other potentially toxic water additives for any water withdrawals (hydrostatic testing or dust abatement), and discharges would be in accordance with applicable National Pollutant Discharge Elimination System permit requirements.

The pipeline would cross approximately 2,027 feet of land classified as wetlands. No wetlands would be permanently filled; however, 0.1 acre of forested wetland within the maintained pipeline right-of-way would be converted to herbaceous or shrub-scrub wetlands. With strict adherence to its Procedures, Reclamation Plan, and Wetland Remedial Revegetation Plan, impacts on wetlands would be minimized. To further mitigate impacts on wetlands, we recommended that Kern River limit the

construction right-of-way width in the wetland at MP 26.4 to 75 feet unless it is determined at the time of construction that the soils within this wetland are saturated to warrant a wider construction right-of-way.

Vegetation, Wildlife, and Federally Listed Species

The Project would affect three communities of special concern: Great Basin sagebrush, Douglas fir forest, and riparian areas. With the implementation of Kern River's proposed construction and mitigation measures, we have determined that impacts on vegetation can be minimized. Kern River's Reclamation Plan describes measures Kern River would use to return disturbed areas to their pre-construction land use while also minimizing visual impacts. The Reclamation Plan also addresses the vegetation conditions found in the higher elevation segments of the proposed Project and includes Kern River's experience from previous construction and expansion projects in the vicinity. Where applicable, Kern River would revise the Reclamation Plan to incorporate new technical standards or information in consultation with the BLM, the USFS, and the Natural Resources Conservation Service. Impacts on vegetation would range from short term to long term depending on vegetation type impacted and amount of time to reach pre-construction condition.

The Project would affect wildlife and wildlife habitats along the proposed route; these impacts could be temporary, short term, long term, or permanent depending on the habitat type impacted. The Project would minimize impacts on migratory birds by maximizing collocation which would reduce habitat fragmentation and by conducting clearing and grading activities outside of the breeding season. Implementation of Kern River's Plan and Procedures and timing restrictions would minimize the effects of the proposed Project on wildlife. To further minimize impacts on wildlife, we recommended that Kern River file the results of its raptor and migratory bird surveys along with any buffers and or mitigation measures developed in consultation with the agencies. We also recommended that Kern River conduct any blasting outside of the season of highest use in crucial habitat for big game.

Construction of the proposed waterbody crossings could result in impacts on fisheries from sedimentation and turbidity, habitat alteration, streambank erosion, fuel and chemical spills, water depletions, entrainment or entrapment during water withdrawals or construction crossing operations, blasting, and operational pipeline failure. Kern River would employ dry-ditch crossing methods and implement the mitigation measures included within its Procedures to minimize aquatic resource impacts. Overall, construction impacts on fisheries would be temporary due to the relatively small area in which each waterbody would be affected and the measures that Kern River would follow to minimize impacts on each waterbody during construction.

Based on Kern River's consultation with the U.S. Fish and Wildlife Service (FWS) and our review of existing records, six federally listed threatened or endangered species, or species that are candidates or petitioned for federal listing, are reported to potentially occur in the vicinity of the proposed Project. We have determined that construction and operation of the proposed Project *may affect but would not likely adversely affect* the Utah prairie dog and Ute Ladies'-tresses. The remaining species (greater sage-grouse, yellow-billed cuckoo, pygmy rabbit, and Northern leopard frog) are proposed or candidate species. Known habitat for these species would be crossed by the Project, and individuals could be impacted or lost. We requested that the FWS consider the draft EIS as the Biological Assessment for the proposed Project. In addition to the federally listed, federally petitioned, and federal candidate species, 49 USFS- or state-identified special status species could occur within the vicinity of the Project. We believe that, given the nature of the species occurrence and the measures that would be implemented as part of the proposed Project, impacts on special-status species would be adequately avoided or minimized. We recommended that no construction activities be allowed to commence until all necessary consultation under Section 7 of the Endangered Species Act is completed.

Land Use and Visual Resources

Construction and operation of the Project would result in short- and long-term impacts on agricultural land, forest, and special use areas. Because the majority of the pipeline (71.4 percent) would be collocated with the existing Kern River and/or other pipeline rights-of-way. Following construction, all affected areas outside the aboveground facility sites would be restored and allowed to revert to pre-construction conditions and uses. Kern River would retain the easement for a 50-foot-wide permanent right-of-way along the approximately 28.0 miles of the Project route. Kern River would maintain or mow the permanent right-of-way no more frequently than every 3 years, with the exception of a 10-foot-wide section centered over the pipeline.

Roadless areas, as designated by the USFS, are regulated under the Roadless Area Conservation Act (36 CFR 294), which limits road construction, road reconstruction, and timber harvesting in inventoried roadless areas on National Forest System lands. As proposed, the Project would impact two roadless areas within the UWCNF: the Mueller Park Roadless Area and the Hogsback Roadless Area. A total of approximately 15.7 acres of forested land would be cleared within the Mueller Park Roadless Area for construction of the proposed pipeline. With the implementation of Kern River's Reclamation Plan, approximately 11 acres of forested land would be able to re-grow upon completion of pipeline construction. We recommended that Kern River modify its route to adopt the Mueller Park Variation which would generally utilize previously cleared areas along the existing rights-of-way and eliminate impacts on the Hogsback Roadless Area.

Visual resources along the pipeline route would be affected by the alteration of existing vegetative patterns associated with clearing of the construction and permanent pipeline rights-of-way. In order to minimize visual impacts, Kern River proposes a reseeding regimen (in its Reclamation Plan) to return the impacted vegetation to pre-existing conditions. Kern River's Reclamation Plan also allows for selective growth of forested species within the permanent right-of-way, excluding the 10-foot-wide area centered over the pipeline, in order to maintain a more natural setting visually. In addition, Kern River is conducting a visual assessment for USFS lands crossed by the proposed Project. Because this assessment will not be completed until the spring of 2010 we recommended that Kern River file its visual assessment before the end of the draft EIS comment period.

The Project would impact numerous trails, parks, the UWCNF, and other public lands. For most of the Project, collocation of the pipeline with existing rights-of-way would help to reduce recreational and visual impacts by decreasing the need for new rights-of-way across these areas. We recommended that Kern River modify its proposed route to adopt the North Salt Lake III Variation to further collocate the proposed loop with the existing Kern River right-of-way along a 1.6 mile segment and avoid impacts to a residence at MP 24.5. Kern River is continuing to consult with the appropriate agencies concerning impacts of crossing public and recreational lands.

Cultural Resources

Cultural resource surveys are complete along the proposed pipeline route. Kern River also has completed cultural resources surveys at the proposed Milford Compressor Station; at pipe yards and staging areas; along Project access roads; and along the approximately 1.4-mile-long electric distribution line for the Milford Compressor Station. Cultural resource surveys identified 25 historic or archaeological sites. Twenty-three of the sites would be avoided; one site would either be avoided or mitigated for; and one site would be mitigated. The review process under Section 106 of the National Historic Preservation Act is on-going. Survey reports are currently under review. We recommended that no construction activities begin until all required surveys are completed, reports and any necessary treatment plans are reviewed, and the appropriate consultations are completed.

Air Quality and Noise

Construction of the Project would result in temporary impacts on air quality during construction and long-term impacts on air quality at the proposed Milford Compressor Station and the existing compressor stations during operation. Because pipeline construction moves through an area quickly, air emissions caused by construction are typically intermittent and short term. Emissions from fugitive dust, construction activities, and open burning would be controlled to the extent required by state and local agencies. We conclude that emissions from construction-related activities would not significantly affect local or regional air quality and would not cause nor contribute to an exceedance of the ambient air quality standards.

Operational emissions resulting from the Project would be associated with the operation of the Coyote Creek, Elberta, and Dry Lake Compressor Station modifications and the new Milford Compressor Station. The modification at the Fillmore Compressor Station would not result in an increase in operating emissions. Kern River would be required to obtain all necessary air quality permits for construction and operation for the stations prior to commencing construction. The new emission sources proposed would not be classified as major sources and we do not anticipate that the compressor station modifications or new compressor station would have any significant impact on regional air quality.

Construction activity and its associated noise levels would vary depending on the phase of construction in progress at any one time. We do not anticipate significant noise impacts associated with construction of the Project. The modeling analyses for each proposed new/modified compressor station incorporated noise reduction measures to achieve the levels presented in this draft EIS. Based on the estimates presented in the acoustical analysis, noise levels would remain below a day-night sound level (L_{dn}) of 55 decibels on the A-weighted scale (dBA) at noise sensitive areas (NSAs). To ensure that the Project achieves this level of noise control, we recommended that Kern River file a noise survey for Milford, Coyote Creek, and Elberta Compressor Stations. If the noise attributable to the operation of any of the compressor stations exceeds an L_{dn} of 55 dBA at any nearby NSA, Kern River would install additional noise controls to meet that level within 1 year of the in-service date. Based on the estimated sound levels and our recommendation, noise levels attributable to operation of the new or modified compressor stations would not result in significant impact on NSAs in the Project area.

ALTERNATIVES CONSIDERED

The No Action and Postponed Action Alternatives were considered for the proposed Apex Expansion Project. While the No Action or Postponed Action Alternatives would eliminate or delay the environmental impacts identified in this draft EIS, U.S. markets would be denied the Project objective of delivering an additional 266 MMcf/d of natural gas from existing points in southwestern Wyoming to Nevada. This denial or delay might result in more expensive and less reliable natural gas supplies for the end users and greater reliance on alternative fossil fuels, such as coal or fuel oil, or both.

A system alternative for the Project would need to be able to transport similar volumes of natural gas from southwestern Wyoming to Nevada. We are not aware of any existing pipeline systems with expansion plans that could meet the purpose and need of the Apex Expansion Project. Similarly, it is anticipated that construction and operational impacts associated with system alternatives involving existing/proposed pipelines in the region would be greater than those of the proposed Project due to the amount of looping and new construction required to connect the systems to the Project origin and terminus. Consequently, no system alternatives were identified that are environmentally preferable to the proposed Project.

We evaluated five major route alternatives to the proposed Project route. Because none of these would offer significant environmental advantages over the proposed Project route, we eliminated them from further consideration. Lastly, we considered route variations to resolve or reduce construction impacts on localized, specific resources. Each route variation considered was compared to the corresponding segment of the proposed Project route to determine whether potential environmental benefits would be afforded. The Mueller Park and North Salt Lake III Route Variations were found to offer environmental advantages and we recommended that these variations be incorporated into the proposed Project.

We also evaluated alternative locations for the proposed Milford Compressor Station to determine whether environmental impacts would be reduced or mitigated by use of alternative facility sites. We did not identify any alternative sites for the proposed Milford Compressor Station that would offer a significant environmental advantage to the proposed site.

MAJOR CONCLUSIONS

As part of our review, we developed measures that we believe would appropriately and reasonably avoid, minimize, or mitigate environmental impacts associated with construction and operation of the proposed Apex Expansion Project. We recommend that these measures be attached as conditions to any authorization issued by the Commission.

We conclude that, if the proposed Project is approved and is constructed and operated in accordance with Kern River's proposed minimization and mitigation measures and our recommended mitigation measures, the proposed facilities would result in some adverse environmental impacts. However, these impacts would be reduced to less-than-significant levels with the implementation of Kern River's proposed mitigation and the additional measures we recommend in the draft EIS. Our conclusions are supported by the following:

- the proposed Project would be collocated with existing utility rights-of-way for approximately 20 miles, or about 71.4 percent of the route;
- Kern River would obtain all necessary federal, state, and local permits, approvals, and authorizations prior to commencement of construction;
- Kern River would implement its Plan and Procedures, as well as additional Project-specific construction and restoration plans, each of which would reduce and mitigate impacts on natural resources during construction and operation of the proposed Project;
- all waterbodies would be crossed via dry crossing methods if water is present at the time of construction; and
- Kern River would complete all necessary surveys for sensitive species and cultural resources, and the appropriate consultations with the FWS and the State Historic Preservation Officer would be completed before initiating construction.

1.0 INTRODUCTION

On November 2, 2009, Kern River Gas Transmission Company (Kern River) filed an application with the Federal Energy Regulatory Commission (FERC or the Commission) in Docket Number CP10-14-000 for the Apex Expansion Project (Project) under Section 7(c) of the Natural Gas Act (NGA), as amended, and Parts 157 and 284 of the Commission's regulations. The application was noticed in the Federal Register on November 16, 2009. Kern River is seeking a Certificate of Public Convenience and Necessity (Certificate) for its Apex Expansion Project, which would include construction and operation of a pipeline, compressor station, modifications to existing compressor stations, and ancillary facilities in Utah, Wyoming, and Nevada.

The environmental staff of the FERC prepared this draft environmental impact statement (EIS) to assess the environmental impact associated with the construction and operation of the facilities proposed by Kern River in accordance with the requirements of the National Environmental Policy Act (NEPA). The U.S. Department of Interior, Bureau of Land Management (BLM), and the U.S. Department of Agriculture, U.S. Forest Service (USFS) are participating as cooperating agencies¹ in the preparation of the EIS because the Apex Expansion Project would cross federally administered lands under their jurisdiction. The U.S. Department of the Interior, Bureau of Reclamation (Reclamation) is also a cooperating agency because one of the alternatives to the proposed Project would cross land under its jurisdiction.

The proposed Project would consist of approximately 28.0 miles of new 36-inch-diameter natural gas pipeline loop in Morgan, Davis, and Salt Lake Counties, Utah (the Wasatch Loop) and the following major associated facilities and upgrades:

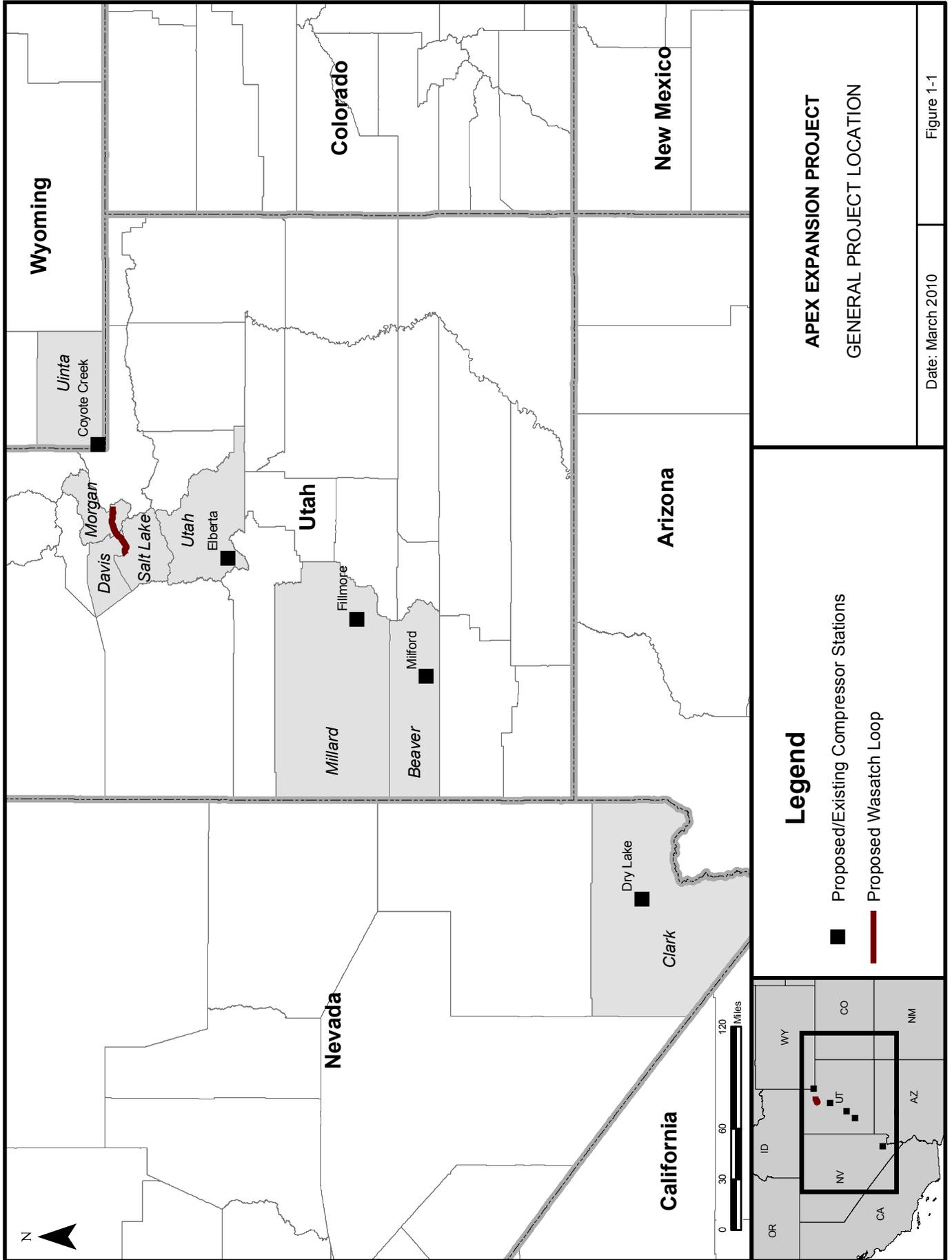
- a new compressor station in Beaver County, Utah (Milford Compressor Station);
- replacement of an existing compressor unit at the Fillmore Compressor Station in Millard County, Utah;
- installation of additional compression at the Coyote Creek Compressor Station in Uinta County, Wyoming; the Elberta Compressor Station in Utah County, Utah; and the Dry Lake Compressor Station in Clark County, Nevada;
- three pig launchers and two pig receivers; and
- six new mainline valves (MLVs).

Figure 1-1 depicts the locations of the proposed facilities. The proposed Project would allow Kern River to transport an additional 266 million cubic feet per day (MMcf/d) of natural gas on its pipeline system from existing receipt connections in southwestern Wyoming to existing delivery connections in southern Nevada.²

More detailed descriptions of the proposed facilities are presented in section 2.0.

¹ A cooperating agency is an agency that has jurisdiction over all or part of the Project area and must make a decision on the proposed Project, and/or an agency that provides special expertise.

² Kern River's existing pipeline system extends from the gas-producing fields in southwestern Wyoming to Bakersfield, California.



1.1 PROJECT PURPOSE AND NEED

1.1.1 Project Purpose

Kern River's stated purpose of the proposed Project is to expand the Kern River Gas Transmission System to enhance its overall flexibility and reliability, and to provide transportation service for natural gas from existing receipt points in southwestern Wyoming to existing delivery points near electrical generation plants in southern Nevada. The Kern River Gas Transmission System transports about 1.7 billion cubic feet per day (Bcf/d) of natural gas from Wyoming to the Las Vegas area and then southwest as far as San Bernardino, California. This system provides over 80 percent of the gas consumed in the Las Vegas area (EIA 2009a). The majority of the original Kern River Gas Transmission System has been looped to increase transport capacity, resulting in a two-pipeline delivery system along most of the pipeline route. However, there is not a loop in the system through the Wasatch Mountains in Utah and also near the Las Vegas area in Nevada. The single pipeline of the Kern River system through these areas limits the volume of gas that can be transported to the Las Vegas and southern California markets. Kern River has proposed to eliminate this bottleneck by constructing and operating the proposed Project in the Wasatch Mountains segment of its system and adding compression to the existing system. In addition, Kern River states that the volume of gas that can currently be transported is fully subscribed under firm, long-term contracts.

1.1.2 Project Need

The transportation of natural gas to the Las Vegas area is currently constrained by available pipeline capacity. Kern River states that NV Energy³ expressed a need for natural gas supplies to delivery points connected to its generation facilities in southern Nevada. In the proposed Apex Expansion Project, Kern River would provide NV Energy with up to 390 MMcf/d by "backhauling" gas (essentially reversing the flow of gas) from the existing Kern River connection with the Mojave Pipeline, located at Daggett, California, about 9 miles east of Barstow, California. The Apex Expansion Project would provide an additional 266 MMcf/d in the existing Kern River Gas Transmission System and meet the additional needs of NV Energy in southern Nevada.

On August 25, 2008, Kern River and NV Energy signed a Precedent Agreement⁴ for long-term transportation service of the gas. As a result, the increase in volume that would result from implementation of the Apex Expansion Project is fully subscribed.

1.2 PURPOSE AND SCOPE OF THE EIS

This draft EIS has been prepared for public review and comment. The principal purposes in preparing this EIS were to:

- identify and assess potential impacts on the natural and human environment that would result from implementation of the proposed Project;
- describe and evaluate reasonable alternatives to the proposed Project that would avoid or minimize adverse effects to the environment;

³ NV Energy was formed in July 1999 by the merger of Nevada Power Company, Sierra Pacific Power, and Sierra Pacific Resources.

⁴ A Precedent Agreement is an agreement between parties which identifies a set of conditions that must be met prior to the execution of a contract.

- identify and recommend specific mitigation measures, as necessary, to minimize environmental impacts; and
- encourage and facilitate involvement by the public and interested agencies in the environmental review process.

The environmental topics addressed in this EIS include geology; soils; groundwater and surface water; wetlands; vegetation; fish and wildlife; threatened, endangered, and other special-status species; land use, including agricultural resources, and recreation; visual resources; socioeconomics; cultural resources; air quality and noise; reliability and safety; and cumulative impacts. This EIS describes the affected environment as it currently exists, addresses the environmental consequences of the proposed Project, and compares the Project's potential impacts to those of the alternatives. The EIS also presents our conclusions and recommended mitigation measures. All stakeholders, including the public and federal, state, and local entities, are strongly encouraged to provide comments on this draft EIS for consideration by the FERC prior to issuing a final EIS. After a final EIS is issued, the Commission will determine whether or not the proposed Project should be approved.

1.2.1 Federal Energy Regulatory Commission

The FERC is the federal agency responsible for evaluating applications filed for authorization to construct and operate interstate natural gas pipeline facilities. Certificates are issued under Section 7(c) of the NGA and Part 157 of the Commission's regulations if the Commission determines that the projects are required by the public convenience and necessity. As a part of that determination, the FERC staff conducts an environmental review in accordance with NEPA. We prepared this EIS to assess the potential environmental impacts associated with the proposed Project in compliance with the requirements of NEPA, the Council on Environmental Quality (CEQ) regulations for implementing NEPA in Title 40 Code of Federal Regulations (CFR) Parts 1500–1508 (40 CFR 1500–1508), and the FERC regulations implementing NEPA (18 CFR 380).

The Commission will consider the findings of the final EIS as well as non-environmental issues in its review of Kern River's Application to determine whether or not a Certificate should be issued for the proposed Apex Expansion Project. A Certificate will be granted only if the FERC finds that the evidence produced on financing, rates, market demand, gas supply, existing facilities and service, environmental impacts, long-term feasibility, and other issues demonstrates that the proposed Project is required by the public convenience and necessity. Environmental impact assessments and mitigation development are important factors in the overall public interest determination.

1.2.2 U.S. Department of the Interior, Bureau of Land Management and Bureau of Reclamation; and U.S. Department of Agriculture, Forest Service

As noted above, the BLM, the USFS, and the Reclamation served as cooperating agencies during preparation of the EIS because the proposed Project or an alternative to the proposed Project would cross federal lands and resources for which those agencies have jurisdiction. In addition, the cooperating agencies have special expertise with respect to environmental issues and impacts associated with the proposed Project and alternatives to the proposed Project. The BLM and the USFS may adopt this EIS in accordance with 40 CFR 1506.3 to meet their NEPA responsibilities in considering Kern River's applications for use of lands administered by those agencies, or they may elect to conduct their own environmental analysis to meet their responsibilities under NEPA. If an alternative to the proposed Project that crosses land under the jurisdiction of Reclamation were selected as the preferred route, Reclamation could also use the EIS in accordance with 40 CFR 1506.3 to meet its NEPA responsibilities. The roles of these agencies in the Project review process are described in further detail below.

BLM is the federal agency responsible for issuing right-of-way grants for natural gas pipelines across federal lands under the jurisdiction of the BLM or under the jurisdiction of two or more federal agencies. Right-of-way grants are issued under Section 28 of the Mineral Leasing Act (MLA) and 43 CFR and 2880 of the BLM's regulations to any qualified individual, business, or government entity. BLM is reviewing Kern River's application for an amendment to the original Kern River Right-of-Way Grant to include both the proposed pipeline and the proposed new Milford Compressor Station site. Issuance of a Right-of-Way Grant for the proposed Project would require amendments to BLM Resource Management Plans (RMPs) where the RMPs are inconsistent with Project implementation. An RMP is a land use plan that describes broad multiple-use direction for managing public lands. RMPs are intended to guide management activities for 15 to 20 years. During that timeframe, however, changes in land use requirements, resource concerns, and federal policies may necessitate amending the RMP to adapt to new conditions. This may be the case for the proposed Apex Expansion Project.

BLM would not issue a Right-of-Way Grant until the heads of the BLM and the USFS have concurred with respect to use of lands under their respective jurisdictions. Where concurrence is not reached, the Secretary of the Interior, after consultation with the heads of the BLM and the USFS, would decide whether or not to issue a Right-of-Way Grant. BLM will consider the findings of the final EIS in its review of Kern River's application to determine whether a Right-of-Way Grant should be issued for the proposed Project. BLM will prepare a Record of Decision (ROD) to document its decision to either approve or deny a grant. If approved, the ROD would specify environmental protection measures to be implemented on federal lands, as well as indicate that USFS and, if appropriate, Reclamation concurred on the findings and environmental protection measures presented in the ROD.

The USFS is the federal agency responsible for approving use of National Forest system lands and amending Land and Resource Management Plans (LRMPs) required under the National Forest Management Act. If BLM issues a Right-of-Way Grant for USFS-managed land, the USFS would be required to amend its LRMP for the Uinta-Wasatch-Cache National Forest (UWCNF).⁵ The BLM ROD would be based on the USFS decision to amend the LRMP to allow the proposed Project. Subgoal 12d of the UWCNF LRMP requires pipelines to follow designated utility corridors. As proposed, the Apex Expansion Project would not follow a designated utility corridor for its entire length through the National Forest; therefore, the USFS will use this EIS to consider amending the UWCNF LRMP to allow the pipeline to cross the forest as proposed. The USFS is reviewing Kern River's proposal and an amendment to the LRMP for the portions of the proposed Project that would be in the UWCNF. The proposed amendment is discussed in greater detail in section 1.6.

Reclamation is the federal agency responsible for issuing consent documents for easement encroachments under Section 10 of the Reclamation Project Act. If the Bountiful Boulevard Route Alternative were selected (as discussed in section 3.4.4 of this EIS), the proposed Project would cross land under the authority of Reclamation, and Reclamation would use information presented in the EIS as a part of its NEPA environmental review process.

1.3 PUBLIC REVIEW AND COMMENT

On February 27, 2009, Kern River filed a request with the FERC to implement the Commission's pre-filing process for the proposed Project. The purpose of the pre-filing process is to encourage early involvement of interested stakeholders, facilitate interagency cooperation, and identify and resolve issues before an application is filed with the FERC. On March 13, 2009, the FERC granted Kern River's request and established pre-filing Docket Number (PF09-7-000) to place information filed by Kern River,

⁵ The USFS has separate LRMPs for the Uinta National Forest and the Wasatch-Cache National Forest. These plans are not yet merged.

information and comments filed by stakeholders, and documents issued by the FERC into the public record. As cooperating agencies, the BLM, USFS, and Reclamation agreed to conduct environmental reviews of the proposed Project in conjunction with the FERC pre-filing process.

In January 2009, Kern River implemented a public outreach and consultation plan designed to (1) share Project information; (2) seek input regarding Project alternatives and construction constraints or methods; and (3) provide stakeholders and other interested parties with opportunities to provide comments about the Project. As a part of the plan, Kern River communicated with landowners; elected officials and staff (municipal, county, state, and federal); community leaders; environmental agencies and non-governmental organizations; agricultural, businesses, and civic organizations; and other interested stakeholders. Kern River conducted more than 190 consultation meetings with public officials and other interested stakeholders.

From March 23 through March 27, 2009, Kern River held three public open houses and two stakeholder meetings in communities in the vicinity of the proposed Apex Expansion Project. On March 4, 2009, Kern River mailed meeting invitations and Project information to more than 2,100 stakeholders, including all affected and adjacent landowners; regulatory and resource agency staff; elected officials and government staff; and other interested parties. In addition, Kern River placed notifications of the open houses in selected weekly and daily newspapers near the open house locations from March 9 through 13 and from March 16 through 20, 2009. The FERC and the USFS staff participated in the open house meetings and provided information regarding the environmental review process.

As a part of its public participation plan, Kern River provided a toll-free number for landowners and other stakeholders to obtain information about the proposed Project, and provided a Project website that includes a description and maps of the proposed Project, information on open houses and public meetings, regulatory filings and information, and contact information. In addition, Kern River has used direct mail to provide two newsletters to stakeholders with Project information.

On May 15, 2009, the FERC issued its *Notice of Intent to Prepare an Environmental Impact Statement for the Apex Expansion Project, Request for Comments on Environmental Issues and Notice of Joint Public Scoping Meetings (NOI)*. The NOI was published in the Federal Register on May 26, 2009. The NOI explained that the FERC would be assessing potential environmental impacts and issues associated with the proposed Apex Expansion Project. It also explained the pre-filing process, generally described the proposed Project, announced the time and location of public scoping meetings, requested written comments from the public, and requested that other federal, state, and local agencies with jurisdiction and/or special expertise formally cooperate with the FERC in the preparation of the EIS. The notice was sent to 2,584 parties, including representatives of federal, state, and local agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners; local libraries, newspapers, and television and radio stations; property owners within 0.25 mile of the proposed pipeline route; and other stakeholders in the region who had indicated an interest in the proposed Project. Issuance of the NOI opened the public scoping period and established a closing date of June 15, 2009, for receiving scoping comments. However, all relevant comments we received prior to final production of the draft EIS were considered in the EIS. Forty comment letters were received during the scoping process.

During the pre-filing period, the FERC, in close cooperation with the BLM, the USFS, and the Reclamation, conducted two public scoping meetings in the vicinity of the proposed Project route in Utah to obtain comments on environmental issues for the proposed Project. The first scoping meeting was at Bountiful High School on June 9, 2009; the second was at the Morgan County Courthouse Auditorium on June 10, 2009.

These scoping meetings provided an opportunity for the public to learn more about the proposed Project and to provide comments on environmental issues to be addressed in this EIS. Approximately 85 people attended the scoping meetings. Transcripts of the scoping meetings have been entered into the Project docket. The transcripts of the scoping meetings, as well as the 40 written comment letters received as part of the scoping process, are part of the public record for the proposed Project and are available for viewing on the FERC Internet website (www.ferc.gov).⁶

The FERC also conducted agency consultations and participated in interagency meetings to identify issues that should be addressed in this EIS. The meetings provided a forum for the exchange of information and supported the FERC's responsibility to coordinate all federal authorizations and associated environmental review for the proposed Project. On March 25, 2009, the FERC staff met with representatives from the USFS, FWS, the Utah Department of Environmental Quality (UDEQ), and the Utah Department of Natural Resources (UDNR). On June 9, 2009, the FERC staff also met with Bountiful city officials, including the mayor, city manager, and city council members to discuss the Bountiful Boulevard Alternative (discussed in section 3.4.4 of this EIS).

This EIS addresses all substantive scoping comments submitted to the FERC or made at the scoping meetings and interagency coordination meetings. Table 1.3-1 lists the environmental issues and concerns identified by the commentors during the scoping process and identifies the EIS section where the issue is addressed.

On November 16, 2009, the FERC issued a *Notice of Application* for the proposed Project. The notice announced that Kern River's application had been filed with the Commission on November 2, 2009, and that the pre-filing process had ended. The notice also opened the period for intervention.

This draft EIS was mailed to federal, state, and local government agencies; elected officials; Native American tribes; local libraries and newspapers; intervenors to the FERC's proceeding; landowners; and other interested parties. The distribution list for the draft EIS is presented in Appendix A. The draft EIS was also submitted to the U.S Environmental Protection Agency (EPA) for issuing its formal public Notice of Availability (NOA) in the Federal Register. The public has 45 days after the date of EPA's notice in the Federal Register to review and comment on the draft EIS in written comments and at the public comment meetings to be held in the Project area. The dates and locations of those public meetings are listed in the letter in the front of this draft EIS and in the NOA. All timely comments received on the draft EIS related to environmental issues will be addressed in the final EIS.

⁶ Public meeting transcripts are available for viewing on the FERC Internet website (<http://www.ferc.gov>). Using the "eLibrary" link, select "general Search" from the eLibrary menu, enter the selected date range and "Docket No." excluding the last three digits (i.e., CP10-14), and follow the instructions. For assistance, call 1-866-208-3676, or e-mail FERCOnlineSupport@ferc.gov. Because scoping was conducted during the pre-filing review (before Kern River filed a formal application with the FERC on November 2, 2009), PF09-7 must be used in the Docket No. field to view the public scoping transcripts.

TABLE 1.3-1
Key Environmental Concerns Identified during the Scoping Process
for the Proposed Apex Expansion Project

Issue/Comment	EIS Section Addressing Comment
General	
Design and location of the pipeline, land requirements	2.1.1, 2.2.1, 2.2.2
Easement rights and restrictions, compensation for land use and damage to property	4.8.2
Future pipelines and other utilities	4.13
Impacts on traffic patterns during pipeline construction and maintenance	4.9.4
Purpose and need for the Project	1.1
Use of ATVs on the proposed right-of-way	4.8.3
Cooperation and considerations to landowners	1.3
Geology	
Damage to geoantiquities and geologic and geomorphic features in the Bonneville Shoreline Preserve	4.1.1, 4.1.4
Potential for seismic activity or land slides to affect the integrity of the pipeline after construction	4.1.3.1, 4.1.3.2
Impacts from blasting	4.1.3
Potential for construction activities near geologic faults to trigger an earthquake	4.1.3
Soils	
Potential for reduced soil fertility due to pipeline and construction associated wildfires	4.2.1.2
Impacts on soil microbiota and hydrology	4.2
Water Resources	
Effects of construction on waterbodies, groundwater, and springs	2.3.2.2, 4.3.1, 4.3.2
Impacts on wetlands, including adjacent upland buffers	4.3.3
Impacts on river, stream, lake, and riparian areas, including surface water quality	4.3.2
Effects of construction on watersheds and water supply for residential areas	4.3.1.2
Effects of water discharge for hydrostatic testing, including spread of aquatic invasive species	4.3.2.8
Fish, Wildlife, and Vegetation	
Effects of the proposed Project on fish and wildlife and their habitat, including greater sage-grouse, pygmy rabbit, spotted frog, boreal toad, least chub, Bonneville cutthroat trout, raptors, passerines, migratory birds, and big game species	4.4, 4.5, 4.6, 4.7
Potential for invasion or spread of undesirable vegetation and noxious weeds during and after construction	4.4.5
Revegetative efforts should include planting replacement native trees (e.g., white fir, sawtooth maple, chokecherry) and allow colonization of many herbaceous species	4.4.5

**TABLE 1.3-1 (continued)
Key Environmental Concerns Identified during the Scoping Process
for the Proposed Apex Expansion Project**

Issue/Comment	EIS Section Addressing Comment
Threatened and Endangered Species	
Potential for impacts on federally listed or proposed threatened or endangered species or their critical habitat	4.7
Land Use, Recreation and Special Interest Areas, and Visual Resources	
Potential impacts on the trails used for recreation (e.g., Bonneville Shoreline Trail and Mueller Park Trail)	4.8.3
Disturbance of visual resources during construction and by the permanent right-of-way	4.8.4
Impacts on existing and proposed conservation easements (e.g., Bonneville Shoreline Preserve) and potential for future preclusion from conservation easements	4.8.3
Impacts on roadless areas	3.5, 4.8.3.2
Impacts on recreation (e.g., hunting and hiking)	4.8.3
Impacts on existing residences and future development	4.8.2.3
Socioeconomics	
Potential effects of construction workforce demands on public services including schools, roads, and waste and wastewater handling facilities, and temporary housing	4.9.3
Decline in property values for residential areas near the proposed action	4.9.5
Impacts on public schools as a result of potential loss of tax revenues due to decreased property values	4.9.3, 4.9.5, 4.9.6
Cost of relocating and maintaining existing utility infrastructure	4.9.3
Cultural Resources	
Effects to known cultural resources including the improvements made by the Civilian Conservation Corps	4.10
Potential impacts on historic trails	4.10
Air Quality and Noise	
Effects of the proposed Project on air quality and noise during construction from operation of construction equipment and after construction from operation of the compressor stations	4.11.1.3, 4.11.1.4, 4.11.2.3, 4.11.2.4
Potential for nuisance fugitive dust from construction and dust suppression methods	4.11.1.3
Reliability and Safety	
Hazards associated with living near a natural gas pipeline and the potential for natural gas leaks and explosions	4.12.2, 4.12.3
Safety for pipeline personnel, including helicopter operators	4.12.1
Potential for restricted access to residential areas for emergency response vehicles and residents as well as road hazards during pipeline construction and maintenance	4.12.2
Potential hazards to natural gas pipelines from wildfires, and potential for construction to start a wildfire	4.12.1, 4.12.4

TABLE 1.3-1 (continued)
Key Environmental Concerns Identified during the Scoping Process
for the Proposed Apex Expansion Project

Issue/Comment	EIS Section Addressing Comment
Alternatives	
Follow the existing pipeline right-of-way and remain close to the current pipeline to minimize right-of-way expansion	3.0
Shorten the proposed route to avoid infringing on private property and to use federal land available for the pipeline easement	3.0
Modify Alternative E to connect from south of East Canyon to the Meridian Peak utility corridor through private and USFS administered lands	3.4.5
Seek alternative routes further north and south of the proposed Alternative	3.4
Utilize the proposed Route Alternative and not the Bountiful Boulevard Route Alternative	3.4.4
Utilize an alternative route across the upper portion of Utah into Nevada, then down to the final destination of the pipeline	3.0
Utilize undeveloped residential areas instead of the Bonneville Shoreline Preserve area	3.5
Adopt minor variations to avoid specific features or resources	3.5
Incorporate private landowner input to alignment	3.5
Cumulative Impacts	
Potential for cumulative impacts from siting numerous utilities within the same corridor	4.13
Potential for new corridors created by the proposed pipeline to encourage development of future utility lines in the same corridor and result in cumulative impacts	4.13
Potential for increased greenhouse gas emissions associated with construction from the natural gas transported in the pipeline to contribute toward global warming	4.13.13

1.4 NON-JURISDICTIONAL FACILITIES

Under Section 7 of the NGA, the FERC is required to consider, as part of its decision to authorize interstate natural gas facilities, all factors bearing on the public convenience and necessity. Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of the Commission. These “non-jurisdictional” facilities may be integral to the need for the proposed facilities (e.g., a power plant at the end of a FERC-jurisdictional pipeline), or they may be merely associated as minor, non-integral components of the jurisdictional facilities that would be constructed and operated as a result of Certification of the proposed facilities.

The FERC has adopted a four-factor procedure to determine whether there is sufficient federal control and responsibility over a project as a whole to warrant environmental analysis of portions of the project outside the Commission’s direct sphere of responsibility. These factors are:

- whether the regulated activity comprises “merely a link” in a corridor type project (e.g., a transportation or utility transmission project);

- whether there are aspects of the non-jurisdictional facility in the immediate vicinity of the regulated activity which uniquely determine the location and configuration of the regulated activity;
- the extent to which the entire project will be within the FERC's jurisdiction; and
- the extent of cumulative federal control and responsibility.

Two non-jurisdictional facilities have been identified in association with the Project: an addition to an existing electrical generation plant, and an approximately 1.4-mile-long electrical distribution line to the proposed Milford Compressor Station (PacifiCorp electrical distribution line).

NV Energy is currently constructing a new, natural gas-fired, 500-megawatt (MW) combined-cycle electrical generation unit at its existing Harry Allen Plant, approximately 25 miles north of Las Vegas, in Clark County, Nevada. The Apex Expansion Project would increase the throughput of the Kern River Gas Transmission System and allow Kern River to provide natural gas transportation to the plant through the existing interconnection with NV Energy. The new unit would require construction of a 500-kilovolt (kV) interconnection at the plant and approximately 0.5 mile of 500-kV transmission line from the plant to NV Energy's existing transmission system. The electrical transmission line would be reviewed by the Public Utilities Commission of Nevada as required by Nevada's Utility Environmental Protection Act. If the transmission line crosses BLM or other federal lands, or if the project results in impacts on jurisdictional wetlands or streams, federal approvals would be required and the project will be reviewed under NEPA by the agencies with jurisdiction. The transmission line associated with the plant will also be subject to local permit requirements.

The new generation unit is currently under construction. After applying the four-factor procedure to the facilities proposed by NV Energy, we determined that the FERC's control and responsibility is not sufficient to extend our environmental review to include the non-jurisdictional generation unit or NV Energy's electric facilities for the reasons listed below:

- First, Kern River's Project is clearly a link in a corridor type project. The Project would supply natural gas from western suppliers to the respective power plant at an existing interconnection.
- As to the second factor, there are no aspects of the non-jurisdictional facilities that uniquely determine the location and configuration of the Project. Kern River plans to provide natural gas to NV Energy at an existing interconnection, and no aspect of the non-jurisdictional facilities impact the location of Kern River's proposed facilities.
- In consideration of the third factor, none of the environmental reviews for the power plant addition activities or the electric power supplier facilities are within the FERC's jurisdiction.
- The fourth factor, the extent of cumulative federal control and responsibility over the non-jurisdictional facilities, is minimal. The new power plant has already undergone a NEPA review by the BLM (supplemental EIS issued November 2009) and is currently under construction.

To provide electrical power to the proposed Milford Compressor Station, PacifiCorp would build an approximately 1.4-mile-long 7.2 kV electrical distribution line from an existing 46-kV electrical sub-transmission line. The proposed line would be supported on single wood pole (raptor-safe) type structures. This electrical distribution line would be built at the request of Kern River and would be for the sole use of the proposed Milford Compressor Station. Although the environmental review for the non-jurisdictional facility is not within the FERC's jurisdiction, the new electrical distribution line would cross land managed by the BLM and require a Right-of-Way Grant from the BLM. As a result, the BLM has requested that this EIS also include the NEPA review of the electrical distribution line. A separate

right-of-way grant would be issued pursuant to Title V of the Federal Land Policy and Management Act for the electrical distribution line. Applying the four-factor analysis, we have determined that the cumulative federal control regarding this non-jurisdictional facility warrants that our environmental review include the electrical distribution line. Therefore, we have included a summary of the environmental impacts of the electrical distribution line in each resource section. In addition, the electrical distribution line would also be under the jurisdiction of the Utah Public Service Commission and subject to local permitting requirements.

1.5 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS

The FERC, the BLM, and the USFS are required to comply with Section 7 of the Endangered Species Act of 1973 (ESA), the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), Section 106 of the National Historic Preservation Act of 1966 (NHPA), the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and Section 307 of the Coastal Zone Management Act of 1972 (CZMA), where applicable. The Project would not be within marine environments or designated coastal zones, nor would it affect anadromous fish species;⁷ therefore, the reviews under the Magnuson-Stevens Act and CZMA do not apply to the Apex Expansion Project. The requirements for compliance with the applicable acts are presented below.

In addition, there are federal permits and approval authority required for the proposed Project that are outside of the FERC's jurisdiction. Those include compliance with the Clean Water Act (CWA) and the Clean Air Act (CAA). Further, the Energy Policy Act of 2005 (EPAct 2005) authorizes the Commission to establish a schedule for all federal authorizations and to maintain a consolidated record of decisions for judicial review. Each of these statutes has been taken into account in the preparation of this EIS.

Section 7 of the ESA, as amended, states that any project authorized, funded, or conducted by any federal agency (such as, the FERC) should not "...jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined...to be critical..." (16 United States Code [USC] Section 1536[a][2][1988]). The FERC, or Kern River as a non-federal party, is required to consult with the FWS to determine whether any federally listed or proposed threatened or endangered species or their designated critical habitats occur in the vicinity of the proposed Project. If, upon review of existing data, it is determined that species or habitats may be affected by the proposed Project, the FERC is required to initiate informal consultation with FWS. If species or habitats would be affected, the FERC is required to prepare a Biological Assessment (BA) to identify the nature and extent of adverse impacts and to recommend measures that would avoid the species and/or habitats or would reduce potential impacts to acceptable levels. However, if the FERC determines that no federally listed or proposed endangered or threatened species or their designated critical habitats would be affected by the proposed Project, no further action is necessary under the ESA. Further information on potential impacts on federally listed species is presented in section 4.7 of this EIS.

The MBTA implements various treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Birds protected under the act include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows, and others, including their body parts (e.g., feathers or plumes), nests, and eggs. The MBTA makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; possess, offer to or sell, barter, purchase, deliver, or cause to be shipped, exported,

⁷ Anadromous fish are fish that migrate up rivers from the ocean to spawn in fresh waters.

imported, transported, carried, or received any migratory bird, part, nest, egg or product, manufactured or not. This EIS discusses compliance with the MBTA in section 4.5.4.

The BGEPA prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald or golden eagle or their body parts, nests, chicks, or eggs, which includes collection, molestation, disturbance, or killing. The BGEPA protections include provisions not included in the MBTA, such as the protection of unoccupied nests and the definition of take that includes the prohibition of disturbing eagles. The BGEPA includes limited exceptions to its prohibitions through a permitting process, including exceptions to take golden eagle nests that interfere with resource development or recovery operations. Compliance with the BGEPA is addressed in section 4.5.4 of this EIS.

Section 106 of the NHPA, as amended, requires the FERC to take into account the effects of its undertakings on properties listed in or eligible for listing in the National Register of Historic Places (NRHP), including prehistoric or historic sites, districts, buildings, structures, objects, or properties of traditional religious or cultural importance. The NHPA also requires the FERC to afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking. In accordance with ACHP procedures, the FERC, as the lead agency, is required to consult with cooperating agencies and the appropriate State Historic Preservation Office (SHPO) regarding the NRHP eligibility of cultural resources and the potential effects of the proposed undertaking on those NRHP-listed or NRHP-eligible cultural resources. The FERC has requested that Kern River, as a non-federal party, assist in meeting the FERC's obligation under Section 106 by preparing the necessary information and analyses, as required by the ACHP procedures in 36 CFR 800. The status of this review is presented in section 4.10 of this EIS.

Kern River would be required to comply with Sections 401, 402, and 404 of the CWA. The EPA has delegated water quality certification (Section 401) and National Pollutant Discharge Elimination System (NPDES) permitting authority (Section 402) to the jurisdiction of agencies in each of the states where Project facilities are proposed to be located. The EPA may assume this authority if a state program is not functioning adequately, or at the request of a state. Water used for hydrostatic testing that results in a point-source discharge into waterbodies requires an NPDES permit issued by each state. Water quality and applicable regulations are addressed in section 4.3 of this EIS.

The U.S. Army Corps of Engineers (COE) has responsibility for determining compliance with the regulatory requirements of Section 404 of the CWA. EPA also independently reviews Section 404 wetland dredge-and-fill applications for the COE and has Section 404(c) veto power for wetland permits issued by the COE. Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the United States. In addition to the CWA, the COE has responsibilities under Section 10 of the Rivers and Harbors Act of 1899.

The COE may issue an individual permit or a nationwide permit (NWP) for natural gas pipelines that affect wetlands. A NWP is a type of general permit designed to authorize certain activities that have minimal adverse effects to the aquatic environment and generally comply with the related laws cited in 33 CFR 320.3. Kern River is applying for a NWP 12 (Utilities). This NWP would be evaluated for compliance with the Section 404(b)(1) Guidelines, including Subparts C through G. For issuance of a NWP 12, the COE must determine that the discharges authorized by a NWP 12 comply with those guidelines with the inclusion of appropriate and practicable conditions, including mitigation, necessary to minimize adverse effects to affected aquatic ecosystems. Further discussion of wetlands affected by the Project is provided in section 4.3.

Ambient air quality is protected by federal regulations under the CAA. These regulations include compliance under the New Source Performance Standards (NSPS) and requirements for the Prevention of Significant Deterioration (PSD). The EPA has delegated the federal permitting process for the CAA to

each of the states where Project facilities are proposed to be located. Although applications are reviewed by both the states and the EPA, the states would determine the need for an NSPS or a PSD permit. Air quality and applicable regulations are discussed in section 4.11.1 of this EIS.

The major permits, approvals, and consultations required for the proposed Project are identified in table 1.5-1. In addition, Kern River would need to obtain permits from counties and/or municipalities along the route (such as permits for road, highway, and flood channel encroachment and crossings; and temporary use and occupancy permits). Kern River would be responsible for obtaining all permits and approvals to construct and operate the proposed Apex Expansion Project, regardless of whether they appear in this table.

TABLE 1.5-1 Major Permits, Approvals, and Consultations for the Proposed Apex Expansion Project			
Agency	Permit/Approval/Consultation	Agency Action	Status
FEDERAL			
FERC	Certificate of Public Convenience and Necessity under Section 7(c) of the NGA	Determine whether the construction and operation of the natural gas pipeline and associated facilities are in the public interest, and consider issuing a Certificate.	Application for Certificate under review (filed November 2, 2009)
	Prepare EIS under Section 102 of the NEPA and Section 2 of Executive Order 11514	Prepare an EIS to describe the effects of the proposed Project on the environment, plans to mitigate the effects of the proposed Project, and alternatives to the proposed Project.	Draft EIS issued
BLM	Right-of-Way Grant and Temporary Use Permit under Section 28 of the MLA	Consider issuing a right-of-way grant through BLM, USFS, or other federally administered lands for the proposed facilities and consider authorizing temporary work areas during construction.	Consultations initiated in May 2008; application filed April 9, 2009
	Consultation under Section 106 of the NHPA	Comment on the effects of the proposed Project on properties listed or eligible for listing on the NRHP.	Consultations in progress
	Sensitive Species Consultation (BLM Manual Chapter 6840)	Comment on sensitive species on land administered by the BLM.	Consultations in progress
	Cooperating agency for EIS under Section 204 of NEPA	Assist the FERC with preparation of the EIS and use the EIS as part of its NEPA review process for consideration of issuing a Right-of-Way Grant and Temporary Use Permit decision process.	Ongoing

**TABLE 1.5-1 (continued)
Major Permits, Approvals, and Consultations
for the Proposed Apex Expansion Project**

Agency	Permit/Approval/Consultation	Agency Action	Status
FEDERAL (continued)			
FWS	Consultations regarding compliance with Section 7 of the ESA	Consider the FERC's finding of impact on federally listed and proposed species and their critical habitat, and provide Biological Opinion if the action is likely to adversely affect federally listed or proposed species or their critical habitat.	Consultations in progress
	Migratory Bird Consultation under Section 3 of Executive Order 13186	Comment on the proposed Project and its effects to listed migratory birds.	In progress
	Fish and Wildlife Consultation under Section 2 of the Fish and Wildlife Coordination Act	Comment on the impoundment, diversion, channelization, control, or modification of waterbodies for the Project and the effects to fish and wildlife.	In progress
	Consultation on the Right-of-Way Grant and Temporary Use Permit under Section 28 of the MLA	Consider concurring with the right-of-way grant and temporary use permits that would be issued by the BLM.	In progress
U.S. Department of Defense, U.S. Army Corp of Engineers (COE), Utah Regulatory Office	Section 404 of the CWA	Consider issuing an individual permit or authorization under the Nationwide Permit Program for the discharge of dredge or fill material into waters of the United States, including wetlands.	Application under review (submitted November 20, 2010)
USFS	Concurrence for Right-of-Way Grant for Uinta-Wasatch-Cache National Forest	Consider providing concurrence to the BLM to issue the right-of-way grant.	Application under review (submitted March 10, 2009)
	LMRP Amendments under Section 6 of the National Forest Management Act	Consider amending the LRMP for the Uinta-Wasatch-Cache National Forest to allow the proposed Project.	Application under review (submitted November 2, 2009)
	Consultation on the BLM Right-of-Way Grant and Temporary Use Permit under Section 28 of the MLA	Consider concurring with the right-of-way grant and temporary use permits that would be issued by the BLM.	Application under review (submitted November 2, 2009)

**TABLE 1.5-1 (continued)
Major Permits, Approvals, and Consultations
for the Proposed Apex Expansion Project**

Agency	Permit/Approval/Consultation	Agency Action	Status
FEDERAL (continued)			
USFS (continued)	Cooperating agency for EIS under Section 204 of NEPA	Assist the FERC with preparation of the EIS and use the EIS as part of its NEPA review.	Ongoing
Reclamation	Consultation on the Right-of-Way Grant and Temporary Use Permit under Section 28 of the MLA	Consider concurring with the right-of-way grant and temporary use permits that would be issued by the BLM.	N/A at this time
	Consent Document for Easement Encroachment under Section 10 of the Reclamation Project Act	Consider authorizing encroachment on Reclamation-administered easements.	N/A at this time
	Cooperating agency for EIS under Section 204 of NEPA	Assist the FERC with preparation of the EIS and use the EIS as a part of the NEPA review in considering authorizing the Easement Encroachment if the alternative route is selected.	Ongoing
U.S. Department of Transportation (USDOT), Pipeline and Hazardous Materials Administration, Office of Pipeline Safety	Approval of Integrity Management Plan under 49 CFR 192	Review and consider approval of Integrity Management Plan.	Plan to be filed prior to initiation of operation
USDOT, Federal Highway Administration	Encroachment Permit	Consider issuing encroachment permit for crossing federally funded highways that are not in accordance with Utah Accommodation Policy R933.	Application under review (submitted December 30, 2009)
EPA, Region VIII	Section 404 of the CWA	Review Section 404 applications to the COE for dredge-and-fill activities and consider exercising veto power over COE permit.	Application under review (submitted November 20, 2010)
	Section 401 of the CWA	Consider issuance of water use and crossing permits, in conjunction with state agencies.	In progress with EIS review

**TABLE 1.5-1 (continued)
Major Permits, Approvals, and Consultations
for the Proposed Apex Expansion Project**

Agency	Permit/Approval/Consultation	Agency Action	Status
FEDERAL (continued)			
EPA, Region VIII (continued)	Section 402 of the CWA, National Pollutant Discharge Elimination System permit	Review and issue NPDES permit for hydrostatic test water discharge in conjunction with state agencies.	In progress with EIS review
	Stormwater Discharge Permit, CWA	Review and issue stormwater permit for construction activities in conjunction with state agencies.	In progress with EIS review
	Review EIS under Section 309 of the Clean Air Act	Comment on the EIS and consider appealing to the CEQ.	Draft EIS issued and under review
U.S. Department of Treasury, Bureau of Alcohol, Tobacco, and Firearms	Treasury Department Order No. 120-1, Permit to Purchase Explosives for Blasting	Consider issuing an Explosive User Permit for trench blasting.	Application to be submitted August, 2010
ACHP	Consultation under Section 106 of the NHPA	Has opportunity to comment on the undertaking.	As necessary
CEQ	Review EIS under Section 204 of NEPA and Section 3 of Executive Order 11514	Review and mediate interagency disagreements about findings of the EIS, if requested.	Will review EIS after issuance
STATE			
Utah			
Utah Department of Community and Culture, Division of State History, SHPO	Consultation under Section 106 of the NHPA	Comment on the effects of the proposed Project on properties listed or eligible for listing on NRHP.	Report submitted in December 2010
Utah Department of Environmental Quality (UDEQ), Division of Air Quality	Construction Permit under Title I of the CAA	Consider issuing a permit to construct a new source of air emissions associated with the Milford compressor station and compressor station expansions.	Application under review (submitted November 2, 2009)
	Operating Permit under Title V of the CAA	Consider issuing a permit to operate a major source of air emissions associated with the Milford compressor station and compressor station expansions.	Application under review (submitted November 2, 2009)

**TABLE 1.5-1 (continued)
Major Permits, Approvals, and Consultations
for the Proposed Apex Expansion Project**

Agency	Permit/Approval/Consultation	Agency Action	Status
STATE (continued)			
Utah (continued)			
UDEQ, Division of Air Quality (continued)	Dust Control Plan	Consider approval of a Dust Control Plan for construction.	Application to be submitted in 2010
	Notice of Intent I under General Permits UTR100000 and UTG070000	Issue Notice of Intent.	Application under review (submitted November 2, 2009)
UDEQ, Division of Water Quality	Water Quality Certification under Section 401 of the CWA	Consider issuing water quality certification for permits authorized under Sections 402 and 404 of the CWA.	Application under review (submitted November 20, 2009)
	NPDES Storm Water Permit under Section 402 of the CWA	Consider authorizing storm water discharges associated with construction under the General Permit.	Application to be submitted March 2010
	NPDES Waste Water Discharge Permit under Section 402 of the CWA	Consider authorizing hydrostatic test water discharges under the General Permit.	Application to be submitted March 2010
	Groundwater Quality Protection Permit under state statutes	Consider issuing a permit for hydrostatic test water discharges to the ground.	Application under review (submitted December 30, 2009)
	Construction Dewatering Permit	Consider issuing a permit for discharge of intruded water from construction excavation to land or U.S. waters.	Application to be submitted March 2010
	Storm Drain Permit	Consider issuing a permit if compression facilities are proposed.	Application to be submitted in March 2010
UDEQ Division of Drinking Water	Consultation	Consultations regarding potential impacts on drinking water sources.	In progress
Utah Department of Natural Resources (UDNR), Division of Water Rights	Stream Channel Alteration Permit under Section 404 of the CWA and state statutes	Consider issuing a permit for stream channel alteration and the discharge of dredge or fill material into waters of the United States. The State of Utah authorizes activities under Section 404 of the CWA under an agreement with the COE.	Application under review (submitted November 20, 2009)

**TABLE 1.5-1 (continued)
Major Permits, Approvals, and Consultations
for the Proposed Apex Expansion Project**

Agency	Permit/Approval/Consultation	Agency Action	Status
STATE (continued)			
Utah (continued)			
UDNR, Division of Water Rights (continued)	Water Rights Transfer	Consider issuance of a permit for the transfer of water rights for hydrostatic testing.	Application to be submitted April 2010
UDNR, Division of Wildlife Resources, Northern Region	Consultation under 18 CFR 380.12(e)(8)	Comment on the effects of the proposed Project on wildlife, fisheries, vegetation, and state-listed species.	In progress
UDNR, Division of Forestry, Fire and State Lands	Approval of Soil Erosion, Sedimentation Control, and Spill Control Plans	Coordinate with local conservation districts, recommend erosion control measures, and consider approval of plan.	Plans to be submitted February 2010
Utah Department of Transportation	Statewide Utility License Agreement under state statutes (Encroachment Permit)	Consider issuing a license for crossing or sharing state highway rights-of-way.	Application under review (submitted December 30, 2009)
Utah Transit Authority (UTA)	Encroachment permit	Consider issuing a permit for any activities affecting Utah Transit Authority routes.	Application under review (submitted December 30, 2009)
Wyoming			
Department of State Parks and Cultural Resources, SHPO	Consultations under Section 106 of the NHPA	Comment on the effects of the proposed Project on properties listed or eligible for listing on the NRHP.	Complete. Letter dated May 19, 2009; no historic properties would be affected
Wyoming Department of Environmental Quality (WDEQ), Water Quality Division	Wyoming Pollutant Discharge Elimination System (WPDES) General Permit for Temporary Discharge	Consider issuing a General permit for discharge of hydrostatic test water.	Application submitted February 2010
	WPDES General Permit for Stormwater Discharges for Construction Activities	Consider authorizing storm water discharges associated with construction under the General Permit.	Application submitted February 2010
WDEQ, Air Quality Division	Construction Permit under Title I of the CAA	Consider issuing a permit for a new source of air emissions associated with construction of the new compressor.	Application under review (submitted December 1, 2009)

**TABLE 1.5-1 (continued)
Major Permits, Approvals, and Consultations
for the Proposed Apex Expansion Project**

Agency	Permit/Approval/Consultation	Agency Action	Status
STATE (continued)			
Wyoming (continued)			
Wyoming Game and Fish Department	Consultation under 18 CFR 380.12(e)(8)	Comment on the effects of the proposed Project on wildlife, fisheries, vegetation, and state-listed species.	Filed letter with the FERC dated May 7, 2009 stating it had no concerns regarding effects of the proposed Project
Nevada			
Nevada Department of Cultural Affairs, SHPO	Consultation under Section 106 of the NHPA	Comment on the proposed Project and its effects to properties listed on or eligible for listing on the NRHP.	Complete. Letter dated December 9, 2009; no historic properties would be affected
Nevada Department of Conservation and Natural Resources (NDCNR), Division of Environmental Protection (DEP), Bureau of Water Pollution Control	NPDES Storm Water Permit under Section 402 of the CWA (Stormwater General Permit)	Consider authorizing storm water discharges associated with construction under the General Permit.	Application to be submitted February 2010
	NPDES Discharge Permit under Section 402 of the CWA	Consider authorizing hydrostatic test water discharges under the General Permit.	Application to be submitted February 2010
NDCNR, Natural Heritage Program	Consultation under 18 CFR 380.12(e)(8)	Comment on the proposed Project and its effects to wildlife, fisheries, vegetation, and state-listed species.	In progress
LOCAL			
Clark County, Nevada			
Clark County, Department of Air Quality and Environmental Management	Air Quality Permit to Construct and Operate	Consider issuing an amendment to the existing permit to accommodate a new compressor at the Dry Lake Compressor Station.	Application under review (submitted November, 2009)
	Dust Permit	Consider issuing dust permit for construction activities at the compressor station.	Application to be submitted in 2010

**TABLE 1.5-1 (continued)
Major Permits, Approvals, and Consultations
for the Proposed Apex Expansion Project**

Agency	Permit/Approval/Consultation	Agency Action	Status
LOCAL (continued)			
Clark County, Nevada (continued)			
Department of Building Services	Building Permit	Issuance of building permit for upgrades to the existing compressor station.	Application to be submitted March 2010
Beaver County, Utah			
Building Inspection Department	Building Permit	Issuance of a permit for the construction of the Milford Compressor Station.	Application to be submitted March 2010
Davis County, Utah			
Department of Public Works	Source Water Protection Ordinance	None	In progress
	Flood Control Permit	Issuance of flood control permit for stormwater discharge.	In progress
Morgan County, Utah			
Planning and Development Services	Consultation requested	None	In progress
Salt Lake County, Utah			
Public Works—Engineering Division	Flood Control Permit	Issuance of flood control permit for stormwater discharge.	Application to be submitted June 2010
Public Works—Planning and Development Services Division	Grading Permit	Issuance of grading permit.	Application submitted January 2010
Utah County, Utah			
Community Development Building Department	Building Permit	Consider issuing dust permit for construction activities at the Elberta Compressor Station.	Application submitted January 2010
Uinta County, Wyoming			
Community Development Building Department	Building Permit	Consider issuing dust permit for construction activities at the Coyote Creek Compressor Station.	Application submitted January 2010

TABLE 1.5-1 (continued) Major Permits, Approvals, and Consultations for the Proposed Apex Expansion Project			
Agency	Permit/Approval/Consultation	Agency Action	Status
LOCAL (continued)			
Bountiful City, Utah			
	Encroachment Permit for electrical distribution line right-of-way	Issuance of permit for encroachment into the existing Bountiful Power Right-of-Way.	Application to be submitted May 2010
North Salt Lake City, Utah			
	Road Crossing Permit	Issuance of a permit for crossing existing city roads.	Application to be submitted May 2010
Salt Lake City, Utah			
	Road Crossing Permit	Issuance of a permit for crossing existing city roads.	Application to be submitted May 2010
	Utah Pollutant Discharge Elimination System(UPDES) Permit	Proof of issuance of permit by the state of Utah must be provided to Salt Lake City.	Application submitted February 2010

The FERC encourages cooperation between applicants and state and local authorities; however, state and local agencies, through the application of state and local laws, may not prohibit or unreasonably delay the construction or operation of facilities approved by the FERC. Any state or local permits issued with respect to jurisdictional facilities must be consistent with the conditions of any authorization issued by the FERC.⁸

1.6 CONFORMANCE WITH RESOURCE MANAGEMENT PLANS

As described above, the BLM is participating as a cooperating agency in preparation of the EIS and has jurisdiction over lands that would be crossed by the proposed Project. Under Section 28, as amended in Section 185(f), of the MLA of 1920, the BLM has the authority to issue right-of-way grants and temporary use permits for all affected federal lands; those actions would be accomplished in accordance with 43 CFR 2880, the subsequent 2880 Manual, and Handbook 2801-1. Kern River would need to obtain an amendment to its existing Right-of-Way Grant as well as a Temporary Use Permit from the BLM for crossing BLM-managed lands.

As also described above, the Forest Service is also participating as a cooperating agency in preparation of the EIS. This includes ensuring occupancy and use of NFS lands is in accordance with the Wasatch-Cache National Forest Land and Resource Management Plan (LRMP)², and if not amending the LRMP before concurring with the BLM's issuance of a Right-of-Way. Subgoal 12d of the LRMP states

⁸ For example, see *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293 (1988); *National Fuel Gas Supply v. Public Service Commission*, 894 F.2d 571 (2d Cir. 1990); and *Iroquois Gas Transmission System, L.P., et al.*, 52 FERC 61,091 (1990) and 59 FERC 61,094 (1992).

that currently designated utility corridors be used fully for power transmission lines of 66kV or greater and oil and gas pipelines that are 10 inches in diameter or greater. This direction was recently clarified in Amendment #9 to the Wasatch-Cache LRMP to require the use of designated corridors to the extent practical. A portion of the proposed alignment of the Wasatch Loop is not within one of the ten designated utility corridors on the Forest. For construction to occur, the Wasatch-Cache LRMP would not have to be amended; however, analysis has been included to describe why the use of designated corridors is not feasible. The proposed Apex Expansion Project pipeline alignment would not become a designated Forest Plan corridor.

Within the Uinta-Wasatch-Cache National Forest (NF or UWCNF), the proposed Project is inconsistent with management direction in the Wasatch-Cache LRMP. Access roads proposed as part of the Project are not consistent with management direction for Prescription 4.2. This is described in further detail below.

The proposed pipeline alignment is within the North Wasatch Ogden Valley Management Area. The broad management prescriptions assigned to the area where the pipeline, access roads, and staging areas are proposed include areas where different resources are emphasized. The following prescriptions would be affected by the proposed Project:

- Watershed Emphasis (3.1W): Emphasis is on maintaining or improving quality of watershed conditions and aquatic habitats. Watershed function and aquatic habitat values are recognized as important and may require restoration to reach desired conditions. Areas of municipal watershed and public drinking water sources will be managed to maintain or improve soil processes and watershed conditions. A 1-acre staging area is proposed in this prescription.
- Emphasis on Recreation Non-motorized Settings (4.2): These areas provide recreation opportunities in a semi-primitive to modified setting where visitors can obtain various degrees of solitude within a near-natural environment.
- Emphasis on Recreation Motorized Settings (4.4): These areas provide recreation opportunities within a range of semi-primitive to rural settings.
- Emphasis on maintaining or restoring non-forested ecosystem integrity while meeting multiple resource objectives (6.1): Emphasis is on non-forested vegetation properly functioning conditions.

With each of these management prescriptions is an associated set of prescription standards and guidelines that allow, restrict, or prohibit certain activities. Standards are a required course of action and any deviation requires a plan amendment. In the Wasatch-Cache LRMP, guidelines are defined as statements describing a preferred or advisable course of action that is generally expected to be carried out. Deviation from compliance does not require forest plan amendment, but that the rationale for such deviation be documented in the project decision document (USDA 2003 pp.4-36).

Pipeline construction is not specifically addressed though, associated road construction is addressed. The following standards and guidelines are relevant to the Wasatch Loop portion of the Apex Expansion Project:

- (S3.1W) Timber harvest, road construction and new recreation facility development are not allowed;
- (S4.2) Timber harvest and road construction are not allowed;

- (G4.4-1) Timber harvest, vegetation/fuel treatment, road construction, prescribed fire and wildland fire use are allowed to mimic historic conditions, to restore ecosystem functioning, and to protect property in the wildland urban interface, and are designed to be compatible with motorized recreation, but must not detract from the recreation setting over the long-term; and
- (G6.1-3) Road construction, new recreation development, and new trail construction are allowed.

2.0 PROPOSED ACTION

2.1 PROPOSED FACILITIES

The proposed Project would consist of a 28-mile-long pipeline loop, one new compressor station, modifications to four existing compressor stations, and other associated aboveground facilities. Figure 1-1 is an overview map depicting the proposed locations of Project facilities; more detailed maps with the proposed locations of the pipeline route and aboveground facilities are provided in Appendix B.

2.1.1 Pipeline Facilities

Kern River proposes to construct, operate, and maintain approximately 28.0 miles of new 36-inch-diameter interstate natural gas transmission pipeline in Utah (termed the Wasatch Loop). The proposed Wasatch Loop would extend southwest from a connection to the existing Kern River Gas Transmission System pipeline at existing Kern River milepost (KRMP) 96.4 in Morgan County (Wasatch Loop milepost [MP] 0.0), traverse Davis and Salt Lake Counties, and end at a connection to the existing Kern River Gas Transmission System pipeline at KRMP 124.5 (MP 28.0) in Salt Lake County. Figure 2.1.1-1 depicts the proposed route of the Wasatch Loop.

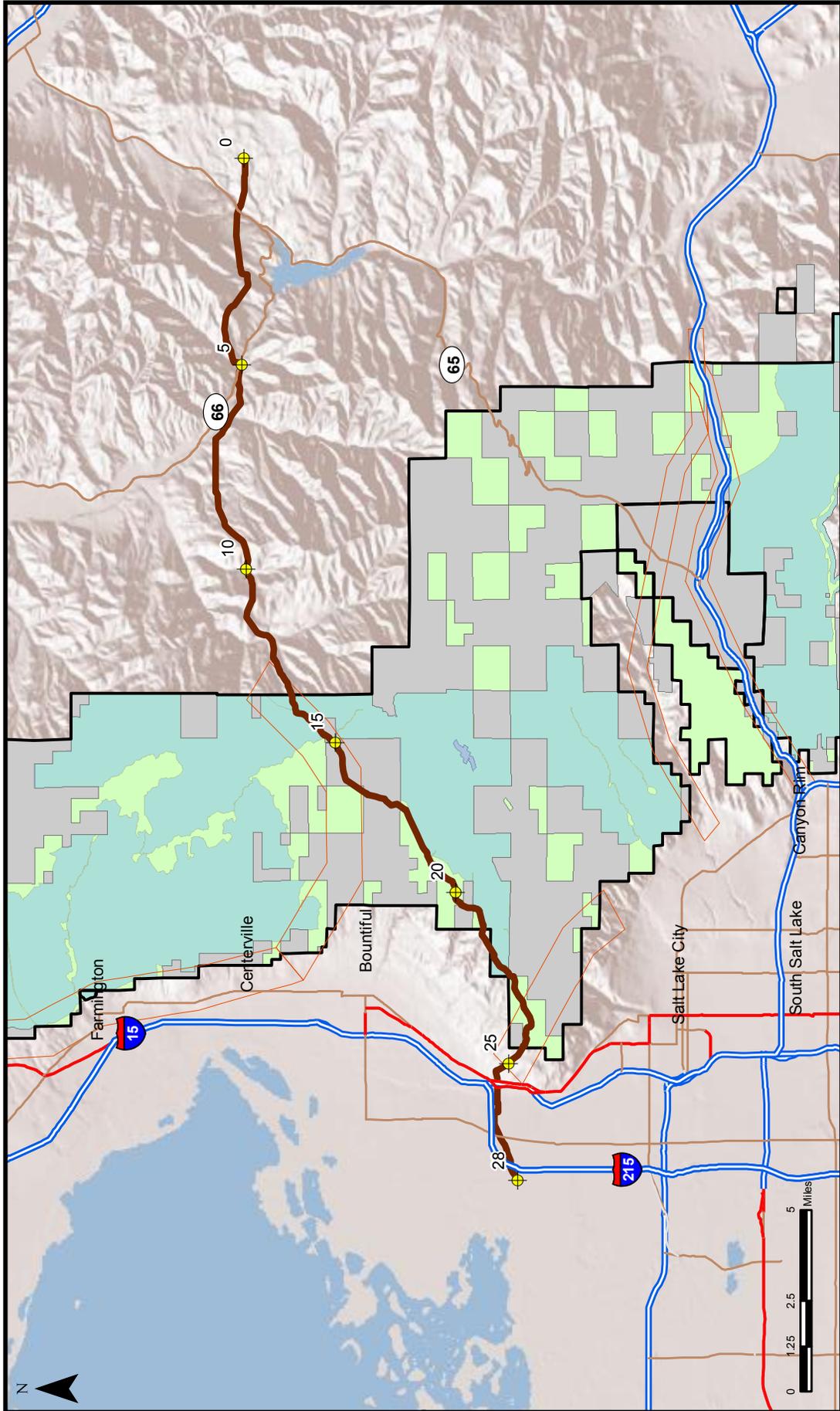
The pipeline would be designed to provide approximately 266 MMcf/d of natural gas. The maximum allowable operating pressure (MAOP) of the pipeline would be 1,333 pounds per square inch gauge (psig).

2.1.2 Aboveground Facilities

The Project would include one new compressor station; one new gas-fired, turbine-driven, centrifugal compressor at each of three existing compressor stations; replacement of a compressor at an existing compressor station; six MLVs to control the flow of gas within the pipeline; three pig launchers and two pig receivers. Table 2.1.2-1 lists aboveground facilities by facility type, milepost, and county.

The proposed Milford Compressor Station would be located in Beaver County, Utah. Major equipment to be installed at the Milford Compressor Station includes a new Titan 250 compressor, three filter/separator units, a gas cooler, two MLVs, two pig launchers, and two pig receivers. A site plan for the proposed Milford Compressor Station is presented in figure 2.1.2-1. Additional compression would be installed at the Coyote Creek Compressor Station in Uinta County, Wyoming; the Elberta Compressor Station in Utah County, Utah; and the Dry Lake Compressor Station in Clark County, Nevada. At each of those compressor stations, a new Mars 100 compressor would be installed and the existing compressors at those stations would be “restaged” (adjusted) to accommodate the reduced flow through the existing compressors that would occur with use of both the existing compressors and the new compressors. The replacement compressor would be installed at the Fillmore Compressor Station in Millard County, Utah. Table 2.1.2-1 lists the locations and horsepower of the compressor stations.

During a previous looping project, Kern River installed equipment in anticipation of a future loop to close the gap between KRMP 96.4 and KRMP 124.5. One of the two existing MLVs at MLV station 96 would be connected to the proposed pipeline at MP 0.0, and one of the MLVs at MLV station 124 would be connected to the Wasatch Loop at MP 28.0. Two new additional MLVs would be installed along the route at MPs 7.1 and 24.6. At the Milford Compressor Station, two new MLVs would be installed, one on each of the two existing Kern River pipelines (the mainline and the existing loop line). Table 2.1.2-1 lists the locations of each of the MLVs.



<h2 style="margin: 0;">APEX EXPANSION PROJECT</h2> <h3 style="margin: 0;">PROPOSED WASATCH LOOP</h3>	<p>Date: March 2010</p> <p>Figure 2.1.1-1</p>
<p>Legend</p> <ul style="list-style-type: none"> UWCNF-proclaimed boundary Private lands within the UWCNF-proclaimed boundary USFS-managed lands within the UWCNF-proclaimed boundary Roadless Areas Milepost Proposed Wasatch Loop Utility Corridor 	

**TABLE 2.1.2-1
Aboveground Facilities for the Proposed Apex Expansion Project**

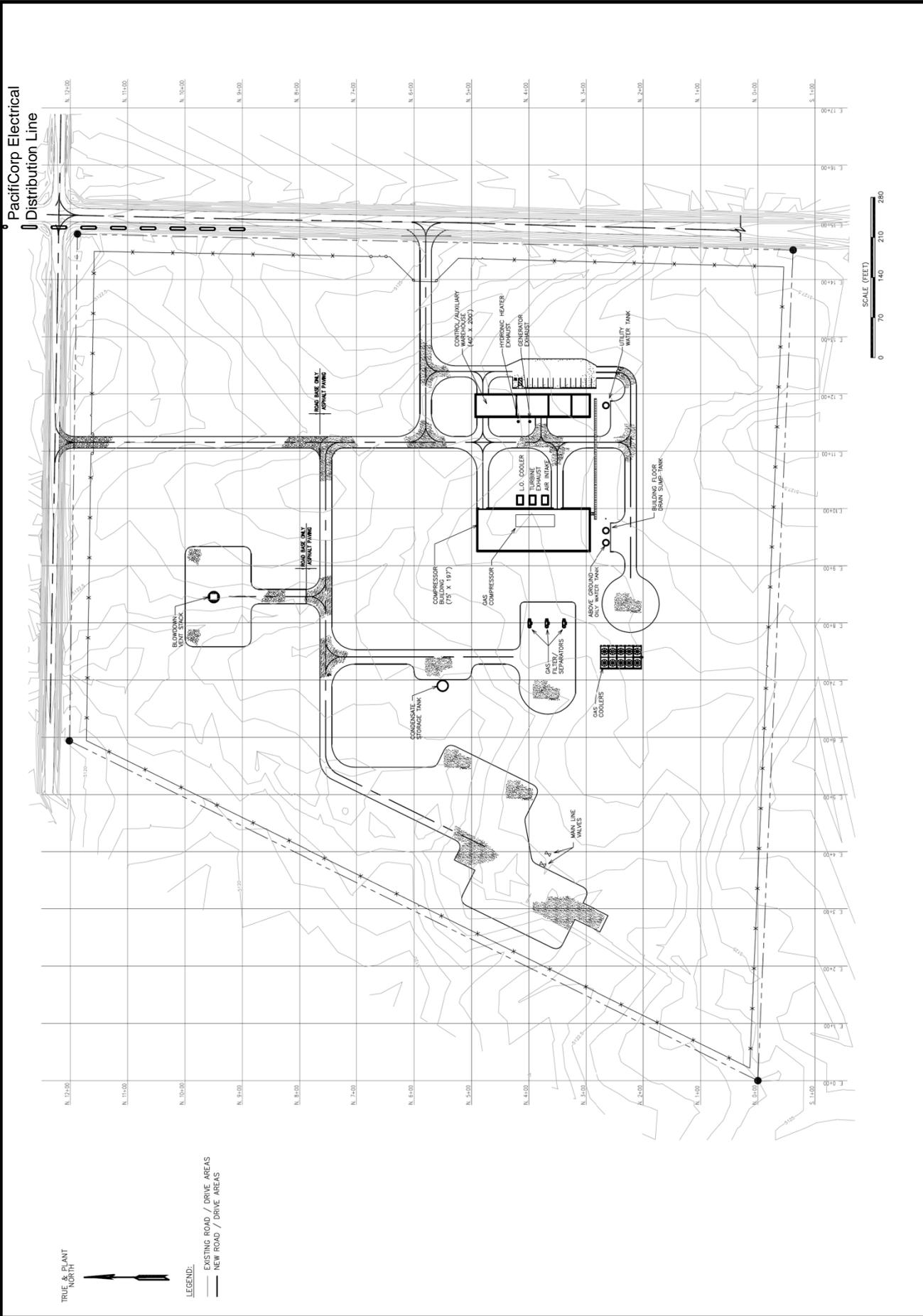
Facility	County and State	Milepost ^b	Horsepower ^a	
			Existing	Additional
New Milford Compressor Station	Beaver, Utah	KRMP 326.9	-	30,000
Additional Compressor, Existing Coyote Creek Compressor Station	Uinta, Wyoming	KRMP 60.1	15,000	16,000
Additional Compressor, Existing Elberta Compressor Station	Utah, Utah	KRMP 191.6	15,000	16,000
Additional Compressor, Existing Dry Lake Compressor Station	Clark, Nevada	KRMP 500.1	15,000	16,000
Replace Compressor, Existing Fillmore Compressor Station	Millard, Utah	KRMP 276.7	30,000	-
MLV 96B	Morgan, Utah	MP 0.0 ^c	-	-
MLV 103B	Morgan, Utah	MP 7.1	-	-
MLV 121B	Salt Lake, Utah	MP 24.6	-	-
MLV 124B	Salt Lake, Utah	MP 28.0 ^c	-	-
2 MLVs at the Milford Compressor Station (one on the mainline, one on the existing loop line)	Beaver, Utah	KRMP 326.9	-	-
1 Pig Launcher	Morgan, Utah	MP 0.0	-	-
2 Pig Launchers and Pig Receivers at the Milford Compressor Station	Beaver, Utah	KRMP 326.9	-	-

Notes:

^a Horsepower presented as ISO (International Organization for Standardization) rating.

^b KRMP = mainline (Kern River gas transmission pipeline) milepost; MP = Wasatch Loop milepost.

^c Mainline Valve (MLV) 96B and MLV 124B were constructed during a previous action but would be connected to the Wasatch Loop as a part of the proposed Apex Expansion Project.



Not to Scale

APEX EXPANSION PROJECT
Plot Plan for the Proposed Milford Compressor Station

Date: March 2010

Figure 2.1.2-1

An existing pig launcher barrel at MLV station 124 (MP 28.0) would be relocated to MLV station 96 (MP 0.0). Figure 2.1.2-2 is a plan view of the MLV and pig launcher and pig receiver at MP 0.0. Two new pig launchers and pig receivers would be installed at the Milford Compressor Station, one on the mainline and one on the existing loop line (see figure 2.1.2-1).

There would not be any metering stations installed for the Apex Expansion Project.

2.1.3 Cathodic Protection System

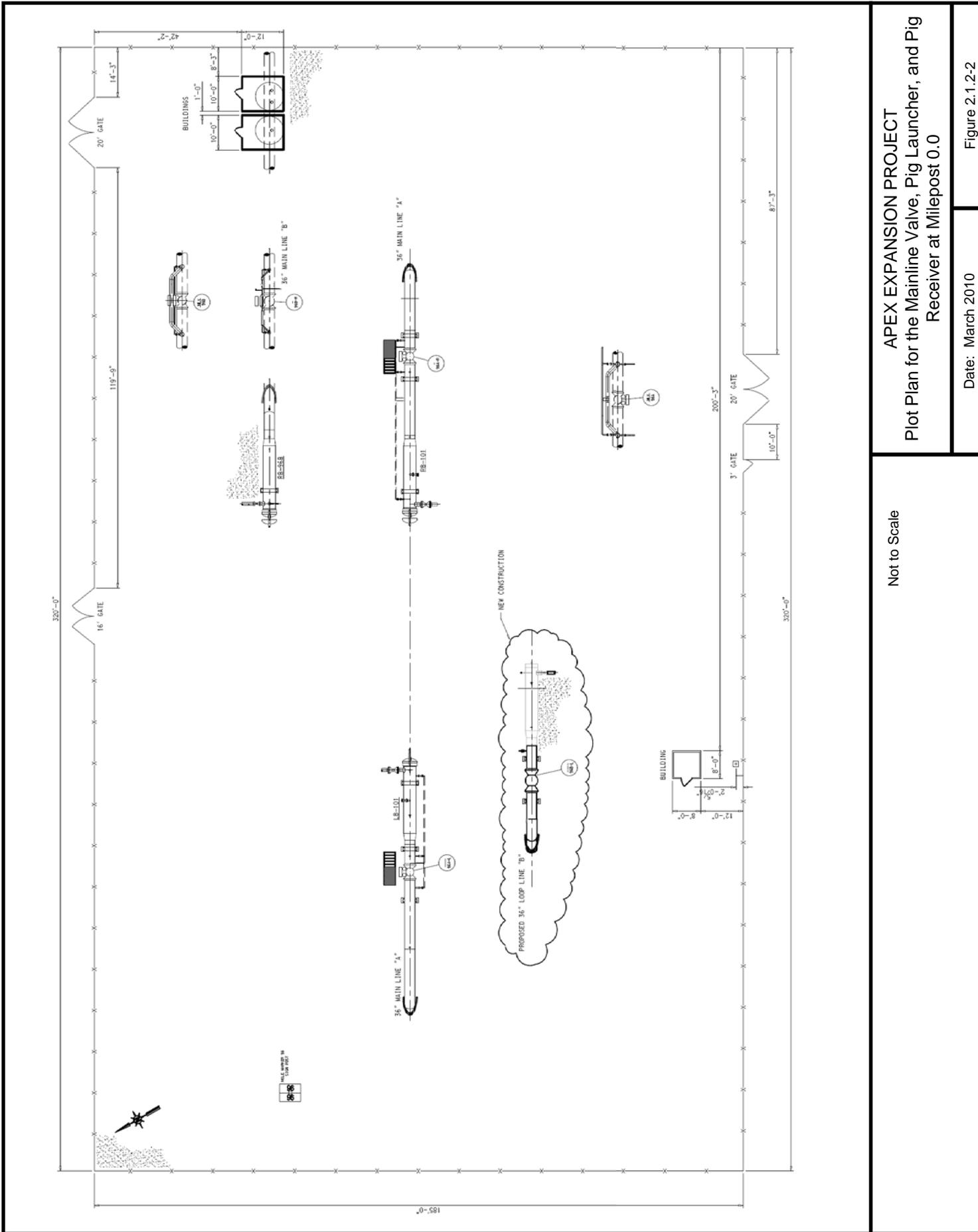
The pipeline would be protected from corrosion by an impressed current cathodic protection system in accordance with USDOT Regulations under 49 CFR 192 (Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards). The cathodic protection system impresses a direct current on the pipe and a ground-bed of sacrificial anodes that would corrode instead of the pipe. The main components of the system are anode beds, rectifiers, and test stations.

As specified by 49 CFR 192, aboveground cathodic protection system test stations would be located at about 1-mile intervals along the pipeline route. A cathodic protection system test station typically consists of test wires within a metal conduit, leading to a junction box. The conduit is supported with a painted metal punched post.

A testing terminal is located at the top of the pipe that can be accessed by operations personnel to measure the current and determine the potential for corrosion. Kern River proposes to use the existing cathodic protection sites that are on the existing Kern River system. If testing indicates that additions to the system are necessary, Kern River would identify new sites or upgrade the existing system. New sites for the Project would be within either the existing Kern River right-of-way or the proposed Project right-of-way.

2.1.4 PacifiCorp Electrical Distribution Line

PacifiCorp would construct an approximately 1.4-mile-long 7.2 kV electrical distribution line from an existing 46-kV electrical sub-transmission line out of the South Milford Substation. This line would extend south from the substation along Imperial Avenue to the proposed Milford Compressor Station. The line would be supported on single wood pole “EJ” (raptor safe) type structures. The transmission line would cross about 1.1 miles (encompassing 3.43 acres) of BLM public land located in Beaver County, Utah. PacifiCorp proposes a right-of-way width of 25 feet, with the transmission line centered within the right-of-way. The power line is designed for and would operate at 72 kV for 30 years. The power line would require 23-single wood pole structures on BLM public land, and 9-single wood pole structures on private lands; no access road would be required for the placement of poles. All areas necessary for the construction and maintenance of the transmission line would be within the 25-foot-wide right-of-way. No toxic substances are proposed for use or storage, or would be generated or used during any phase of construction, and/or used for any phase of the electrical distribution line. Where appropriate, specific effects from the construction and operation of the electrical distribution line may be analyzed separately within the resource discussions throughout this EIS. However, if the effects are similar to those associated with the proposed Milford Compressor Station, then the analysis will be detailed within the discussion of the compressor station.



Not to Scale

APEX EXPANSION PROJECT
 Plot Plan for the Mainline Valve, Pig Launcher, and Pig Receiver at Milepost 0.0

Date: March 2010

Figure 2.1.2-2

2.2 LAND REQUIREMENTS

Construction of the proposed pipeline would disturb a total of about 395.5 acres of land, including the pipeline construction right-of-way and additional temporary workspaces (ATWSs). Pipe yards, staging areas, contractor yards, and offloading sites would disturb 213.5 acres of land depending on which sites are selected, as described below. Construction of the Milford Compressor Station would disturb about 33.2 acres of land, and construction of 1 new temporary access road and modifications to 35 existing roads would disturb 6.0 acres of land.¹ Operation of the Project would require a total of about 246.6 acres of which 169.5 acres would be required for the permanent pipeline right-of-way and new aboveground facility sites along the route, and 33.2 acres would be required for the Milford Compressor Station. The 169.5 acres of land required for the permanent right-of-way includes approximately 24.8 acres of existing right-of-way from the overlapping of the Wasatch Loop right-of-way with the Kern River Mainline right-of-way. Finally, 15 of the existing roads encompassing 43.9 acres would be maintained as permanent access roads.

A more detailed description of land use and requirements is presented in section 4.8. If the proposed Project is approved, Kern River's construction and operation work areas would be limited to the areas described in this EIS and any subsequent Commission authorizations.

2.2.1 Pipeline Right-of-Way

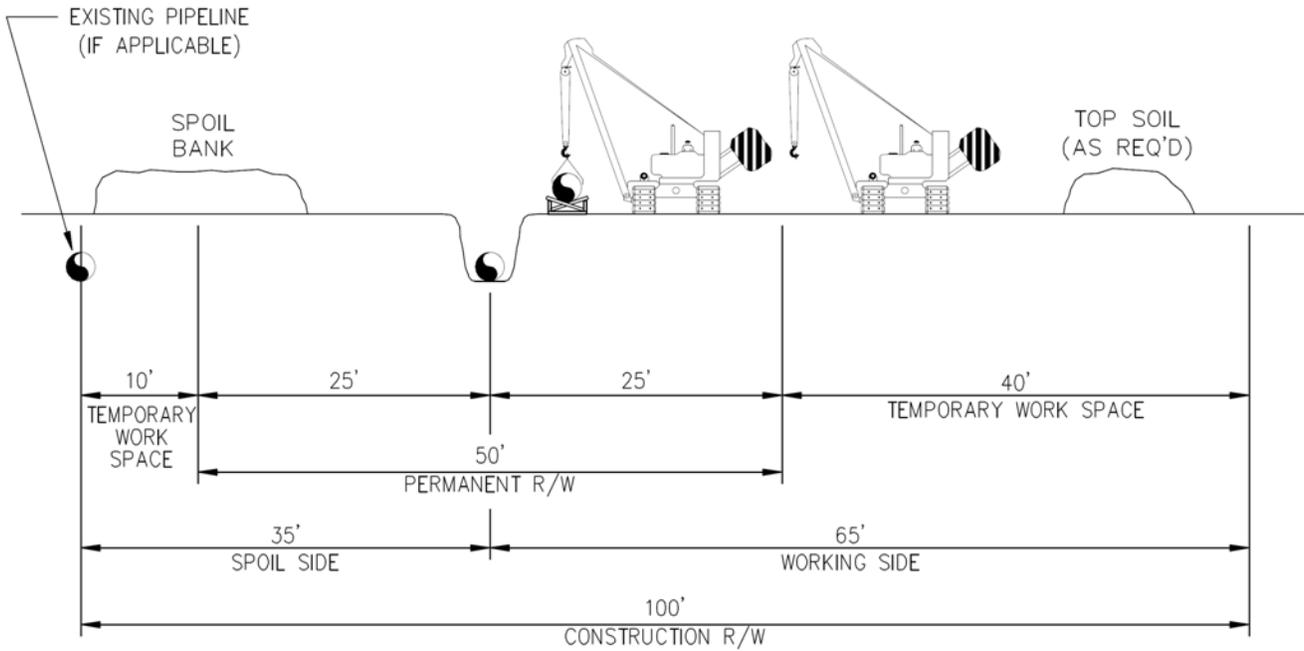
Kern River would use a 100-foot-wide construction right-of-way for a majority of the proposed pipeline route. In addition to the construction right-of-way, ATWS would be required in areas such as the following:

- where the proposed route crosses roadways, railroads, waterbodies, wetlands, or other utilities;
- areas of steep terrain and areas with other construction constraints that require special construction techniques;
- locations with soil stability concerns;
- where topsoil segregation is required, possibly including construction along lands managed by the USFS or BLM;
- truck turnarounds;
- hydrostatic test water withdrawal and discharge locations; and
- staging and fabrication areas.

Figure 2.2.1-1 illustrates a typical construction right-of-way.

In general, Kern River proposes to install the pipeline approximately 35 feet from the existing mainline to allow for construction activities and maintenance of soil stability around the existing pipeline. However, Kern River's field investigations identified 18 locations where the proposed pipeline would be parallel to the mainline but construction would require a non-standard parallel offset (NSPO) greater than Kern River's standard offset of 35 feet. These NSPOs range from 36 to 85 feet and would generally be associated with steep terrain; highway, road, and waterbody crossings; crossings of other utility lines; restricted right-of-way availability; or where aboveground features are within 25 feet of the existing line.

¹ A total of 37 existing roads (of which 35 would require modifications) and one new temporary access road would be used during construction.



NOTES:

1. CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORK SPACE AT CROSSINGS.
2. TOP SOIL SEGREGATION AS REQUIRED.

Not to Scale

APEX EXPANSION PROJECT
 Cross-section of a Typical Right-of-Way

Date: March 2010

Figure 2.2.1-1

The FERC regulations (18 CFR 380.15[d][1]) give primary consideration to the use, enlargement, or extension of existing rights-of-way over developing a new right-of-way in order to reduce potential impacts on sensitive resources. In general, installation of new pipeline along existing rights-of-way that have been previously cleared (such as pipelines, power lines, roads, or railroads) may be environmentally preferable to the development of new rights-of-way. Construction-related effects and cumulative impacts can normally be reduced by use of previously cleared rights-of-way; however, in congested or environmentally sensitive areas, it may be advantageous to deviate from an existing right-of-way. Additionally, collocation may be infeasible in some areas due to a lack of or unsuitably oriented existing corridors, engineering and design considerations, or constructability issues.

Kern River has proposed a route for the Wasatch Loop that is generally parallel to its existing right-of-way, the existing right-of-way of Questar Pipeline Company, and the proposed right-of-way for the UNEV pipeline. As currently proposed, approximately 18.4 miles (65.7 percent) of the Wasatch Loop would be installed near the edge of an existing right-of-way (the proposed pipeline would be 35 feet from the existing pipelines). This includes approximately 0.6 mile that is sited to be collocated with the proposed UNEV project,² which is expected to be constructed by December 2010. The remaining approximately 9.6 miles (34.3 percent) of the loop would deviate from these pipeline rights-of-way due to topographic and other land use constraints, requiring establishment of new rights-of-way. The lateral separation from the existing rights-of-way would be up to about 0.7 mile. Additional information on the locations of the proposed pipeline in relation to existing rights-of-way is presented in section 4.8 of the EIS.

In total, the construction right-of-way for the pipeline would temporarily disturb about 339.2 acres of land. Areas used for extra workspace along the construction right-of-way would affect a total of about 56.3 acres during construction. Of the total 395.5 acres, about 51.7 acres were previously disturbed during construction of other pipelines.

Staging areas may be located along the construction right-of-way or off the right-of-way in nearby areas and would vary in size. The locations and sizes of ATWSs are presented in Appendix C. Restrictions on the use of workspaces and staging areas in or near waterbodies, wetlands, and woody riparian areas are discussed in sections 4.2.2.3, 4.3.2.4, 4.3.3.2, and 4.4.3. Although Kern River has identified areas where extra workspace would be required, additional or alternative areas could be identified in the future due to changes in site-specific construction requirements. Kern River would be required to file information on each of those areas for review and approval prior to use.

Where the Wasatch Loop is collocated with the existing Kern River pipeline, the permanent right-of-way would have a 15-foot overlap where the existing right-of-way is 50 feet wide and a 27.5-foot overlap where the existing right-of-way is 75 feet wide. The permanent right-of-way would require about 169.5 acres of land. Of that area, about 24.8 acres are currently in permanent right-of-way for existing pipelines. After construction is completed, Kern River intends to retain a 50-foot-wide permanent right-of-way to operate the proposed pipeline.

2.2.2 Aboveground Facilities

The proposed aboveground facilities include one new compressor station, upgrades of four existing compressor stations, six MLVs, three pig launchers, and two pig receivers. Construction and operation at the existing compressor stations (Coyote Creek, Elberta, Fillmore, and Dry Lake) would be

² The UNEV Pipeline is a 400-mile, 12-inch buried petroleum products line that originates near the refineries in North Salt Lake City and ships product from them to a distribution terminal in Iron County, Utah, and a terminal in North Las Vegas. The pipeline project has not yet been approved by the BLM.

conducted within the existing fence lines and no new area would be affected. Construction and operation of the new Milford Compressor Station would impact a total of approximately 33.2 acres.

Four of the MLVs and one pig launcher would be installed within the proposed pipeline construction right-of-way; therefore, the land requirements for those facilities are included in the discussion of land requirements for the proposed pipeline (section 2.2.1). The remaining two MLVs, two pig launchers, and two pig receivers would be constructed within the boundaries of the Milford Compressor Station and are included in the site's 33.2 acres of impact.

2.2.3 Pipe and Contractor Yards

Kern River anticipates using two pipe storage yards and two contractor yards during construction of the proposed Wasatch Loop, one of each near the eastern end of the loop and one of each near the western end. Kern River has identified nine areas for potential use as pipe storage and contractor yards totaling 176.2 acres. In addition 11 areas to be used as staging areas during construction would affect 37.3 acres. Contractor yards typically would be located away from the construction right-of-way and would be used for stockpiling pipe, storing materials, staging work, fabricating accessories, repairing equipment, housing mobile offices, and parking vehicles. Alternative staging areas would generally be located along the construction right-of-way or in proximity to access roads. Table 2.2.3-1 lists the locations and areas of the sites being considered, and the sites are depicted on the maps presented in Appendix BS. Following construction all yards would be restored to their pre-construction conditions, except where individual landowner agreements negotiated during the easement acquisition process dictate other acceptable restoration measures.

Additional pipe, rail, and contractor yards beyond those currently identified could be required during construction of the proposed Apex Expansion Project. Prior to construction, Kern River would be required to file a complete and updated list of all extra work areas, including pipe, rail, and contractor yards (see Post-Approval Variance Process, section 2.6).

2.2.4 Access Roads

Kern River plans to use 38 access roads during installation of the proposed pipeline. Of these, 37 are existing roads and one would be a new temporary access road (see Appendix C). A total of 41.8 miles of access roads would be required for construction, including one new 410-foot-long (less than 0.1-mile) temporary access road. A total of 62.3 acres of access roads would be required for construction of the Apex Expansion Project. The new temporary access road and modifications to 35 existing access roads would only disturb 6.0 acres of land beyond the existing access road widths.

Kern River would use existing roads for construction and for personnel ingress and egress at the four existing compressor stations; no new access roads or road improvements outside of the existing compressor station sites would be required. The proposed site of the new Milford Compressor Station is adjacent to Imperial Avenue, which would be used for access to the site. Kern River would construct a driveway to the facility from Imperial Avenue.

It should be noted that roads located within the National Forest that are not a part of the USFS road system are considered by the USFS to be non-existing, and any improvements required to these roads would be considered by the USFS as new construction.

**TABLE 2.2.3-1
Potential Pipe Yards, Staging Areas, and Contractor Yards for the
Proposed Apex Expansion Project**

Identification Number	Location	County	Primary/ Alternate	Area (acres)
Pipe Yard				
STK-DA-1 ^a	Business Depot, Ogden	Davis	Primary	29.4
STK-DA-2	Warehouse-500 N. Redwood Rd., North Salt Lake	Davis	Primary	2.7
STK-MO-1	Wasatch Rail Siding, Wasatch	Summit	Alternate	6.5
STK-SU-2	Henefer Frontage Rd., Henefer	Summit	Alternate	43.8
STK-SL-2 Metro Group	W. 900 S., Salt Lake City	Salt Lake	Alternate	37.2
Staging Area				
TWS-MO-1	MP 0.0 - MLV 96 Laydown Area	Morgan	Primary	3.8
TWS-MO-2	MP 2.3 - East Canyon	Morgan	Primary	5.2
TWS-MO-9	MP 4.9 - Highway 66	Morgan	Primary	0.8
TWS-MO-3	MP 11.9 - North Hardscrabble Road	Morgan	Primary	10.1
TWS-MO-4	MP 11.9 - South Hardscrabble	Morgan	Primary	1.9
TWS-MO-6	MP 11.9 - Hardscrabble	Morgan	Primary	0.6
TWS-MO-8	MP 14.8 - Skyline	Davis	Primary	4.6
TWS-DA-1	MP 14.8 - North Bountiful	Davis	Primary	3.2
TWS-DA-2	MP 15.8 - Questar Right-of-Way	Davis	Primary	4.1
TWS-SL-1	MP 23.8 - Forest Service	Salt Lake	Primary	1.5
TWS-SL-2	MP 28.0 - West Tie-In	Salt Lake	Primary	1.5
Contractor Yard				
CY-SU-1	Dennis Wright, Coalville	Summit	Primary	19.7
CY-SU-2	Rees Enterprises, Coalville	Summit	Alternate	4.7
CY-DA-1	West Parrish Ln., Centerville	Davis	Primary	20.9
CY-SL-1	1500 West 150 South, Salt Lake City	Salt Lake	Alternate	11.3
Total				213.5
<hr/> Note: ^a Two potential sites have been identified at the Business Depot location.				

Kern River would obtain owner approval for use of all existing access roads. Other roads constructed by public and private entities may also be used provided they are suitable and landowner approval is received. Improvements would be required on some existing roads prior to hauling construction equipment and materials. Sections 4.5 and 4.8 provide additional information on access roads.

2.3 CONSTRUCTION PROCEDURES

The proposed pipeline facilities would be designed, constructed, operated, and maintained in accordance with the USDOT regulations under 49 CFR 192 (Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards) and other applicable federal and state regulations. Among other design standards, these regulations specify pipeline material selection; minimum design requirements; protection from internal, external, and atmospheric corrosion; and qualification procedures for welders and operations personnel. More detailed safety information is provided in section 4.12. In addition, Kern River would comply with the siting and maintenance requirements in 18 CFR 380.15 (Siting and Maintenance Requirements) and other applicable federal and state regulations, including the requirements of the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA). The OSHA regulations are intended to ensure adequate protection of the public, pipeline workers, contractors, and employees, and to prevent natural gas pipeline accidents and failures.

Kern River prepared an *Upland Erosion Control, Revegetation and Maintenance Plan* for the proposed Apex Expansion Project (Kern River's Plan). We have reviewed Kern River's Plan and find that it meets or exceeds the best management practices and mitigation measures included in our *Upland Erosion Control, Revegetation and Maintenance Plan* (our Plan). The intent of Kern River's Plan is to identify baseline mitigation measures for minimizing erosion and enhancing revegetation in upland areas. Modifications to our Plan are identified in Kern River's Plan which includes mitigation measures designed to address the greater potential for erosion and sediment transport in critical slope areas found along the proposed alignment in the Wasatch Mountains. Kern River's Plan is presented in Appendix D.

Kern River also developed *Wetland and Waterbody Construction and Mitigation Procedures* for the proposed Project (Kern River's Procedures) that meet or exceed the best management practices and mitigation measures included in our *Wetland and Waterbody Construction and Mitigation Procedures* (our Procedures). The intent of the Kern River Procedures (Appendix E) is to identify baseline mitigation measures for minimizing the extent and duration of construction-related disturbance on wetlands and waterbodies. Kern River would implement its Plan and Procedures during construction and operation of the Apex Expansion Project. Modifications to our Plan and Procedures that Kern River has proposed in Kern River's Plan and Procedures are addressed further in sections 4.2, 4.3, and 4.4 of this EIS. Our Plan and Procedures are available on the FERC Internet website at www.ferc.gov/industries/gas/enviro/guidelines.

In addition, Kern River would restore all BLM-managed lands in accordance with the BLM-approved Plan of Development (POD) for the proposed Project.

Kern River also prepared a Reclamation Plan for the proposed Project (Reclamation Plan) that describes measures Kern River would use to return disturbed areas to their pre-construction land use and minimize visual impact. The Reclamation Plan, which is presented in Appendix F, adapts and expands on the Reclamation Plan prepared for construction of Kern River's existing pipeline system in 1991 to incorporate (1) more current agency recommendations; (2) Kern River's experience from the construction of the mainline; and (3) Kern River's experience in construction and restoration of its 2003 Expansion Project. In addition, the Reclamation Plan addresses the vegetation conditions found in the higher elevation segments of the proposed Project. Where applicable, Kern River would revise the Reclamation Plan to incorporate new technical standards or information in consultation with the BLM, the USFS, and the Natural Resources Conservation Service (NRCS), and in conjunction with developing the post-FERC-Certificate Implementation Plan.

Kern River would also implement the procedures included in its Noxious Weed Control Plan for the proposed Project, which is provided in Appendix G. As part of that plan, Kern River would clean

vehicles and equipment prior to mobilization to Project sites and as they leave construction areas with identified noxious weeds. The Noxious Weed Control Plan is discussed further in section 4.4 of this EIS.

Kern River has also developed a draft Project-specific Spill Prevention, Control and Countermeasure (SPCC Plan) for oil and hazardous substances for the proposed Apex Expansion Project. The SPCC Plan, which is presented in Appendix H, describes the management of hazardous materials, such as fuels, lubricants, and coolants that would be implemented during construction.

Kern River anticipates that blasting may be necessary to construct the pipeline along portions of the proposed route (see section 4.1.3.4). Kern River has prepared a Blasting Plan (presented in Appendix I) and would follow the procedures of that plan where blasting is necessary.

Kern River has developed an Unanticipated Discoveries Plan to guide the treatment of any unanticipated discoveries of cultural resources or human remains during construction (see section 4.10).

The cooperating agencies are reviewing Kern River's construction plans with respect to their areas of responsibility, and additional measures may be incorporated into agency permits to ensure that construction and restoration would be completed in compliance with agency standards. BLM will require that Kern River prepare a POD as part of the right-of-way granting process in accordance with the regulations at 43 CFR 2884.11. Kern River's construction and restoration plans referenced in this EIS and included in the appendices would also be part of Kern River's POD with the BLM.

The majority of construction would be accomplished in the spring (starting on or after May 1), summer, and fall of 2011. Kern River proposes to clear the entire right-of-way in the fall and winter of 2010. Construction activities beyond just clearing, however, are anticipated in late fall and early winter 2010 in the following areas:

- East Canyon Creek crossing (MP 5.4);
- Jordan River crossing (MP 27.0);
- City Drain Canal crossing (MP 27.4);
- Interstate 15 (I-15), Highway 89, Frontage Road crossing (MP 25.7);
- areas of agricultural land between Interstate 215 (MP 27.6) and MP 28.0; and
- the Milford (KRMP 326.9), Fillmore (KRMP 276.7), and Dry Lake (KRMP 500.1) Compressor Stations.

In addition to the proposed winter construction in 2010, Kern River would begin preparation for spring, summer, and fall 2011 construction at several locations in the late fall and early winter of 2010. Preparatory activities would include clearing and grubbing along the proposed pipeline route, installing construction bridges, preparing laydown yards, and establishing a construction grade at the crossing of the Wasatch Fault. Clearing and grubbing activities would occur at various points along the proposed pipeline route, and other preparatory activities would occur in the following locations:

- Sheep Creek (MP 6.3) and Hardscrabble Creek (MP 11.8) crossings;
- Hardscrabble Road laydown yard (MP 8.7 or 11.9);
- Bountiful Boulevard laydown yard (MP 16.0); and
- Wasatch Fault crossing (MP 25.4).

Winter construction would be conducted in accordance with the Kern River Winter Construction Plan for the Apex Expansion Project. The plan is provided in Appendix J.

2.3.1 General Pipeline Construction Procedures

Prior to initiating construction-related activities, Kern River would secure right-of-way easements from private landowners and managers of public lands whose properties would be crossed by the proposed pipeline route. All owners, tenants, and lessees of private land, and lessees and managers of public lands along the right-of-way would be notified in advance of construction activities that could affect their property, business, or operations. If the necessary land rights or easements cannot be obtained through good faith negotiations with private landowners and the proposed Project has been certificated by the FERC, Kern River may use the right of eminent domain granted to it under Section 7(h) of the NGA to obtain a right-of-way. Kern River would still be required to compensate the private landowners for the right-of-way, as well as for any damages incurred during construction. However, the level of compensation would be determined by the court according to state laws that set forth the procedures for the use of eminent domain once the FERC issues a Certificate. Kern River must proceed through the appropriate state court to condemn land for which it has received a Certificate from the FERC. The FERC does not take part in such proceedings.

Kern River would construct the proposed pipeline along the construction right-of-way using sequential pipeline construction techniques, including survey, staking, and fence crossing; clearing and grading; trenching; pipe stringing, bending, and welding; lowering-in and backfilling; hydrostatic testing; cleanup and restoration; and commissioning. Conventional overland installation of the pipeline is essentially a moving assembly line with a construction spread (construction crew and equipment) proceeding along the construction right-of-way in a continuous operation, as depicted in figure 2.3.1-1. Kern River would construct the Wasatch Loop using a single construction spread.

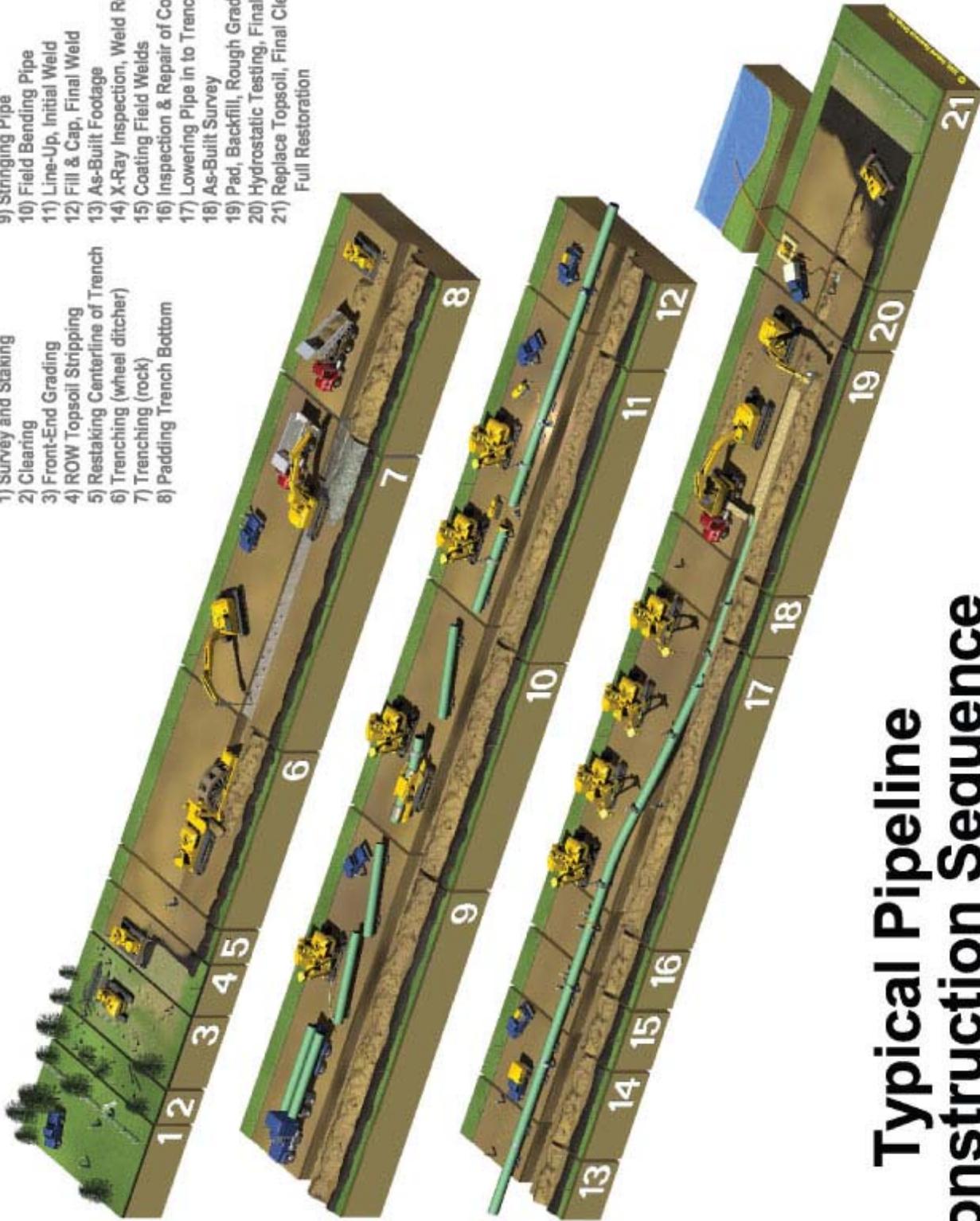
The majority of the pipeline construction process would be accomplished using conventional open-cut methods, which typically include the steps described below. The proposed methods for accomplishing pipeline installation across wetlands and waterbodies, as well as other specialized construction procedures, are described in section 2.3.2.

Construction at any single point along the pipeline, from right-of-way surveying and clearing to backfill and finish grading, would typically last about 6 to 10 weeks. The construction process would be coordinated to limit the time of active disturbance of an individual area and the time the trench is open to limit the potential for erosion and the loss of normal use.

2.3.1.1 Survey, Staking, and Fence Crossings

After right-of-way easements have been obtained, the pipeline centerline, construction right-of-way, ATWSs, drainage centerlines and elevations, and highway and railroad crossings would be surveyed and staked. Access roads would be clearly marked using temporary signs or flagging, and wetlands and other environmentally sensitive areas, such as water wells and springs, would be marked. Kern River would contact the Utah One-Call system to locate, identify, and flag existing underground utilities (for example, cables, conduits, and pipelines) to prevent accidental damage during pipeline construction.

- 1) Survey and Staking
- 2) Clearing
- 3) Front-End Grading
- 4) ROW Topsoil Stripping
- 5) Restaking Centerline of Trench
- 6) Trenching (wheel ditcher)
- 7) Trenching (rock)
- 8) Padding Trench Bottom
- 9) Stringing Pipe
- 10) Field Bending Pipe
- 11) Line-Up, Initial Weld
- 12) Fill & Cap, Final Weld
- 13) As-Built Footage
- 14) X-Ray Inspection, Weld Repair
- 15) Coating Field Welds
- 16) Inspection & Repair of Coating
- 17) Lowering Pipe in to Trench
- 18) As-Built Survey
- 19) Pad, Backfill, Rough Grade
- 20) Hydrostatic Testing, Final Tie-In
- 21) Replace Topsoil, Final Clean-Up, Full Restoration



Typical Pipeline Construction Sequence

Not to Scale

APEX EXPANSION PROJECT
Typical Pipeline Construction Sequence

Date: March 2010

Figure 2.3.1-1

Where fences are encountered along the proposed construction right-of-way and require cutting or removal, a fence crew would install temporary fences to confine livestock to existing areas off the right-of-way and to prohibit or otherwise control public access across the right-of-way. This work would include installing new posts to brace the existing fence on either side of the cut or removed fencing to avoid damage to the existing fence. Temporary gates would be installed, as necessary.

2.3.1.2 Clearing and Grading

After completion of the surveys, staking, and fence work, large obstacles, such as trees, rocks, brush, and logs would be removed from the right-of-way and ATWSs. Timber would be removed only when necessary for construction purposes. Timber and other vegetative debris may be chipped for use as erosion control mulch, or otherwise disposed of in accordance with applicable local regulations and landowner requirements. The construction right-of-way and the ATWSs would then be cleared and, where necessary, graded, to provide a relatively level surface for trench-excavating equipment and the movement of other construction equipment along the right-of-way.

To prevent mixing of soil horizons or introduction of rock into the topsoil, topsoil would be removed across the full width of the construction right-of-way in agricultural and residential areas and segregated from the subsoil in accordance with Kern River's Plan. It is anticipated that topsoil would be removed to a depth of 12 inches at most locations, or as described below if that is not possible. Topsoil may also be segregated if requested by landowners or land management agencies and on rangelands and USFS lands to enhance restoration. On those lands, Kern River would develop site-specific topsoil segregation and redistribution plans that would be completed in consultation with the USFS, BLM, and other managing agencies or landowners. Where additional topsoil stripping is required, Kern River would evaluate the need for additional right-of-way width to maintain separation of the topsoil and subsoil piles.

To segregate topsoil in other areas, Kern River would remove topsoil and vegetative debris to a typical depth of 12 inches over the trench, the storage areas for excavated materials, and areas where cut-and-fill activities would be conducted (for example, on side-slopes). Topsoil would be stockpiled along one side of the right-of-way, allowing the other side to be used for access, material transport, and pipe assembly, as illustrated in figure 2.2.1-1. Where shallow soils or soils with stony substrates are encountered, Kern River would reduce the depth of topsoil removal for segregating the topsoil to approximately 4 to 6 inches, instead of the typical 12 inches for deeper soils as specified in Kern River's Plan. When soils have a high content of cobbles, rocks, or boulders, topsoil salvaging may not be possible. In addition, Kern River would segregate topsoil only when safe construction conditions can be maintained. Additional information on topsoil segregation is provided in section 4.2.

Temporary erosion controls would be installed immediately after initial disturbance of the soil along the construction right-of-way and would be properly maintained throughout construction. They would remain in place until permanent erosion controls are installed or restoration is completed.

2.3.1.3 Trenching

The pipeline trench would be excavated using a rotary trenching machine, a track-mounted excavator, or similar equipment. Excavated materials would be stockpiled along the right-of-way on the side of the trench away from the construction traffic and pipe assembly areas.

Explosives would be used as necessary in areas where rock substrates occur at depths that interfere with conventional excavation or rock-trenching methods (generally within 5 feet of the ground surface). Based on its preliminary analysis, Kern River identified four areas along the proposed route where there is a high likelihood that blasting would be required: from MP 2.8 to 3.0, from 3.6 to 4.7, from

6.0 to 6.8, and from 8.9 to 9.4. Kern River would conduct blasting in accordance with its Blasting Plan, and in accordance with all other applicable regulations. Blasting would be conducted in a manner that would prevent damage to underground structures (for example, cables, conduits and pipelines) or to springs, water wells, or other water sources. Blasting mats or soil cover would be used as necessary to prevent the scattering of loose rock. All blasting would be conducted during daylight hours and would not begin until occupants of nearby buildings, stores, residences, places of business and farms have been notified. Additional information on blasting is presented in section 4.1.

The proposed pipeline would be buried below the ground surface to a depth that would meet or exceed the USDOT standards presented in 49 CFR 192.327. Except in rocky areas, the trench would be excavated to a sufficient depth to allow a minimum of 3 feet of cover between the top of the pipe and the final land surface after backfilling; this would exceed the USDOT general minimum depth of cover 30 inches in soil in Class I areas. Where consolidated rock is within 18 inches of the surface, the pipeline would be buried to allow 2 feet of cover over the pipe; this would exceed the USDOT standard for depth of cover of 18 inches in consolidated rock near the surface. The minimum depth of cover in road and railroad drainage ditches and at stream and road crossings would be 5 feet. In addition, the bottom of the trench would be excavated at least 12 inches wider than the diameter of the pipe (that is, the bottom of the trench would be at least 48 inches wide).

Trench breakers (barriers to subsurface water flow placed in the trench) would be used to create segments within the open trench to reduce erosion and allow access across the trench. Trench breakers would typically consist of sandbags or polyurethane foam placed across the ditch and would be installed in accordance with the Kern River Plan and Procedures.

2.3.1.4 Pipe Stringing, Bending, and Welding

After trenching, sections of straight steel pipe, generally either 40 feet long or 80 feet long, would be transported to the right-of-way by truck or helicopter and placed along the excavated trench in a single, continuous line on the working side of the trench, opposite the side where the excavated materials are stockpiled (termed “stringing”). For river crossings, pipe would be stockpiled in ATWSs in close proximity to the river. Pipe sections would be protected on the outside and inside with a factory-applied fusion-bonded epoxy coating; the beveled ends of the sections would be uncoated to allow for welding.

Some pipe sections would be bent at the work site to follow the natural grade and direction changes of the right-of-way. Bending would be accomplished using track-mounted hydraulic bending machines. Where multiple or complex bends are required, bending would be conducted at the pipe fabrication factory, and the pipe would be shipped to the work sites pre-bent.

The pipe joints would be aligned, welded together into a long segment, and placed on temporary supports at the edge of the trench. Welders would use multiple passes to provide a full-penetration weld. Kern River would only use experienced welders who are qualified according to applicable American Welding Society, American Society of Mechanical Engineers (ASME), and American Petroleum Institute (API) standards.

Each weld would be visually inspected and non-destructively tested using radiographic (x-ray) or other approved test methods in accordance with API standards. Welds with flaws would be repaired or cut out and re-welded. After welding is completed, a coating crew would coat the area around the weld. Pipeline companies use several different types of coating in the field, the most common being fusion-bonded epoxy. Prior to application, the coating crew would thoroughly clean the bare pipe (the welded area) with a power wire brush or sandblast machine to remove dirt, mill scale, and debris. The crew would then apply the coating and allow the coating to dry. The pipeline would be inspected electronically

(also referred to as “jeeped”) for faults or voids in the coating and would be visually inspected for faults, scratches, or other defects. If damage to the coating is discovered, it would be repaired before the pipe is lowered into the trench.

2.3.1.5 Lowering-In and Backfilling

Prior to lowering the proposed pipeline, the trench would be cleaned of debris and foreign material. The pipe and trench would also be inspected to ensure that the pipe and trench configurations are compatible. During construction, the open trench may accumulate water either from groundwater intrusion or precipitation and would be dewatered periodically to allow for proper and safe construction, particularly during tie-ins. During trench dewatering, water would be pumped from the trench into stable upland areas through a filter bag, straw bales, or equivalent to remove sediment. The rate of flow from the pump would be regulated and energy dissipation devices would be used as necessary to prevent erosion from runoff and to prevent the flow of heavily silt-laden water directly into adjacent waterbodies. Dewatering would be conducted in accordance with applicable federal, state, and local permitting requirements and in accordance with Kern River’s Procedures.

In areas of rock, the bottom of the trench may be padded with sandbags or support pillows to protect the pipe coating. Topsoil would not be used as padding material. Where the previously excavated material contains large rocks or other materials that could damage the pipe or its coating, screened fill or protective coating would be placed around the pipe prior to backfilling. The pipeline would then be lowered into the trench by appropriately spaced, sideboom tractors working in unison to avoid buckling of the pipe. In accordance with Kern River’s Plan and Procedures, trench breakers would be installed at regular intervals where appropriate to prevent subsurface erosion and flow of water between the trench and crossed waterbodies, wetlands, and near-surface groundwater.

After the proposed pipeline is lowered into the trench and adequately protected, previously excavated materials would be used to backfill the trench using bladed equipment or excavators. Subsoil in all cultivated areas and on BLM lands would be decompacted after backfilling and prior to replacing topsoil. If decompaction is necessary after topsoil has been replaced, Kern River would use a tiller (or similar equipment) to loosen compacted areas. Topsoil previously segregated from the trench material in all agricultural and residential areas would be returned as nearly as possible to its original horizon. The right-of-way, ATWSs, and other disturbed areas would be finish graded and restored as closely as possible to pre-construction contours and to conform with adjacent areas, with some crowning over the trench outside of wetland areas to accommodate soil settlement. Any excess excavated materials or materials deemed unsuitable for backfill would be evenly spread over the right-of-way or disposed of in accordance with applicable regulations and landowner requirements.

2.3.1.6 Hydrostatic Testing

Once installation and backfilling are completed and before the proposed Project begins operation, the pipeline would be hydrostatically pressure tested in accordance with USDOT safety standards (49 CFR 192) to verify its integrity and to ensure its ability to withstand the MAOP. Hydrostatic testing consists of installing a hydrostatic test cap and manifold, filling the pipeline with water, pressurizing the pipeline to 125 percent of its MAOP, and maintaining that test pressure for a specified minimum period of time. Kern River would test segments of the pipeline and wherever possible would transfer the hydrostatic test water to the next segment for re-use. Any leaks or loss of pressure detected during the test would be repaired, and that segment of pipeline would be re-tested.

When discharged, the test water would be released adjacent to the construction right-of-way through an energy-dissipating device such as a splash plate, and a straw bale filter or sediment bag. Test

water would not be discharged directly into surface waters. Discharge sites would be in stable, well-vegetated upland areas in the vicinity of the same water source it is taken from to avoid transferring non-native species into a new area. Test water for the proposed Project would contact only new pipe and no chemicals would be added.

Hydrostatic test water would be obtained and discharged in accordance with applicable state and local regulations, and in accordance with Kern River's Procedures. Additional information on hydrostatic testing, including potential sources of hydrostatic test water, is presented in section 4.3 of this EIS.

2.3.1.7 Cleanup and Restoration

After the proposed pipeline has been successfully tested, the trash, debris, surplus materials, and temporary structures present along the construction right-of-way would be removed and disposed of in accordance with applicable federal, state, and local regulations. Permanent erosion control measures, such as diversion terraces and slope breakers, would be installed during this phase in accordance with Kern River's Plan and Procedures. Disturbed areas would be seeded in accordance with the Kern River's Reclamation Plan and written recommendations for seed mixes, rates, and dates, obtained from the local soil conservation authority or as requested by the landowner or land management agency. Additional information on restoration and revegetation procedures in wetland and upland areas is provided in sections 4.3 and 4.4, respectively. Measures that Kern River would incorporate into the proposed Project to limit the spread of noxious weeds are presented in its Noxious Weed Control Plan. Final seedbed preparation, as required, and seeding and planting are planned for September and October 2011 and would coincide with the optimal periods for dormant seeding and planting. In addition, designated locations of noxious weeds would be treated prior to reclamation in accordance with the Noxious Weed Control Plan. Seeding would be completed, along with other erosion control, by the onset of winter 2011.

Disturbed pavement and other road surfaces along access roads would be restored to pre-construction or better conditions, unless otherwise specified by the property owner and approved by applicable regulatory agencies. Likewise, any private or public property damaged during construction, such as fences, gates, and driveways, would be restored to original or better condition, consistent with individual landowner agreements.

Pipeline markers and/or warning signs would be installed along the pipeline centerline at specified intervals to identify the pipeline location, specify Kern River as the operator of the pipeline, and provide telephone numbers for emergencies and inquiries.

2.3.1.8 Commissioning

Test manifolds would be removed and final pipeline tie-ins would be completed after hydrostatic testing. The pipeline then would be cleaned and dried using pigs that are moved through the pipeline with pressurized dry air. Pigs also would be used to internally inspect the pipeline to detect whether the pipe was damaged during construction. Damaged pipe segments would be dug up, repaired, and retested. Pipeline commissioning would then commence. Commissioning involves verifying that equipment has been properly installed and is working, verifying that controls and communications systems are functioning, and confirming that the pipeline is ready for service. In the final step, the pipeline would be prepared for service by purging the pipeline of air and loading it with natural gas. Kern River would not be authorized to place its pipeline into service until it has received written in-service approval from the FERC Director of the Office of Energy Projects (OEP).

2.3.2 Special Pipeline Construction Procedures

Special construction techniques would be required when constructing across most environmentally sensitive areas such as wetlands and waterbodies where there is existing infrastructure such as roadways and railroads, or in other areas where the open-cut construction methods described in section 2.3.1 are not appropriate. The special construction methods Kern River proposes to use for the Apex Expansion Project are described below. ATWSs adjacent to the construction right-of-way would be used at most of these areas for staging construction, storing materials, maneuvering equipment, fabricating pipe, and stockpiling spoil.

2.3.2.1 Wetlands

Construction of the proposed Project pipeline across wetlands would be conducted in accordance with applicable permit requirements and Kern River's Procedures. Overall, the wetland crossing methods and mitigation measures identified in Kern River's Procedures are designed to minimize the extent and duration of construction-related disturbance within wetlands. The site-specific crossing procedures used to install the pipeline across wetlands would vary dependent on the level of soil stability and saturation encountered during construction.

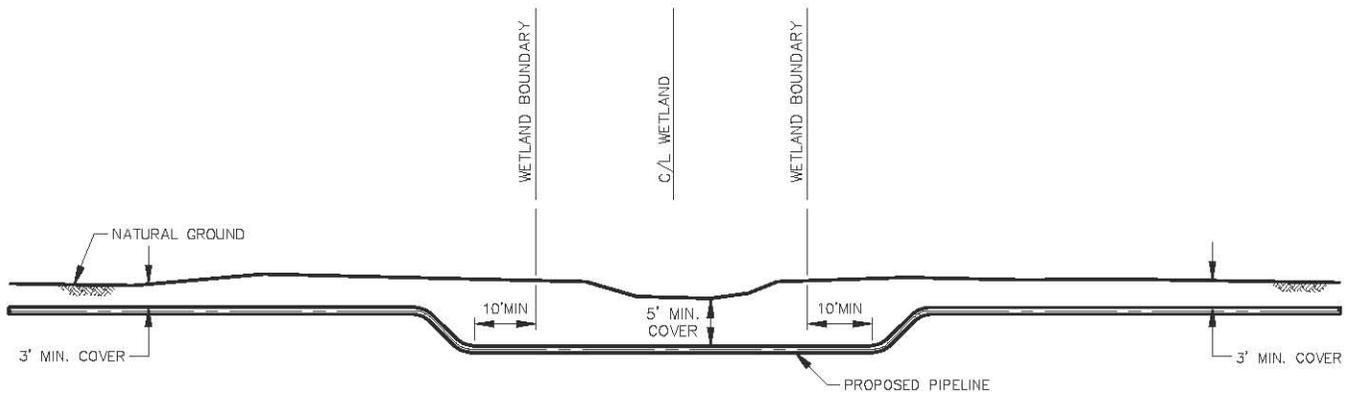
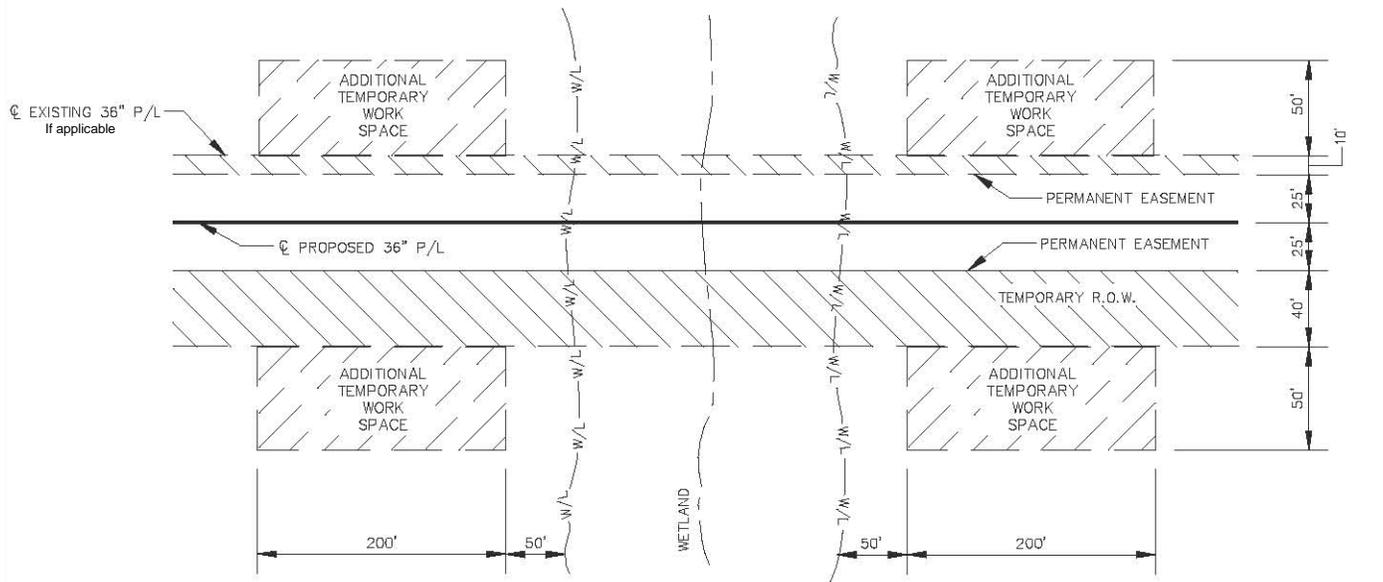
All wetlands crossed by the proposed Project are scrub-shrub, forested, or emergent. Wetland vegetation would be cut to ground level within the construction right-of-way through wetland areas. Grading and stump removal would be performed only over the trench, except where otherwise required for safety. To minimize erosion and promote revegetation within the wetland, removal of the root mass of woody vegetation would be allowed only directly over the trench area or where required for safety.

Silt fences would be installed at the edges of the construction right-of-way in wetlands where there would be a possibility for materials excavated from the trench to flow into undisturbed areas of the wetland. If the previously excavated trench adjacent to the wetland contains water, trench plugs would be left in the trench at the edge of the entry into the wetland. In addition, where necessary to maintain the hydrologic integrity of the wetland, trench breakers would be installed where the trench enters and exits the wetland.

A typical wetland crossing parallel to an existing pipeline is depicted in figure 2.3.2-1.

Construction procedures across wetlands that are unsaturated at the time of construction would be similar to those used in upland areas. However, Kern River would use low ground-pressure equipment and would install equipment mats to minimize compaction of wetland soils and rutting within wetlands. In unsaturated wetlands, up to 12 inches of topsoil would be segregated over the pipeline trench. If saturated wetlands with standing water or unstable soils are encountered, stable temporary work surfaces of timber mats would be constructed within the construction right-of-way adjacent to the area to be excavated. Construction would then proceed as in unsaturated wetlands, except topsoil segregation would not be possible because of saturation. Pipe stringing and fabrication may occur within the construction right-of-way within the wetland adjacent to the trench or adjacent to the wetland in a designated ATWS.

Permanent erosion control structures that may alter hydrology (for example, slope breakers) would not be installed within wetland boundaries, but would be used in the adjacent upland areas to control erosion and sedimentation. Materials such as equipment mats placed in wetlands during construction would be removed during final cleanup, and the pre-construction contours of the wetland would be restored. Stockpiled topsoil removed from directly over the trench would be placed over the backfilled trench to as close as feasible to its original horizon. Excess backfill material would be spread



PROFILE

SCALE: N.T.S.

NOTES:

1. CONCRETE COATED PIPE OR CONCRETE WEIGHTS MAY BE USED AS REQUIRED.

Not to Scale

APEX EXPANSION PROJECT
 Typical Wetland Crossing Adjacent to an Existing Pipeline

Date: March 2010

Figure 2.3.2-1

over adjacent upland areas and stabilized. Permanent erosion control measures would be installed, and disturbed areas within the wetland would be temporarily stabilized by seeding with native, annual wetland grasses.

The transferring of liquids and refueling would occur only in pre-designated locations at least 100 feet from all wetlands and waterbodies as required by Kern River's SPCC Plan. Where conditions require that construction equipment such as trench dewatering pumps or hydrostatic test water pumps be refueled within 100 feet of wetlands or waterbodies, these operations would be manned continuously to ensure that over filling, leaks, or spills do not occur. Where stationary equipment must remain within 100 feet of a waterbody or wetland, adequate secondary containment would be provided.

Section 4.3 addresses wetlands, including the wetland restoration and mitigation procedures and the draft Wetland Remedial Revegetation Plan (Appendix K) that would be implemented by Kern River.

2.3.2.2 Waterbodies

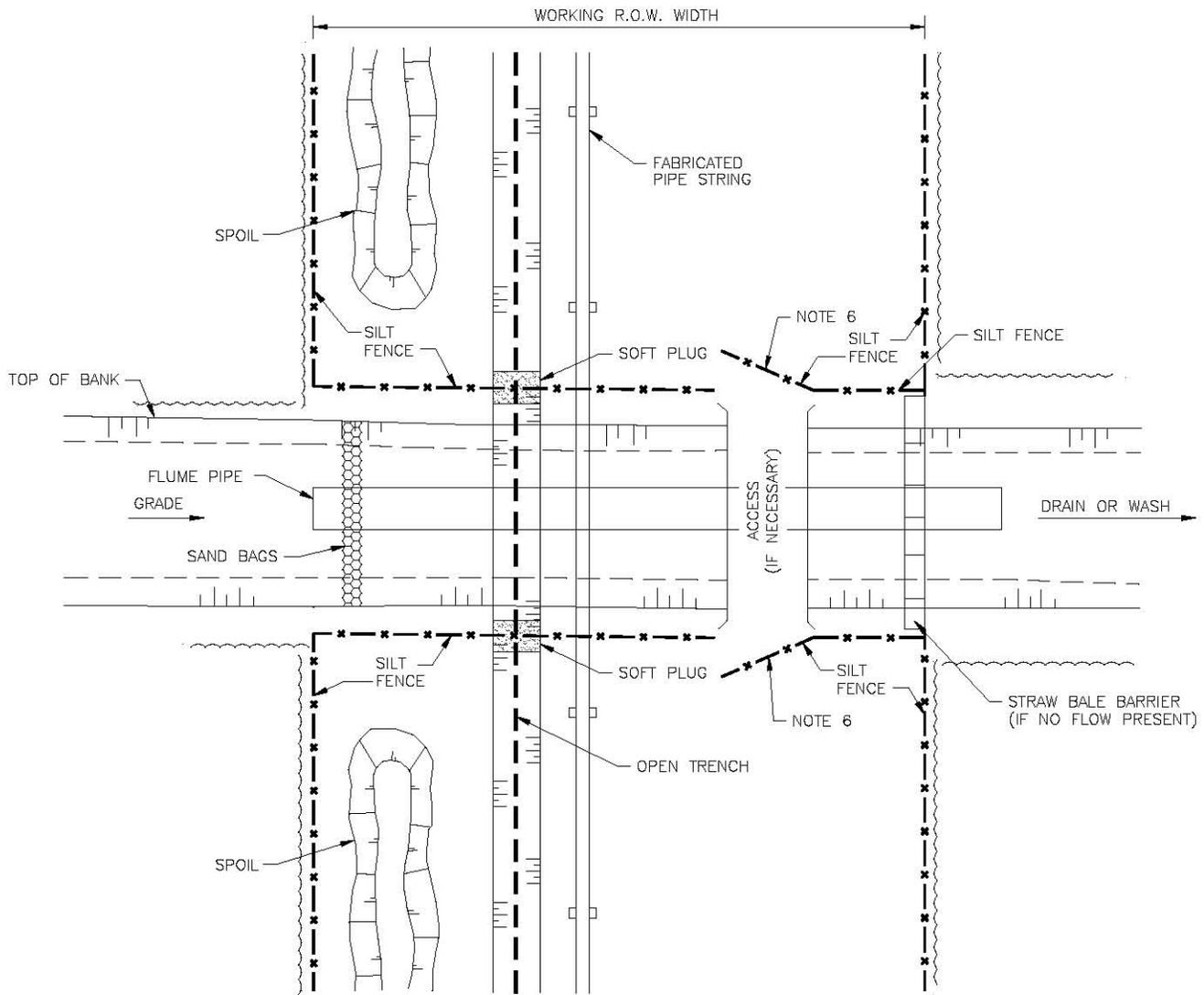
This section describes the methods used to construct pipeline crossings of waterbodies and the methods used to install equipment bridges over waterbodies.

Pipeline Crossings and Equipment Bridges

The Kern River Procedures define a waterbody as (1) any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing and (2) permanent waterbodies such as ponds and lakes. Installation of the proposed pipeline across rivers and streams and the installation and removal of equipment bridges across waterbodies would be accomplished in accordance with Kern River's Procedures and all applicable permit requirements. Kern River's Procedures identify the baseline mitigation measures, from pre-construction planning through construction, restoration, and monitoring, for minimizing the extent and duration of Project-related disturbance to waterbodies. The waterbody crossing measures specified in Kern River's Procedures are based on industry standard practices.

The proposed route would cross 21 waterbodies, including 7 intermittent streams, 12 perennial streams, and 2 ephemeral streams. Kern River proposes to cross three of these waterbodies (City Drain, Jordan River, and Northwest Oil Drain) using the conventional horizontal boring method; two waterbodies using the dam-and-pump method; and the remainder using the flume method. If waterbodies are dry or exhibit no flow at the time of construction, Kern River would use an open-cut construction method.

In general, an open-cut waterbody crossing is accomplished using methods similar to conventional open-cut trenching methods used in upland areas. The open-cut construction method involves excavation of the pipeline trench across the waterbody; installation of a prefabricated segment of pipeline; and backfilling of the trench with native material, with no effort to isolate flow, if any, from construction activities. Figure 2.3.2-2 illustrates a typical open-cut waterbody crossing. Excavation and backfilling of the trench would generally be accomplished using backhoes operating from one or both banks of the waterbody. All construction equipment would cross the waterbody using equipment bridges, if water was present.



PLAN VIEW

N.T.S.

NOTES:

1. APPLICABLE TO MINOR (<10') WATERBODIES AND WASHES THAT ARE NOT FLOWING AT THE TIME OF CONSTRUCTION, OR DO NOT SUPPORT A SIGNIFICANT FISHERY.
2. VEHICLE ACCESS IS ONLY REQUIRED WHERE NECESSARY TO FACILITATE EQUIPMENT MOVEMENT AND MAY CONSIST OF TIMBER MATS, TEMPORARY BRIDGES, RAIL FLATCARS OR FLUME CROSSING.
3. INSTALL SOFT PLUGS FOLLOWING EXCAVATION OF MAINLINE DITCH THROUGH CROSSING.
4. INSTALL SEDIMENT BARRIERS AS INDICATED, PROTECT ACCESS WITH SILT FENCE GATES OR STRAW BALE BARRIERS. SILT FENCE TO RUN 5' PAST THE END OF SPOIL PILE.
5. MAINLINE PIPE SECTION MAY SPAN CROSSING IN PREPARATION FOR LOWER IN.
6. SILT FENCE OR STRAW BALE "GATE" TO BE CLOSED AT NIGHT OR DURING RAINFALL.
7. INSTALL PERMANENT TRENCH BREAKERS ON EACH SIDE OF WASH CROSSINGS BASED ON PIPELINE ROW SLOPE OF 5% OR MORE, CHANNEL AND BANK PROFILES.
8. FOR ACTUAL CONSTRUCTION WORK SPACE, REFER TO THE CONSTRUCTION ALIGNMENT SHEETS OR OTHER APPLICABLE SITE SPECIFIC DRAWINGS.
9. FLUME PIPE WILL BE INSTALLED IN THE WATER BODY IN THE EVENT WATER IS RUNNING WHEN THE CROSSING IS TO BE MADE. IF NO WATER IS PRESENT, CONTRACTOR MAY REMOVE THE FLUME TO INSTALL THE CROSSING.

Not to Scale

APEX EXPANSION PROJECT
Typical Non-flowing Waterbody Crossing

Date: March 2010

Figure 2.3.2-2

The flume method involves establishing dams upstream and downstream of the crossing area and installing one or more pipes (flumes) that would extend along the course of the waterbody and through both dams. Streamflow would be carried through the construction area by the flume pipes. Additional information on the flume method is provided below. The East Canyon Creek Crossing would be constructed using the flume method. Kern River has indicated that the actual method of waterbody crossing would be subject to change based on the site-specific conditions (water flow) encountered at the time of construction. The conventional horizontal bore, flume, and dam-and-pump methods are described below.

All waterbody crossings that Kern River does not intend to construct using the conventional bore or dam-and-pump methods would be prepared as flume crossings, regardless of whether or not water is present. Because Kern River is proposing construction in the summer and fall at most crossing sites, many of the intermittent streams may be dry at the time of construction. Waterbodies, without flow at the time of construction would be constructed using the open-cut method. If water is not present at the time of construction and precipitation is not forecast, the flume pipe would be removed and the crossing would be constructed using the open-cut method. In the event that unexpected flow occurs during construction, the flume pipe would be replaced and construction would proceed using the flume method. If water is present in a crossing at the time of construction, the crossing would be constructed using the flume method.

Mitigation measures described in Kern River's Procedures would be implemented to minimize impacts on the aquatic environment during construction, especially if water is present in the channel. This would include installing mats across the wetland adjacent to the East Canyon Creek and Jordan River crossing sites to prevent excessive rutting and to protect the vegetative material and topsoil.

Construction would be scheduled so that the trench would be excavated immediately prior to pipelaying activities. In accordance with Kern River's Procedures, excavated materials would be stockpiled in the construction right-of-way at least 10 feet from the streambank or in approved ATWSs and would be surrounded by sediment control devices to prevent sediment from returning to the waterbody.

All streambeds and banks would be restored to pre-construction contours as part of restoration activities. The methods that would be used for equipment bridges and for constructing waterbody crossings are described below. As previously indicated, Kern River proposes to cross East Canyon Creek, the Jordan River, and the City Drain in the fall or winter of 2010 prior to mainline construction in 2011, and a description of its proposed crossing method for these waterbodies is included below. Any modification to the methods described in this EIS and Kern River's filings would require review and approval by the FERC and possibly other agencies. Additional information on the proposed waterbody crossing procedures and potential environmental consequences is presented in section 4.3.

Equipment Bridges

Kern River would install temporary equipment bridges across waterbodies for access along the proposed right-of-way. The bridges would be installed in accordance with Kern River's Procedures. Except at East Canyon Creek and the City Drain, equipment bridges would generally be constructed of culverts (or flumes) and equipment pads (or geotextiles) or culverts (flumes) and clean rock fill. A culvert or flume bridge involves using flume pipes to convey the flow of water, with the number of flumes needed dependent on the potential flow of water at the time of construction. The flumes would be laid on the river bed and the equipment pads or clean rock, purchased from a commercial source, would be used to cover the flumes up to the level of the streambank to provide a travel surface for construction equipment. If excessively soft soils are encountered in the streambed, or if high-water flows occur,

portable bridges (flexi-float bridges) may be used at minor stream crossings in lieu of culverts. At East Canyon Creek and the City Drain, a flat railroad car frame or similar type of portable bridge would be used. Except at the City Drain, equipment bridges would be maintained throughout construction, and construction traffic would be required to use the equipment bridge if water is present in the channel. The bridge at the City Drain would be removed immediately after the bored crossing is completed.

Each bridge would be designed to accommodate the highest streamflow expected to occur and would be maintained to prevent soil from entering the waterbody and to prevent restriction of flow, bank erosion and stream scour during the period of time that the bridge is in use. After the bridges are removed, all disturbed areas would be restored to pre-installation conditions.

Conventional Bore Crossing Method

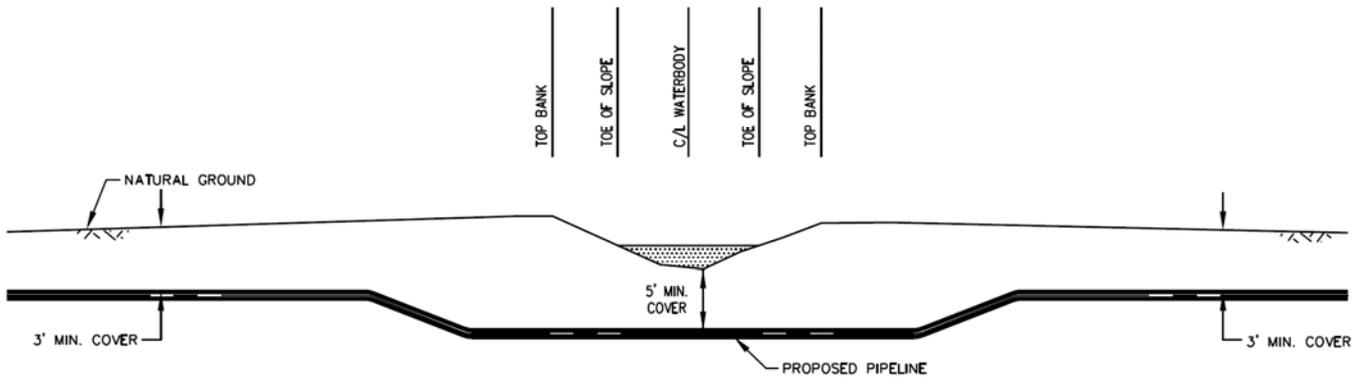
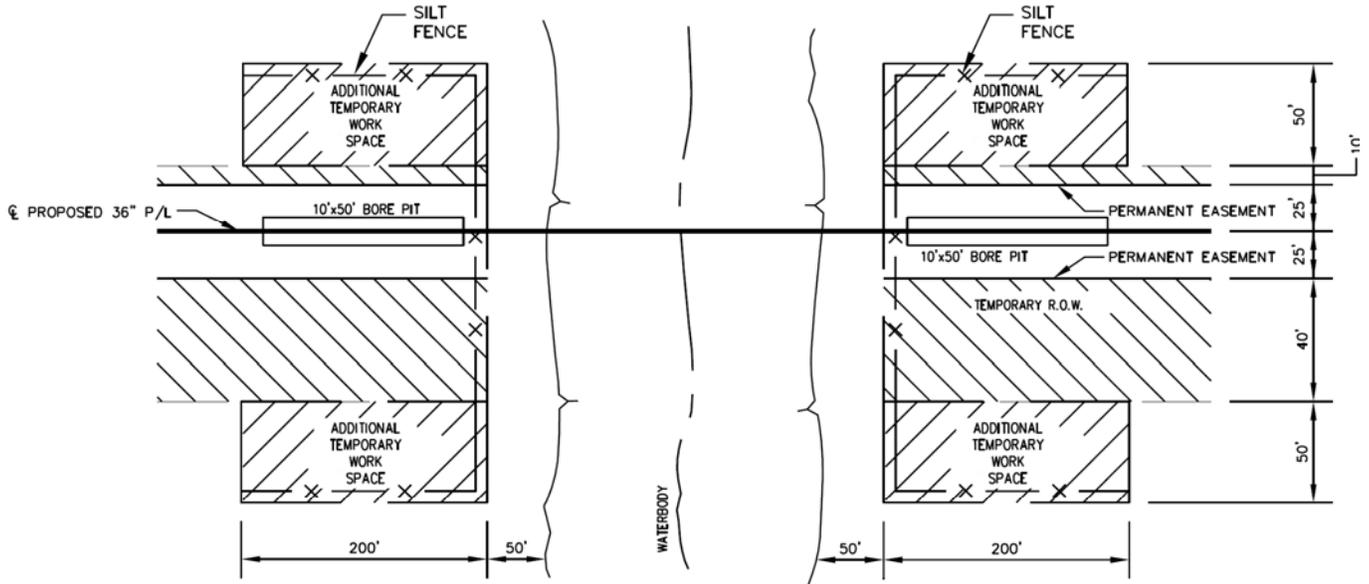
Conventional (horizontal) boring requires the excavation of entry and exit pits on either side of the crossing for a boring machine to install the pipeline beneath the feature. The machines would bore a horizontal hole equivalent to the diameter of the pipe. The pipeline section would then be pushed through the bore hole. If additional pipeline sections are required, they would be welded to the first section of the pipeline in the bore pit before being pushed through the bore hole. A typical conventional bore crossing is shown in figure 2.3.2-3.

Flume Crossing Method

Kern River would install flumes with sufficient capacity to transport the maximum flows that could be generated seasonally within the waterbody. The flumes, typically 40 to 60 feet long, would be installed before trenching and aligned to prevent impounding of water upstream of the construction area or to cause back-erosion downstream. The upstream and downstream ends of the flumes would be incorporated into dams made of sandbags or plastic dams. Upstream dams would be installed first and would funnel streamflow into the flumes. Downstream dams then would be constructed to prevent water from flowing back into the area to be trenched. Kern River would monitor the dams and adjust them as necessary to minimize leakage. The flumes would remain in place during pipeline installation, backfilling, and streambank restoration. A typical flume crossing is shown in figure 2.3.2-4.

Prior to trenching, the area between the dams typically would be dewatered. Water from any trench dewatering activities would be released into the adjacent upland area using a water discharge device and sediment barriers, in accordance with Kern River's Plan and Procedures. Backhoes working from one or both banks would excavate the trench across the waterbody and under the flume pipes. Sediment containment devices, such as silt fences and straw bales, would be installed to contain the excavated material and to minimize the potential for sediment to migrate into the waterbody.

After the trench is excavated to the proper depth, a prefabricated section of pipe would be positioned and lowered into the trench. The trench then would be backfilled with the excavated material from the stream unless otherwise specified in stream crossing permits. Prior to removing the dams and flume pipes and restoring streamflow, water that accumulated in the construction area would be pumped into a straw bale structure or similar dewatering device, and the bottom contours of the streambed and the streambanks would be restored as close as practical to pre-construction contours.



PROFILE
SCALE: N.T.S.

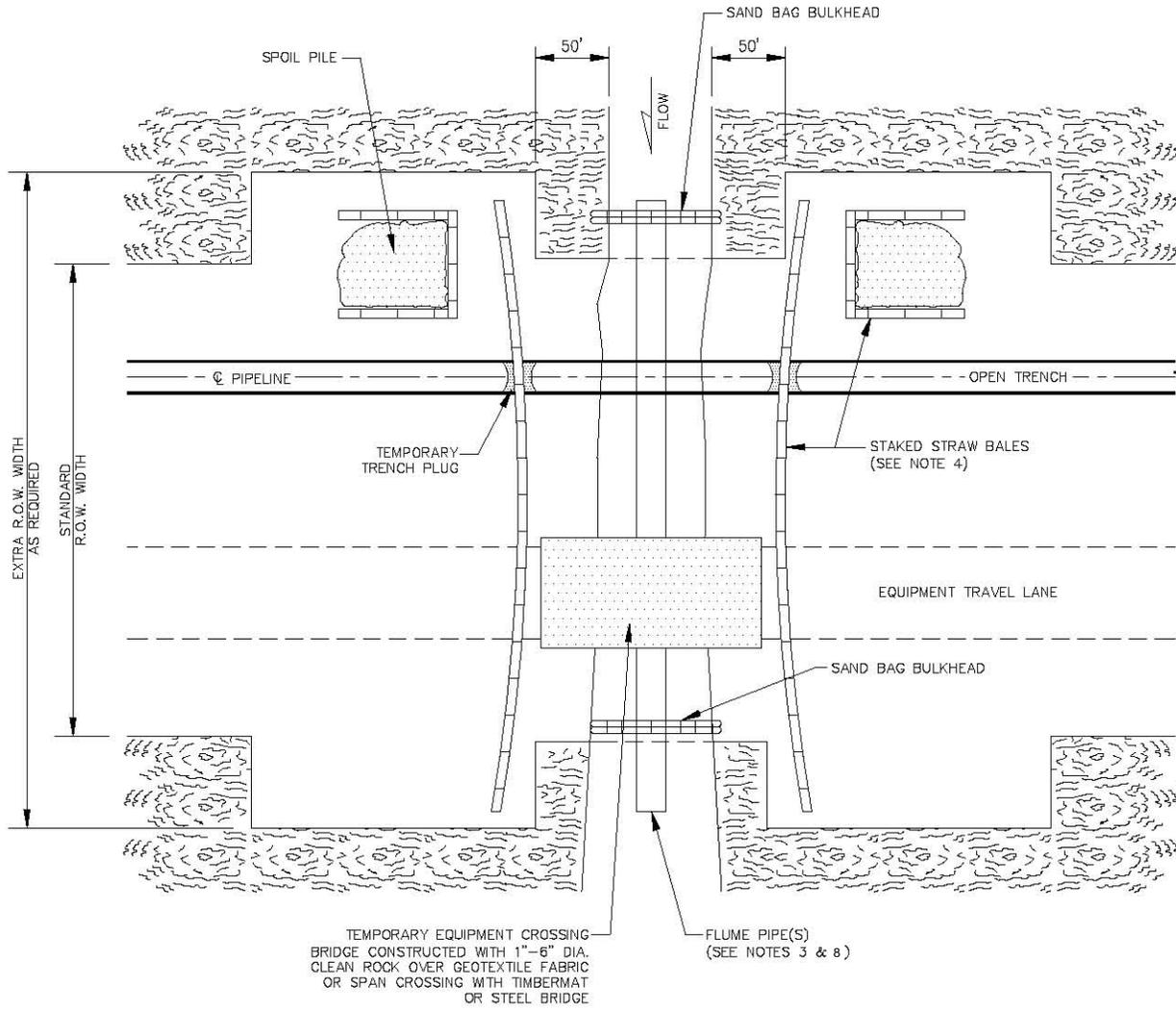
- NOTES:**
1. FOR ACTUAL CONSTRUCTION WORK SPACE, REFER TO THE CONSTRUCTION ALIGNMENT SHEETS OR OTHER APPLICABLE SITE SPECIFIC DRAWINGS.

Not to Scale

APEX EXPANSION PROJECT
Conventional Bore Crossing Method

Date: March 2010

Figure 2.3.2-3



NOTES:

1. USE FLUME TRENCH METHOD FOR SMALL STREAMS SUPPORTING COLD WATER OR SIGNIFICANT WARM WATER FISHERIES.
2. LOWER PIPE INTO TRENCH BY PASSING UNDER THE FLUME PIPE(S).
3. ACTUAL NUMBER OF FLUME PIPES (MIN.20" DIA.) REQUIRED DETERMINED BY STREAM FLOW AS DETERMINED BY MANNING'S FORMULA.
4. STRAW BALES TO BE IN PLACE ACROSS TRAVEL LANE DURING PERIODS OF NO CONSTRUCTION ACTIVITY.
5. MINIMUM CLEAN ROCK COVER OVER FLUME PIPE(S) IS 1.0'.
6. INSTALL TRENCH BREAKERS ON EACH SIDE OF CROSSING.
7. FOR ACTUAL CONSTRUCTION WORK SPACE, REFER TO THE CONSTRUCTION ALIGNMENT SHEETS OR OTHER APPLICABLE SITE SPECIFIC DRAWINGS.
8. CONTRACTOR WILL PROTECT THE STREAM BED AT THE OUTLET OF THE FLUME PIPES WITH AN APPROPRIATE ENERGY DISAPATING DEVICE.

Not to Scale

**APEX EXPANSION PROJECT
Flume Crossing Method**

Date: March 2010

Figure 2.3.2-4

Dam-and-Pump Method

The dam-and-pump method involves installing temporary dams upstream and downstream of the proposed waterbody crossing. The temporary dams would typically be constructed using sandbags or plastic dams. After dam installation, appropriately sized pumps would be used to transport the streamflow around the construction work area. Figure 2.3.2-5 illustrates a typical dam-and-pump waterbody crossing. Intake screens would be installed at the pump inlets to prevent or limit entrainment of aquatic life, and energy-dissipating devices would be installed at the pump discharge point to minimize erosion and streambed scour. Trench excavation and pipeline installation would then commence in the dewatered portion of the waterbody channel.

Horizontal Directional Drilling Crossing Method

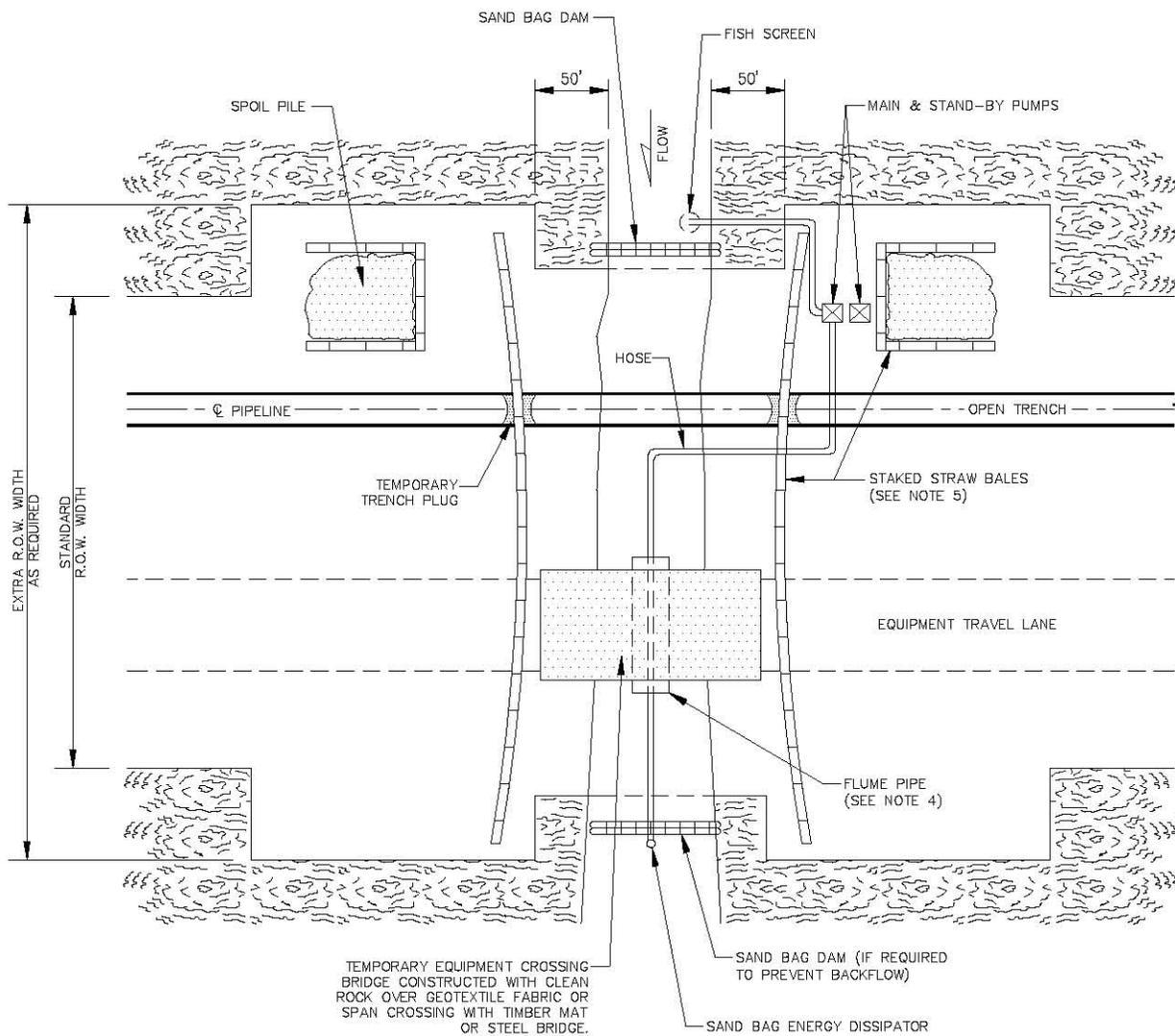
Horizontal directional drilling (HDD) is a trenchless crossing method that may be used to avoid direct impacts on sensitive resources, such as waterbodies and wetlands, by directionally drilling beneath them. HDD is typically used for crossing major waterbodies (greater than 100 feet wide). However, the proposed route does not cross any waterbodies of that width, and Kern River does not propose the use of HDD at any locations at this time. If further engineering analysis indicates that HDD is the preferred installation method at any location, Kern River would notify the FERC.

East Canyon Creek Crossing

During construction of the Kern River mainline in 1991, a conventional bore was proposed for crossing East Canyon Creek. The boring was not successful and installation was accomplished using open-cut installation techniques. East Canyon Creek has significant surface flow and groundwater flow throughout much of the year, but flow is generally lowest late in the year. As a result, Kern River has developed a site-specific crossing plan to construct the crossing in late fall or early winter of 2010, when surface and groundwater levels are expected to be low in the creek. If construction extends into winter, it would be conducted in accordance with Kern River's Winter Construction Plan. In addition to lower flows, winter construction with partially frozen or frozen soil with an insulating snow cover would reduce the potential for impacts to the adjacent wetlands as compared to summer and fall conditions.

Kern River proposes to use the flume crossing method at East Canyon Creek. After the pipe is lowered into the trench, the ends of the pipe sections near the beginning of the sag bend would be capped until tie-ins can be completed in 2011. After capping, trench breakers would be installed on each side of the East Canyon Creek crossing and the trench, banks would be backfilled to restore the channel and banks to stable slopes and contours, and the flume pipes would be removed. Where the backfill material may have become partially frozen, portable diesel-fired drying units may be used for thawing and removing ice and snow prior to backfill to avoid the potential for excessive settling, or clean fill would be imported. The banks would be stabilized with cobbles or boulders to provide protection from hydraulic erosion in higher flow periods until permanent seeding and installation of erosion control matting could be completed in the 2011 construction season.

The temporary equipment bridge at the crossing site would remain in place for the 2011 construction season. The bridge would be removed when reclamation of adjacent portions of the right-of-way and ATWSs have been completed.



NOTES:

1. USE PUMP AROUND METHOD FOR SMALL STREAMS SUPPORTING WARM OR COLD WATER FISHERIES WHERE FISH PASSAGE IS NOT A CONCERN.
2. AFTER INSTALLING PIPE AND BACKFILLING, DISMANTLE DOWNSTREAM THEN UPSTREAM DAMS WHILE KEEPING PUMP RUNNING TO MAINTAIN STREAM FLOW.
3. PUMPS SHALL HAVE A CAPACITY AT LEAST TWICE THAT OF THE MAXIMUM ANTICIPATED STREAM FLOW AS DETERMINED BY THE RATIONAL METHOD.
4. STRAW BALES TO BE IN PLACE ACROSS TRAVEL LANE DURING PERIODS OF NO CONSTRUCTION ACTIVITY.
5. INSTALL TRENCH BREAKERS ON EACH SIDE OF CROSSING.
6. FOR ACTUAL CONSTRUCTION WORK SPACE, REFER TO THE CONSTRUCTION ALIGNMENT SHEETS OR OTHER APPLICABLE SITE SPECIFIC DRAWINGS.

Not to Scale

**APEX EXPANSION PROJECT
Dam-and-Pump Crossing Method**

Date: March 2010

Figure 2.3.2-5

Temporary mulch would be applied to the disturbed portion of the construction right-of-way and the ATWSs. The sediment barriers would be left in place and inspected as described in Kern River's Plan and Procedures or during and immediately following a period of thawing and higher runoff. The bridge would be maintained as necessary. The crossing would require approximately 2 to 3 weeks to complete.

Jordan River and City Drain Crossings

The Jordan River and City Drain crossings would be constructed using the conventional horizontal bore method. Construction at both crossings would be initiated in the fall of 2010, but may extend into winter. If construction extends into winter, it would be conducted in accordance with the Kern River's Winter Construction Plan. In the fall and early winter, groundwater levels would be lower than at other times of the year and would result in better bore pit stability and less disturbance to the adjacent wetlands.

Kern River anticipates that excavation of bore pits would proceed similarly to that for conventional non-winter construction. Frozen soils near the surface are not expected to impede excavation or use of conventional equipment. Topsoil and subsoil would be stockpiled separately as described for standard pipeline construction (section 2.3.1). The bore pits would be excavated outside of existing levees, and the levees would not be disturbed during construction. The bore pits would be dewatered as necessary. Water would be released into the adjacent upland area using a water discharge device and sediment barriers in accordance with Kern River's Plan and Procedures. Kern River would remove snow from the bore pits to allow visual inspection of the trench and bore pits and to allow work in the bore pits. Excavated material from the boring may be covered with Visqueen or a similar product to protect it from excessive snow accumulation and from mixing with the snow removed from the bore pits. Portable drying units may be used to thaw and remove snow and ice from the excavated material prior to backfilling the bore pits in order to prevent excessive settling. In addition, Kern River may import clean topsoil if required to restore the original contours. After the pipeline is installed under the waterbody, it would be capped and the bore bits would be backfilled. The right-of-way and ATWSs would be covered with mulch to reduce the potential for erosion during snowmelt and other runoff.

The pits would be re-excavated in 2011 to complete tie-ins with the adjacent pipe segments and restored with the adjacent segments of the construction right-of-way in accordance with Kern River's Procedures and Reclamation Plan.

2.3.2.3 Agricultural Areas

The proposed pipeline route would cross about 1.1 miles of agricultural areas. In these areas, Kern River proposes to segregate the topsoil across the entire width of the construction workspace. To mitigate impacts on topsoil in these areas, Kern River proposes to separate the topsoil to its actual depth, to a maximum depth of 12 inches. The topsoil would be stockpiled separately from the subsoil to prevent mixing. Kern River would also bury the pipeline to a depth that would result in at least 5 feet of cover in agricultural areas.

2.3.2.4 Roads, Highways, and Railroads

The proposed pipeline route would cross paved and unpaved roads, highways, and railroads. Construction across these features would be accomplished in accordance with Kern River's Plan and the requirements of all applicable crossing permits and approvals. During roadway construction, Kern River would incorporate safety precautions required by federal, state, and local transportation agencies.

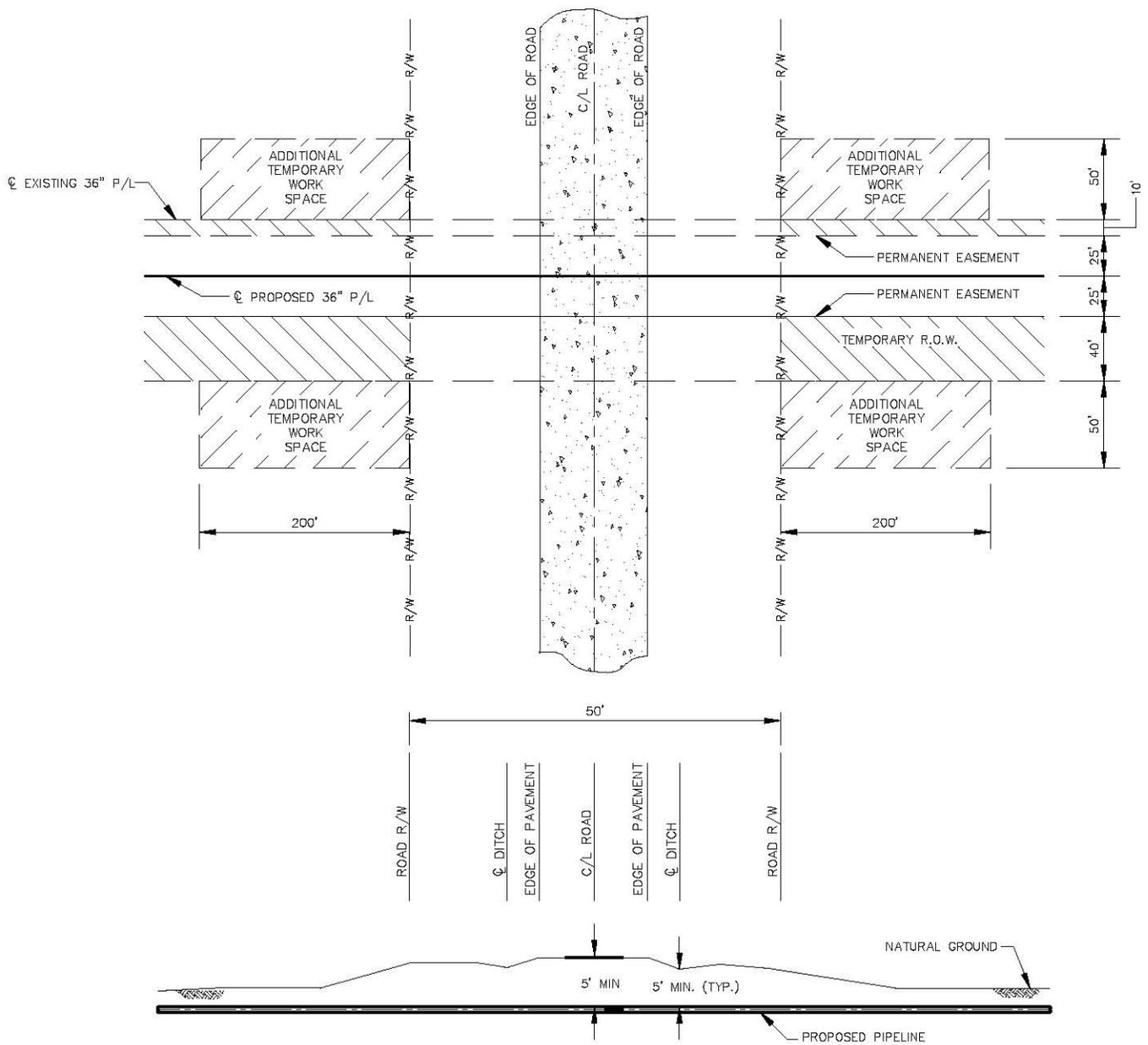
Railroads and major paved highways would be crossed using conventional subsurface boring techniques where feasible (conventional horizontal bore technique, described in section 2.3.2.2 and table 2.3.2-1). Figures 2.3.2-6 and 2.3.2-7 are plan views of typical road and railroad bored crossings, respectively. With this method, the pipeline would pass under the railroad or roadway with little or no disturbance to traffic along the roadway. The crossing of Interstate 15 would be accomplished during the late fall and would extend into early winter.

TABLE 2.3.2-1 Proposed Horizontal Bore Locations for the Proposed Apex Expansion Project			
State	County	Feature Crossed	Milepost
Roadways			
Utah	Morgan	State Highway 65	1.2
	Morgan	State Highway 66	5.0
	Davis	South Frontage Road	25.7
	Davis	State Highway 89	25.7
	Davis	Interstate 15	25.7
	Davis	Interstate 15 Southbound Ramp	25.8
	Davis	Beck Street Ramp	25.8
	Davis	Redwood Road	27.0
	Davis	Pony Express Court	27.0
	Salt Lake	Interstate 215	27.6
	Salt Lake	2200 W. Street	28.0
Railroads			
Utah	Davis	Union Pacific and UTA Railroads (4)	25.8 – 25.9
	Davis	Chevron Rail Spur	26.5

Pipeline crossings of lightly traveled paved and unimproved rural dirt roads would typically be crossed using the open-cut installation method. If open-cut road construction requires extensive construction time, provisions would be made for detours or other measures to permit traffic flow during construction. If reasonable detours are not feasible, a minimum of one lane would be kept open to traffic, except for brief periods when it is essential to close the road to lay the pipeline or weld pipeline segments together. To the extent possible, roads would not be closed during peak traffic hours. After the pipeline is installed, the roadway would be restored to its pre-construction condition or better.

With either method, the pipeline would be buried to a depth of at least 5 feet below the road or railroad surface and designed to withstand the anticipated external loads.

Section 4.8 provides additional information on the proposed road and railroad crossings.



PROFILE

SCALE: N.T.S.

NOTES:

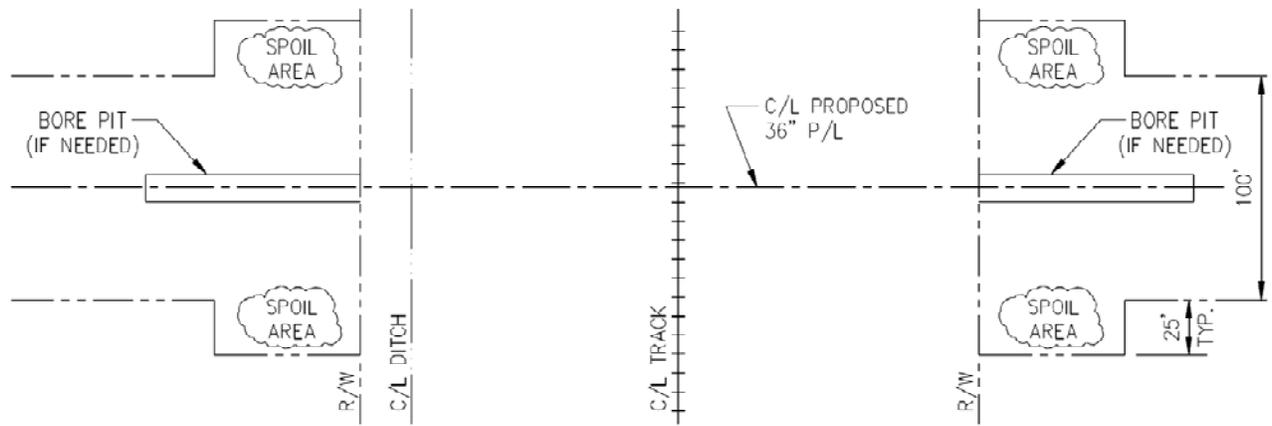
1. FOR ACTUAL CONSTRUCTION WORK SPACE, REFER TO THE CONSTRUCTION ALIGNMENT SHEETS OR OTHER APPLICABLE SITE SPECIFIC DRAWINGS.

Not to Scale

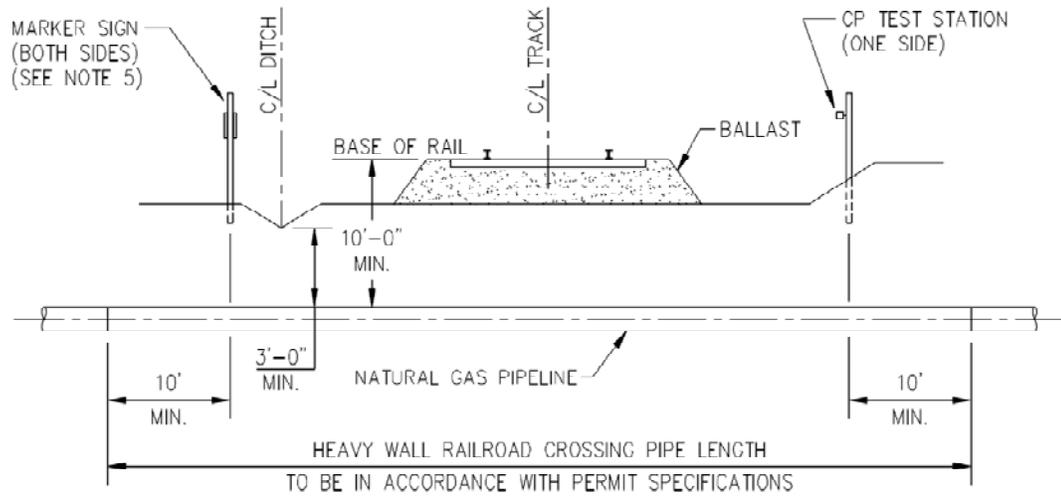
APEX EXPANSION PROJECT
 Conventional Horizontal Boring for
 Roadway Crossing

Date: March 2010

Figure 2.3.2-6



PLAN



PROFILE

NOTES:

1. WHERE CONFLICTS MAY EXIST, PERMIT SPECIFICATIONS SHALL ALWAYS GOVERN THIS DRAWING.
2. THE MINIMUM BORE LENGTH SHOULD BE IN ACCORDANCE WITH THE PERMIT SPECIFICATIONS.
3. PIPE SHALL BE DESIGNED IN ACCORDANCE WITH THE SPECIFIC PERMIT REQUIREMENTS AND DOT TITLE 49, PART 192. TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE. RAILROAD PIPE SHALL EXTEND A MINIMUM OF 10 FEET OUTSIDE THE R-O-W LIMITS ON EITHER SIDE CROSSING OF THE RAILROAD.
4. ANY EXCAVATION WITHIN THE LIMITS OF THE ROAD R-O-W SHALL BE REPLACED WITH BACKFILL SPECIFIED BY THE ENGINEER AND COMPACTED IN 6" LAYERS AT 95% OF DENSITY OF UNDISTURBED SOIL ADJACENT TO THE LOCATION OR IN ACCORDANCE WITH THE SPECIFIC PERMIT REQUIREMENTS.
5. MARKERS SHALL BE PLACED AT RAILROAD R-O-W LINES.
6. NO VERTICAL OR HORIZONTAL PIPE BENDS SHALL BE PLACED WITHIN THE RAILROAD R-O-W.
7. PIPE DIAMETER, WALL THICKNESS AND GRADE SHALL BE SPECIFIED ON THE ALIGNMENT SHEET DRAWINGS.
8. SEDIMENT BARRIERS SHALL BE INSTALLED AT THE BASE OF SLOPES ADJACENT TO ROAD CROSSINGS WHERE THERE IS POTENTIAL FOR RUNOFF AND SEDIMENTATION. TO BE LEFT IN PLACE UNTIL RESTORATION AND PERMANENT EROSION AND SEDIMENT CONTROL IS COMPLETED.
9. SEDIMENT BARRIERS SHALL BE INSTALLED AROUND BORE PIT STOCKPILES WHERE SEDIMENT BARRIERS EXTENDING ACROSS THE ROW AT THE BASE OF SLOPES ARE NOT REQUIRED.
10. BORE PIT DEWATERING SHALL BE FILTERED THROUGH A TRENCH DEWATERING STRUCTURE AND DIVERTED TO A STABLE AREA AWAY FROM THE ROAD.
11. BORE PIT DIMENSIONS WILL BE DETERMINED BY SITE REQUIREMENTS.

Not to Scale

APEX EXPANSION PROJECT
Conventional Horizontal Boring for
Railroad Crossing

Date: March 2010

Figure 2.3.2-7

2.3.2.5 Residences within 50 Feet of the Construction Right-of-Way

Kern River identified two residences and one barn within 50 feet of the proposed construction right-of-way. The residence at MP 27.5 is located adjacent to Kern River's existing right-of-way. Kern River would reduce the pipeline offset or the construction workspace as practicable to minimize inconvenience to property owners. If construction requires the removal of private property features such as gates or fences, Kern River would coordinate with the landowner or tenant on the best methods to use.

Kern River is currently coordinating with the property landowners to avoid and minimize impacts on the residential properties. Kern River would coordinate construction work schedules with affected landowners prior to starting construction. To minimize impacts on residential areas within the vicinity of construction work areas, Kern River would implement measures as described in section 4.8.2.3 on a site-by-site basis. Kern River developed site-specific residential construction plans to inform affected landowners of proposed measures to minimize disruption and to maintain access to the two residences located within 50 feet of the construction right-of-way (see appendix L). These site-specific construction plans include a dimensioned drawing depicting the residence in relation to the pipeline; workspace boundaries; the proposed permanent right-of-way. We have reviewed the site-specific residential construction plans and find them acceptable. We are, however, specifically seeking comments on these plans.

After completion of major construction, the property would be restored as reasonably as practicable as requested by the landowner to the extent that the landowner's requirements are compatible with existing regulations and with Kern River's standards regarding right-of-way restoration and maintenance.

2.3.2.6 Commercial and Industrial Areas

Industrial and commercial land is present in the vicinity of the proposed route between MP 25.0 and 27.0. No industrial or commercial buildings are located within 50 feet of the proposed construction right-of-way. Kern River would coordinate with business owners to maintain access; reduce construction duration to the extent possible; and generally minimize impacts and inconveniences to business owners, employees, and customers.

2.3.2.7 Areas of Steep Terrain

Portions of the proposed Project would traverse areas of side slopes and rolling terrain that could require additional right-of-way to create level and safe workspaces. Where steep slopes (greater than 15 percent) are parallel to the proposed pipeline right-of-way, Kern River would use industry-accepted steep slope construction methods. This would involve cutting the uphill side of the construction right-of-way during grading. The material removed from the cut would be used to fill the downhill side of the construction right-of-way to provide a safe and level surface from which to operate heavy equipment. The pipeline trench would then be excavated along the newly graded right-of-way at the appropriate depth beneath the original grade.

After pipeline installation and backfill of the trench, excavated material would be placed back in the cut and appropriately compacted to restore the approximate original contours. All disturbed areas would then be stabilized in accordance with Kern River's Plan. This would include seeding and installation of erosion control matting or fabric to provide a higher degree of protection from surface erosion until vegetation becomes established.

Where steep slopes are generally perpendicular to the right-of-way, erosion control structures including slope and trench breakers would be used in accordance with Kern River's Reclamation Plan and the provisions of Kern River's Plan. The restored right-of-way would be monitored for restoration success and corrective action would be implemented in any areas of active erosion.

Figure 2.3.2-8 provides a typical cross-section of the steep slope construction technique. This construction technique would likely require ATWSs to accommodate the additional volumes of fill material generated by this technique. Figure 2.3.2-9 depicts a typical right-of-way for construction areas on steep slopes.

2.3.2.8 Areas with Geologic Faults

The proposed route would cross one active fault, the Warm Springs Fault, at about MP 25.6. The other faults crossed by the pipeline route are considered to be geologically older and inactive. Analyses conducted for the Warm Springs Fault and construction of the existing Kern River pipeline at this location indicate that special construction methods would be needed for the proposed Project. Kern River would use the design and construction procedures that were employed for the Kern River mainline crossing of the Warm Springs Fault, including the following specific fault-rupture mitigation measures:

- Install extra-heavy wall, Grade X65 steel pipe;
- Surround the pipe with select sand backfill along a distance of 450 feet west of the fault trace and 750 feet east of the fault trace; and
- Excavate the pipe trench to a depth of 10 feet below the pipe and place a 4-foot-deep layer of select sand backfill in the trench along a distance of 100 feet west of the fault trace and 200 feet east of the fault trace.

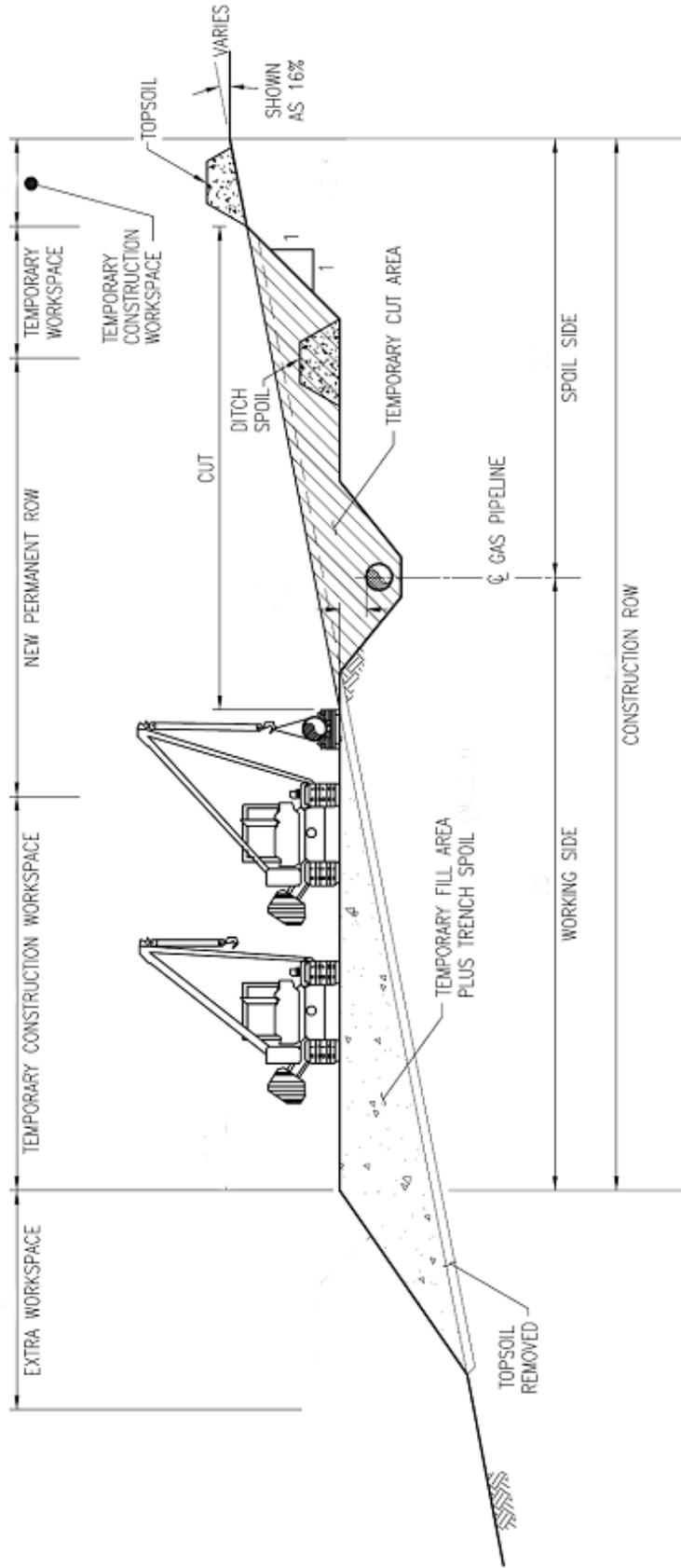
Section 4.1 provides additional information on the proposed crossing of the faults and geologic hazards.

2.3.3 Construction Procedures for Aboveground Facilities

Aboveground facilities for the proposed Project include one new compressor station (Milford Compressor Station), one new compressor at each of three existing compressor stations (Coyote Creek, Elberta, and Dry Lake Compressor Stations), replacement of an existing compressor at an existing compressor station (Fillmore Compressor Station), six MLVs, three pig launchers, and two pig receivers. The pipeline construction crew would install four MLVs and one pig launcher along the proposed pipeline; construction at the existing compressor stations and at the site of the new compressor station (which includes two MLVs, two pig launchers, and two pig receivers) would be conducted by fabrication crews working separately from the pipeline construction spread. At the existing compressor stations, all construction activities would be conducted within the existing fence lines.

2.3.3.1 Compressor Stations

At the site of the proposed Milford Compressor Station at KRMP 326.9, the first step of construction would involve the removal of vegetation from the site and leveling of the terrain. After grading at the site of the new proposed compressor station, concrete foundations would be poured for buildings and pipe support piers. After completion of this work, Kern River would winterize the site.

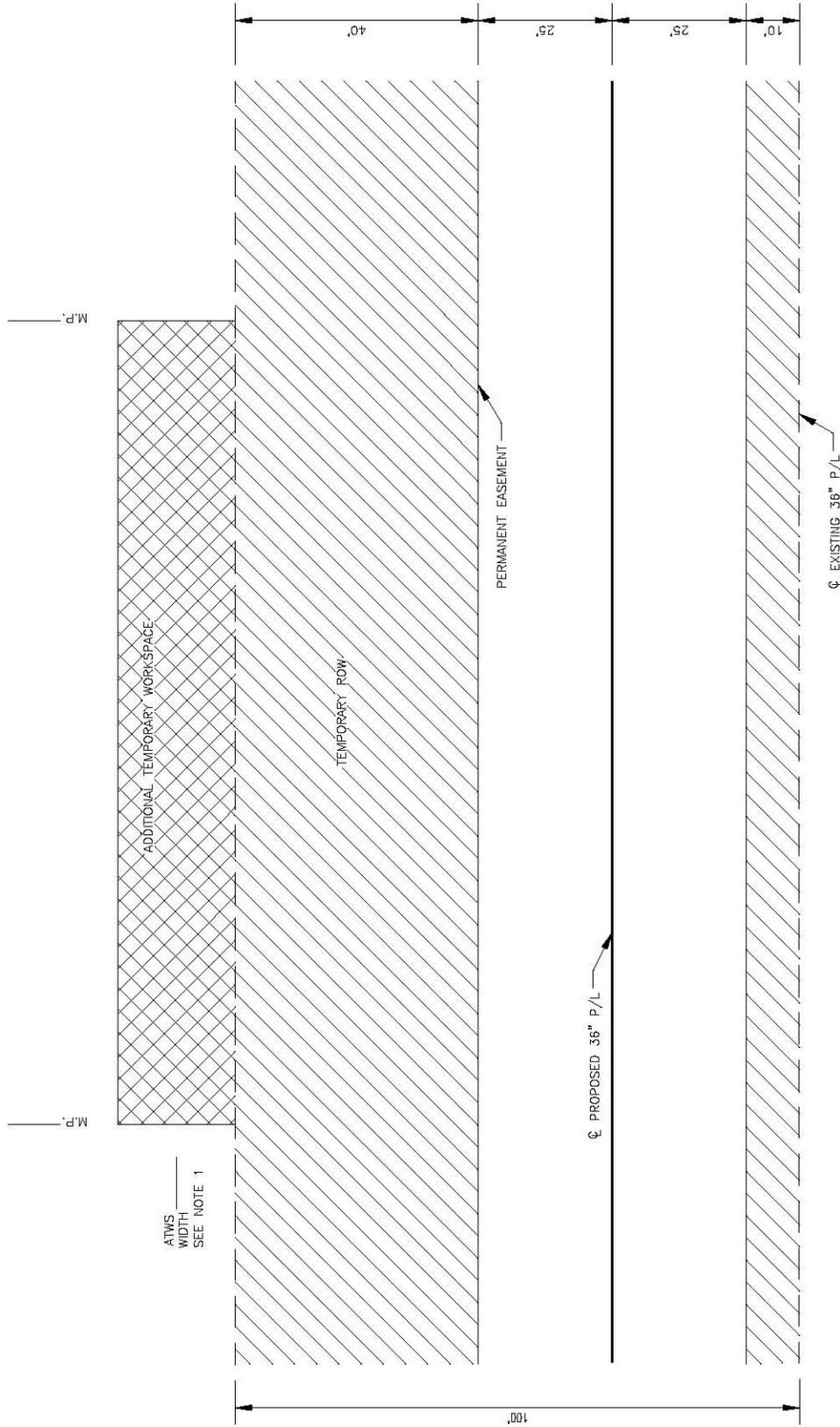


APEX EXPANSION PROJECT
 Cross-section of Typical Side Slope Construction Method

Date: March 2010

Figure 2.3.2-8

Not to Scale - Reference Only
 Kern River proposes to use specific side slope construction methods when the proposed pipeline would be upgradient and downgradient of other pipelines and transmission lines



NOTES:
 1. ACTUAL DIMENSIONS OF THE ATWS WILL VARY BASED ON THE SITE SPECIFIC CONDITIONS; REFER TO THE CONSTRUCTION ALIGNMENT SHEETS FOR APPROVED ATWS LOCATIONS AND DIMENSIONS.

Not to Scale

APEX EXPANSION PROJECT
 Typical Side Slope Construction Method Right-of-Way

Date: March 2010

Figure 2.3.2-9

In the spring of 2011, Kern River would return to the proposed Milford Compressor Station site to install new filter/separator units; a new compressor building; a new turbine/compressor package inside the compressor building; high-pressure gas coolers; a natural gas-fired auxiliary power generation unit for backup power generation; pipelines associated with the new compressor; a blowdown/vent stack; two MLVs (one on the existing mainline pipeline and one on the existing loop pipeline); two pig launchers and two pig receivers (one on the existing mainline pipeline and one on the existing loop pipeline); power and control buildings; a warehouse building and the required electrical service; other utilities; and control equipment. Kern River would also construct a potable water tank and a septic system to serve the restrooms in the control building. Potable water would be brought to the compressor station by truck. The new compressor station site would be fenced for security and protection.

At the existing compressor stations, some grading may be required at the sites planned for installation of the new compressors. At the existing stations, concrete foundations would be poured to support extensions of the existing compressor buildings, the new or replacement compressors, and the associated piping and appurtenant equipment.

Constructing the concrete foundations at each of the sites would entail setting forms, installing rebar, pouring the concrete, and allowing the concrete to cure in accordance with applicable standards. Concrete pours would be randomly sampled to verify compliance with minimum strength requirements.

Major construction activities at the existing compressor stations would involve extending the compressor buildings, installing the new or replacement turbine/compressor units inside of the buildings, installing piping associated with the new compressors and existing pipelines, installing new high-pressure gas coolers, relocating the existing blowdown/vent stacks or adding new blowdown/vent stacks, and installing the required utilities and control equipment. In addition, the existing compressors at the Coyote Creek, Elberta, and Dry Lake Compressor Stations would be restaged to accommodate the reduced flow through the existing compressors that would occur with use of both the existing compressors and the new compressors.

For each existing compressor station, prefabricated segments of pipe, valves, fittings, and flanges would be shop- or site-welded and assembled at the compressor station site. The compressor units and other large equipment would be brought to the sites by truck, mounted on their respective foundations by cranes, and the compressor buildings or the building extensions erected around them. Noise abatement measures (including use of sound-dampening equipment installed in the walls of the building) and emission control technology would be installed as needed to meet applicable federal, state, and local standards. Section 4.11 provides additional information on noise abatement and emission control technology.

Before being placed in service, all components of the high-pressure natural gas system would be hydrostatically tested and all controls and safety equipment and systems would be calibrated and tested. Municipal or private water well sources would be used for all hydrostatic testing associated with the compressor stations. Hydrostatic testing would be conducted in accordance with the requirements of USDOT pipeline safety regulations (49 CFR 192), Kern River's testing specifications, and applicable permit requirements as described in section 4.3. Because hydrostatic test water from the existing compressor stations would be exposed to both new and existing pipe, it would be tested and disposed of at a local wastewater treatment facility, or if necessary, wastewater would be treated and disposed of on site. Test water for the proposed Milford Compressor Station would contact only new pipe and no chemicals would be added; therefore the that test water would be discharged on site in accordance with applicable state and local regulations and in accordance with the Kern River Procedures. Section 4.3 of the EIS provides additional information on hydrostatic testing procedures at the compressor stations.

After completion of testing, the final construction activities would consist of painting structures using colors that do not contrast with the surrounding environment, grading and surfacing the driveway at the proposed Milford Compressor Station, gravelling the working yard in the vicinity of the new compressors at the existing stations, and gravelling the working yard of the new Milford Compressor Station. Debris and wastes generated from the construction would be disposed of in accordance with applicable regulations.

2.3.3.2 Mainline Valves

As described in section 2.1.2, there are two MLVs in place at both Kern River MLV station 96 and MLV station 124. One of the two existing MLVs at each station would be connected to the proposed Wasatch Loop at MPs 0.0 and 28.0. In addition, the pipeline construction crew would install two new MLVs along the proposed route at MPs 7.1 and 24.6. At the proposed Milford Compressor Station, one new MLV would be installed on each of the two existing Kern River pipelines (the mainline and the existing loop line). Installation of the new MLVs would be conducted in compliance with the same standards and requirements described above for the compressor stations and pipeline.

At each of the MLV sites along the pipeline route, clearing and grading would be accomplished as part of pipeline construction. Concrete footings and concrete pads would be constructed as described for the compressor stations (section 2.3.3.1). The pipeline construction crew would connect the MLVs to the proposed pipeline using the welding and testing procedures described for pipeline construction (section 2.3.1.4). After the valves are installed, the sites would be graveled, as necessary, and fenced.

At the proposed Milford Compressor Station, the compressor station construction crew would install the two MLVs on the concrete foundations described in section 2.3.3.1, connect them to the existing pipelines, and hydrostatically test the valves as described in section 2.3.1.6.

2.3.3.3 Pig Launchers and Pig Receivers

As described in section 2.1.2, a pig launcher barrel would be relocated from the existing MLV station 124 (MP 28.0) to MLV station 96 (MP 0.0). These facilities would be tied into the existing Kern River pipeline and the proposed Wasatch Loop pipeline by the pipeline construction crew. The special facility construction crew at the Milford Compressor Station would install two pig launchers and two pig receivers at that site. One pig launcher and one pig receiver would be attached to the existing mainline, and one pig launcher and one pig receiver would be attached to the existing loop line. These facilities would be installed on the concrete foundations and tested as described in section 2.3.3.1.

The pig launchers and pig receivers would be connected to the pipelines using the welding and testing procedures described for pipeline construction (section 2.3.1.4), and installation of the new pig launchers would be conducted in compliance with the same standards and requirements described above for the pipeline and compressor stations.

2.4 CONSTRUCTION WORKFORCE AND SCHEDULE

Kern River plans to begin construction in November 2010 and initiate service by November 2011. The majority of construction of the proposed loop would occur from April through November 2011 using one construction spread. The spread would have an estimated peak workforce of 541 and an average workforce of 262. As the pipeline spread moves along, construction at any single point along the proposed pipeline, from initial surveying and clearing to backfilling and finish grading, would last approximately for 6 to 10 weeks. However, the duration of construction may be longer at the proposed MLV sites and at hydrostatic test tie-in locations.

The proposed modifications at the Coyote Creek, Elberta, and Fillmore Compressor Stations may occur at any time during the proposed pipeline construction period. Modification of the Dry Lake Compressor Station would be completed in the fall of 2010 and the winter of 2011. Construction of the Milford Compressor Station and the additions to and modifications of the existing compressor stations would take from 3 to 8 months to complete. At the Milford Compressor Station site, Kern River would accomplish the site preparation work in late 2010, winterize the site, and return in the spring of 2011 to complete construction.

The average and peak construction workforce numbers for each compressor station are listed in table 2.4-1.

TABLE 2.4-1 Construction Workforce and Schedule for Compressor Station Construction and Modifications for the Proposed Apex Expansion Project				
Compressor Station	Kern River Mainline Milepost	Number of Workers		Estimated Time to Complete (months)
		Average	Peak	
Coyote Creek (existing)	60.1	40	70	7
Elberta (existing)	191.6	40	70	7
Fillmore (existing)	276.7	20	30	3
Milford (new)	329.6	50	90	8
Dry Lake (existing)	500.1	40	70	7

2.5 ENVIRONMENTAL INSPECTION, COMPLIANCE MONITORING, AND POST-APPROVAL VARIANCES

The FERC may impose conditions on any Certificate granted for the proposed Apex Expansion Project. These conditions could include requirements and mitigation measures identified in this EIS to minimize environmental impacts associated with the proposed Project (see section 5.2). We will recommend to the Commission that these requirements and mitigation measures (indicated with bold type in the text) be included as conditions to any Certificate issued for the proposed Project. Further, Kern River would be required to implement the construction procedures and mitigation measures it has proposed in its filings with the FERC unless specifically modified by other Certificate conditions.

Other regulatory agencies also may issue conditions as part of their permits or approvals. While there would be differences between the conditions of the FERC and other agencies, the environmental inspection program for the Apex Expansion Project would address all conditions placed on the proposed Project by regulatory agencies.

During Project construction, Kern River would be represented by a Chief Inspector who would be supported by one Environmental Inspector and Craft Inspectors dedicated entirely to the Wasatch Loop. A full-time inspector would be assigned to each compressor station until initial ground work and temporary erosion control measures are installed as needed to ensure that there are no adverse impacts from excessive soil erosion and sedimentation from the site. There would be a full-time Environmental Inspector during winter construction of the pipeline. In areas where winter work is completed and the spread has been demobilized, the right-of-way would not be continuously inspected. However, access

roads would be monitored biweekly, and when the snow cover melts, the construction sites and access roads would be inspected to determine whether maintenance or remedial erosion control efforts are needed.

The Environmental Inspector would be responsible for monitoring and ensuring compliance with all environmental mitigation measures required by the FERC Certificate; the BLM Right-of-Way Grant and Temporary Use Permit; conditions or requirements of other federal, state, or local permits or authorizations; and Kern River's plans. The Environmental Inspector would have the authority to stop activities that violate the environmental conditions of these authorizations, state and federal environmental permit conditions, or landowner requirements, and to order appropriate corrective actions if needed. The Environmental Inspector would also be responsible for maintaining status reports and training records.

In addition to the Environmental Inspector, inspectors from the FERC, the BLM, and the USFS would conduct periodic field inspections during construction and restoration. The FERC, the BLM, and the USFS inspectors would report on the effectiveness of Kern River's environmental inspection program and assess environmental compliance with both the FERC Certificate and with the terms and conditions of the BLM right-of-way grant.

2.6 POST-APPROVAL VARIANCE PROCESS

The pipeline alignment and work areas identified in this EIS should be sufficient for construction and operation (including maintenance) of the Apex Expansion Project and ancillary facilities. However, minor route realignments and other workspace refinements often continue past the project planning phase and into the construction phase. As a result, the project location and areas of disturbance described in this EIS may require refinement after project approval (assuming the project is approved). These changes frequently involve minor route realignments, shifting or adding new temporary extra workspaces or staging areas, or adding additional access roads. We have developed a procedure for assessing impacts on those areas that have not been evaluated in this EIS and for approving or denying their use. In general, biological and cultural resource surveys were conducted using a survey corridor larger than that necessary to construct the pipeline. For example, Kern River utilized a 400- to 600-foot-wide survey corridor for wetland, wildlife, and cultural resource surveys, and identified wells and springs within 150 feet of the proposed pipeline workspaces. If Kern River shifts any additional temporary workspace or requires unanticipated workspace subsequent to any project approval, these areas would typically be within the previously surveyed area. Such requests would be reviewed using a post-approval variance process.

The request for route realignments or additional workspace locations along with a copy of the survey results would be documented and forwarded to the FERC (and other federal land managing agencies, as applicable) in the form of a "variance request". The FERC and/or the applicable federal land managing agency would take the lead on reviewing the request, depending on the ownership status of the subject land. Typically, no further resource agency consultation would be required if the requested change is within previously surveyed areas. The procedures used for assessing impacts on work areas outside the survey corridor and for approving their use are similar to those described above, except that additional surveys, analyses, and resource agency consultations would be performed to ensure that impacts on biological, cultural, and other sensitive resources would be avoided or minimized to the maximum extent practicable.

After Kern River completes any additional surveys, analyses, and/or resource agency consultations, the new work area and supporting documentation (including landowner approval) would be forwarded to the FERC and other federal land managing agencies, as applicable, in the form of a variance request, which would be evaluated in the manner described above. At the conclusion of the Project, as-

built drawings would be provided to the FERC, the BLM, and the USFS, as appropriate, to document the final location of the constructed facilities. The BLM and other federal land managing agencies, as appropriate, would use the information in the as-built survey to determine if an amendment to the right-of-way grant on federal land would be necessary.

2.7 OPERATION, MAINTENANCE, AND EMERGENCY RESPONSE

The Project pipeline and aboveground facilities would be operated and maintained in accordance with USDOT regulations in 49 CFR 192, the Commission's guidance at 18 CFR 380.15, and Kern River's Plan and Procedures.

2.7.1 Operation

2.7.1.1 Pipeline Surveys and Inspections

As required by 49 CFR 192.615, Kern River would establish an operation and maintenance plan and an emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency. Kern River's existing operations and maintenance program includes corrosion control, leak inspection surveys, regularly scheduled aerial and ground patrols of the pipeline right-of-way, and maintenance of the right-of-way. The existing Kern River operation, maintenance, and emergency plans would be expanded to incorporate the Apex Expansion Project; key elements of those plans are described below.

As a part of the existing operations and maintenance plans, Kern River conducts regular patrols of the pipeline right-of-way. The patrol program includes periodic aerial and vehicle patrols of the pipeline facilities to survey surface conditions on and adjacent to the pipeline right-of-way for evidence of leaks, unauthorized excavation activities, erosion and wash-out areas, areas of sparse vegetation, damage to permanent erosion control devices, exposed pipe, missing markers and signs, new residential developments, and other conditions that might affect the safety or operation of the pipeline. The cathodic protection system is also inspected periodically to ensure that it is functioning properly. In addition, pigs are regularly sent through the pipeline to check for corrosion and irregularities in the pipe in accordance with USDOT requirements. Kern River keeps detailed records of all inspections and supplements the corrosion protection system as necessary to meet the requirements of 49 CFR 192.

Kern River also maintains a liaison with the appropriate fire, police, and public officials. This program identifies the available resources and responsibilities of each organization that may respond to a natural gas pipeline emergency and assists in developing coordination responsibilities

In addition, Kern River uses a supervisory control and data acquisition (SCADA) system, which continuously monitors gas pressure, temperature, and volume at specific locations along the pipeline. This system is installed along the Kern River mainline and existing loop lines and would be incorporated into the proposed Project. The SCADA system is continuously monitored from Kern River's gas control center in Salt Lake City, Utah. The system provides continuous information to the control center operators and has threshold and alarm values set such that warnings are provided to the operators if critical parameters are exceeded.

2.7.1.2 Right-of-Way Maintenance

In addition to the survey, inspection, and repair activities described above, operation of the pipeline would include maintenance of the right-of-way. The right-of-way would be allowed to revegetate after restoration; however, large brush and trees may be periodically removed near the

pipeline. Trees or deep-rooted shrubs could damage the pipeline's protective coating, obscure periodic surveillance, or interfere with potential repairs; in accordance with Kern River's Plan, such vegetation would typically not be permitted to grow within the permanent right-of-way. The frequency of the vegetation maintenance would depend upon the vegetation growth rate. Routine vegetation maintenance clearing would not be done more frequently than every 3 years. However, to facilitate periodic corrosion and leak surveys, a corridor not exceeding 10 feet in width centered on the pipeline would be maintained annually in an herbaceous state. In no case would routine vegetation maintenance clearing occur between April 15 and August 1 of any year. Vegetation maintenance would not normally be required in agricultural or grazing areas. Vegetation management is discussed further in section 4.5.

Pipeline facilities would be clearly marked at line-of-sight intervals and at crossings of roads, railroads, and other key points. The markers would clearly indicate the presence of the pipeline and provide a telephone number and address where a company representative may be reached in the event of an emergency or prior to any excavation in the area of the pipeline by a third party. Kern River participates in the One-Call system in Utah.

2.7.1.3 Compressor Stations

The current operation and maintenance procedures of the four existing compressor stations would be expanded to include the equipment installed as a part of the proposed Project. Operation and maintenance of the Milford Compressor Station would be similar to that of the existing Kern River compressor stations.

At each of the compressor stations associated with the proposed Project, operations personnel would perform routine checks of the facilities, including calibration of equipment and instrumentation, inspection of critical components, and scheduled and routine maintenance of equipment. Safety equipment, such as pressure relief devices, fire detection and suppression systems, and gas detection systems, would be periodically tested for proper operation. Corrective actions would be taken for any identified problems.

The existing compressor stations are equipped with combustible gas and fire detection alarm systems and an emergency shutdown system, as described below. The Milford Compressor Station would have the same alarm and emergency shutdown systems and capabilities. The gas detection system is designed to sound an alarm and begins venting upon detection of 20 percent of the lower explosive limit of natural gas in air. Automatic emergency shutdown of the compressors, evacuation or venting of gas from the station piping, and isolation of the station from the main pipeline would occur following a fire detection alarm or the detection of a 40 percent of the lower explosive limit inside the station. The compressor stations are also equipped with relief valves or pressure protection devices to protect the station piping from overpressure if station or unit control systems fail.

The Kern River telemetry system is designed to notify personnel locally and at the gas control headquarters in Salt Lake City of the activation of safety systems and alarms. If alerted to a potential emergency, these personnel would instruct maintenance personnel to investigate and take proper corrective actions.

2.8 FUTURE PLANS AND ABANDONMENT

Kern River currently has no plans for future expansion of the facilities proposed. If additional demand for natural gas supplies requires future expansion, Kern River would apply for the appropriate authorizations from the FERC and the relevant federal, state, or local agencies. If such applications are filed, the potential environmental impacts of the new proposal would be examined at that time.

Abandonment of the pipeline facilities would be subject to the approval of the FERC under Section 7(b) of the NGA and would comply with USDOT regulations and specific agreements or stipulations made for the pipeline right-of-way. An environmental review of any proposed abandonment would be conducted when the application for abandonment is filed with the FERC.

3.0 ALTERNATIVES

As required by NEPA and the FERC policy, we have evaluated alternatives to the Apex Expansion Project to determine whether they would be technically and economically feasible, and environmentally preferable to the proposed action. These alternatives include the No Action and Postponed Action alternatives, energy alternatives, system alternatives, major route alternatives, route variations, and aboveground facility site alternatives. The purpose of this evaluation was to determine whether there are reasonable alternatives that would result in less environmental impact than the Project as proposed while still meeting the Project's objectives. Kern River has indicated the following proposed Project objectives:

- provide additional natural gas pipeline capacity to growing electric generation requirements of NV Energy in southern Nevada;
- provide supply diversity and enhanced reliability, which would minimize the reliance on more costly energy sources to the southern Nevada market;
- efficiently meet the first two objectives with minimal pipeline construction and environmental impacts by using existing available pipeline capacity on the Kern River pipeline system; and
- meet a November 2011 in-service date.

Identification of alternatives to the proposed Project incorporated public comments and input received from federal and state regulatory agencies. The analysis of alternatives is based on information provided by Kern River and our review of aerial photographs, USGS topographic maps, other publicly available information, input from cooperating agencies, and our site visits.

We used the following evaluation criteria to determine whether an alternative would be environmentally preferable:

- significant environmental advantage over the proposed Project;
- ability to meet the proposed Project objectives; and
- technical and economic feasibility and practicability.

It is important to recognize that not all conceivable alternatives are technically and economically practical and feasible. Some alternatives may be impracticable because the sites are unavailable and/or incapable of being implemented after taking into consideration costs, existing technologies, constraints of existing system capacities, and logistics in light of the overall Project objectives. In conducting a reasonable analysis, it is also important to consider the environmental advantages and disadvantages of the proposed action and to focus the analysis on those alternatives that may reduce impacts and/or offer a significant environmental advantage.

Through the application of evaluation criteria and subsequent environmental comparisons, each alternative was considered until it was clear that the alternative was not reasonable or would result in significantly greater environmental impacts that could not be readily mitigated. Those alternatives that appeared to be the most reasonable with less than or similar levels of environmental impact are reviewed below in the greatest detail.

3.1 NO ACTION OR POSTPONED ACTION ALTERNATIVES

The Commission has three possible courses of action in processing applications under Section 7 of the NGA: (1) the requested authorization could be denied (e.g. the No Action Alternative); (2) the proposed

action could be postponed pending additional filings or studies (e.g. the Postponed Action Alternative); or (3) the Certificate could be granted with or without conditions.

As discussed in section 1.1.2, the proposed Project would supply an additional 266 MMcf/d of natural gas from the Rocky Mountains supplies to southwest markets through an expansion of the existing Kern River pipeline system. The proposed looping of the existing Kern River system and the proposed compression would meet the additional needs of NV Energy in southern Nevada. The addition of incremental supply to the Kern River pipeline system would help meet growing energy demands, enhance reliability, and result in supply diversification by providing access to a larger share of domestic natural gas supplies.

If the FERC were to deny Kern River's application, the short- and long-term environmental impacts identified in this EIS would not occur. If the Commission postpones action on the application, the environmental impacts identified in this EIS would be delayed. If Kern River decided not to pursue the Project, the impacts would not occur at all. However, if the FERC were to select the No Action or Postponed Action Alternative, the objectives of the proposed Project as described in section 1.1 would not be met, and a new source of natural gas to markets that can be accessed through the existing Kern River pipeline system would not be developed.

Although it would be purely speculative and beyond the scope of this analysis to attempt to predict what actions might be taken by policymakers or end users in response to the No Action or Postponed Action Alternative, it is likely that potential end users (i.e., NV Energy) would make other arrangements to obtain natural gas service or make use of alternative fossil fuel energy sources (such as fuel oil or coal), other traditional long-term fuel source alternatives (such as nuclear power or hydropower), and/or renewable energy sources (such as wind or solar power) to compensate for the reduced availability of natural gas that would be supplied by the proposed Project. It is also possible that energy conservation practices would be used to offset the demand for natural gas in the markets that would be supplied by the proposed Project.

In combination or as individual sources, specific energy alternatives or conservation measures could have one of three end results. The projected energy needs of the target market area could: (1) not be provided; (2) be met with equal or less environmental impact than that of the proposed Project; or (3) be met with greater environmental impact than those of the proposed Project if implemented. Section 3.2 discusses energy alternatives, including increased efficiency, conservation, renewable energy sources, and use of other non-renewable fuels.

3.2 ENERGY ALTERNATIVES

3.2.1 Energy Conservation and Increased Efficiency

A decision to deny or postpone Kern River's application could result in higher natural gas prices over time due to limited access to new natural gas supplies. In turn, these higher prices may motivate consumers to conserve or reduce their use of natural gas. The acts of conservation and increased efficiency are undoubtedly important components of future energy portfolios for southern Nevada, as well as for the country as a whole.

Energy conservation and increased efficiency in energy have been of national concern since the 1973 oil crisis. Since then, most states have implemented conservation and efficiency programs. The California Energy Commission, established in 1974, is tasked with promoting energy efficiency standards, as well as public interest through research and technology. The Nevada Renewable Energy and Energy Conservation Task Force was established in 2001 by the Nevada Legislature to assist the Nevada State Office of Energy in developing and implementing conservation measures and procedures to reduce the demand for energy. A private-public partnership between the Utah Department of Environmental Quality (UDEQ) and the state's

private utilities promotes energy conservation and efficient energy use in homes and both private and public businesses.

Energy conservation could help alleviate some of the nation's growing demand for energy and, therefore, offset the need for increased natural gas supplies. Due to increased energy efficiency, energy use per capita will decrease between 2007 and 2030 (EIA 2009a). Despite this per capita decrease, overall energy demand in the United States will increase as population increases, with total energy consumption estimated to increase by 11 percent between 2007 and 2030 (EIA 2009a). Under the State Energy Program that is administered by Department of Energy (DOE) (2008a) and required under Section 123 of the EPAct of 2005, state energy programs are required to develop an energy conservation plan to participate in the State Energy Program. California, Nevada, and Utah have developed energy conservation plans for their states. Although conservation under the state energy plans and other energy conservation measures will be important elements in addressing future energy demands, energy conservation would not preclude the need for natural gas infrastructure that would supply Kern River's proposed volumes to NV Energy's new 500-MW electric generation unit (currently under construction).

3.2.2 Renewable Energy

Renewable energy sources are another long-term fuel source alternative to natural gas, including hydropower and other renewable energy sources (e.g., wind, biomass, solar, tidal, and geothermal energy). Renewable energy projects will likely play an increasingly prominent role in meeting the U.S. energy demands in the coming years. Each of these energy sources discussed below have associated environmental impacts. For technologies currently in use, these impacts are more clearly defined (e.g., wind turbines may affect birds and bats); however, the impacts of newer technologies have yet to be determined (e.g., the potential impacts of hydrokinetic energy).

Electricity generated from the flow of water through turbines that was previously stored behind dams is called "hydropower". Currently, this energy source is a significant contributor to the U.S. energy mix, and non-tidal hydropower electricity generation is expected to remain steady (approximately 3 percent of all energy production) through 2030 (EIA 2009a). Although efficiency upgrades at existing hydropower facilities are expected to produce incremental additions of power in the coming years, it is unlikely that new or significant sources of hydropower could be developed in a timeframe to be considered an alternative to NV Energy's new 500-MW project.

Heat sources from the earth, including hot springs, geysers, and volcanoes, can be used to generate energy known as geothermal energy. According to the 2009 U.S. Geothermal Power Production and Development Update, the United States is leading the world in online geothermal energy capacity, with about 4 percent of renewable energy-based electricity as geothermal energy in 2007. Eight states, including California, Nevada, and Utah, currently have facilities generating geothermal electricity, as of August 2009, the on-line capacity of geothermal power facilities in California, Nevada, and Utah were 2,605.3 MW, 448.4 MW, and 47 MW, respectively (Jennejohn 2009). In California, 4.5 percent of total electricity is produced by geothermal power plants (California Energy Commission 2008). According to the Energy Information Administration (EIA), less than 1 percent of Nevada's energy is supplied from a mix of hydroelectric and geothermal, while the contribution of geothermal in Utah is minimal. The primary barriers to further development of this renewable resource include resource uncertainty, and high development and exploration costs, in addition to the resource's location in environmentally sensitive areas, which makes siting facilities challenging. Given the physical limitations of geothermal sites and the overall negligible contribution to energy production, this type of renewable resource could not provide the additional energy supply in the timeframe proposed by NV Energy's 500-MW project.

Biomass energy production (including biofuels, waste, and wood-derived fuels) now accounts for 37 percent of all non-hydropower renewable resource energy production (EIA 2009a). The production and consumption of biofuels (such as ethanol and biodiesel) drive a large portion of this production. The Renewable Fuel Standards that was passed under the Energy Independence and Security Act of 2007 requires the production of 36 billion gallons of biofuels per year by 2022 (BRDB 2008). Further, DOE (2008b) announced a \$1 billion partnership with industry to research, develop, and implement advanced biofuel production by 2012. Nationally, biomass consumption is projected to increase by 4.4 percent per year between 2007 and 2030, resulting in biomass energy accounting for approximately 53 percent of the non-hydropower renewable resources energy production by 2030 (EIA 2009a). However, uncertainty regarding biomass output, the high costs of transportation of inputs to energy conversion facilities, and the lack of private capital investment in new facilities make this energy source an infeasible and unforeseeable alternative to NV Energy's 500-MW project (CBEA 2008).

Solar energy production accounted for approximately 1 percent of all non-hydropower renewable energy production in the United States in 2007 (EIA 2009a). Solar energy can be produced in three ways: passive solar energy involves use of direct sunlight through windows to warm and/or light interior spaces, water can be heated through solar means, or the sunlight can be converted into electricity via solar panels. Large-scale commercial and small-scale and customer applications are anticipated to increase (EIA 2009a) but are not expected to represent a significant replacement of current natural gas energy resources for several years. Therefore, we do not consider solar energy to be a reasonable or feasible alternative since it could not off-set the energy proposed by the NV Energy's new 500-MW project in the same timeframe.

The American Wind Energy Association reports that as of October 2009, 1.2 percent of U.S.-generated electricity came from wind sources. California is ranked third in the United States in total operating capacity with 2,787 MW, or about 9 percent of the total U.S. capacity wind power contributes approximately 2.8 of the state's total power (AWEA 2009, DOE 2008b). According to the EIA, Nevada has substantial wind-based energy potential; however, there is currently no active energy production based on wind sources in Nevada (EIA 2009b). The largest renewable facility in Utah, a 203-MW wind farm in Millard and Beaver Counties, was completed in November 2009 (Ecogeek 2009). Power generated by wind is dependent upon a variety of factors, such as cost of fossil fuels, state renewable energy programs, technology improvements, as well as public concerns for environmental and other impacts. Currently, the foremost barrier to future development of wind farms stems from the lack of existing transmission distribution lines. As such, we do not believe that wind power represents a reasonable, feasible alternative on the same timeframe as NV Energy's 500-MW project and the proposed Project.

Renewable energy sources, including wind and solar power, will increasingly play an important role in power generation for the western market, especially as it relates to electrical demand. All three states in the region of influence have established Renewable Portfolio Standards (RPS). According to the EIA, California and Nevada have RPS with goals of increased electricity generation from renewables by the years 2020 (33 percent) and 2025 (25 percent), respectively¹. Utah has a voluntary program, with a target of 20 percent increase in renewables by 2025 (EIA 2009b). However, these sources represent a small fraction of the projected energy demands for this market for the foreseeable future, especially related to providing refined petroleum products for the transportation sector.

Overall, the percentage of electricity generated from hydropower and non-hydropower renewable energy sources is projected to increase from approximately 6.7 percent in 2007 to about 12.6 percent of total energy use through 2030 (EIA 2009a). Despite the current and future promotion of renewable energy use, as

¹ California also has an intermediate goal for investor-owned utilities, electric service providers, small and multi-jurisdictional utilities, and community choice aggregators to meet at least 20 percent by 2010 (EIA 2009b).

described above, increases in renewable energy supplies cannot be fully implemented on the same timeline to provide comparable generation capability as NV Energy's 500-MW project and the proposed Project.

3.2.3 Nuclear Energy

Another traditional, non-renewable fuel source alternative to natural gas for electric generation is nuclear power. Several incentive and partnership programs aimed at promoting increased nuclear power generation infrastructure in the United States have recently been developed to promote fossil fuel alternatives for power generation (EIA 2009a, DOE 2008b). The DOE (2008c) has implemented a loan guarantee program with the U.S. nuclear industry to license and construct new nuclear power plants throughout the country (DOE 2008b). Further, under the EPAct, several incentives for the development of new nuclear reactor facilities and improved technology are designed to promote the operation of new nuclear power systems (DOE 2009). With projected new nuclear generating facilities and upgrades to existing nuclear infrastructure, nuclear power generation is expected to increase in the United States by approximately 0.5 percent annually between 2007 and 2030 (EIA 2009a). Despite this projected growth in nuclear power generation, the EIA estimates that nuclear power will account for about 18 percent of total U.S. generating capacity by 2030 (EIA 2009a). Use of nuclear energy results in spent nuclear fuel that requires long-term management or disposal, which is not available. Additionally, regulatory requirements, cost considerations, and public concerns make new nuclear power plants an infeasible alternative to serve NV Energy's targeted markets within a timeframe that would meet the objectives of the proposed Project.

3.2.4 Fossil Fuels

Denying or postponing a decision on the proposed Project would eliminate the increase in natural gas availability in the targeted market regions intended to satisfy future demand. Therefore, NV Energy would either need to obtain natural gas supplies from an alternative source or convert its new unit to another fuel source. A likely consequence could be an increased reliance on fuel oil, coal, and other non-renewable fuel supply sources. EIA (2009b) reported that, between 2007 and 2030, primary energy production is likely to increase (see section 3.1). While fuel oil and coal may provide an alternative to natural gas, the environmental impacts associated with the extraction and increased consumption of oils would not be preferable to natural gas. Natural gas is the cleanest burning of the fossil fuels. Relative to natural gas, reliance on coal or fuel oil to power electric generation would likely result in substantial increases in the emissions of pollutants, such as nitrous oxides (NO_x), sulfur dioxide (SO₂), and carbon dioxide, and associated reductions in air quality. In addition, increased reliance on other fossil fuels would result in secondary impacts associated with their production (such as oil drilling and coal mining); transportation via truck, rail cars, and/or pipelines; and crude oil refinement. The use of fossil fuels like coal also results in higher emission of pollutants such as mercury into both the atmosphere and surrounding environment through deposition. In addition, unlike natural gas, coal use results in waste coal ash that requires disposal. Therefore, we believe that use of this energy source is not preferable to the proposed Project.

3.3 SYSTEM ALTERNATIVES

System alternatives are alternatives to the proposed action that would make use of existing, modified, or proposed pipeline systems to meet the stated objectives of the Apex Expansion Project. Implementation of a system alternative would make it unnecessary to construct all or a part of the proposed Project, although some modifications or additions to existing or proposed pipeline systems may be required to satisfy the proposed Project objectives. These modifications or additions would result in environmental impacts that may be less than, similar to, or greater than those associated with construction and operation of the proposed Project. The purpose of identifying and evaluating system alternatives is to determine whether the environmental impacts associated with construction and operation of the proposed Project could be avoided or reduced by using another pipeline system, while still meeting the objectives of the proposed Project.

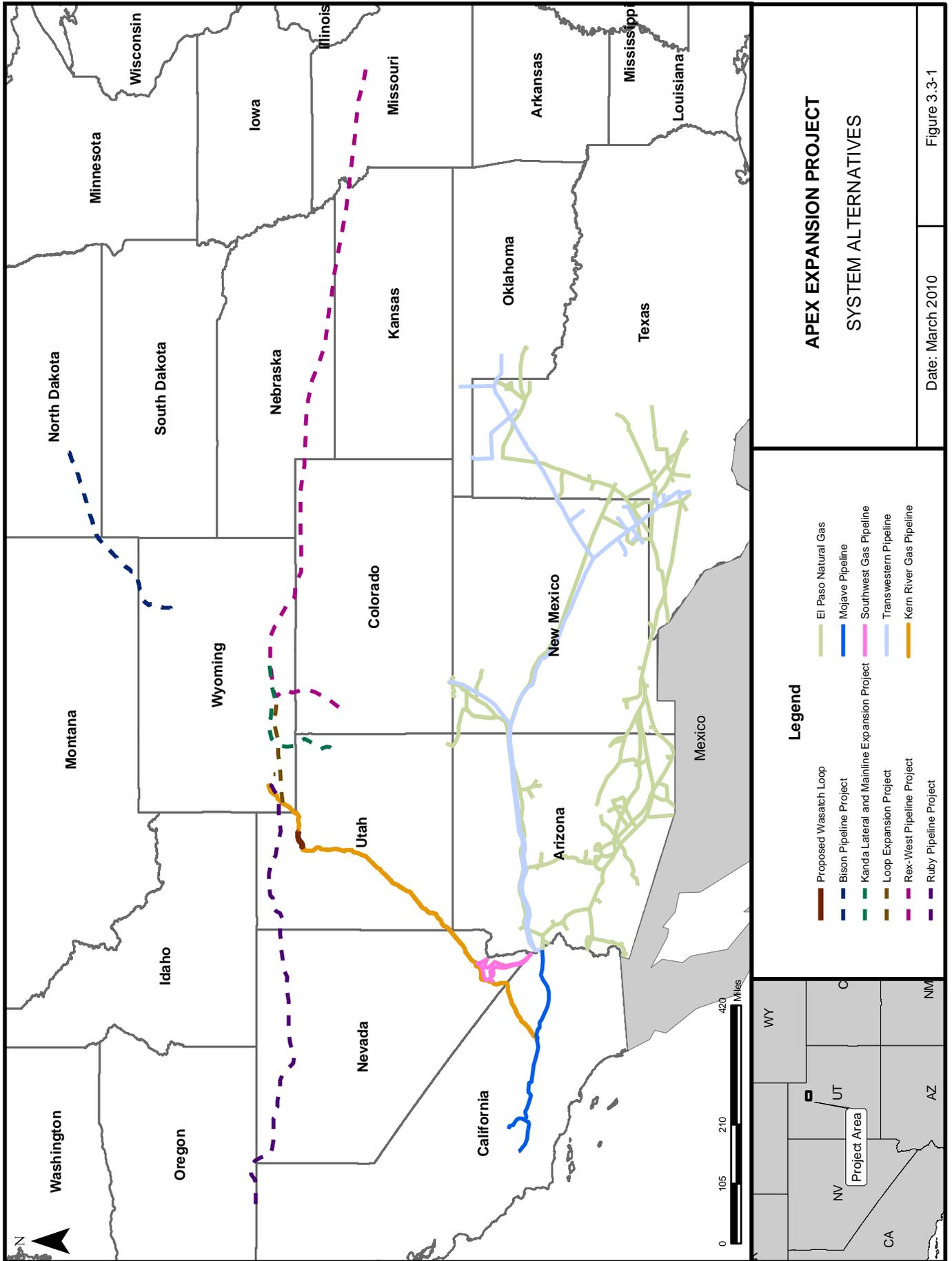
A viable system alternative to the proposed Apex Expansion Project would have to supply an additional 266 MMcf/d of natural gas to southern Nevada and other southwest markets in the same general timeframe as the proposed Project.

Our analysis of system alternatives includes an examination of existing and proposed natural gas systems that currently or would eventually serve the markets targeted by the proposed Project, and considers whether those systems would meet the proposed Project's objectives while offering an environmental advantage over the proposed Project. The remainder of this section includes a discussion of existing overland natural gas pipeline systems and proposed pipeline systems that extend from the general Project area to target markets. Figure 3.3-1 depicts the location of the existing pipeline system alternatives in relation to the proposed Project route.

In addition to the Kern River System, El Paso and Transwestern currently transport natural gas to southern Nevada. While the Kern River system supplies natural gas to southern Nevada from Rocky Mountain sources, the natural gas supplied by El Paso and Transwestern originates from the Permian and San Juan basins in New Mexico and Texas, respectively. The connection to these natural gas supplies via the El Paso and Transwestern lines is not direct, but rather relies on an interconnection with Southwest Gas Corporation's pipeline system and local distribution system. Since Southwest Gas Corporation's existing system is currently at capacity, significant modifications to the system would be required in order for either the El Paso or Transwestern pipeline systems to meet the proposed Project objectives. Currently, the FERC is not aware of any proposal by Southern Gas Corporation to make modifications to their existing system to meet the additional demand for gas in southern Nevada or any other market. However, in order to meet the objectives of the proposed Project, typical expansion of system infrastructure would include the construction of 140 miles of new pipeline in addition to the need for additional compression and construction of other appurtenant facilities. These types of modifications would have a significantly larger impact on the environment than Kern River's proposed 28-mile loop. While expansions to the El Paso or Transwestern pipeline systems may enhance the reliability to the southern Nevada markets, they would not provide supply diversity, which is a key goal of the proposed Project.

In April 2009, an interconnect between the Kern River system and that of the Mojave Pipeline Company allowed for increased supply of natural gas from the Permian and San Juan basins. While this interconnect has improved the reliability of the gas supply in this market, it does not provide for supply diversity and thus does not meet the proposed Project goals. Therefore, the Mojave Pipeline existing system is not a viable system alternative to the proposed Apex Expansion Project.

Projects that are proposed to transport natural gas but are not yet constructed and systems that are recently put into service are also possible alternatives to the proposed Project. We have identified seven recently proposed or certificated interstate pipeline projects that would transport natural gas from the Rocky Mountain region (table 3.3-1). The discussion that follows is organized to discuss system alternatives based on their state of completion those that are most complete are discussed first.



**TABLE 3.3-1
Proposed or Recently Certificated Interstate Pipeline Projects
Proposed to Transport Rocky Mountain Natural Gas**

Project Name	Project Status	Proposed In-Service Date
Kanda Lateral and Mainline Expansion	Certificated	In service
Rex-West Project	Certificated	In service
Kern River 2010 Expansion Project	Certificated	November 2010
Loop Expansion Project	Application submitted	November 2010
Bison Pipeline Project	Application submitted	November 2010
Ruby Pipeline Project	Application submitted	Spring 2011

Two of the eight systems are currently in service: the Kanda Lateral and Mainline Expansion and the Rex-West Project. The Kanda Lateral and Mainline Expansion transports up to 0.15 Bcf/d of natural gas via a 124-mile-long pipeline that extends from the Natural Buttes Fields in Uintah County, Utah to Sweetwater County, Wyoming. The Rex-West Project transports up to 1.5 Bcf/d of natural gas via a 713-mile-long, 42-inch-diameter pipeline extending from the Cheyenne Hub in Weld County, Colorado to Audrain County, Missouri. These system alternatives would require connections to the proposed Project's target markets via additional pipeline systems or new pipe. As such, it would be necessary to significantly expand or modify the pipeline systems to meet the proposed Project's objectives. While the specific details of expansion or modifications to meet the proposed Project goals are not known, as the systems are currently not proposing to do so, we estimate that the systems would require new pipe of approximately 125 miles to more than 350 miles. Environmental impacts associated with the expansions of these pipeline systems and the construction of new pipelines to connect the system alternative to the targeted market would result in greater impacts than those associated with the proposed Project. For these reasons, we do not consider the Kanda Lateral and Mainline Expansion or the Rex-West System Alternatives to provide environmental benefits superior to the proposed Project, and we have eliminated these from further consideration.

There is one certificated/approved project currently under construction that utilizes natural gas from the Rocky Mountain region. The Kern River 2010 Expansion Project (Docket No. CP08-429-001), which involved the addition of compression and upgrades at existing aboveground facilities, would enhance the existing system to transport up to an additional 0.14 Bcf/d of natural gas via the existing 1,680-mile-long pipeline that extends from southwestern Wyoming to southern California. While these projects would increase the infrastructure that transports Rocky Mountain supplies, thus helping to reduce the bottlenecking that occurs in that area, neither project would serve the southern Nevada market. Further, these projects would not enhance the reliability of the Kern River system, which currently serves customers in Utah, Nevada, Arizona, and California. Therefore, we do not believe that these projects are viable alternatives to the proposed Apex Expansion Project.

Questar's Loop Expansion Project (Docket No. CP10-03-000) would transport up to 0.78 Bcf/d of natural gas via a 43-mile-long pipeline that extends from Sweetwater County, Wyoming to Uinta County, Wyoming. This proposed project is currently under review by the FERC. The proposed Bison Pipeline Project and Ruby Pipeline Project are new pipeline projects that are also currently under review by the FERC under Docket Nos. CP09-161-000 and CP09-54-000, respectively. The Bison Pipeline Project is proposed to transport 0.5 Bcf/d of natural gas from the Rocky Mountain region to Midwestern markets through an interconnect with the Northern Border pipeline system. The Bison Pipeline Project would consist of a 301.2-

mile-long, 30-inch-diameter natural gas transmission pipeline that would extend northeast from a point near Dead Horse (Campbell County), Wyoming, through southeastern Montana and southwestern North Dakota. It would connect with Northern Border's pipeline system near Northern Border's Compressor Station #6 in Morton County, North Dakota, which would ship the gas to markets in the Midwestern United States (primarily Iowa, Minnesota, Wisconsin, and Illinois). The purpose of the Bison Pipeline Project would be to transport natural gas produced in the Rocky Mountain region to markets in the Midwest. Similarly the Ruby Pipeline Project would transport Rocky Mountain gas. This project would transport 1,455 cubic feet per day (cf/d) of natural gas via a 675.2-mile-long, 42-inch-diameter natural gas transmission pipeline that would extend west across northern Utah and Nevada to the Malin Market Center in Oregon. The purpose of this pipeline system would be to serve markets in northern Nevada and consumers on the west coast (northern California, Oregon, and Washington). While these projects would increase the infrastructure that transports Rocky Mountain supplies, thus helping to reduce the bottlenecks that occur in that area, none would serve the southern Nevada market. Further, these projects would not enhance the reliability of the Kern River system, which currently serves customers in Utah, Nevada, Arizona, and California. Therefore, we do not believe that these projects are viable alternatives to the proposed Apex Expansion Project.

3.4 MAJOR ROUTE ALTERNATIVES

Kern River's preliminary route for the Wasatch Loop was selected to follow its existing pipeline system across the Wasatch Mountains in northern Utah. Subsequent deviations from this existing corridor were developed through consultation and coordination with Kern River's engineering team, as well as consideration of public comments and input received from federal, state, and local agency representatives. As noted in section 1.3, Kern River held a variety of public open houses as well as agency and stakeholder meetings while developing the proposed route. In addition, the FERC held two scoping meetings during development of the proposed Project to identify and evaluate alternatives that could avoid or minimize potential impacts.

In the initial stages of route selection studies for the Apex Expansion Project, Kern River based its evaluations on one primary routing objective, to collocate the proposed pipeline with the existing pipeline. Since the loop would have the same origination and destination points along the existing Kern River pipeline in this area, installing it adjacent to the existing pipeline would be preferable to constructing a new route through undisturbed areas. As described in section 2.0, the origin of the loop is at KRMP 96.4 (Loop MP 0.0) on Kern River's existing pipeline and the terminus of the loop is at KRMP 124.5 (Loop MP 28.0). The majority of the original Kern River Gas Transmission System has been looped to increase transport capacity, resulting in a two-pipeline delivery system along most of the pipeline route. However, there is not a loop in the system through the Wasatch Mountains in Utah and also near the Las Vegas area in Nevada. A route along the existing Kern River pipeline corridor would also result in more efficient and effective management of operation and maintenance of the loop compared to a route that would not be adjacent to the existing pipeline. This analysis resulted in the subsequently proposed Project that is described throughout sections 2.0 and 4.0 of this EIS. The currently proposed route incorporates eight deviations from the existing right-of-way, which are described in table 3.4-1.

**TABLE 3.4-1
Deviations from Kern River's Existing Right-of-Way Incorporated into the Proposed Apex
Expansion Project Route**

Variation	County	Beginning Milepost^a	Ending Milepost^a	Total Length (Miles)	Change in Proposed Route Length^b	Description/Rationale^c
Rocky Canyon	Morgan	2.3	2.6	0.3	+0.05	More perpendicular waterbody crossing; avoids narrow ridge and steep slopes.
Tucson Hollow	Morgan	3.4	3.7	0.3	+0.01	Avoids steep slopes.
Hardscrabble	Morgan	11.6	13.7	2.1	-0.22	Avoids steep side slope construction on ridge confined with multiple rights-of-way.
Saddle	Morgan	15.0	15.4	0.4	-0.02	Avoids narrow ridge and steep slopes.
Sessions Mountains	Morgan	17.0	17.4	0.4	-0.14	Follows a shorter, more linear path, minimizes visual impacts, and improves construction safety.
Cave Peak	Davis	18.8	20.5	1.8	-0.14	Avoids steep side slope construction on a narrow ridge with unstable slopes and minimizes visual impacts.
Wasatch Front	Davis and Salt Lake	21.6	25.4	3.8	+0.31	Avoids steep slope and existing residential development, minimizes visual impacts, and accommodates a landowner request for a portion of the variation.
Chevron Refinery	Salt Lake	25.6	26.9	1.8	+0.03	Avoids location of planned future projects and crosses Interstate 15 at location approved by Utah Department of Transportation.

Notes:

- ^a The beginning and ending mileposts correspond to the locations where the proposed route deviates from and rejoins the existing Kern River right-of-way.
- ^b This value is positive for variations that add length to the proposed route or negative for variations that reduce the overall length of the proposed route.
- ^c Provided by Kern River in their Application (November 2009).

We considered major route alternatives for the proposed Apex Expansion Project to determine whether these alternatives would avoid or reduce impacts to environmentally sensitive resources that would be crossed by the proposed pipeline and in response to suggestions by the public. The origin and delivery points of a major route alternative are generally the same as for the corresponding portion of a proposed pipeline. However, the alternatives would follow routes significantly different from the proposed pipeline. Major route alternatives would not modify or make use of other existing or new pipeline systems.

Commission regulations (18 CFR 380.15[d][1]) give primary consideration to the use, enlargement, or extension of existing rights-of-way to reduce potential impacts on sensitive resources. Installation of new pipeline along existing, cleared rights-of-way (such as pipelines, power lines, roads, and railroads) may be environmentally preferable to construction along new rights-of-way; and construction effects and cumulative impacts can normally be reduced by use of previously cleared rights-of-way. Likewise, long-term or permanent environmental impacts can normally be reduced by avoiding the creation of new rights-of-way through undisturbed areas.

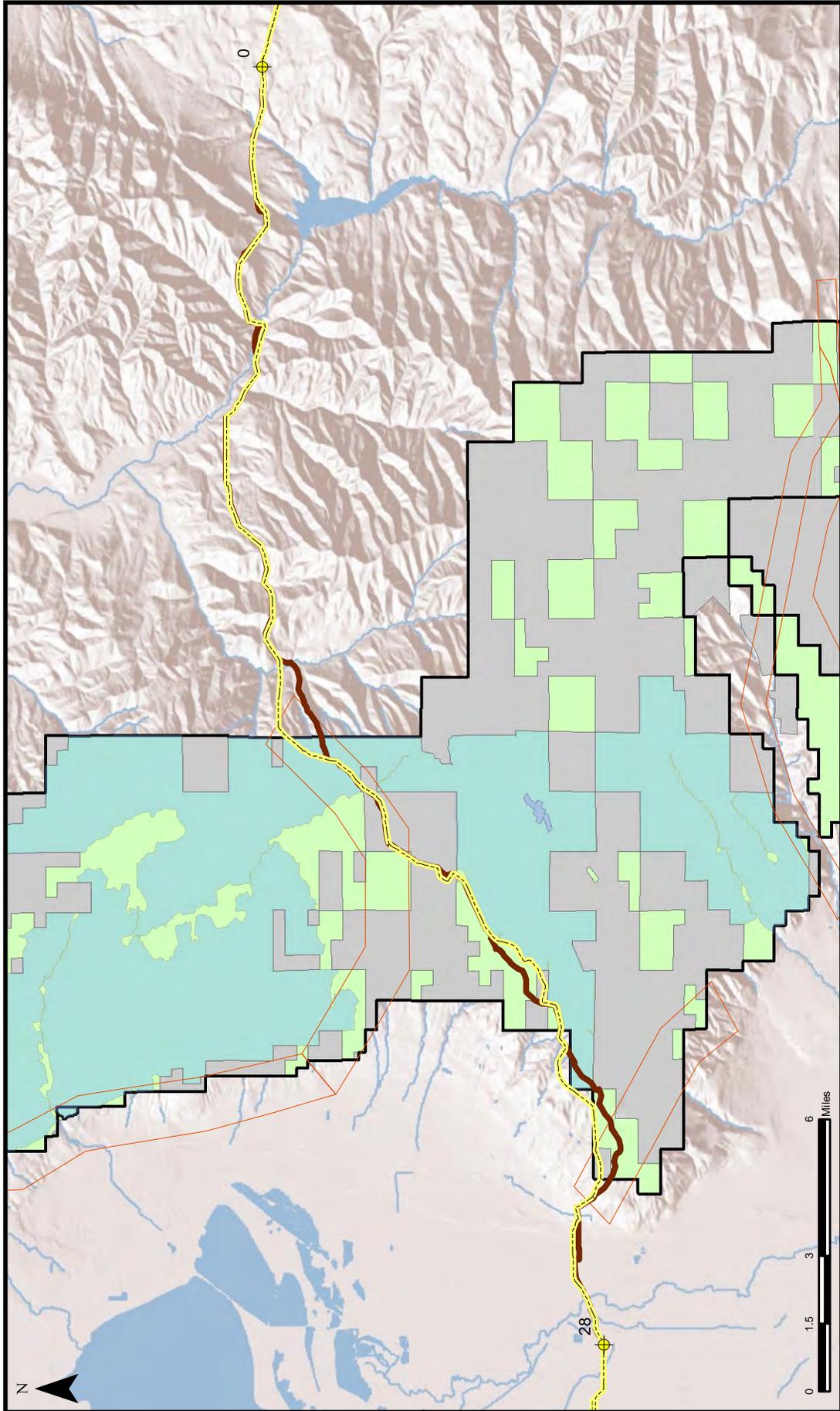
We received comments from the public and federal and state resource agencies during the scoping period for the proposed Project requesting the evaluation of various route alternatives. Based on input provided to us by the general public and federal and state resource agencies, and based on our review of the proposed Project, we identified and evaluated five major route alternatives: the Kern River Right-of-Way Route Alternative (section 3.4.1), the Legacy Highway Route Alternative (section 3.4.2), the Pages Lane/Porter Road Route Alternative (section 3.4.3), the Bountiful Boulevard Route Alternative (section 3.4.4), and the Wasatch Mountains Route Alternative (section 3.4.5).

3.4.1 Kern River Right-of-Way Route Alternative

The Kern River Right-of-Way Route Alternative would follow Kern River's existing system from the point of origin at MP 0.0 through to the tie-in point at MP 28.0 as depicted in figure 3.4.1-1. The major advantage of this alternative route would be its complete collocation with the existing pipeline, which could potentially minimize environmental and land use impacts.

Impacts of the proposed Project route and the Kern River Right-of-Way Route Alternative are compared in table 3.4.1-1. Quantitative data are based on a comparative desktop analysis using a combination of United States Geological Survey (USGS) topographic maps, National Wetlands Inventory (NWI) maps, and USGS land cover land use data.

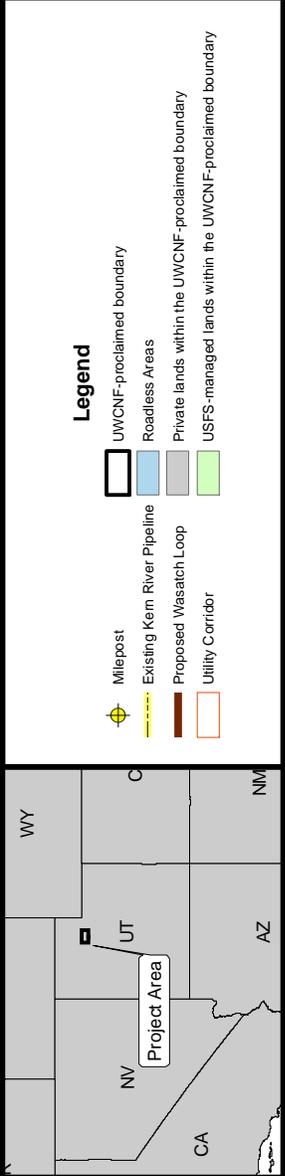
The Kern River Right-of-Way Route Alternative would impact approximately 77 acres less than the proposed Project route. The alternative route would have greater impacts on forest lands, while the proposed route would have greater impacts on sage grouse and pygmy rabbit habitat (sage brush habitat). The terrain along the alternative route also presents significant construction challenges and would impact more residences within 50 feet of the permanent right-of-way. While the Kern River Right-of-Way Route Alternative conceptually represents a route that would eliminate the need for new right-of-way, the original pipeline was constructed along ridge lines and across several steep slopes. Construction of a loop along existing pipeline at these locations raises construction challenges and construction safety concerns. In several locations there would be insufficient room to allow for safe installation of the proposed pipeline. Further, due to the constrained nature of the topography along Kern River's existing right-of-way, there is an increased chance of soil erosion and sedimentation issues, which have both environmental and visual implications. As a result of these impediments along the existing pipeline, Kern River has incorporated the route deviations described in table 3.4-1 into its proposed route. Construction of the loop entirely along the existing pipeline is not technically feasible for these reasons. In addition, this alternative would require construction within 50 feet of



APEX EXPANSION PROJECT
KERN RIVER
RIGHT-OF-WAY ROUTE ALTERNATIVE

Date: March 2010

Figure 3.4.1-1



27 additional residences. Therefore, we believe that the alternative route does not present a clear environmental advantage over the proposed route, and we have eliminated the Kern River Right-of-Way Route Alternative from further consideration. While we do not believe it is technically feasible for Kern River to follow its existing pipeline entirely, we did evaluate several variations in section 3.5 to determine possible locations where Kern River could increase its collocation with the existing pipeline right-of-way.

**TABLE 3.4.1-1
Comparison of Kern River Right-of-Way Route Alternative and the
Proposed Apex Expansion Project Route**

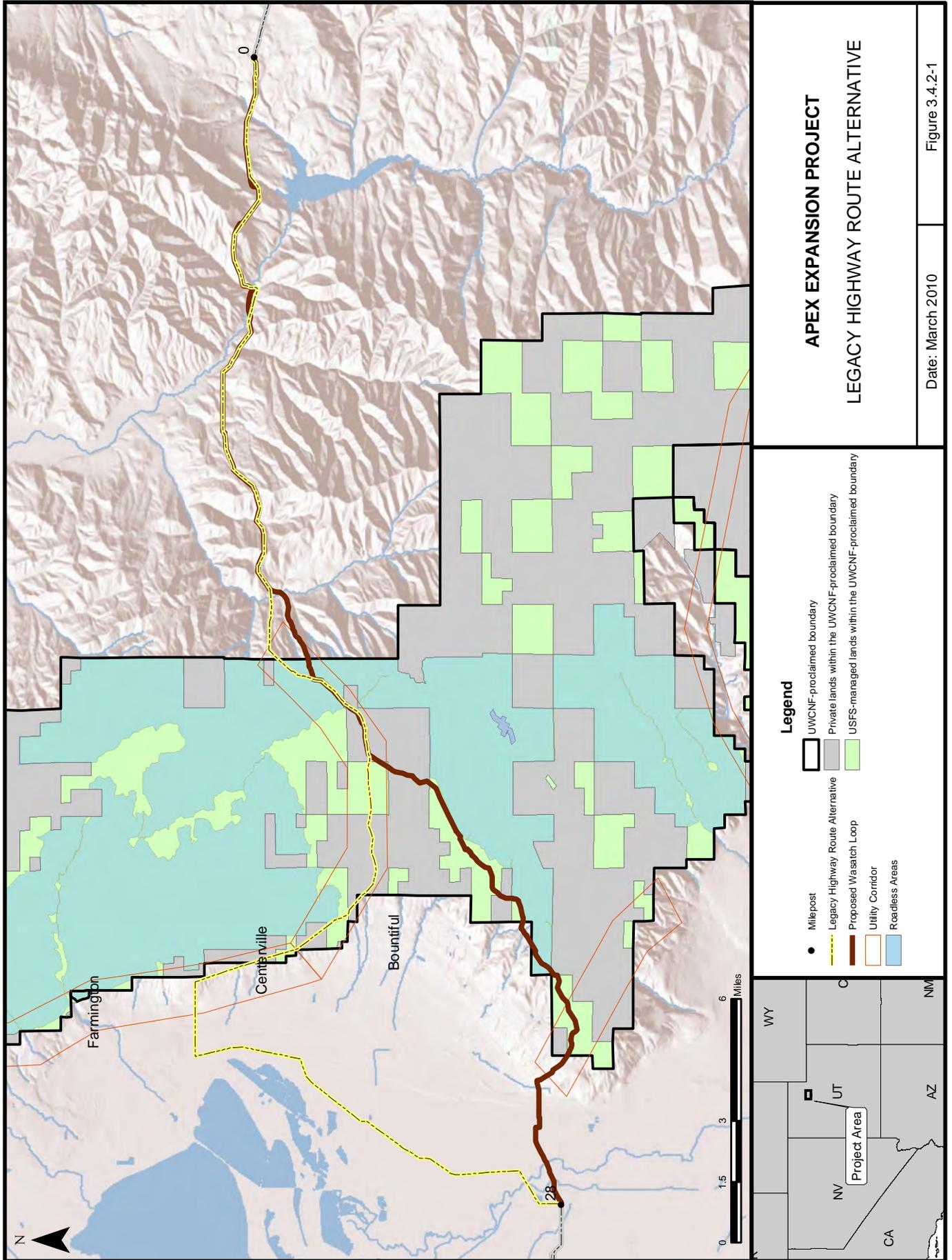
Evaluation Criterion	Proposed Project Route	Alternative Route
Total length (miles)	28.0	29.4
Construction impacts (acres)	433	356
Permanent impacts (acres)	170	178
Residences within 50 feet ^a (number)	3	30
Agricultural land (miles/acres)	1.0/21.2	1.2/14.2
Forested land (miles/acres)	3.4/81.6	12.4/150.2
Wetlands crossed (miles)	0.4	0.2
Coldwater fisheries (number)	5	20
Category 1 high-quality waters crossed (number)	6	8
Adjacent to existing rights-of-way (miles)	18.4	29.4
U.S. Forest Service Lands (miles)	7.6	6.0
National Forest Service trail crossings (number)	5	3
Proposed special management areas crossed ^b (number)	4	6
Douglas fir stands crossed (miles/acres)	4.0/43.9	3.9/46.7
Mountain mahogany-oak stands crossed(miles/acres)	15.2/211.0	13.2/159.4
Sage brush habitat crossed ^c (miles)	12.0	3.6
Notes:		
^a The number of residences reported would be within 50 feet of the permanent right-of-way.		
^b Special management areas are comprised of wildlife management areas, national forests, preserves and other public use lands.		
^c Identified as sensitive communities and/or species of concern.		

3.4.2 Legacy Highway Route Alternative

The Legacy Highway Route Alternative would follow Kern River’s existing system, and the proposed route, for the first 16.1 miles west of the origin. Between MP 15.9 and 16.0, the alternative route would then deviate from the Kern River right-of-way and head northwest within the USFS Ward Canyon utility corridor. The Legacy Highway Route Alternative would then take a generally northern route along the Bonneville Bench through the eastern foothills of Bountiful and Centerville cities. To cross Interstate 15, the alternative route would head west after which it would turn south to follow an existing transmission corridor and the Legacy Highway through the Legacy Nature Preserve (LNP) before terminating at the proposed Project tie-in point at MP 28.0 (figure 3.4.2-1).

Impacts of the proposed Project route and the Legacy Highway Route Alternative are compared in table 3.4.2-1. Quantitative data are based on a comparative desktop analysis using a combination of USGS topographic maps, NWI maps, and USGS land cover use data.

TABLE 3.4.2-1 Comparison of Legacy Highway Route Alternative and the Proposed Apex Expansion Project Route		
Evaluation Criterion	Proposed Project Route	Alternative Route
Total length (miles)	28.0	34.8
Construction impacts (acres)	433	422
Permanent impacts (acres)	170	211
Residences within 50 feet ^a (number)	3	7
Agricultural land (miles/acres)	1.0/21.2	7.5/90.7
Forested land (miles/acres)	3.4/81.6	9.0/109.5
Wetlands crossed (miles)	0.4	1.4
Coldwater fisheries (number)	5	22
Category 1 high-quality waters crossed (number)	6	21
Adjacent to existing rights-of-way (miles)	18.4	29.0
U.S. Forest Service lands (miles)	7.6	3.9
National Forest Service trail crossings (number)	5	3
Proposed special management areas crossed ^b (number)	4	7
Douglas fir stands crossed (miles/acres)	4.0/43.9	3.0/35.8
Mountain mahogany-oak stands crossed(miles/acres)	15.2/211.0	10.5/126.7
Sage brush habitat crossed ^c (miles)	12.0	3.6
Notes:		
^a The number of residences reported would be within 50 feet of the permanent right-of-way.		
^b Special management areas are comprised of wildlife management areas, national forests, preserves and other public use lands.		
^c Identified as sensitive communities and/or species of concern.		



**APEX EXPANSION PROJECT
LEGACY HIGHWAY ROUTE ALTERNATIVE**

Date: March 2010

Figure 3.4.2-1

- Legend**
- Milepost
 - Legacy Highway Route Alternative
 - Proposed Wasatch Loop
 - Utility Corridor
 - Roadless Areas
 - UWCNF-proclaimed boundary
 - Private lands within the UWCNF-proclaimed boundary
 - USFS-managed lands within the UWCNF-proclaimed boundary

The Legacy Highway Route Alternative would be about 7.0 miles longer than the proposed Project alignment. The alternative would have reduced construction impacts due to its greater collocation with existing rights-of-way but increased permanent impacts due to its longer length. The alternative would avoid crossing the urbanized areas of Bountiful and Centerville cities, and in some cases, impacts on certain habitat would be reduced. Construction of this alternative, however, would be within 50 feet of 4 additional residences than the proposed route. The alternative route has several constrained areas due to the extreme topography and existing features (e.g., the Davis County Aqueduct), that present construction limitations and safety concerns. The location of the route within the Salt Lake Valley poses concerns for a high water table, which would slow construction, require specialized construction equipment, and impact more wetlands and waterbodies. Kern River has indicated that this alternative has the potential for exposure to artesian water pressure, which raises concerns for soil liquefaction during construction and could reduce the success of post-construction restoration in affected areas.

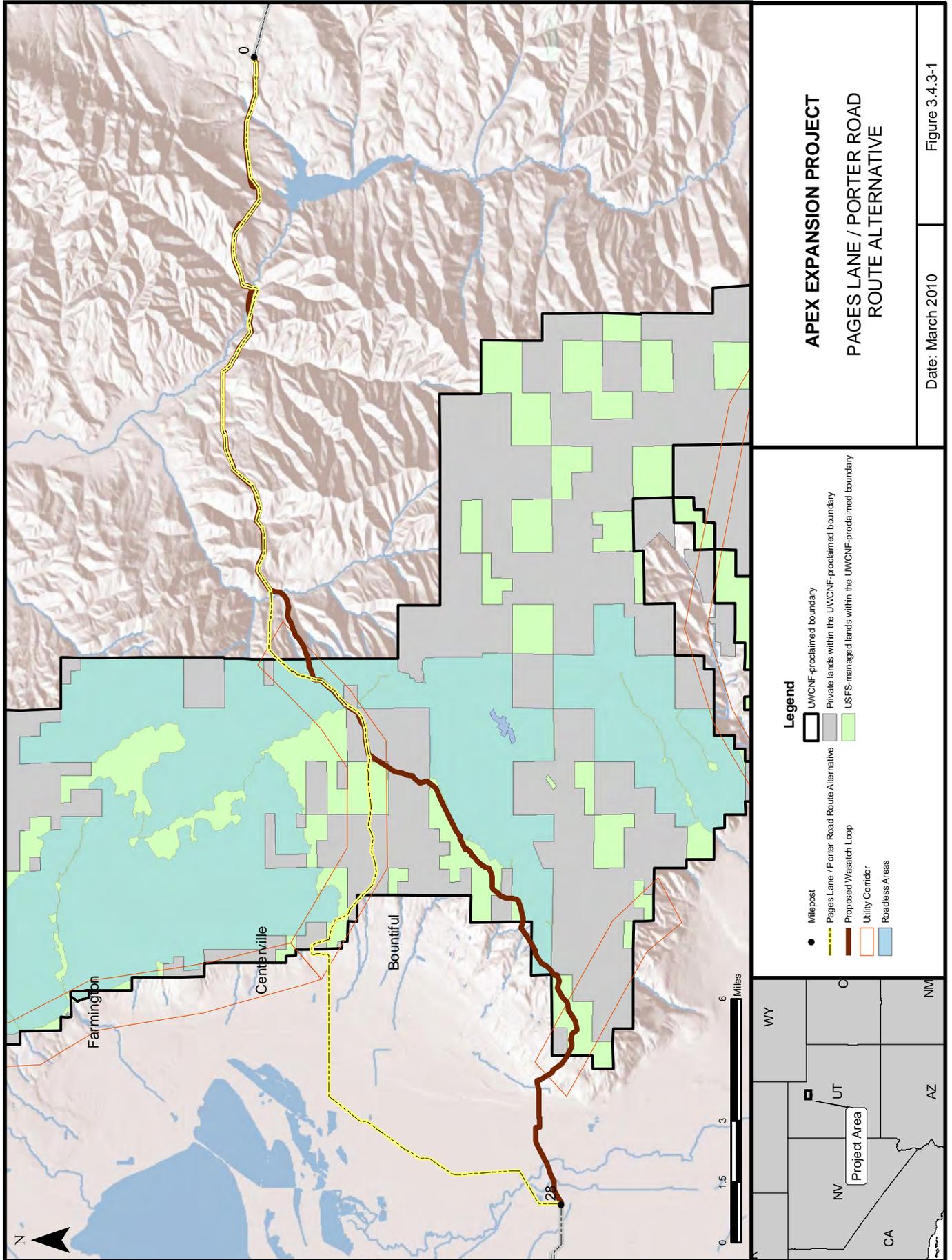
The alternative would cross the LNP, which would result in an increased risk of impacts on high-quality habitat supporting a variety of species as compared to the proposed route. The LNP was established to mitigate impacts from construction of the Legacy Highway, including wetland mitigation sites that would fall within the construction workspace of this alternative route. The FERC received comments from stakeholders regarding potential impacts of this alternative route to local businesses/commercial areas; recreation; and other sensitive areas, including the Farmington Bay Waterfowl Management Area, the LNP, and the Bonneville Shoreline Trail. Additional concerns for this alternative route included concern regarding the proposed expansion of an airport nearby and its location within an already highly congested utility corridor. Due to the potential impact on special management areas, construction feasibility and safety concerns along this alternative route, as well as the issues raised by stakeholders, we believe that the alternative route does not present a clear environmental advantage over the proposed route. Therefore, we have eliminated the Legacy Highway Route Alternative from further consideration.

3.4.3 Pages Lane/Porter Road Route Alternative

Similar to the Legacy Highway Route Alternative, the Pages Lane/Porter Road Alternative would follow Kern River's proposed route between MP 0.0 and 15.9. The Pages Lane/Porter Road Alternative would then follow the Legacy Highway Alternative for about 3.5 miles from MP 15.9 to the foothills of Centerville, Utah (figure 3.4.3-1). In Centerville the alternative route would follow either Pages Lane or Porter Road to cross the Salt Lake Valley. The alternative route would meet up with the Legacy Highway Route Alternative near the Legacy Highway and follow a similar route to the terminus.

Impacts of the proposed Project route and the Pages Lane/Porter Road Route Alternative are compared in table 3.4.3-1. Quantitative data are based on a comparative desktop analysis using a combination of USGS topographic maps, NWI maps, and USGS land cover use data.

The Pages Lane/Porter Road Alternative would impact approximately 67 acres less than the proposed Project route. This alternative would have greater impacts than the proposed route on agricultural and forested land but less impacts on other habitat types (Douglas fir stands, mountain mahogany-oak stands, and sage brush habitat). While the Pages Lane/Porter Road Route Alternative would have some of the same construction constraints as the Legacy Highway Route Alternative due to the terrain, they would be less significant. Further, the alternative route's collocation with Pages Lane or Porter Road to cross Salt Lake Valley would reduce the crossing length of the LNP. Alternatively, this segment of the alternative route is in a residential area with 45 residences within 50 feet of the permanent right-of-way, compared to two residences within 50 feet of the proposed permanent right-of-way. This alternative would also require multiple utility crossings, both underground at various depths and overhead, resulting in traffic control issues. Specialized



APEX EXPANSION PROJECT
PAGES LANE / PORTER ROAD
ROUTE ALTERNATIVE

Date: March 2010 Figure 3.4.3-1

- Legend**
- Milepost
 - Pages Lane / Porter Road Route Alternative
 - Proposed Wasatch Loop
 - Utility Corridor
 - Roadless Areas
 - UWCNF-proclaimed boundary
 - Private lands within the UWCNF-proclaimed boundary
 - USFS-managed lands within the UWCNF-proclaimed boundary

construction techniques due to the limited area for temporary workspace along this alternative would also cause construction to occur at a slow pace. The FERC received comments regarding concerns from stakeholders similar to those received for the Legacy Highway Route Alternative, in addition to comments regarding traffic-related issues and other disruptions to the various local communities along this alternative route. Due to greater landowner impacts, we do not believe that this alternative provides a clear environmental advantage over the proposed route; therefore, we have eliminated the Pages Lane/Porter Road Route Alternative from further consideration.

**TABLE 3.4.3-1
Comparison of Pages Lane/Porter Road Route Alternative and the
Proposed Apex Expansion Project Route**

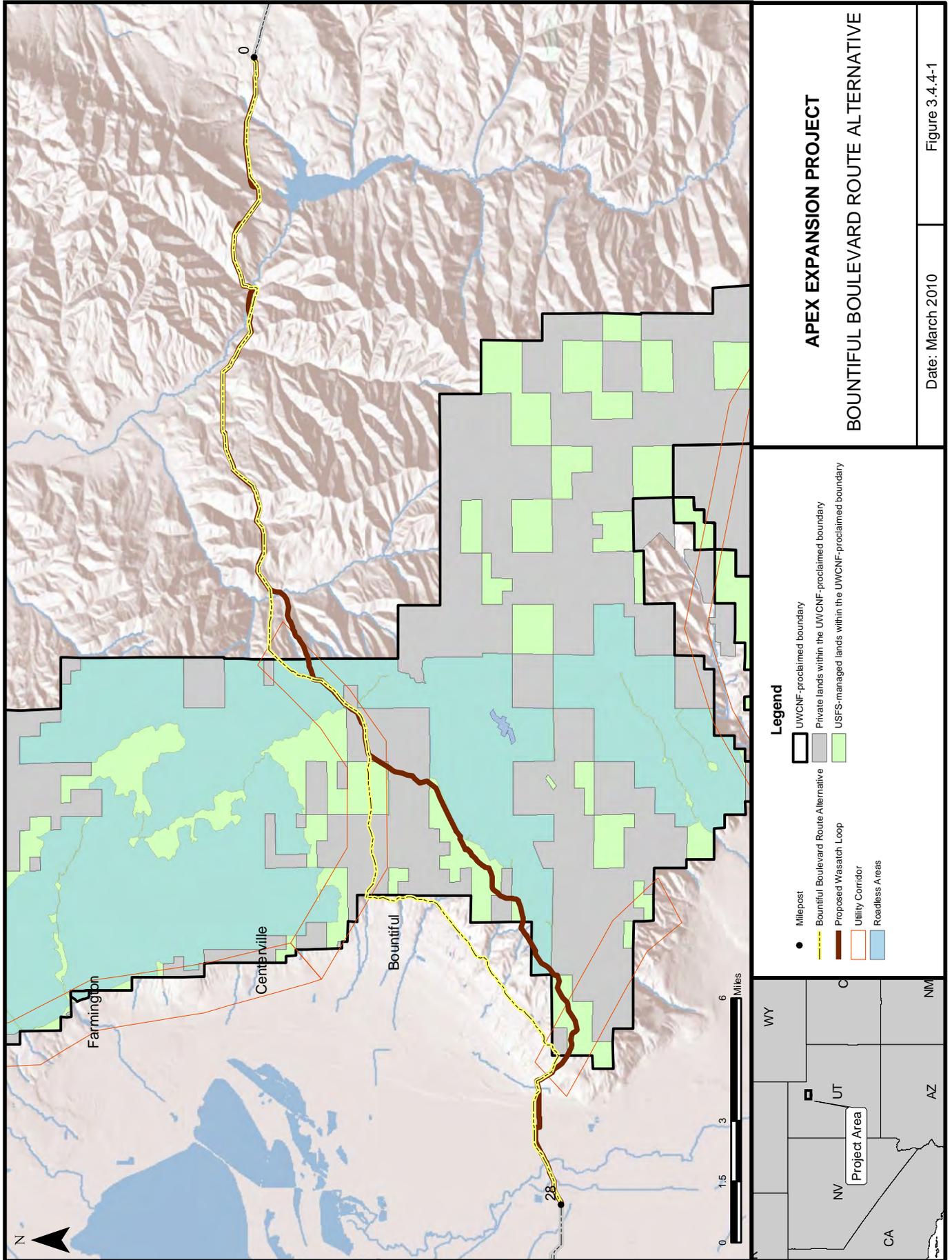
Evaluation Criterion	Proposed Project Route	Alternative Route
Total length (miles)	28.0	30.2
Construction impacts (acres)	433	366
Permanent impacts (acres)	170	183
Residences within 50 feet ^a (number)	2	45
Agricultural land (miles/acres)	1.0/21.2	5.0/61.0
Forested land (miles/acres)	3.4/81.6	8.9/107.5
Wetlands crossed (miles)	0.4	0.3
Coldwater fisheries (number)	5	16
Category 1 high-quality waters crossed (number)	6	33
Adjacent to existing rights-of-way (miles)	18.4	24.6
U.S. Forest Service lands (miles)	7.6	3.7
National Forest Service trail crossings (number)	5	2
Proposed special management areas crossed ^b (number)	4	7
Douglas fir stands crossed (miles/acres)	4.0/43.9	3.0/35.8
Mountain mahogany-oak stands crossed(miles/acres)	15.2/211.0	10.5/126.7
Sage brush habitat crossed ^c (miles)	12.0	3.6
Notes:		
^a The number of residences reported would be within 50 feet of the permanent right-of-way.		
^b Special management areas are comprised of wildlife management areas, national forests, preserves and other public use lands.		
^c Identified as sensitive communities and/or species of concern.		

3.4.4 Bountiful Boulevard Route Alternative

Similar to the Legacy Highway Alternative, the Bountiful Boulevard Route Alternative would follow Kern River’s proposed pipeline route between MP 0.0 and 15.9. The Bountiful Boulevard Route Alternative would also follow the Legacy Highway Alternative for about 2.5 miles from MP 15.9, at the east tie-in point, to the foothills of Bountiful, Utah (figure 3.4.4-1). In Bountiful, the alternative route would turn south following Bountiful Boulevard for about 6 miles to reach Kern River’s existing system near MLV 121 and then following the existing right-of-way to the terminus at MP 28.0.

Impacts of the proposed Project route and Bountiful Boulevard Route Alternative are compared in table 3.4.4-1. Quantitative data are based on a comparative desktop analysis using a combination of USGS topographic maps, NWI maps, and USGS land cover use data.

TABLE 3.4.4-1 Comparison of Bountiful Boulevard Route Alternative and the Proposed Apex Expansion Project Route		
Evaluation Criterion	Proposed Project Route	Alternative Route
Total length (miles)	28.0	28.3
Construction impacts (acres)	433	293
Permanent impacts (acres)	170	172
Residences within 50 feet ^a (number)	3	245
Agricultural land (miles/acres)	1.0/21.2	1.3/16.2
Forested land (miles/acres)	3.4/81.6	8.6/107.3
Wetlands crossed (miles)	0.4	0.2
Coldwater fisheries (number)	5	17
Category 1 high quality waters crossed (number)	6	2
Adjacent to existing rights-of-way (miles)	18.4	21.6
U.S. Forest Service lands (miles)	7.6	2.8
National Forest Service trail crossings (number)	5	3
Proposed special management areas crossed ^b (number)	4	6
Douglas fir stands crossed (miles/acres)	4.0/43.9	3.0/35.8
Mountain mahogany-oak stands crossed(miles/acres)	15.2/211.0	10.5/126.7
Sage brush habitat crossed ^c (miles)	12.0	3.6
Notes: ^a The number of residence reported would be within 50 feet of the permanent right-of-way. ^b Special management areas are comprised of wildlife management areas, national forests, preserves and other public use lands. ^c Identified as sensitive communities and/or species of concern.		



The alternative route would cross through a residential area along Bountiful Boulevard, impacting a significant number of residences within 50 feet of the proposed permanent right-of-way (245 residences). Impacts associated with this alternative through residential areas would be similar to those discussed for the Pages Lane/Porter Road Route Alternative but would be greater due to the larger number of residences. FERC received several comments regarding concerns from stakeholders about potential impacts during construction to utility lines, water lines, sewers/drains, as well as potential challenges with maintenance of these utilities following construction. Commentors also pointed to potential traffic control issues since Bountiful Boulevard is the only access road for residences of the area and access to two golf courses and a fire station. In addition, the alternative route would be in proximity to areas utilized for flood control, which may require additional specialized construction designs and/or further refinement of the identified route. Due to the greater number of affected landowners and the associated impacts from construction, we do not believe that the alternative provides an environmental advantage over the proposed route. Therefore, we have eliminated the Bountiful Boulevard Route Alternative from further consideration.

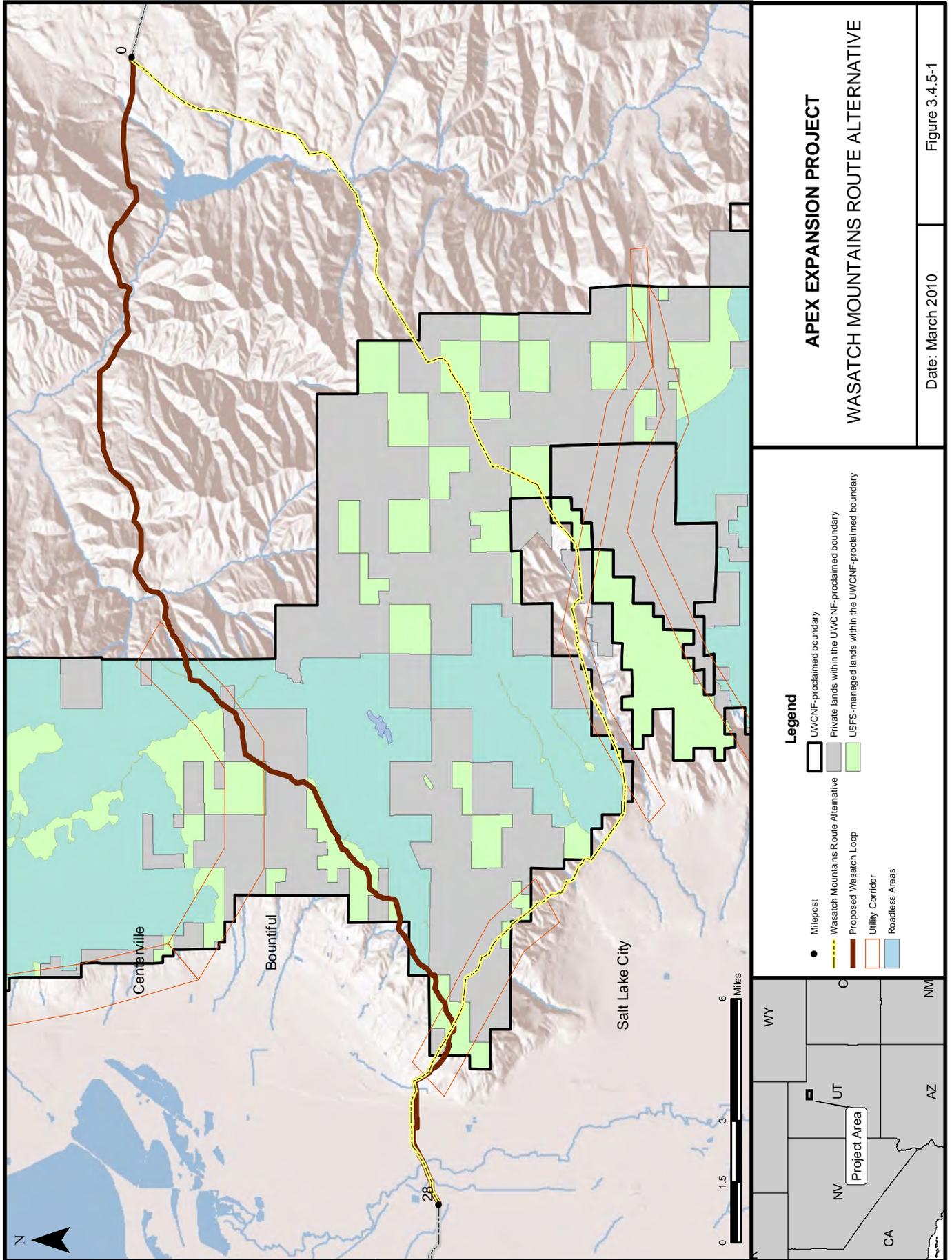
3.4.5 Wasatch Mountains Route Alternative

The Wasatch Mountains Route Alternative would run southwest from the east tie-in point of the corresponding segment of the proposed route at MP 0.0, following an existing utility corridor and other pipelines through Emigration Canyon, which would also be partly located within the USFS-designated Little Mountain utility corridor (figure 3.4.5-1). Upon exiting the canyon, the alternative route would then turn north along the Bonneville Bench to parallel the existing Questar pipeline right-of-way to Kern River's existing pipeline system near MLV 121, and then follow the existing right-of-way to the terminus at MP 28.0.

Impacts of the proposed Project route and Wasatch Mountains Route Alternative are compared in table 3.4.5-1. Quantitative data are based on a comparative desktop analysis using a combination of USGS topographic maps, NWI maps, and USGS land cover use data.

The Wasatch Mountains Route Alternative would require the most greenfield² construction (13.1 miles) of any of the alternative routes considered and 3.5 miles more length than the proposed loop, including lands within the UWCNF. Also, this alternative route would encumber all of the issues previously identified across the other four major alternatives, including construction challenges, residences in close proximity (45 within 50 feet of the permanent right-of-way), traffic concerns (especially at the crossing of Canyon Creek Road where steep slopes may prohibit a road bore), and limited area for temporary workspace, and associated safety concerns. Further, since the Wasatch Mountains Route Alternative would be constructed on lands not previously disturbed, the majority of the route has not been surveyed to identify cultural resources (only 5 percent of the first 28 miles has previously been surveyed). Given the proximity of this route to areas identified as important historical, cultural, or recreational areas, it is likely that the corridor of the alternative route would be of moderate to high density for potential cultural/historic sites. Given the extensive amount of greenfield associated with the alternative, in addition to the other factors discussed above, we do not believe that the alternative provides an environmental advantage over the proposed route. Therefore, we have eliminated the Wasatch Mountains Route Alternative from further consideration.

² "Greenfields" are lands that do not contain existing utility rights-of-way.



APEX EXPANSION PROJECT
WASATCH MOUNTAINS ROUTE ALTERNATIVE

Date: March 2010
 Figure 3.4.5-1

**TABLE 3.4.5-1
Comparison of Wasatch Mountains Alternative and the
Proposed Apex Expansion Project Route**

Evaluation Criterion	Proposed Project Route	Alternative Route
Total length (miles)	28.0	31.2
Construction impacts (acres)	433	378
Permanent impacts (acres)	170	189
Residences within 50 feet ^a (number)	3	45
Agricultural land (miles/acres)	1.0/21.2	1.4/16.8
Forested land (miles/acres)	3.4/81.6	11.2/135.2
Wetlands crossed (miles)	0.4	0.1
Coldwater fisheries (number)	5	22
Category 1 high-quality waters crossed (number)	6	33
Adjacent to existing rights-of-way (miles)	18.4	18.1
U.S. Forest Service lands (miles)	7.6	4.8
National Forest Service trail crossings (number)	5	4
Proposed special management areas crossed ^b (number)	4	4
Douglas fir stands crossed (miles/acres)	4.0/43.9	1.6/19.4
Mountain mahogany-oak stands crossed(miles/acres)	15.2/211.0	8.3/100.6
Sage brush habitat crossed ^c (miles)	12.0	6.6
Notes:		
^a The number of residences reported would be within 50 feet of the permanent right-of-way.		
^b Special management areas are comprised of wildlife management areas, national forests, preserves and other public use lands.		
^c Identified as sensitive communities and/or species of concern.		

3.5 ROUTE VARIATIONS

Route variations differ from system or major route alternatives in that they are identified to resolve or reduce construction impacts to localized, specific resources such as cultural resources sites, wetlands, recreational lands, residences, and terrain conditions. While route variations may be a few miles in length, most are relatively short and in close proximity to the proposed route. Because route variations are identified in response to specific local concerns, they are often the result of landowner comments. A variety of factors are considered in identifying and evaluating route variations, including length, land requirements, and potential for reducing or minimizing impacts on natural resources.

Our analysis of route variations is based on information provided by Kern River, input provided to us by the general public, as well as federal and state resource agencies. In addition, we have reviewed aerial photography and USGS topographic maps of the proposed route, and have conducted site visits. Seven route

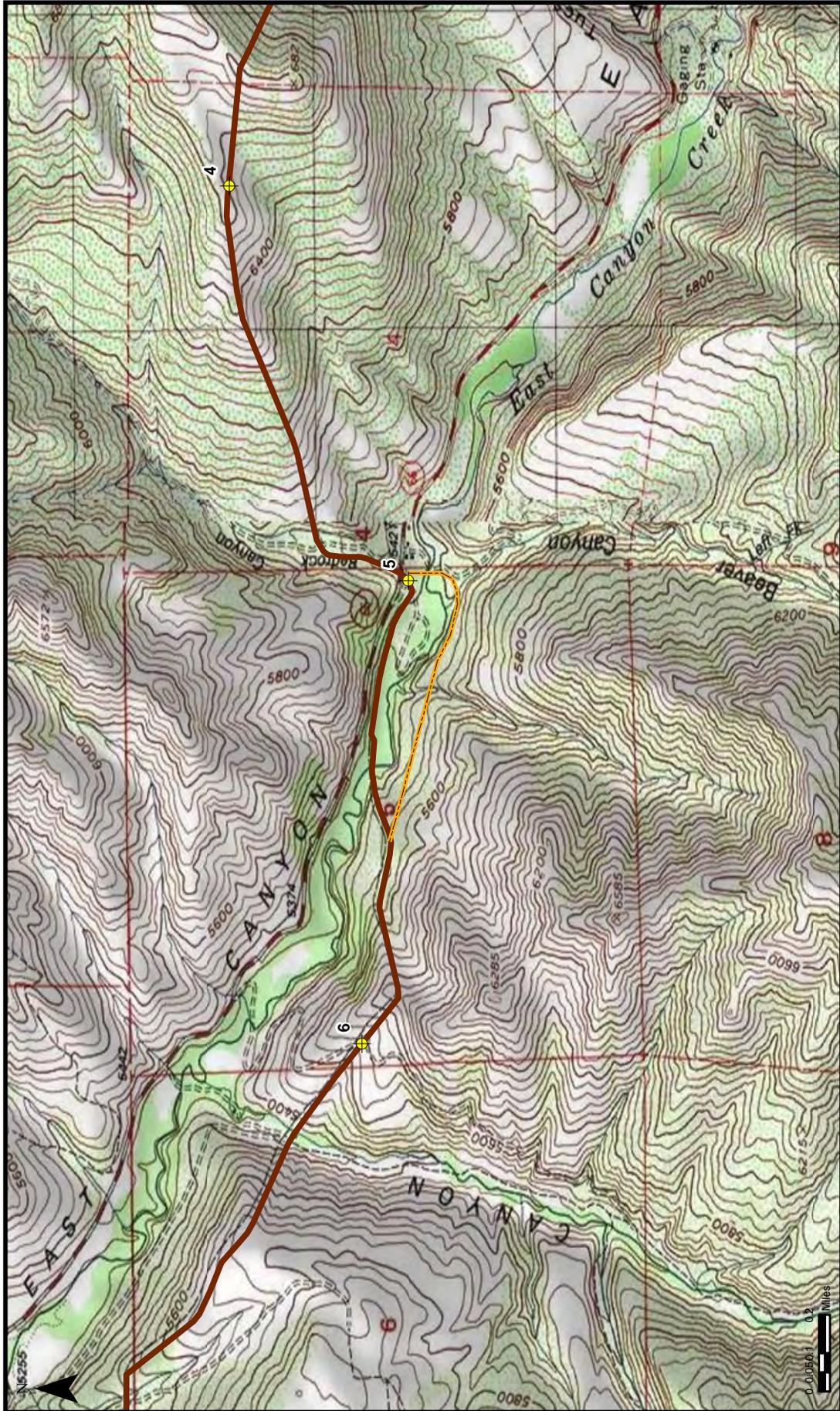
variations were identified for the proposed Apex Expansion Project, which are described below. Table 3.5-1 lists the seven variations, the associated segments along the proposed route that they would replace, and the rationale for the variation we have taken into consideration in our analysis.

Route Variation	Proposed Project Route Milepost Range (approximate)	Reason for Variation	Status
East Canyon	5.0 – 5.6	Provides a more perpendicular crossing of the East Canyon Creek and riparian area	Not recommended
Mueller Park	13.7 – 14.7	Avoids the Hogsback Roadless Area	Recommended
Holbrook Canyon	15.9 – 17.1	Avoids steep slopes of Holbrook Canyon and coniferous habitat	Not recommended
Sitka Holdings	21.0 – 22.5	Avoids private land holding but impacts more U.S. Forest Service land and forest habitat	Not recommended
North Salt Lake I	23.9 – 25.0	Avoids steep slope and recent residential development but encroaches on the Bonneville Shoreline Preserve	Not recommended
North Salt Lake II	23.9 – 25.0	Avoids Eaglepointe residential development area and the Bonneville Shoreline Preserve	Not recommended
North Salt Lake III	22.0 – 24.9	Avoids steep slope, mule deer wintering habitat, and historic Conservation Corps terracing	Recommended

3.5.1 East Canyon Route Variation

The East Canyon Route Variation was developed to allow for a more perpendicular crossing of the East Canyon Creek (see section 4.3). The East Canyon Route Variation would deviate from the proposed Project alignment at MP 5.0, shifting the alignment southwest and then east before resuming the proposed Project alignment at MP 5.6 (figure 3.5.1-1).

The East Canyon Route Variation would be approximately the same length as the proposed Project alignment (table 3.5.1-1). However, the route variation would cross topography that would make construction difficult. Further, the route variation would not be collocated with Kern River’s existing right-of-way, while the corresponding segment of the proposed alignment would be collocated and would cross one less waterbody than the route variation. The East Canyon Route Variation would traverse both sagebrush/grass (0.3 mile) and mahogany-oak scrub (0.3 acre), while the proposed Project route would avoid these habitats but would instead cross 0.01 mile of wetlands. However, this segment of the proposed route alignment would be contained entirely within an existing right-of-way. Both the proposed Project route and the route variation do not cross USFS property, and both would result in similar impacts to private landowners.

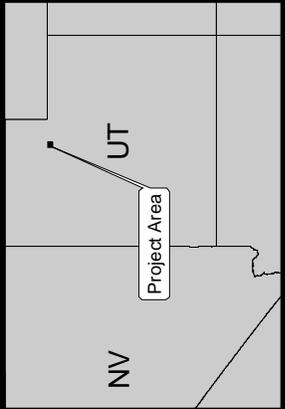


APEX EXPANSION PROJECT

EAST CANYON ROUTE VARIATION

Legend

-  Milepost
-  Proposed Wasatch Loop
-  Utility Corridor
-  USFS-managed lands within the UWCNF-proclaimed boundary
-  Private lands within the UWCNF-proclaimed boundary
-  UWCNF-proclaimed boundary
-  Roadless Areas



Date: March 2010

Figure 3.5.1-1

**TABLE 3.5.1-1
Comparison of Features of the Proposed Project Route and
the East Canyon Route Variation**

Feature	Unit	Proposed Project Route	Route Variation
Total length	Miles	0.6	0.7
Collocation	Miles	0.6	0.0
Construction impacts	Acres	6.8	8.1
Residences within 50 feet ^a	Number	0	0
Private land holdings	Miles	0.6	0.7
U.S. Forest Service lands	Miles	0.0	0.0
Waterbody crossings	Number	3	4
Wetland crossings ^b	Miles	0.1	0.0

Notes:

^a The number of residences reported would be within 50 feet of the permanent right-of-way.

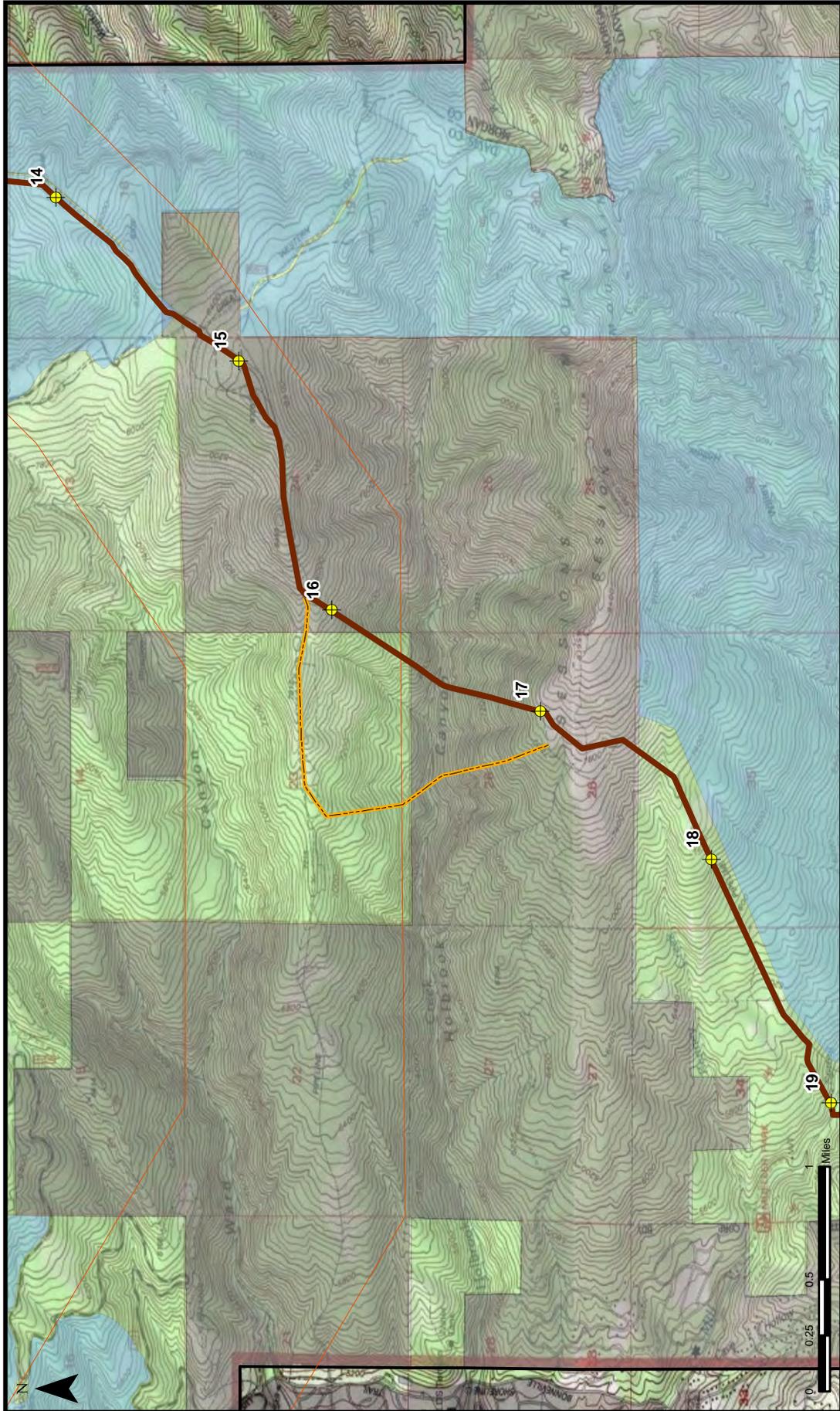
^b National Wetlands Inventory wetlands.

Kern River stated that this route variation would have terrain constraints and conflicts with the landowners use of the area. While the East Canyon Route Variation would allow for a more perpendicular crossing of East Canyon Creek, Kern River has developed specialized construction techniques along the proposed route, discussed in section 4.3.2.6, that would minimize impacts on this waterbody. For these reasons, along with the decreased collocation with existing rights-of-way, we do not consider the East Canyon Route Variation to be environmentally preferable to the proposed Project alignment. Therefore, we have eliminated the East Canyon Route Variation from further consideration.

3.5.2 Holbrook Canyon Route Variation

The Holbrook Canyon Route Variation was considered due to construction constraints from steep terrain and an area of mature spruce-fir habitat along a segment of the proposed route between MP 15.9 to 17.1 (figure 3.5.2-1). The Holbrook Canyon Route Variation would deviate from the proposed Project alignment at MP 15.9, continuing west within the Ward Canyon Utility Corridor and then south before resuming the proposed Project alignment at MP 17.1.

The Holbrook Canyon Route Variation would be slightly longer than the proposed Project alignment (table 3.5.2-1) and would not be collocated with Kern River's existing right-of-way. Additionally, the route variation would have more construction impacts than the proposed alignment and would also impact more USFS property.



APEX EXPANSION PROJECT

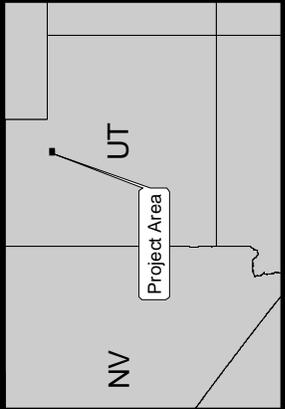
HOLBROOK CANYON ROUTE VARIATION

Date: March 2010

Figure 3.5.2-1

Legend

-  Milepost
-  Holbrook Canyon Route Variation
-  Proposed Wasatch Loop
-  Utility Corridor
-  Roadless Areas
-  UWCNF-proclaimed boundary
-  Private lands within the UWCNF-proclaimed boundary
-  USFS-managed lands within the UWCNF-proclaimed boundary



**TABLE 3.5.2-1
Comparison of Features of the Proposed Project Route and
the Holbrook Canyon Route Variation**

Feature	Unit	Proposed Project Route	Route Variation
Total length	Miles	1.3	1.8
Collocation	Miles	1.3	0.0
Construction impacts	Acres	15.2	21.9
Residences within 50 feet ^a	Number	0	0
Private land holdings	Miles	0.1	0.3
U.S. Forest Service lands	Miles	0.3	1.1
Waterbody crossings	Number	2	2
Wetland crossings ^b	Miles	0.0	0.0

Notes:

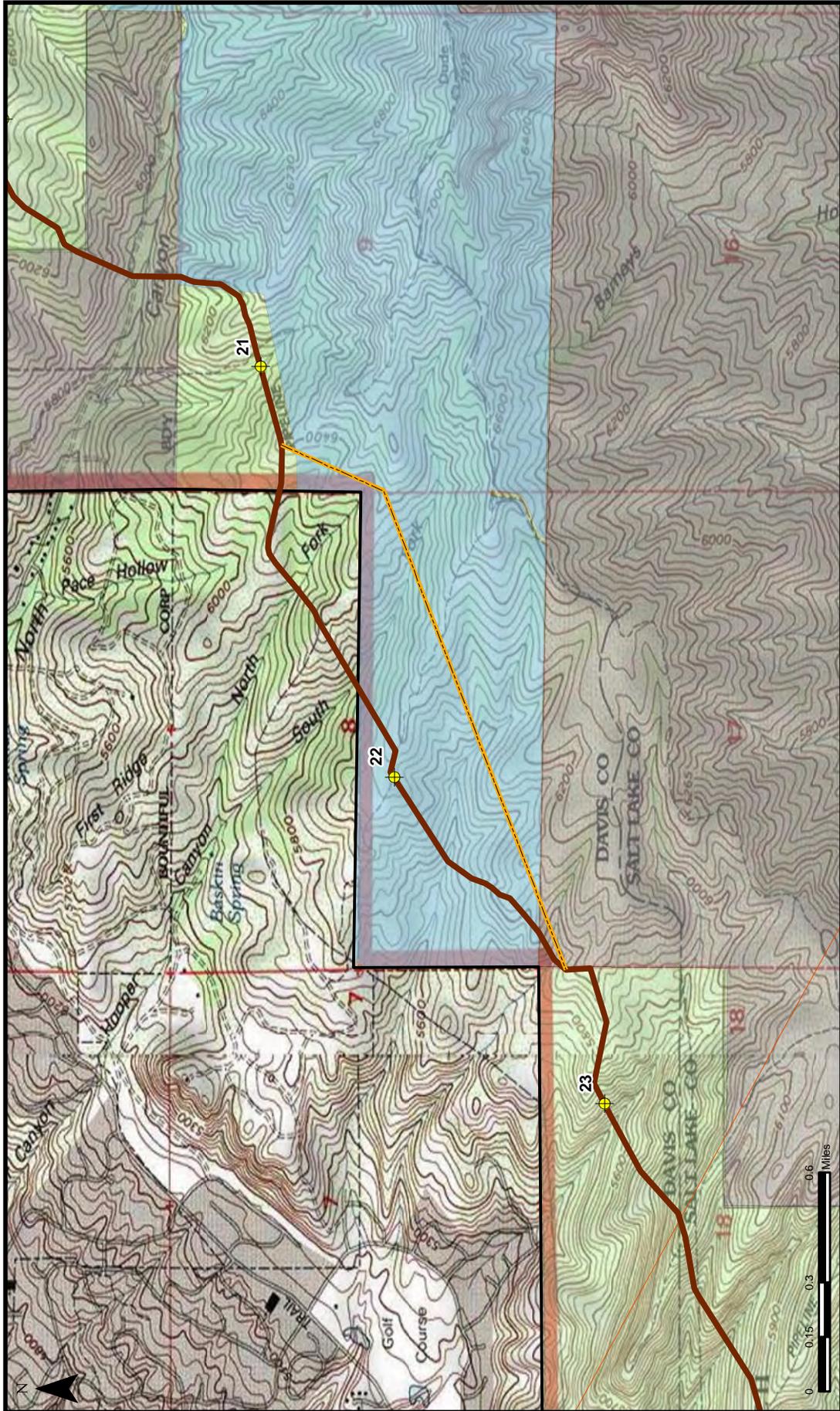
^a The number of residences reported would be within 50 feet of the permanent right-of-way.

^b National Wetlands Inventory wetlands.

Both the proposed route and the Holbrook Canyon Route Variation have similar terrain challenges but the Holbrook Canyon Route Variation would be approximately 0.5 mile longer, would not be collocated with the existing pipeline, and would impact more private and USFS land. Further, while the Holbrook Canyon Route Variation would avoid clearing of mature spruce-fir habitat along the corresponding segment of the proposed route; this impact does not outweigh the additional construction disturbance resulting from this variation. Therefore, we believe that the variation does not offer an environmentally preferable alternative to that of the proposed Project alignment. Therefore, we have eliminated the Holbrook Canyon Route Variation from further consideration.

3.5.3 Sitka Holdings Route Variation

The Sitka Holdings Route Variation was identified during meetings with landowners and based on comments received at the FERC scoping meetings. A request was made on behalf of a private landowner to re-route the pipeline alignment to circumvent his property between MP 21.0 and 22.5. To address the landowner's concern, we considered a variation known as the Sitka Holdings Route Variation. At MP 21.0, the variation would deviate south of the proposed route to avoid the private landholding and then turn southwesterly to rejoin the proposed route at MP 22.5 (figure 3.5.3-1).



APEX EXPANSION PROJECT

SITKA HOLDINGS ROUTE VARIATION

Date: March 2010

Figure 3.5.3-1

Legend

- Milepost
- Sitka Holdings Route Variation
- Proposed Wasatch Loop
- Utility Corridor
- Roadless Areas
- UWCNF-proclaimed boundary
- Private lands within the UWCNF-proclaimed boundary
- USFS-managed lands within the UWCNF-proclaimed boundary



We reviewed the Sitka Holdings Route Variation in detail, including the maps provided by the commentor. While this variation would meet the landowner’s request to avoid the property, the variation is not collocated with the existing pipeline and would require 0.4 mile of greenfield construction across USFS lands which would result in an additional 0.2 mile, or 2.4 acres³ of impacts on forest habitat (table 3.5.3-1).

Feature	Unit	Proposed Project Route	Route Variation
Total length	Miles	1.5	1.4
Collocation	Miles	0.4	0.0
Construction impacts	Acres	17.7	17.1
Residences within 50 feet ^a	Number	0	0
Private land holdings	Miles	0.1	0.2
U.S. Forest Service lands	Miles	0.9	1.3
Waterbody crossings	Number	0	0
Wetland crossings ^b	Miles	0.0	0.0

Notes:

^a The number of residences reported would be within 50 feet of the permanent right-of-way.

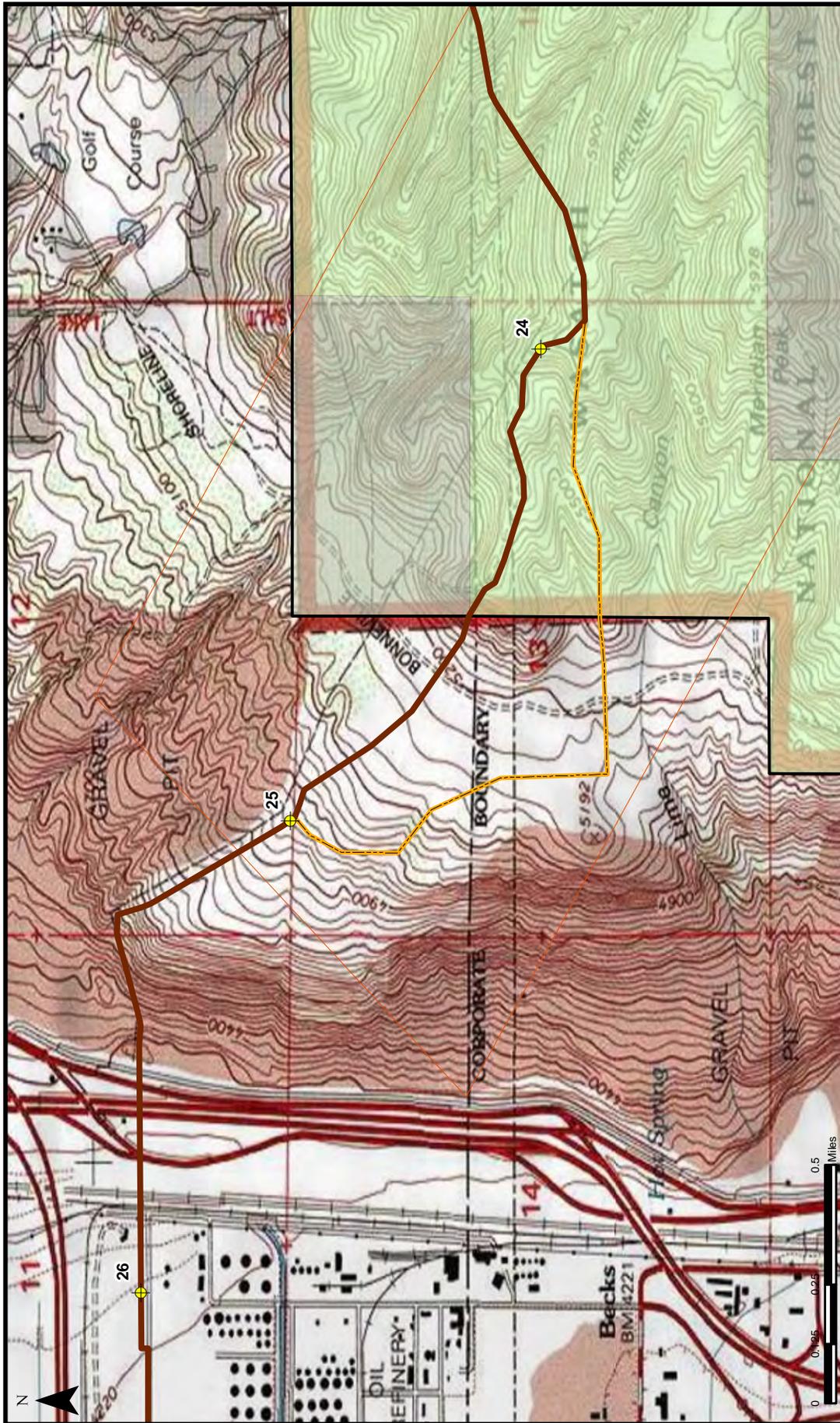
^b National Wetlands Inventory wetlands.

Despite the slightly shorter overall route of the Sitka Holdings Route Variation, the variation would have increased impacts on previously undisturbed areas by creating new right-of-way and would increase impacts on forest habitat on USFS-managed land. We believe that this route alternative does not offer an environmental advantage over the corresponding segment of the proposed Project alignment; therefore, we have eliminated the Sitka Holdings Route Variation from further consideration.

3.5.4 North Salt Lake I Route Variation

The North Salt Lake I Route Variation was considered as an alternative to the corresponding segment of the proposed route which avoids steep terrain and the presence of recent development of residential communities along Kern River’s existing right-of-way between MP 24 and 25. This variation, which would be slightly longer than the corresponding segment of the proposed route, would leave the existing right-of-way at MP 23.9 and take a southwest path to follow the prehistoric Bonneville Bench shoreline (figure 3.5.4-1). The North Salt Lake I Route Variation would then continue west about 1 mile before heading in a northwesterly direction for 0.8 mile to rejoin the proposed route at MP 25.0.

³ This impact area was calculated based on the additional 0.2 mile of forest land and a 100-foot-wide construction right-of-way.

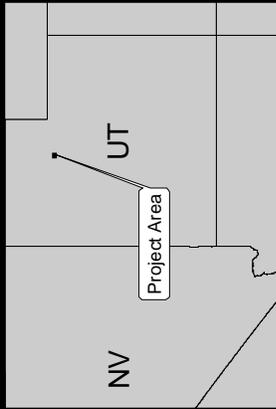


APEX EXPANSION PROJECT

NORTH SALT LAKE I ROUTE VARIATION

Legend

- Milepost
- North Salt Lake I Route Variation
- Proposed Wasatch Loop
- Utility Corridor
- Roadless Areas
- UWCNF-proclaimed boundary
- Private lands within the UWCNF-proclaimed boundary
- USFS managed lands within the UWCNF-proclaimed boundary



Date: March 2010

Figure 3.5.4-1

The route variation would be 0.3 mile longer than the corresponding segment of the proposed route, with slightly increased construction impacts (an additional 4.1 acres). Both routes are not collocated with Kern River’s existing pipeline and would have a similar level of impact on private land and USFS land (table 3.5.4-1).

Feature	Unit	Proposed Project Route	Route Variation
Total length	Miles	1.1	1.4
Collocation	Miles	0.0	0.0
Construction impacts	Acres	13.2	17.3
Residences within 50 feet ^a	Number	0	0
Private land holdings	Miles	0.5	0.5
U.S. Forest Service lands	Miles	0.6	0.5
Waterbody crossings	Number	0	0
Wetland crossings ^b	Miles	0.0	0.0

Notes:

^a The number of residences reported would be within 50 feet of the permanent right-of-way.

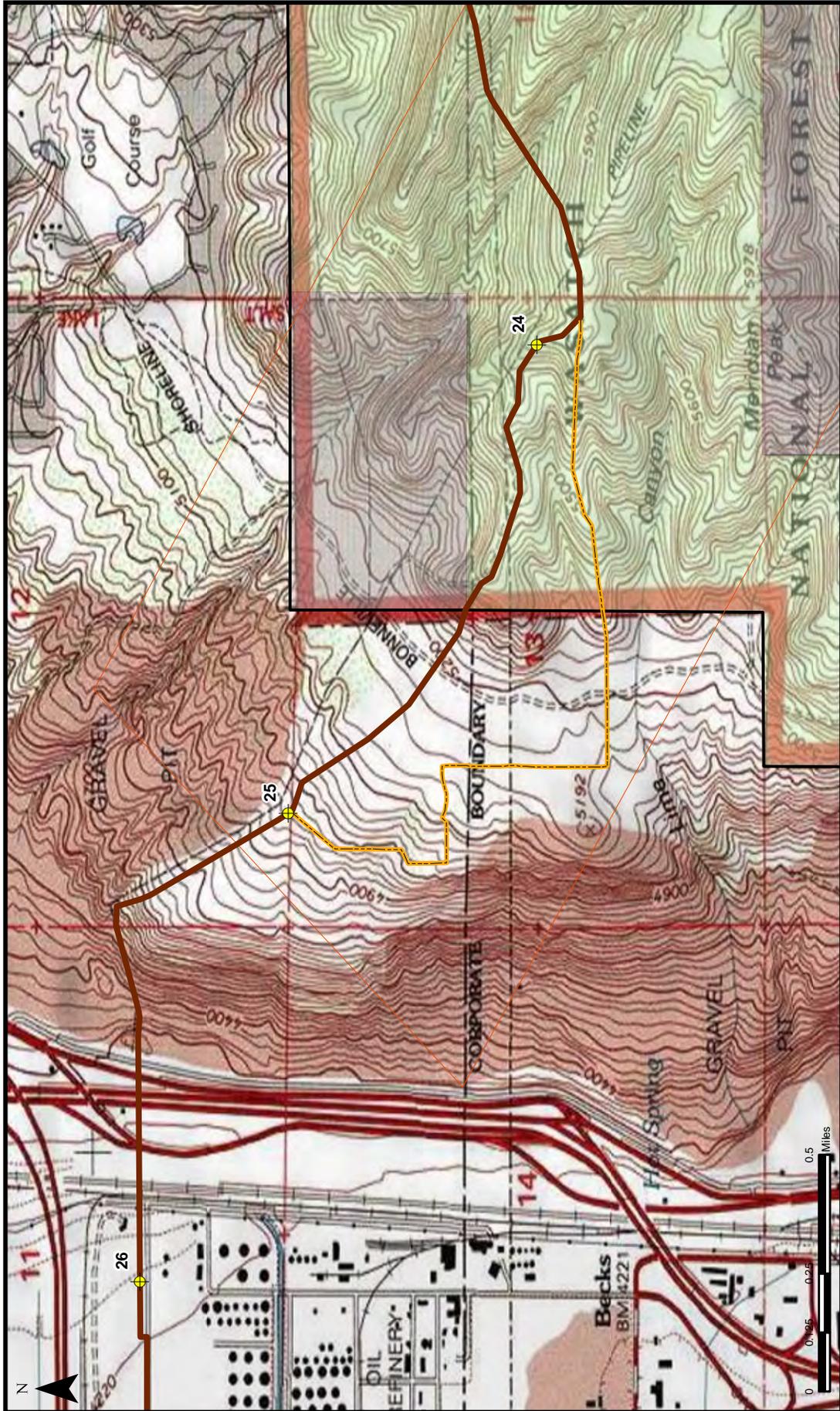
^b National Wetlands Inventory wetlands.

The North Salt Lake I Route Variation would cross lands under the jurisdiction of Salt Lake and North Salt Lake Cities known as the Bonneville Shoreline Preserve. This geological formation represents the shoreline of prehistoric Lake Bonneville and has been protected as a preserve in perpetuity by a conservation easement.

Commentors expressed concern with and opposition to any route alignment impacting the Bonneville Shoreline Preserve during Kern River’s open houses and the FERC scoping period. Due to the public opposition to any route alignment within the Bonneville Shoreline Preserve and the additional construction impact resulting from this variation, we have eliminated the North Salt Lake I Route Variation from further consideration.

3.5.5 North Salt Lake II Route Variation

The North Salt Lake II Route Variation was considered as an alternative to the previous route variation (North Salt Lake I) and as an alternative to the corresponding segment of the proposed route which avoids the Edgewood/Eaglepointe residential development along Kern River’s existing right-of-way. This variation would leave the existing right-of-way at MP 23.9 and generally take the same route as the North Salt Lake I Route Variation for 0.3 mile and a different route for the last 0.8 mile before rejoining the proposed route at MP 25.0 (figure 3.5.5-1).



APEX EXPANSION PROJECT

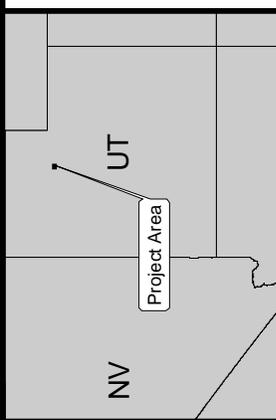
NORTH SALT LAKE II ROUTE VARIATION

Date: March 2010

Figure 3.5.5-1

Legend

- Milepost
- Proposed Wasatch Loop
- Utility Corridor
- Roadless Areas
- UWCNF-proclaimed boundary
- Private lands within the UWCNF-proclaimed boundary
- USFS-managed lands within the UWCNF-proclaimed boundary



The North Salt Lake II Route Variation would be approximately 0.5 mile longer than the corresponding segment of the proposed route, with increased construction impacts (an additional 6.1 acres). Both routes would have similar impacts on private land and USFS land (table 3.5.5-1).

Feature	Unit	Proposed Project Route	Route Variation
Total length	Miles	1.1	1.6
Collocation	Miles	0.0	0.0
Construction impacts	Acres	13.2	19.3
Residences within 50 feet ^a	Number	0	0
Private land holdings	Miles	0.5	0.6
U.S. Forest Service lands	Miles	0.6	0.5
Waterbody crossings	Number	0	0
Wetland crossings ^b	Miles	0.0	0.0

Notes:

^a The number of residences reported would be within 50 feet of the permanent right-of-way.

^b National Wetlands Inventory wetlands.

The North Salt Lake II Route Variation would be longer and would have more construction impacts than either the corresponding segment of the proposed Project alignment or the North Salt Lake North I Route Variation. However, as discussed above, the route variation would avoid the Edgewood/Eaglepointe residential development and the Bonneville Shoreline Preserve.

Kern River consulted with North Salt Lake City officials, who expressed their preference for the North Salt Lake II Route Variation to avoid impacts on the Edgewood/Eaglepointe development. The FERC also received comments from both North Salt Lake and Salt Lake Cities, which stated that this route variation was preferable to any route alignment impacting the Bonneville Shoreline Preserve. Kern River’s proposed route also avoids impact on the Edgewood/Eaglepointe residential development and the Bonneville Shoreline Preserve. Because the North Salt Lake II Route Variation results in additional construction impacts and does not offer any environmental advantages over the corresponding segment of the proposed route, we have eliminated the North Salt Lake II Route Variation from further consideration.

3.5.6 Mueller Park Route Variation

The Mueller Park Route Variation was identified to avoid impacts on the Hogsback Roadless Area.⁴ This variation would be the same length as the corresponding segment of the proposed route, but would generally follow Kern River’s existing pipeline and the Questar Line on the south side of the existing right-of-way between MP 13.7 and 14.7 rather than on the north side of the existing right-of-way (figure 3.5.6-1 and table 3.5.6-1). While the Mueller Park Route Variation avoids impact on the Hogsback Roadless Area, it is

⁴ A copy of the Secretary’s memorandum 1042-154 is available at: <http://www.ocio.usda.gov/directives/doc/SM1042-154.pdf>

aligned within the Mueller Park Roadless Area. Since the Mueller Park Roadless Area was not identified in the set of inventoried roadless area maps contained in the Forest Service Roadless Area Conservation FEIS, Volume 2, dated November 2000, removal of timber and road construction would not be subject to approval from the Secretary of Agriculture.

**TABLE 3.5.6-1
Comparison of Features of the Proposed Project Route and
the Mueller Park Route Variation**

Feature	Unit	Proposed Project Route	Route Variation
Total length	Miles	1.0	1.0
Collocation	Miles	0.1	<0.1
Construction impacts	Acres	13.0	12.7
Residences within 50 feet ^a	Number	0	0
Private land holdings	Miles	0.1	0.2
U.S. Forest Service lands	Miles	0.1	<0.1
Waterbody crossings	Number	0	0
Wetland crossings ^b	Miles	0.0	0.0

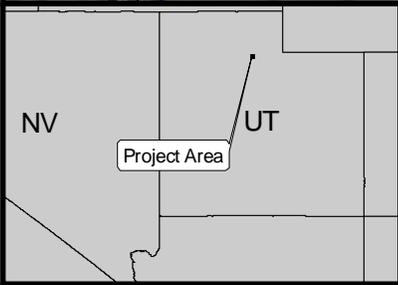
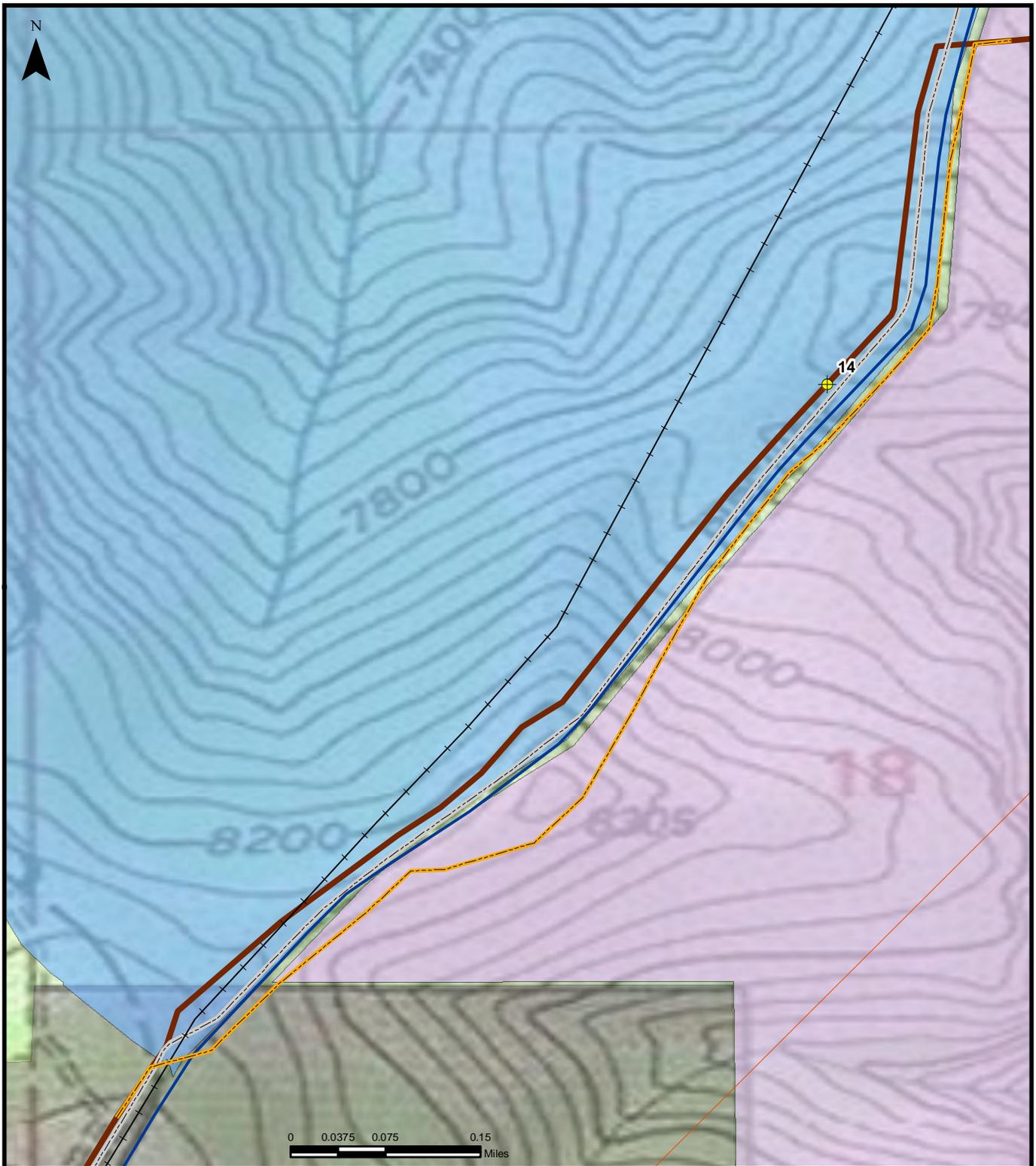
Notes:

^a The number of residences reported would be within 50 feet of the permanent right-of-way.

^b National Wetlands Inventory wetlands.

The Mueller Park Route Variation would generally utilize previously cleared areas along the existing rights-of-way. Due to challenging terrain a minor deviation from the existing rights-of-way would be required resulting in less than 0.1 acre of greenfield construction within the UWCNF and the Mueller Park Roadless Area. The Mueller Park Route Variation would impact 0.5 mile, or about 6.1 acres, of the Mueller Park Roadless Area during construction. While the Mueller Park Route Variation would not be entirely collocated with the existing right-of-way, some portions would be located within a designated utility corridor through the area. It is likely that some tree clearing would be required within this portion of the crossing; however, these lands would be able to revegetate upon completion of pipeline construction. While this variation would require 0.4 mile of greenfield within the UWCNF, the USFS, the managing agency for the UWCNF and the associated roadless areas, has stated that they prefer the Mueller Park Route Variation over the proposed route. We agree and in conjunction with the reduced impacts from workspace design along this variation, we believe this route offers an environmental preferable alternative to the proposed route. The Mueller Park Route Variation also avoids impact on the Hogsback Roadless Area, which may require approval due to the more stringent restrictions of this roadless area than the Mueller Park Roadless Area. **Therefore, we recommend that:**

- Prior to the end of the draft EIS comment period, Kern River should incorporate the Mueller Park Route Variation into the proposed Project route between MP 13.7 and 14.7. In addition, Kern River should complete and file with the FERC all biological and cultural resources surveys and consultations on the recommended variation and provide updated alignment sheets for the review and written approval of the Director of OEP.**



Legend	
	Milepost
	Hogsback Roadless Area
	Mueller Park Roadless Area
	Mueller Park Route Variation
	Existing Kern River Pipeline
	Proposed Wasatch Loop
	Questar Gas Line
	Existing Power Line
	Utility Corridor
	UWCNF-proclaimed boundary
	Private lands within the UWCNF-proclaimed boundary
	USFS-managed lands within the UWCNF-proclaimed boundary

APEX EXPANSION PROJECT

MUELLER PARK ROUTE VARIATION

Date: March 2010 Figure 3.5.6-1

3.5.7 North Salt Lake III Route Variation

The North Salt Lake III Route Variation was based on a request by the USFS regarding the area of the proposed route between MP 22.0 and 24.9 to avoid steep slopes, mule deer wintering habitat, and historic Civilian Conservation Corps (CCC) terracing. Similar to the corresponding segment of the proposed route, this variation avoids impact on the Bonneville Shoreline Preserve. This variation, which would be slightly shorter than the proposed route, would also follow an existing access road (access road #33) and Kern River’s existing right-of-way across the USFS lands in this area (figure 3.5.7-1 and table 3.5.7-1). The North Salt Lake III Route Variation would rejoin the proposed route at MP 24.9.

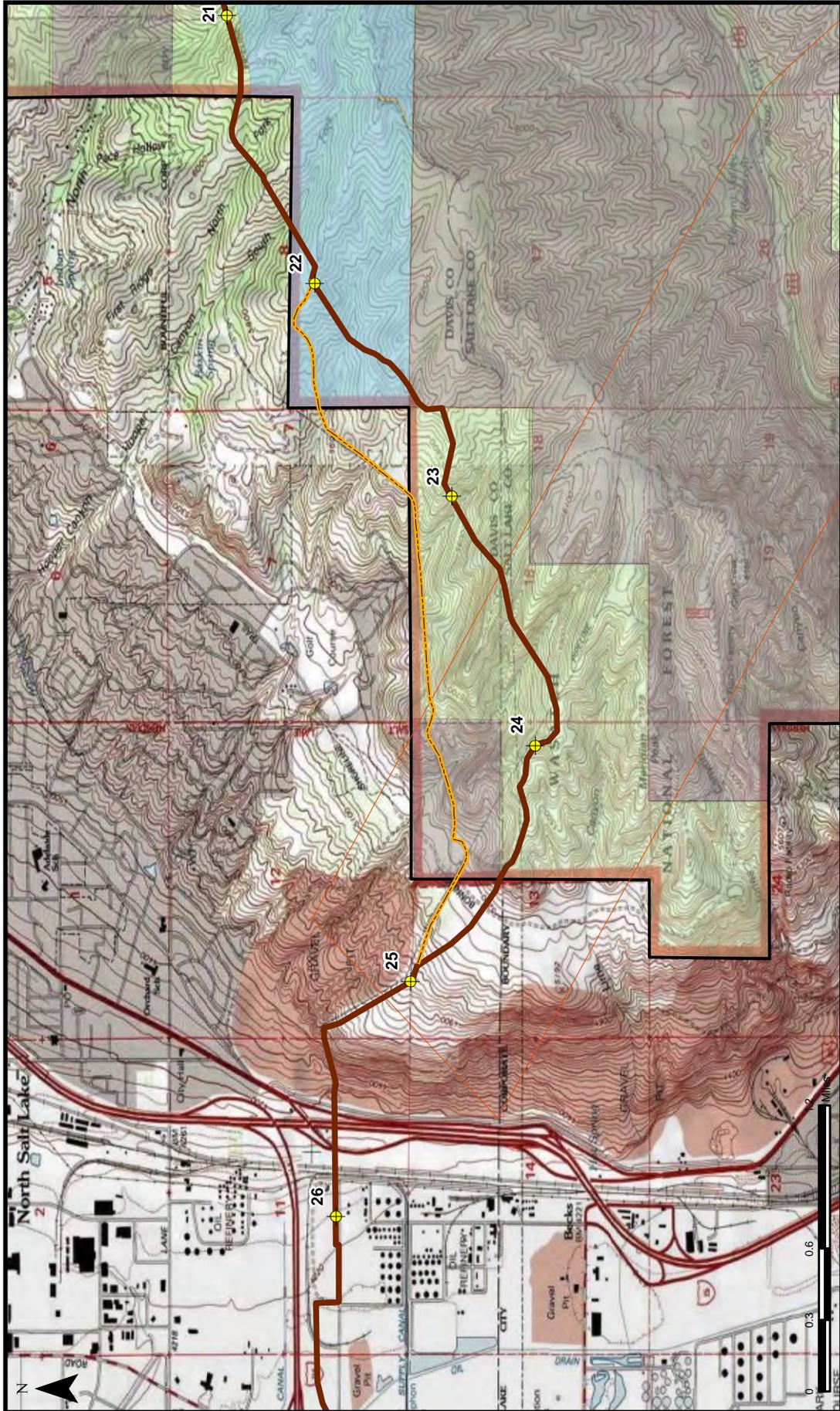
Feature	Unit	Proposed Project Route	Route Variation
Total length	Miles	3.0	2.6
Collocation	Miles	0.0	1.6
Construction impacts	Acres	40.4	32.4
Residences within 50 feet ^a	Number	1	0
Private land holdings	Miles	0.5	1.0
U.S. Forest Service lands	Miles	2.4	1.2
Waterbody crossings	Number	0	0
Wetland crossings ^b	Miles	0.0	0.0

Notes:

^a The number of residences reported would be within 50 feet of the permanent right-of-way.

^b National Wetlands Inventory wetlands.

The North Salt Lake III Route Variation would be shorter than the corresponding segment of the proposed route and would be collocated with Kern River’s existing right-of-way for an additional 1.6 miles. Further, the variation would have a shorter crossing of USFS lands and avoid crossing the historic CCC terracing. Since the construction of Kern River’s existing pipeline there has been substantial development of residential communities (Edgewood/Eaglepointe) along and near the existing Kern River right-of-way, which in conjunction with the existing terrain could result in construction constraints through this area of the variation; however, the North Salt Lake III Route Variation would not come within 50 feet of any residences. In addition, this variation would avoid a residence within 50 feet along the corresponding segment of the proposed route. By collocating the proposed pipeline with the existing Kern River pipeline along this segment, additional visual impacts that would be created by the corresponding segment of the proposed route would be avoided. The USFS has also indicated their preference for Kern River to utilize the North Salt Lake III Route Variation.



APEX EXPANSION PROJECT

NORTH SALT LAKE III ROUTE VARIATION

Date: March 2010

Figure 3.5.7-1

Legend

- UWCNF-proclaimed boundary
- Private lands within the UWCNF-proclaimed boundary
- Milepost
- North Salt Lake III Route Variation
- Proposed Wasatch Loop
- Utility Corridor
- Roadless Areas
- USFS-managed lands within the UWCNF-proclaimed boundary

We believe that the North Salt Lake III Route Variation route offers an environmentally preferable advantage to the proposed route. Therefore, **we recommend that:**

- **Prior to the end of the draft EIS comment period, Kern River should incorporate the North Salt Lake III Route Variation into the proposed Project route between MP 22.0 and 24.9. In addition, Kern River should complete and file with the FERC all biological and cultural resources surveys and consultations on the recommended variation and provide updated alignment sheets for the review and written approval of the Director of OEP.**

3.6 ABOVEGROUND FACILITY ALTERNATIVES

We evaluated the proposed locations of the new aboveground facilities to determine whether environmental impacts would be reduced or mitigated by use of alternative facility sites. Our evaluation involved inspection of aerial photography and mapping, as well as site visits along the proposed Project corridor. The aboveground facilities for the proposed Project include one new compressor station, upgrades at four existing compressor stations, three pig launchers, two pig receivers, and six MLVs (two of the MLVs and the two pig launchers/pig receivers would be located at the proposed Milford Compressor Station).

Because the locations of MLVs would be linked to the location of the existing pipeline MLVs, the search for alternatives was constrained to sites located adjacent to the intersection of the proposed Project route and the existing pipeline facility locations. The proposed locations of MLVs along the proposed Project route were also largely determined based on USDOT safety regulations that specify the maximum distance between sectionalizing block valves and require that these facilities be located in readily accessible areas. Additionally, we did not identify any alternative sites for the proposed MLV or pig launcher/pig receiver facilities that would offer a significant environmental advantage to the proposed sites for these facilities.

As with the other proposed aboveground facilities, the proposed upgrades at the compressor station locations would be constrained to sites at existing compressor stations. As described in section 2.1, the upgrades at the existing compressor stations would consist of restaging and/or additional compression that would be confined within the existing site boundary. Since the proposed upgrades at these compressor stations would occur within the boundary of existing facilities, we did not evaluate alternative locations for these compressor stations. We did, however, consider an alternative site for the new Milford Compressor Station.

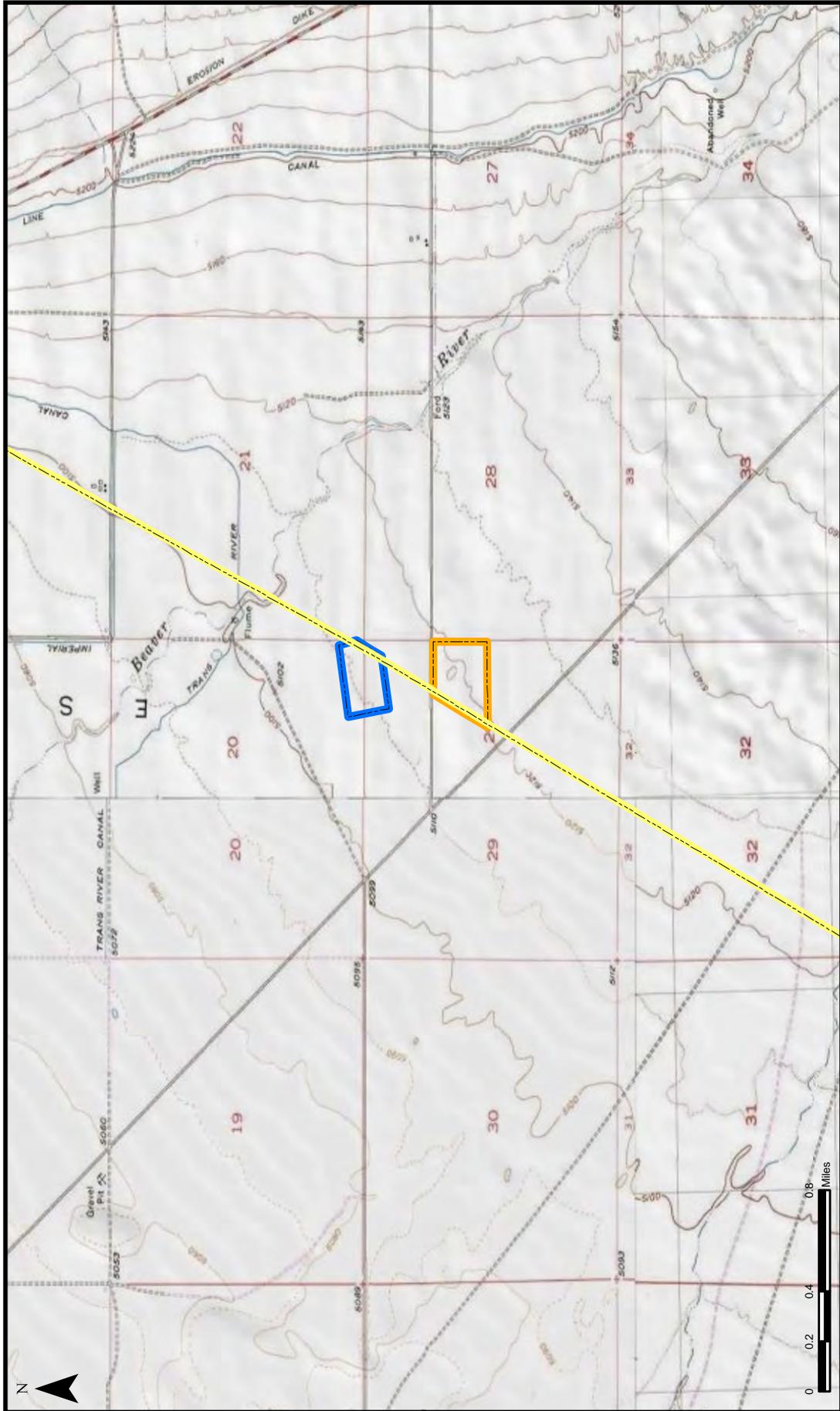
3.6.1 Milford Compressor Station Site Alternative

The proposed compressor station site in Beaver County, Utah along the existing Kern River pipeline route (MP 326.9) was largely dictated based on engineering and economic design standards. As described in section 4.8, construction and operation of the proposed compressor station would result in the permanent conversion of 33.2 acres of rangeland to an industrial land use for the life of the proposed Project. We have determined that operation of this facility would not result in significant air quality degradation or noise impacts to any nearby residents, given the measures proposed by Kern River and our recommendations (see section 4.11).

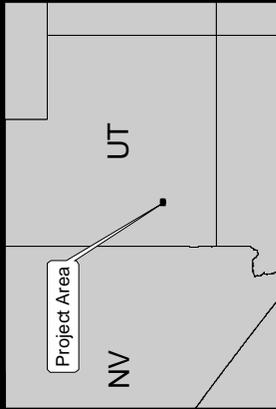
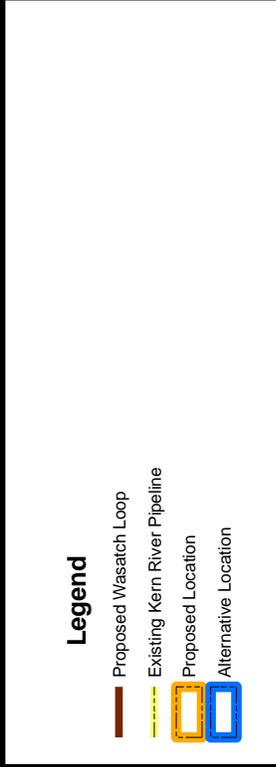
We reviewed the area within a five mile radius of the proposed site, the general distance at which an alternative site would be viable based on the design of the proposed Project, and found the terrain to be generally similar with comparable land uses. In addition to the proposed compressor station site at KRMP 326.9 on Kern River's existing system, we evaluated one alternative site for the proposed Milford Compressor Station (KRMP 326.5) (see figure 3.6.1-1). Project noise and air emission impacts at the proposed Milford Compressor Station, and plans to minimize and mitigate those impacts, are discussed in section 4.11. As shown in table 3.6.1-1, the proposed compressor site and the alternative site are similar in

land use. No noise-sensitive areas would be located within 0.5 mile of either the proposed or alternative sites. The proposed Milford Compressor Station site and the alternative site are both located on BLM land and are currently managed as rangeland. In general, conditions at the proposed and alternative site are similar and as such would have similar environmental consequences. The one exception is that the proposed site has more direct access via existing improved roads, whereas the alternative site would require construction of a 0.2-mile access road resulting in additional acres of impact. Therefore, in the absence of a site that would clearly be environmentally preferable to the proposed site, we have eliminated any sites for further analysis. We have determined that the alternative site as discussed above would be environmentally acceptable. If Kern River would need to use the alternative location for the Milford Compressor Station because of Utah prairie dog presence at the proposed location, then Kern River would need to obtain the appropriate approvals from the FERC and the BLM.

TABLE 3.6.1-1 Comparison of Milford Compressor Station Site Alternative and the Proposed Apex Expansion Project		
Evaluation Criterion	Proposed Project Site	Alternative Site
Construction impacts (acres)	33.2	33.2
Permanent impacts (acres)	33.2	33.2
Prime farmland (acres)	0.0	0.0
Noise-sensitive areas within 0.25 mile (number)	0	0
Noise-sensitive areas within 0.5 mile (number)	0	0
Land availability	Available	Available
Land uses	Rangeland	Rangeland



APEX EXPANSION PROJECT
MILFORD COMPRESSOR STATION
SITE ALTERNATIVES



Date: March 2010

Figure 3.6.1-1

4.0 ENVIRONMENTAL ANALYSIS

The environmental consequences of constructing and operating the Apex Expansion Project would vary in duration and significance. Four levels of impact duration were considered: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction, with the resources returning to pre-construction conditions almost immediately afterward. Short-term impacts would continue for approximately 3 years following construction. Impacts were considered long-term if the resources would require more than 3 years to recover, but would be expected to recover during the life of the proposed Project. Permanent impacts would occur as a result of activities that modify resources to the extent that they would not return to pre-construction conditions within 50 years, such as clearing of old growth forest or conversion of land to an aboveground facility site. We considered an impact to be significant if it would result in a substantial adverse change in the physical environment.

In this section, we discuss the affected environment, general construction and operational impacts, and proposed mitigation for each resource. Generally, we begin our discussion of potential impacts for a given resource with what could happen in the absence of appropriate construction techniques or conservation measures to address environmental impacts or effect to resources. Our discussion then focuses on what we anticipate the impacts to be, given the Project-specific conditions and measures that would address environmental concerns, including measures proposed by Kern River, those required by other agency or permitting or regulation, and our additional recommendations. The additional measures that we have identified appear as a bulleted paragraph and in **boldface type in the text**. We are recommending that these measures be included as specific conditions to any Certificate that the Commission may issue to Kern River for the proposed Project.

Conclusions in this EIS are based on our analysis of environmental impacts and the following assumptions:

- Kern River would comply with all applicable laws and regulations;
- the proposed facilities would be constructed as described in section 2.0 of this EIS; and
- Kern River would implement the mitigation measures identified in its application and supplemental filings to the FERC.

4.1 GEOLOGY

Impacts and geological hazards associated with the existing aboveground facilities were previously analyzed as part of the 2003 Kern River Expansion Project and were not resurveyed for the proposed Apex Expansion Project. Modifications to existing facilities would not impact geologic resources and therefore are not analyzed further in this discussion. Impacts associated with the proposed Wasatch Loop and the Milford Compressor Station are discussed in the following sections.

4.1.1 Geology and Physiography

The proposed Project would begin in Morgan County, Utah at MP 0.0 and traverse over mountainous terrain, ending in Salt Lake City, Utah at MP 28.0. Maximum elevations along the proposed route are between 7,800 and 8,600 feet above mean sea level, while the lowest elevation is at 4,215 feet. The Project would be located within two main geologic regions: the Middle Rocky Mountains and the Basin and Range physiographic provinces. These provinces include three smaller, distinct physiographic regions: Wasatch Hinterlands, Wasatch Range, and Wasatch Front Valleys.

Approximately 19 miles of the proposed pipeline would occur in the Middle Rocky Mountains physiographic province and crosses portions of the Wasatch Hinterlands (MP 0.0 to 7.0) and Wasatch Range (MP 7.0 to 19.0) where two mountain ranges occur, the Uinta Mountains trending east and the Wasatch Range trending north. The terrain of the Uinta Mountains is characterized by wide arches while the terrain of the Wasatch Range is characterized by more jagged arches (Stokes 1988). The remainder of the proposed pipeline (MP 19.0 to 28.0) would cross the Wasatch Front Valleys, a part of the Basin and Range province. The Wasatch Front Valleys is a downward shifting block of land that is separated from the upward moving Wasatch Range by the Wasatch Fault Zone (WFZ). The Project would traverse quaternary-aged and younger sediments derived from rock formations of the Wasatch Range (Fitzhugh 1983).

The proposed Milford Compressor Station would also occur in the Basin and Range physiographic province on a floodplain of the Beaver River. Other aboveground facilities including three pipe yards, five contractor yards, and eight staging areas, two of which may be used for additional workspace have soils that are shallow-to-bedrock. Geologic conditions crossed by the proposed Project are presented in table 4.1.1-1.

TABLE 4.1.1-1 Geologic Conditions Crossed by the Proposed Apex Expansion Project			
Geologic Age	Cumulative Length Crossed (miles)	Formation or Unit Type	Description of Formation or Unit Type
Oligocene and Eocene (23 to 55.8 mya)	1.9	Norwood Tuff	rock composed of compacted volcanic ash varying in size from fine sand to coarse gravel
Holocene (present)	4.5	Alluvium and fill material	alluvium, artificial fill, clay, silt, and sand
Pleistocene (present to 1.8 mya)	2.0	Pediment gravel, sand and gravel deposits of the high stand of Lake Bonneville	pediment gravel, sand and gravel deposits of the high stand of Lake Bonneville
Middle Jurassic (176 to 161 mya)	0.6	Preuss Sandstone	marine sandstones and limestones
Upper Cretaceous (65.5 to 99.6 mya)	0.4	Echo Canyon Conglomerate	alluvial fan conglomerate
Upper Cretaceous (65.5 to 99.6 mya)	0.8	Hams Fork Member of the Evanston Formation	alluvium and fluvial quartzitic conglomerate
Eocene and Paleocene (33.9 to 65.5 mya)	8.2	Wasatch Formation	fluvial sandstone and shale
Middle Cambrian (501 to 521 mya)	0.1	Ophir Formation	phyllitic shale with some thin beds of shaley limestone and some quartzite and phyllite
Middle and Lower Cambrian (501 to 542 mya)	0.4	Tintic Quartzite	shallow marine quartz
Eocene and Paleocene	1.6	Conglomerate/ Wasatch Formation	conglomerate dominant of Wasatch Formation
Archean (2,500 to 3,850 mya)	4.1	Farmington Canyon Complex	schist, gneiss, and quartzite

**TABLE 4.1.1-1 (continued)
Geologic Conditions Crossed by the Proposed Apex Expansion Project**

Geologic Age	Cumulative Length Crossed (miles)	Formation or Unit Type	Description of Formation or Unit Type
Miocene (5.3 to 23.8 mya)	5.2	Conglomerate	consolidated pebbles, gravel, or boulders
Holocene and Pleistocene (present to 1.8 mya)	0.5	Alluvial fan and landslide deposits	landslide deposits, alluvial fan, and debris fan deposits
Pliocene (2.4 to 5.4 mya)	0.05	Hopper Canyon Formation	valley fill deposits, alluvial and lacustrine sediments
Quaternary (present to 1.8 mya)		Alluvium	Alluvium deposits
Quaternary (present to 1.8 mya)	Milford Compressor Station	Alluvium	Alluvium deposits

Note:
Mya = Million years ago

PacifiCorp Electrical Distribution Line

The surficial geology in the area of the proposed PacifiCorp electrical distribution line is Quaternary-aged lacustrine deposits of sandy and silty soils deposited by ancestral Lake Bonneville. While prehistoric megafauna fossils have been recovered from the shorelines of ancestral Lake Bonneville, the finds are relatively rare in the southern extent of the lake. The lands encompassed by the proposed Project are believed to rank as Class 2, Low Potential, using the Potential Fossil Yield Classification System. Lands crossed by the proposed electrical distribution line are unlikely to contain vertebrate fossils or scientifically significant non-vertebrate fossils. Therefore, an assessment or mitigation measures for potential paleontological resources is not considered necessary in this case.

The approximately 1.4-mile electrical distribution line would be installed on approximately 23 single wood pole structures. These poles would be installed using a rubber tire line truck-mounted auger. Once the pole structures are set in place, the space surrounding the poles would be backfilled. No vegetation or contouring would be necessary based on the flat topography of the area of the proposed distribution line. The work area for each pole would be reclaimed and seeded, if determined necessary, with a BLM-approved reclamation plan. Access for the distribution line would be on the existing Imperial Road. The auger rig would back up to the pole stake from Imperial Road.

4.1.2 Mineral Resources

Mineral resources identified in the vicinity of the proposed Project include oil and gas, metal ores, and aggregates including quartzite and sandstone. The locations of the mineral resources were determined using USGS topographic maps, mineral resource databases from the BLM and USGS, and geographic information system (GIS) data provided by the Utah Geological Survey (UGS).

4.1.2.1 Mining

Open pit and underground mines which occur within 0.5 mile of the proposed Project were identified. Table 4.1.2-1 identifies seven mines and two mineral leases near or traversed by the proposed pipeline. Six of the seven mines are open pit mines which produce aggregate, including limestone, quartzite, sandstone, and chert. Three of these mines are listed as active. An underground mine which produces iron ore from limonite, goethite, hematite, magnetite, and chalcopyrite was identified near the proposed Project and is listed as inactive. Two mineral leases would be traversed by the pipeline at MPs 10.7 and 11.7. Kern River would negotiate and coordinate with landowners and lease holders prior to construction.

Mile Post		Distance from Proposed Project	Resource	Resource Production Type	Status	Source Identifying Resource
Start	End					
6.1	6.1	2,250 feet north	aggregate	open pit	inactive	UGS
10.6	12.0	1,550 feet southeast	limonite, goethite, hematite, magnetite, and chalcopyrite iron ore	underground mine	inactive	UGS
10.7	11.7	pipeline crosses the southeast corner of the mineral claim	unidentified mineral claim	unidentified	inactive	USGS/UGS
11.7	12.2	pipeline crosses the northwest corner of the mineral claim	iron	unidentified	inactive	USGS/UGS
24.9	24.9	2,200 feet west	limestone, quartzite, sandstone, and chert aggregate	open pit	active	UGS
25.4	25.4	1,000 feet northeast	limestone, quartzite, and sandstone aggregate	open pit	intermittent producer	UGS
25.4	25.4	1,650 feet north	limestone, quartzite, and sandstone aggregate	open pit	active	UGS
25.5	25.7	200 feet south ^a	limestone, quartzite, and sandstone aggregate	open pit	inactive	UGS
25.5	25.7	100 feet north ^a	limestone, quartzite, sandstone, and chert aggregate	open pit	active	UGS
28.0	28.0	2,200 feet south	oil and gas	oil well	inactive	UGS/BLM

Note:
^a Wasatch Loop would be placed within a fill berm with the existing Kern River and Questar pipelines.

Potential mine hazards, including slope failure, could occur if adjacent mines are not properly stabilized. The pipeline would cross between two open pit mines which are within 500 feet of the pipeline at MP 25.4 to 25.6; potential risks would be minimized by constructing this segment within an

existing berm that was constructed for the existing Kern River pipeline to provide additional stability between the open pits on either side of the right-of-way. The berm was engineered and constructed to provide a consistent grade for the existing pipeline as it traverses the slopes of the Wasatch Front between the two open pit mines. No slope failures have been reported for the existing pipeline in this area since the berm was constructed. The Project would also be constructed within this berm between the open pit mines; therefore, risks associated with slope failure are not expected in this area.

4.1.2.2 Oil and Gas Production

An inactive oil well was identified approximately 2,220 feet south of the proposed pipeline near MP 28.0. No other oil or gas wells were identified within 0.5 mile of the proposed Project facilities. Potential impacts on the oil well and associated underground utilities would be minimized through the activation of the One-Call system by Kern River prior to construction in order to identify and avoid any buried utilities related to the oil well.

4.1.3 Geologic Hazards

Geologic hazards including seismicity, landslides, subsidence, flash floods, and volcanoes were evaluated for the proposed Project and are discussed in the following sections.

4.1.3.1 Seismicity and Faulting

Geologic hazards associated with seismicity may include earthquakes and faulting. Kern River identified potential seismic hazards using historical data for recorded earthquakes, published maps, and technical papers. Subsurface seismic investigations were conducted in areas along the proposed Project from MP 25.5 to 28.0. Based on the Richter Magnitude Scale, an earthquake with a magnitude (M) of 5.0 to 5.9 can be felt by people and can cause major damage to poorly constructed buildings and slight damage to well-constructed buildings; an earthquake with a magnitude of 6.0 to 6.9 can be destructive in populated areas; and an earthquake with a magnitude of 7.0 or greater can cause major damage to large areas. Historical seismic investigations indicate that earthquakes have occurred in the vicinity of the proposed Project. Table 4.1.3-1 presents historical earthquakes with magnitudes greater than 3.0 that have occurred within 100 miles of the proposed Project. Historic earthquakes occurring within 20 miles of the proposed Milford Compressor Station with magnitudes ranging from 3.0 to 4.2 and three earthquakes with a magnitude of 5.0 or greater within 100 miles were identified.

Magnitude Range	Number of Earthquakes	Epicenter Distance from Proposed Project Alignment (miles)
3.0 to 3.99	129.0	11 to 99
4.0 to 4.99	36.0	5 to 89
5.0 to 5.99	9.0	10 to 63
6.0 to 6.99	3.0	75 to 90

Earthquake shaking can be expressed in terms of acceleration due to gravity (g). In accordance with the American Society of Civil Engineers Technical Council on Lifeline Earthquake Engineering, a

10 percent probability of exceedance within 50 years is used for construction of pipelines, while a 2 percent probability of exceedance is used for buildings. Seismic hazards using peak horizontal ground acceleration (PGA) values are provided in table 4.1.3-2. A comparison equating the Richter Magnitude Scale to PGA is as follows: 5.0 to 5.9 M is equivalent to a PGA of 9.2 to 34 percent; a 6.0 to 6.9 M is equivalent to a PGA ranging from 34 to greater than 124 percent, and M values greater than 6.9 are equivalent to PGAs greater than 124 percent.

TABLE 4.1.3-2 Peak Horizontal Acceleration for Pipelines and Buildings along the Proposed Apex Expansion Project		
Alignment Section	Pipeline	Buildings
Approximate Milepost	10% Probability of Exceedance within 50 Years (g)	2% Probability of Exceedance within 50 Years (g)
26.3	0.30	0.76
15.0	0.21	0.47
3.0	0.16	0.30

Note:
g = Acceleration of gravitational force

Faulting can occur with earthquakes and result in the cracking or pulling apart of the ground surface. Faults can be classified as normal, thrust or reverse, and strike-slip. A normal fault is a result of tensional force that pulls the ground surface apart. Thrust and reverse faults are a result of compressional force that pushes slabs of the ground together. A strike-slip fault occurs when a section of the crust moves laterally to another, and the displacement occurs along the fault line. Quaternary-aged (2 million years ago [mya]) and Holocene-aged (0.1 mya) faults along the proposed Project were identified and are presented in table 4.1.3-3.

The WFZ is crossed by the proposed Project at two locations at MP 19.2 at the Rudy’s Flat Fault and at MP 25.6 at the Warm Springs Fault. The Warm Springs Fault is considered an active fault of Holocene age, with the last movement occurring approximately 1,300 years ago. Potential hazards associated with faults would be mitigated through the use of extra wall thickness of Grade X65 steel pipe and placement of granular/sand backfill material underneath and surrounding the pipeline near the fault. Areas of the pipeline trench would also be excavated to a depth of 10 feet below the pipeline and backfilled with sand and include the installation of expanded foam ditch plugs in areas of the trench. Granular/sand backfill would be placed along the pipeline extending 450 feet west and 750 feet east of the fault trace. Excavation to 10 feet below the pipeline would occur extending 100 feet west and 200 feet east of the fault trace.

TABLE 4.1.3-3 Quaternary and Holocene Faults Crossed by the Proposed Apex Expansion Project			
Milepost	Fault Name	Type of Fault	Last Movement (years before present)
2.0	East Canyon Fault (northern segment; eastern splay)	Normal	>100K to < 1.6M
2.3	East Canyon Fault (northern segment; western splay)	Normal	>100K to < 1.6M
19.2	Wasatch Fault Zone - Rudy's Flat Fault (Salt Lake City Segment)	Normal	< 1.6M
25.6	Wasatch Fault Zone - Warm Springs Fault (Salt Lake City Segment)	Normal	~1,300 ± 650
Notes:			
	K =	Thousand	
	M =	Million	

4.1.3.2 Landslide Incidence and Susceptibility

Landslides are defined as the movement of rock, debris, or soil down a slope. Slope failure causing a landslide can be initiated by precipitation, seismic activity, slope disturbance due to construction or other activity, or a change in groundwater conditions. Construction factors that may increase the potential for slope failure could include trenching along slopes and the burden of construction equipment on unstable surfaces. Landslide hazards for the proposed Project were assessed through the use of aerial maps, helicopter flyovers of the Project area, and ground-based surveys. Existing landslides and steep slopes with high risk for future landslides were identified by Kern River; however, none of these are considered hazards to the proposed Project. Kern River evaluated the potential risk hazards posed by the identified landslides. The potential risk hazards are classified as high, moderate, and low.

Map-based assessments of the Project area indicated 11 known or mapped landslide hazards. Initial aerial and ground surveys have identified nine of the 11 locations as low risk. A ground-based survey investigated landslides #8 and #9, which were determined to be high risk based on map observations to determine potential risk to the proposed pipeline. To mitigate potential risks posed by landslide #8, the proposed alignment was rerouted to an area of low potential risk. Ground reconnaissance of landslide #9 indicated that the alignment of the pipeline would not likely be affected by erosion or landslides, and the risk was determined to be low. Table 4.1.3-4 presents landslides and the associated risk hazards along the proposed Project.

**TABLE 4.1.3-4
Landslide Risks Identified along the Proposed Apex Expansion Project**

Landslide Number	Milepost		Description	Geologic Unit	Movement Relative to Pipeline	Potential for Movement	Hazard Risk Posed to Pipeline
	Start	End					
1	0.0	0.5	Project traverses the northern portion of a mapped, ancient landslide.	Norwood Tuff, Landslide deposits	Perpendicular	Low	Low
2	7.5	7.6	Project traverses a small ancient landslide.	Wasatch Formation	Perpendicular	Low	Low
3	7.8	9.1	Project crosses a large ancient landslide.	Wasatch Formation and Norwood Tuff	Parallel	Low	Low
4	15.0	15.4	Project crosses south and above mapped landslides.	Farmington Canyon Complex	Perpendicular	Low	None
5	15.7	15.8	Project crosses south and above mapped landslides.	Farmington Canyon Complex	Perpendicular	None	None
6	16.4	16.9	Project traverses mapped landslide, aerial reconnaissance did not identify the landslide.	Farmington Canyon Complex	Parallel	High	None
7	18.6	18.7	Project crosses slope north and east of an ancient and dormant landslide.	Farmington Canyon Complex	Parallel	High	Low
8	18.9	19.2	Project rerouted to small spur west of landslide which is slow-moving and active.	Wasatch Formation	Parallel	High	Low
9	19.6	20.0	Project traverses above and east of erosional headwall. Deep seated movement was not indicated in surveys.	Alluvial fan and debris fan deposits, conglomerates	Perpendicular	High	Low

TABLE 4.1.3-4 (continued)							
Landslide Risks Identified Along the Proposed Apex Expansion Project							
Landslide Number	Milepost		Description	Geologic Unit	Movement Relative to Pipeline	Potential For Movement	Hazard Risk Posed to Pipeline
	Start	End					
10	22.0	22.9	Project traverses above and southwest of ancient landslide. No indications of active movement observed.	Landslide deposits	Perpendicular	Low	None
11	22.5	22.9	Project crosses ridgeline above and northwest of debris flow.	Landslide deposits	Parallel	High	None

High risk indicates that the proposed Project crosses or is near a landslide that, if active, (1) may affect the proposed pipeline; (2) is located on a slope that is susceptible to slope failure; or (3) has geomorphic and surficial observations indicative that the landslide has had movement within the last 100 years. A moderate risk indicates that the proposed Project (1) crosses or is near a landslide; (2) is located on a slope that is susceptible to slope failure; or (3) has geomorphic and surficial observations indicative that the landslide has had movement between 100 and 5,000 years ago. A low risk indicates that the proposed Project is located far from a landslide or is constructed so that a landslide has a low potential to involve the pipeline. A low risk may also include a landslide that is crossed but has a low potential for reactivation due to the removal of the cause of the landslide, stabilization of the landslide, or geomorphic and surficial features indicating the landslide has not had movement within 5,000 years.

4.1.3.3 Subsidence

The lowering or collapse of ground surface in either localized areas or regionally is known as subsidence; and it can be caused by underground mining, karst terrain, liquefaction induced by earthquakes, withdrawal of groundwater, or a change in hydrology. Subsidence hazards associated with karst terrain or change in regional hydrology were not identified along the proposed Project. Subsidence associated with liquefaction induced by earthquakes was discussed in section 4.1.3.1 and was determined to be a low hazard risk to the proposed Project. An underground mine identified near the proposed Project would be greater than 500 feet from the alignment and would not pose potential risk of subsidence to the pipeline. Regional ground subsidence due to groundwater extraction north of Milford, Utah would not pose subsidence risk to the proposed Milford Compressor Station or associated electric distribution line.

4.1.3.4 Shallow Bedrock

Soils with bedrock present within 60 inches (5 feet) of the surface are considered shallow-to-bedrock. Areas with shallow-to-bedrock classifications were identified using the State Soil Geographic Database (STATSGO) database. To excavate the trench line in areas identified with shallow bedrock, blasting may be necessary. Geotechnical investigations conducted in 2009 by Kern River indicated that

approximately 248 acres of the proposed Project may require blasting. Areas identified for potential blasting are discussed below and listed in table 4.1.3-5.

Mile Post		Length of Pipeline (miles)	Blasting Potential ^a
Start	End		
0.0	0.4	0.4	Low
0.4	1.3	0.9	Moderate
1.3	2.2	1.0	Low
2.2	2.8	0.6	Moderate
2.8	3.0	0.2	High
3.0	3.6	0.6	Moderate
3.6	4.7	1.1	High
4.7	5.5	0.8	Low
5.5	6.0	0.5	Moderate
6.0	6.8	0.8	High
6.8	8.9	2.1	Low
8.9	9.4	0.5	High
9.4	10.4	1.0	Moderate
10.4	11.0	0.6	Low
11.0	12.0	1.0	Low
12.0	13.6	1.6	Moderate ^b
13.6	17.9	4.3	Moderate
17.9	18.8	0.9	Low
18.8	20.5	1.8	Moderate ^b
20.5	21.6	1.1	Low
21.6	24.9	3.3	Low ^b
24.9	25.6	0.7	Low
25.6	26.8	1.2	Low ^b
26.8	28.0	1.3	Low

Note:

^a Except as noted, areas classified with low potential for blasting were determined using previous construction data that indicate no blasting occurred during the construction of the existing pipeline. Areas classified as moderate were determined using construction data from the existing pipeline that indicate blasting occurred in restricted portions of the pipeline segment. Areas classified as high potential were determined using construction data from the existing pipeline that indicate a large portion of the pipeline segment required blasting.

^b Segment of proposed Project is not collocated with the existing pipeline. Data from previous construction were not used to assess blasting potential.

Blasting

Kern River anticipates that blasting may be necessary where hard bedrock occurs at depths of 5 feet or less. Areas identified for potential blasting occur between MP 0.0 and 19.0. Kern River has used knowledge of construction data from the existing pipeline and depth to bedrock data to classify areas of the proposed Project into low, moderate and high potential for blasting, which is summarized in table 4.1.3-5. Areas classified with low potential for blasting were determined using previous construction data that indicate no blasting occurred during the construction of the existing pipeline. Areas classified as moderate were determined using construction data from the existing pipeline that indicate blasting occurred in restricted portions of the pipeline segment. Areas classified as high potential were determined using construction data from the existing pipeline that indicate a large portion of the pipeline segment required blasting.

Potential impacts on water wells, springs, wetlands, slopes, paleontological resources, nearby aboveground facilities, and adjacent pipelines and utility lines could occur from blasting. Potential impacts on water wells and springs are discussed in section 4.3, and potential impacts on wetlands are discussed in section 4.3.3. To minimize potential impacts on slopes which could lead to landslides or slope failure, Kern River would survey areas near blasting locations to measure slope angles and determine slope stability. Areas that indicate potential hazards for slope failure would be monitored during blasting. Blasting potential is classified as low in areas identified for potential seismic activity (MP 25.0 to 28.0); therefore, blasting should not affect the seismic setting of the area.

To minimize potential impacts on adjacent pipelines and buried utilities, Kern River would not conduct blasting within 10 feet of existing pipelines or buried utilities. In the event that blasting is necessary near existing pipelines or buried utilities, Kern River would notify the pipeline or utility owner and implement measures to minimize potential damage to the pipeline or buried utility. To minimize potential impacts on nearby aboveground structures, inspection of structures would be conducted prior to and following blasting. Kern River would comply with all federal, state, and local regulations for blasting and has developed a Blasting Plan that would be implemented during construction. Mitigation measures outlined in the Blasting Plan would be implemented to minimize potential impacts, including the placement of blasting mats/pads to minimize the potential for debris to damage nearby structures. The Blasting Plan requires the blasting contractor to prepare a site-specific blasting plan that includes requirements of the blasting contractor to provide the following:

- explosive type and method of detonation;
- detonation for delays;
- depth and spacing of charges;
- procedures for storage, handling, and transportation of explosives;
- procedures for the prevention of fire, noise, accidental detonation;
- procedures for pre- and post-blasting monitoring;
- identification of geologic structures; and
- procedures for notifications to residents, business owners, and owners of aboveground and buried structures.

4.1.3.5 Flash Flood, Stream Scour and Debris Flows

Erosion and movement of sediment and debris associated with water channel migration and flash flooding, along with mitigation methods that would be employed to minimize potential risk to the Apex Expansion Project are discussed in section 4.3.

4.1.3.6 Volcanoes, Liquefaction, and Karst Topography

Volcanoes are classified as openings of the earth's crust, where magma or melted rock, ash, gases, and debris below the crust are brought to the surface in the form of an eruption. Volcanoes can be extinct, indicating that eruptions are no longer likely; dormant, indicating that an eruption may occur at some time, but is not imminent; or active, indicating that eruptions can occur at any time. Volcanic hazards can include landslides, lava, and pyroclastic flows which could pose potential risk to aboveground facilities and buried pipelines. No volcanic hazards were identified near the proposed Project.

Liquefaction of soil occurs where saturated, non-cohesive soils temporarily lose their strength when subjected to intense ground shaking. Areas susceptible to liquefaction may include soils that are generally sandy or silty and are generally located along rivers, streams, lakes, and shorelines or in areas with shallow groundwater. Kern River identified an area of high potential for liquefaction along the proposed pipeline at MP 25.5 to 28.0 (Harty and Lowe 2003). Although an area along the pipeline has been identified with a high potential for liquefaction, a review of liquefaction-induced settlement of the ground following a major earthquake along the pipeline from MP 25.5 to 28.0 indicates settlement generally ranging from 1 to 14 inches, which would result in low potential for damage to the pipeline.

Karst topography is created from the dissolution of soluble rocks in areas that primarily contain limestone and dolomite. Karst terrain and the associated potential for sinkholes can be problematic during pipeline construction and operation. Hazards associated with karst topography were not identified along the pipeline route, indicating that sinkhole formation would be unlikely.

4.1.4 Paleontological Resources

Paleontological resources including plant, invertebrates, and vertebrate fossils may be found in a variety of geologic formations. The Federal Land Policy and Management Act and NEPA enforce the protection of significant paleontological resources on federally owned and/or managed lands. Potential impacts on paleontological resources associated with the proposed Project may occur as a result of construction and may include impacts from trenching the pipeline, the use of heavy equipment, grading, and excavation. Portions of the Apex Expansion Project would be near the existing Kern River pipeline and would not be recommended for monitoring during grading and trenching, as paleontological monitoring and surveys were previously conducted during the construction of the existing Kern River pipeline. Areas of the Project that diverge from the existing Kern River pipeline would be monitored for paleontological resources during grading and trenching operations.

Kern River has not conducted a specific paleontological resource study for the Project but would utilize its previously prepared Paleontological Resource Management Plan (PRMP) that was developed for the 2003 Kern River Expansion Project as part of the approved Implementation Plan. The PRMP would be adapted for the Project and provides procedures for obtaining pre-construction approvals, monitoring identified significant fossil locations during construction, and procedures for unanticipated discovery of fossils during construction.

The Apex Expansion Project would utilize the Implementation Plan developed for the 2003 Kern River Expansion Project, which was produced in 1990 and submitted to the FERC. Procedures outlined in the Implementation Plan associated with paleontological resources include:

- production of a PRMP that identifies areas along the proposed Project containing potentially significant resources. Significant resources would be identified through a desktop review of published literature, maps and records;
- identify areas requiring a field survey prior to construction;
- prepare and submit for FERC approval and then implement a mitigation plan to address areas of the proposed Project where high-sensitivity areas would be impacted; and
- prepare procedures for addressing construction concerns, monitoring, and proper handling and removal of significant fossils discovered during construction.

The existing Kern River pipeline was assessed under the developed Implementation Plan and a PRMP was prepared to address construction concerns, monitoring and handling and removal of fossils discovered along the corridor during construction. Portions of the Apex Expansion Project follow the alignment of the existing Kern River pipeline and would not be recommended for monitoring unless an area of high sensitivity occurs. Areas where the proposed Apex Expansion Project diverges from the existing Kern River pipeline are summarized in table 4.1.4-1.

The area of the proposed Milford Compressor Station and the approximately 1.4-mile electrical distribution line was rated with a moderate to low sensitivity for fossils and is not recommended by Kern River for monitoring during construction operations. The Dry Lake Compressor Station is recommended by Kern River for monitoring during construction and excavation, as significant vertebrate fossils including horse, bison, sheep, deer, mammoth, camel, and bivalves have been identified in sediments in the area. The remaining compressor stations have previously been assigned moderate to low sensitivity and are not recommended by Kern River for monitoring.

Kern River would adapt the PRMP produced for the 2003 Kern River Expansion Project for the Apex Expansion Project. The PRMP would follow guidance established by the BLM, State of Utah, and the USFS. Mitigation of potential impacts on paleontological resources during the Project would be conducted under the supervision of a qualified paleontologist. Pre-construction approval and permits for paleontological monitoring and removal of fossils from land managed or owned by the BLM or USFS would be obtained prior to construction. The permit would be issued following the approval of a BLM paleontologist's review of the PRMP, credentials of the paleontological monitors, and an agreement for curation of removed fossils. For paleontological resources identified on privately owned land, Kern River would notify both the FERC and the landowner and would negotiate the curation/repository of fossils with the landowner. Monitoring during trenching and grading operations in areas identified as high sensitivity would be conducted by a qualified paleontological monitor. Areas not recommended for monitoring during trenching and grading operations would be spot-checked by qualified paleontologists. Workers in areas that do not require monitoring would receive orientation and training for fossil discovery and mitigation. A copy of the PRMP, which includes a section discussing unanticipated paleontological discoveries would be reviewed by construction supervisors and would be kept on-site during construction operations. If an unanticipated paleontological resource is identified, the construction foreman would immediately notify the Environmental Inspector, who would then notify the Project paleontologist of the find. If a fossil is identified, Kern River and the appropriate federal, state, or local agency would be notified of the find for consultation. Following the completion of trenching and grading, a monitoring report summarizing the findings would be completed by a qualified paleontologist and issued to the FERC and other cooperating agencies.

**TABLE 4.1.4-1
Areas Recommended for Paleontological Resource Monitoring for
the Proposed Apex Expansion Project**

Mile Post		Recommending Monitoring	Rationale for Monitoring
Start	End		
2.2	2.4	Monitoring recommended for trenching and grading operations	Traverses the Evanston Formation which is known to contain dinosaur fossils
11.6	13.6	Monitoring recommended for trenching and grading operations	Traverses the Wasatch Formation which may contain fossils
14.9	15.2	Monitoring recommended for trenching and grading operations	Traverses pre-Cambrian-aged metamorphic rocks which may contain fossils
16.9	17.3	Monitoring recommended for trenching and grading operations	Traverses pre-Cambrian-aged metamorphic rocks which may contain fossils
18.7	20.4	Monitoring recommended for trenching and grading operations	Traverses the Wasatch Formation which may contain fossils
21.6	24.9	Monitoring recommended for trenching and grading operations	Traverses the Wasatch Formation and Cambrian-aged rocks which may contain fossils
25.5	28.0	Monitoring recommended for trenching and grading operations	Traverses Lake Bonneville sediments and other Quaternary-aged deposits which may contain fossils

4.1.5 Summary of Potential Impacts

The primary effect of Project construction on geologic resources would be disturbances to topographic features found along the construction right-of-way. As described in section 2.3.1, all areas disturbed during Project construction would be graded and restored as closely as possible to pre-construction contours during cleanup and restoration. Potential impacts associated with landslides, soil liquefaction, and seismicity would be mitigated through avoidance of landslide-prone areas and through the use of special construction materials within seismically active areas. Potential hazards associated with faults would be mitigated through the use of extra wall thickness of Grade X65 steel pipe and placement of granular/sand backfill material underneath and surrounding the pipeline near the fault. Areas of the pipeline trench would also be excavated to a depth of 10 feet below the pipeline and backfilled with sand and would include the installation of expanded foam ditch plugs in areas of the trench. Granular/sand backfill would be placed along the pipeline extending 450 feet west and 750 feet east of the fault trace. Excavation to 10 feet below the pipeline would occur extending 100 feet west and 200 feet east of the fault trace. Kern River does anticipate the need for blasting and would follow all applicable state, federal and local regulations and prepare a site-specific blasting plan to minimize impacts. For these reasons,

construction of the Project would be unlikely to result in significant alterations of the topography or geologic resources of the Project area.

Impacts of the Apex Expansion Project from post-construction operations are expected to be minimal. Permanent impacts from the Project would include aboveground facilities, which include the proposed Milford Compressor Station and the electrical distribution line. Activities during operation would potentially involve repair or replacement of portions of the Project including pipeline and equipment at the aboveground facilities including the proposed Milford Compressor Station, the electrical distribution line and the four existing compressor stations. However, as no additional ground would be excavated during operations of the Project that has not previously been assessed for risks to geologic resources, no impacts would be expected related to geologic hazards or to mineral or paleontological resources during operation of the proposed Project.

Based on the overall geologic conditions present in the Project area, Kern River’s proposed construction and operation methods (section 2.3), and our recommendations, we conclude that construction of the Project would not significantly alter the geologic conditions of the region.

4.2 SOILS

Soil types that occur within the proposed Project area and information on their characteristics were obtained using NRCS soil survey maps, the STATSGO, and the Soil Survey Geographic Database (SSURGO).

Potential impacts on soil resources from construction of the proposed Apex Expansion Project, including the installation of the pipeline, construction of the proposed Milford Compressor Station, the extension of the electrical distribution line to the Milford Compressor Station, and modifications to the existing compressor stations, are related to clearing, grading, excavation, backfilling, and heavy equipment traffic. Removal of vegetation during construction operations could result in a greater chance for wind and water erosion. Compaction due to heavy equipment traffic could adversely impact the potential of the soil for revegetation and thereby increase the potential for erosion. Loss of topsoil during construction, excavation, and backfilling could also result in poorer quality soils with a lower revegetation potential.

4.2.1 Standard Soil Limitations

Several soil characteristics have the potential to affect, or be affected by, construction and operation of the proposed Project. These include erosion potential; prime farmland; compaction potential; presence of stony or rocky soils; hydric soils; and presence of shallow bedrock. Table 4.2.1-1 summarizes areas along the proposed Project route, including ATWSs and staging areas, affected by these soil characteristics.

TABLE 4.2.1-1 Soil Limitations Crossed by the Proposed Apex Expansion Project (acres)							
Highly Erodible		Soil Compaction Potential	Poor Revegetation Potential	Shallow to Bedrock	Prime Farmland	Stony/Rocky Soils	Hydric Soils
Water	Wind						
266.3	19.6	178.9	324.9	398.8	0	67.6	53

4.2.1.1 Erosion Potential

Erosion is the wearing away of soils caused by exposure to water, wind, ice, or other geologic forces. Many factors influence the extent to which soil is eroded, such as soil structure, drainage characteristics, texture, slope, climate, and vegetation. The erosion potential across the proposed Project area was evaluated based on the occurrence of soils that are susceptible to wind or water erosion. Soils susceptible to erosion from water are classified by variables including slope class, slope length, and soil texture. Soils susceptible to erosion from water were identified as soils having slopes greater than 9 percent or designated by STATSGO as highly erodible land (HEL), with the fine earth fraction of the soil (Kf value) greater than 0.26. The Kf value is indicative of the susceptibility for soil or material less than 2 millimeters to be eroded through sheet or rill erosion.

Approximately 19.8 miles of the proposed Project route would cross soils classified as water erodible with approximately 62 percent (266.3 acres) of the proposed Project erodible to water when evaluated with STATSGO Kf values (0.26 to 0.50). Soils susceptible to wind are characterized by the properties of texture, soil content, aggregate stability, and the proportion of organic material. Approximately 5 percent (19.6 acres) of the proposed Project route and facilities are classified as wind-erodible soils. Successful restoration and revegetation are important for maintaining soil productivity and protecting the underlying soil from potential damage, such as erosion. Soils with a coarse surface texture (sandy loam or coarser) that are moderately well to excessively drained may prove to be difficult to revegetate because these drier soils have less water to aid in seed germination and the eventual establishment of new vegetation. The coarse-textured soils also have a lower water-holding capacity following precipitation, which could result in moisture deficiencies in the root zone and create unfavorable conditions for many plants. In addition, steep slopes (greater than 9 percent) along the proposed pipeline route may make the establishment of vegetation difficult. The clearing and grading of soils with poor revegetation potential could result in a lack of adequate vegetation following construction and restoration of the right-of-way, which could lead to increased erosion, a reduction in wildlife habitat, and adverse visual impacts. Soils with low or poor revegetation potential can be classified using a soils ability for growth of grassland, shrub land, or rangeland habitats. Approximately 75 percent (325 acres) of the proposed Project route and facilities are classified as having low revegetation potential for grasslands, shrub lands, and rangelands.

Of the aboveground facilities associated with the Apex Expansion Project, only the proposed Milford Compressor Station would require a substantial amount of new construction. The other four compressor stations have potential impacts related to erosion of soils from Project-related construction and movement of equipment, but all disturbances and potential impacts would occur within the existing boundaries of the stations. The Coyote Creek Compressor Station located in Uinta County, Wyoming overlies soils considered to have moderate to high erosion potential, and portions of the site are considered to have low revegetation potential. The Elberta Compressor Station in Utah County, Utah overlies soil considered to have moderate to high erosion potential. The soils at the proposed Milford Compressor Station in Beaver County, Utah are considered to have low to moderate erosion potential. The Fillmore Compressor Station in Millard County, Utah overlies soils that are not considered to have moderate to highly erodible soils. The Dry Lake Compressor Station in Clark County, Nevada overlies soils that are not considered to have moderate to high erosion potential. Other aboveground facilities including a contractor yard (CY-SL-1), one pipe yard, and six staging areas for additional workspace are located in areas that are considered to have low revegetation potential. However, impacts are expected to be minor as these workspaces are temporary.

Impacts on erodible soils would be minimized through the use of temporary and permanent erosion control devices such as slope breakers, trench breakers, hay bales, and silt fences, as identified in Kern River's Plan and the Reclamation Plan. To minimize potential impacts near waterbodies and

wetlands, temporary erosion control devices would be installed prior to construction, as described in Kern River's Procedures. Temporary erosion control devices would be inspected regularly to determine whether repairs or replacement is necessary and would only be removed following the successful revegetation of an affected area.

4.2.1.2 Prime Farmland

The U.S. Department of Agriculture (USDA) defines prime farmland as "land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, and oilseed crops" (USDA 1993). This designation includes cultivated land, pasture, woodland, and other lands that are either used for food or fiber crops, or are available for these uses. Urbanized land, built-up land, and open water cannot be designated as prime farmland. Prime farmland typically contains few or no rocks; is permeable to water and air; is not excessively erodible or saturated with water for long periods; and is not subject to frequent, prolonged flooding during the growing season. Soils that do not meet the above criteria may be considered prime farmland if the limiting factor is mitigated (e.g., by draining or irrigating). The Apex Expansion Project would not cross any areas designated as prime farmland. Drainage tiles used to improve the drainage of soils in agricultural areas may be encountered at MP 7.0 to 8.0, 27.6 to 27.9 and near MP 18.8. Damage to drain tiles can occur from construction equipment. Potential impacts on drain tiles, if damaged by construction, would be repaired by a qualified tile-drainage specialist. The compressor stations and other aboveground facilities associated with the proposed Project are not proposed in areas of prime farmland.

4.2.1.3 Compaction Potential

Soils identified as compaction prone are characterized as clay loams or finer grain size classifications designated by the USDA. A drainage class of somewhat poor to very poor is also considered in characterizing compaction-prone soils. Soil compaction and rutting could be affected by construction activities. The pipeline route would traverse approximately 2.6 miles of land classified as compaction-prone soils. Compaction prone soils are not expected to be present at the existing or proposed compressor stations, however some storage yards, contractor yards, and staging areas are located in areas with moderate to high compaction potential. The impacts associated with the existing aboveground facilities are expected to be minor and temporary since they would be restored to pre-construction use following construction activities. The areas impacted by new aboveground facilities would be converted to industrial use. The extent of soil compaction may be dependent on the proportion of moisture in the soil. Soils with moderate moisture content may be more prone to compaction associated with construction activities than dry soils. Potential impacts on compaction prone soils would be mitigated through scheduling construction during the dry season and the use of timber or board mats to cross areas that are compaction prone. Additionally, Kern River would conduct compaction tests and till compacted subsurface soils in agricultural areas through the use of paraplows or similar equipment as identified in its Plan.

4.2.1.4 Stony-Rocky Soils

Soils with textural classifications including stony, cobbly, gravelly, shale, slate, or droughty in any layer, or with stones larger than 3 inches in the surface layer in greater than 15 percent of the area, may be characterized as stony or rocky soil. Areas along the proposed Project route were evaluated to determine areas with 15 percent or greater occurrence of rock fragments greater than 3 inches in size and areas with soil classifications that include a rock outcrop identifier in their soil association classification. The Project would affect approximately 68 acres of stony and rocky soil. Proposed or existing compressor stations would not affect stony-rocky soils. Potential impacts from stony-rocky soils would be minimized on agricultural lands through the removal of rock fragments brought to the surface during

construction. Topsoil removed from the trench line would be segregated and stockpiled during construction activities. Prior to topsoil replacement, topsoil would be screened for rock fragments greater than 3 inches. On croplands where bedrock fragments are brought to the surface during trenching operations would be removed using rock pickers. On rangelands, Kern River would scatter rocks along the right-of-way in a natural pattern, use rock fragments to create permanent slope breakers or make cross contour berms where approval has been granted.

4.2.1.5 Hydric Soils

Hydric soils are defined as “soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part” (FR 1994). Soils that are artificially drained or protected from flooding (such as, by levees) are still considered hydric if the soil in its undisturbed state would meet the definition of a hydric soil. Hydric soils include very poorly, poorly, and somewhat poorly drained soils. Due to extended periods of saturation, hydric soils can be prone to compaction and rutting. In addition, high groundwater levels associated with hydric soils could create a buoyancy hazard for the proposed pipeline. Approximately 53 acres of the pipeline route would traverse hydric soils, of which 29 acres are considered to be prone to compaction and rutting. Hydric soils are not present at the locations of any of the existing or proposed compressor stations. Potential impacts on compaction prone hydric soils would be mitigated through the use of timber or board mats to cross areas that are compaction prone. Additionally, Kern River would conduct compaction relief tests and till compacted subsurface soils in agricultural areas through the use of paraplovers or similar equipment as identified in its Plan. Thus, impacts on hydric soils would be minor and temporary.

4.2.1.6 Shallow Bedrock

Soils with bedrock present within 60 inches (5 feet) of the soil surface are considered shallow to bedrock. Soils with shallow-to-bedrock classifications were identified using the STATSGO database. Approximately 16.5 miles of the pipeline route traverses soil that is considered shallow-to-bedrock. The Coyote Creek and Dry Lake Compressor Stations contain soils identified as shallow-to-bedrock. Other aboveground facilities including 3 pipe yards, 5 contractor yards, and 8 staging areas two of which may be used for additional workspace have soils that are shallow-to-bedrock. To excavate the trench line, blasting may be necessary where shallow bedrock is present. Geotechnical investigations conducted in 2009 by Kern River indicate that approximately 248 acres of the Project may require blasting as previously discussed in section 4.1.3.4. If blasting was conducted, any rock fragments greater than 3 inches in diameter introduced into the topsoil would be removed as needed to maintain consistency with the surrounding land. Thus, impacts on shallow-to-bedrock soils would be minor and temporary.

4.2.2 Spill/Contamination Prevention

Other potential impacts during construction could include the accidental release of petroleum hydrocarbons or other hazardous materials or encountering existing contaminated areas during excavation. During construction, Kern River would implement mitigation measures to prevent and contain, if necessary, accidental spills of any material that may contaminate soils, and to ensure that inadvertent spills of fuels, lubricants, or solvents are contained and cleaned up in accordance with its SPCC Plan. If required, all potentially contaminated materials would be handled, transported, and disposed of in accordance with appropriate federal, state, and local regulations.

4.2.3 Topsoil Segregation

Topsoil is the uppermost layer of soil, typically has the highest concentration of organic materials, and generally has greater biological productivity than subsurface soils. The micro-organisms

and other biological material typically found in topsoil provide necessary nutrients to vegetation. Topsoil also has the highest concentration of plant root and seeds. Topsoil preservation is important especially for restoration of natural vegetation and cropland and range or pasture lands, especially in areas where topsoil is limited in extent or depth. Topsoil would be segregated across the width of the construction workspace in agricultural and residential areas, and in areas where requested by landowners and in accordance with Kern River's Plan. Topsoil segregation may also be conducted on range lands and USFS lands at the request of the BLM or the USFS and other land management agencies. Topsoil would be removed to a minimum depth of 12 inches in accordance with Kern River's Plan. If areas of shallow topsoil and stony-rock soils are encountered, Kern River would reduce the minimum depth for topsoil segregation to 4 to 6 inches. Topsoil would be stockpiled in a manner that discourages mixing with subsurface soil. Silt fences and other barriers would be installed to prevent erosion and siltation from the stockpiles into nearby waterways.

To minimize impacts on soil resources from the Apex Expansion Project, Kern River would implement mitigation controls for erosion, compaction, drainage tiles, and stony and rocky soils, as discussed in the preceding sections and outlined in its Plan. These mitigation measures would be monitored through environmental inspections during construction and restoration. We have reviewed Kern River's Plan and found that it is consistent with our Plan which is available for review on the FERC website at www.ferc.gov/industries/gas/enviro/guidelines.

Environmental Inspectors would monitor construction and restoration activities to document that Kern River was complying with its Plan. Potential impacts from construction and restoration along the proposed Project may include erosion, compaction of soils, and damage to existing drainage tiles and the introduction of stones or rocks to the top 12 inches of topsoil. Environmental Inspectors would monitor and identify areas that appear to be susceptible to these impacts and implement appropriate mitigation measures to reduce or limit the potential affects. Mitigation measures that would be verified by Environmental Inspectors include the proper marking of areas to be cleared for construction; identification of any soil stabilization or erosion controls needed along the proposed Project route; and verifying the appropriate restoration of contours and topsoil, and that any soils imported for restoration purposes are free of noxious weeds and pests. Mitigation controls for erosion implemented by Kern River would include installation of sediment barriers and slope breakers during construction, and application of mulch or other erosion control measures in areas that are susceptible to erosion during restoration. In addition, Kern River would restore to pre-existing conditions any existing water bars and erosion control structures that are currently in place.

Maintenance of drainage tiles during construction and any necessary repairs after construction to drainage tiles also would be conducted in accordance with Kern River's Plan. To minimize grazing disturbance, Kern River would work with landowners, permittees, and appropriate agencies to develop grazing deferment plans in order to minimize potential grazing impacts during revegetation.

Impacts on agricultural and rangeland soils resulting from construction of the pipeline would be temporary since the pipeline would be buried and disturbed areas within the temporary construction and permanent rights-of-way would largely revert to their pre-construction uses following restoration.

4.2.4 PacifiCorp Electrical Distribution Line

In addition to the construction of the proposed Milford Compressor Station, an approximately 1.4-mile aboveground electrical distribution line would be extended to provide electrical power to the proposed compressor station. Soils found along the proposed electrical distribution line are similar to those identified at the proposed Milford Compressor Station. The approximately 23 single wood pole structures would be installed using a rubber tire line truck mounted auger. Once the pole structures are

set in place, the space surrounding the poles would be backfilled. No contouring would be necessary based on the flat topography of the area proposed for the electrical distribution line. The work area for each pole would be reclaimed and seeded, if determined necessary, with a BLM approved reclamation plan. Access for the distribution line would be on the existing Imperial Road. The auger rig would backup to the pole stake from Imperial road. Potential impacts on soil resources would be limited to the footprint of the approximately 23 pole structures. Assuming an approximate diameter of 12 inches, the electrical distribution line would impact less than 0.1 acre.

4.2.5 Operation Impacts

During operations, there would be no impacts on soil resources expected beyond periodic inspection of the right-of-way and the use of permanent access roads to aboveground facilities. Any impacts on soil resources associated with standard operations would be minor and infrequent.

Potential impacts from maintenance of the proposed Project could include soil displacement, compaction, and erosion caused by machinery necessary to maintain or repair any portions of the proposed pipeline or aboveground facilities. To minimize impacts on soils from operation of the proposed Project, Kern River would implement the measures in its Plan—as described for construction in the preceding sections—to mitigate impacts such as compaction and erosion.

4.3 WATER RESOURCES

4.3.1 Groundwater Resources

The Apex Expansion Project would transverse portions of two major aquifer systems: the Basin and Range aquifer system in Utah and Nevada and the Upper Colorado River Basin aquifer system in Wyoming. Both of these aquifers include large-scale systems formed in bedrock and unconsolidated sedimentary deposits (referred to as “basin-fill aquifers”) and waterbearing zones of relatively small extent in glacial deposits and alluvial deposits along streams and rivers. Additional information on aquifers occurring along the proposed Project route, including sole-source aquifers, wellhead protection areas, and supply wells is provided below.

Basin and Range Aquifer System

The Basin and Range aquifer system is a principal source of groundwater in Utah and Nevada. Historically, groundwater from this aquifer system has been used for irrigation purposes. Although the primary use of this aquifer system is still irrigation, increased populations and growing metropolitan areas are increasingly dependent on this system for potable water supply demands (USGS 2009a). The proposed Wasatch Loop and the Milford Compressor Station would be constructed within the Basin and Range aquifers in Morgan, Davis, Salt Lake, and Beaver Counties, Utah.

This aquifer system extends over approximately 200,000 square miles of the southwestern United States, including western Utah and most of Nevada. The system includes basin-fill aquifers and aquifers where groundwater moves primarily within carbonate rock. Basin-fill or valley-fill aquifers were deposited in depressions formed by faulting, erosion, or both. These aquifers consist of moderately consolidated, well- to poorly-sorted beds of gravel, sand, silt, and clay deposited on alluvial fans, pediments, flood plains, and playas. Water generally moves under unconfined conditions from recharge areas along the margins of mountainous basins toward discharge areas at the center of structural basins near the center of valleys. Aquifer discharge occurs through upward leakage to shallower aquifers and then to major streams. The thickness of basin-fill aquifers is not well-known but ranges from about 1,000 to 5,000 feet in many basins and may exceed 10,000 feet in a few deep basins in Utah. These

aquifers generally have high hydraulic conductivities and, in places, allow rapid infiltration from the surface. Because of their high conductivity, rapid recharge, and good yield, these aquifers can be a significant water supply source; however, they are also susceptible to contamination. (USGS 2009a).

Carbonate rock aquifers generally underlie the basin-fill aquifers in the Basin and Range system. These aquifers consist primarily of limestone, dolomite, and marble with some quartzite, shale, siltstone, and sandstone in formations that are thousands of feet thick. Groundwater yields vary and depend on the degree of secondary dissolution (primarily karst formation) within the bedrock. Groundwater flows through soluble rock to fractures and solution openings that can vary in size from small tubes to caverns, through bedrock from basin to basin, or beneath basins from mountainous recharge areas to discharge areas. Well yields and spring flows can be very high in areas where fractures and solution openings comprise well-connected networks and the rock is thickly saturated. (USGS 2009a).

Three of the four existing compressor stations proposed for modifications under the Apex Expansion Project are located within the Basin and Range aquifer system and include Elberta Compressor Station (Utah County, Utah), Fillmore Compress Station (Millard County, Utah), and Dry Lake Compressor Station (Clark County, Nevada). The modification activities proposed at these stations are not expected to cause impacts on groundwater resources and thus are not discussed further.

Upper Colorado River Basin Aquifer System

The Upper Colorado River Basin aquifer system also underlies the southwestern United States as well as the southwestern portion of Wyoming. In Wyoming, the Upper Colorado River Basin aquifer system consists of five aquifers and extends over about 20,000 square miles which are mostly in the Green River, the Great Divide, and the Washakie structural basins (USGS 2009b).

Most of the fresh water in the Upper Colorado River Basin aquifer system is found in the Wasatch–Fort Union aquifer. The Wasatch–Fort Union aquifer is the only aquifer that underlies the proposed Project area in Uinta County and the Green River Basin. The principal water-yielding beds in this aquifer are sandstones that are interbedded with shale, mudstone, and some coal beds. Groundwater is generally between 200 and 1,000 feet below ground surface (bgs) in the majority of the Wasatch–Fort Union aquifer, with shallower groundwater found near surface waterbodies that serve as discharge areas for the aquifer. Water in the western part of the aquifer moves from recharge areas in the mountains toward the Green River and its tributaries and toward the Flaming Gorge Reservoir (USGS 2009b). Wells completed in the Upper Colorado River Basin aquifer system commonly are 300 to 900 feet deep and locally are 1,000 to 3,000 feet deep. These aquifers are deeply buried or overlain by fine-grained rocks in many places.

One of the four existing compressor stations proposed for modifications under the Apex Expansion Project is located within the Upper Colorado River Basin aquifer system. The modification activities proposed at the Coyote Creek Compressor Station (Uinta County, Wyoming) are not expected to cause impacts on groundwater resources and thus this station and its locations are not discussed further.

4.3.1.1 Sole-Source Aquifers

The EPA defines a sole-source aquifer or principal-source aquifer as one that supplies at least 50 percent of the drinking water consumed in the area overlying an aquifer. EPA guidelines stipulate that such areas can have no alternative drinking water source(s) that could physically, legally, and economically supply all those who depend upon the aquifer for drinking water (EPA 2010). No sole-source aquifers designated by the EPA would be crossed by the Apex Expansion Project.

4.3.1.2 Water Supply Wells

Based on agency consultations, field surveys, and desktop research, three public water supply wells, have been identified within the proposed pipeline construction right-of-way in Utah (table 4.3.1-1). All of these public supply wells are associated with transient non-community public water systems. Transient non-community water systems are defined as non-community public water systems that do not serve 25 of the same non-resident persons per day for more than 6 months per year (UDEQ 2009). All of these systems have protection zones that would be traversed by the proposed pipeline route as identified in table 4.3.1-2. No other water supply wells or springs have been identified within 150 feet of the proposed pipeline construction right-of-way in Utah. Furthermore, no water supply wells or springs have been identified within 200 feet of the proposed Milford Compressor Station.

Utah County	Approximate Milepost	Name/ Type	Well Use Type	Protection Zone Acreage Crossed
Morgan	1.0 – 4.0 ^b	East Canyon State Park / public	Transient Non- Community Well	45.7
Morgan	6.4 – 8.7 ^b	LDS Stake Camp Woodland/ public	Transient Non- Community Well	33.0
Morgan	7.8 – 7.9 ^b	Camp Zarahemla / public	Transient Non- Community Well	0.2

Notes:

^a Workspaces may include permanent right-of-way, temporary workspaces, additional temporary workspaces, staging areas, and contractor yards.

^b Pipeline construction workspaces would cross within an area of a protection zone, and the surface area crossed is reported. Jensen 2009a; 2009b

Kern River has stated that they would continue to consult with landowners and perform right-of-way surveys to verify the locations of all active wells and springs within 150 feet of the pipeline route. At this time, these surveys have not been completed; therefore, **we recommend that:**

- **Prior to construction, Kern River file completed surveys for all potable water supply wells and springs identified within 150 feet of the proposed construction right-of-way and list any site-specific measures that it would implement to avoid, minimize, or mitigate for potential impacts on water supply wells and springs.**

**TABLE 4.3.1-2
Wellhead Protection Zones Identified within the Proposed Apex Expansion Project
Construction Workspaces^a**

Public Water System	Utah County	Approximate Milepost^{b,c}	Source Type	Protection Zone Acreage Crossed
Weber Basin South	Davis	14.8 – 15.0	Well	4.1
	Davis	15.3 – 15.5	Well	2.1
Bountiful City	Davis	15.1 – 15.3	Well	1.3
	Davis	15.5 – 17.2	Well	30.4
	Davis	18.7 – 19.0	Well	7.5
North Salt Lake	Davis	20.1 – 20.1	Well	0.6
	Davis	20.1 – 20.1	Well	0.3 ^d
	Davis	20.1 – 20.1	Well	0.3 ^d
	Davis	23.4 - 24.4	Spring	13.6
	Davis	24.4 – 25.6	Well	18.7
South Davis County WID	Davis	19.8 – 19.8	Spring	<0.1
	Davis	20.1– 21.2	Spring	15.2
	Davis	21.2 – 21.2	Well	0.4
	Davis	21.4 – 21.5	Well	0.9
	Davis	21.9 – 23.3	Spring	17.5
	Davis	21.9 – 23.3	Spring	17.5 ^d
	Davis	21.9 – 23.3	Spring	17.5 ^d

Notes:

^a Workspaces may include permanent right-of-way, temporary workspaces, ATWSs, and staging areas.

^b Mileposts are not listed in numerical order but rather by public water system.

^c Mileposts have been rounded up for purposes of this table and do not reflect exact locations.

^d Protection zone completely overlaps three different sources and the same protection area for the entire acreage crossed.

Sources: Jensen 2009a, 2009b.

4.3.1.3 Wellhead Protection Areas

Wellhead protection areas (identified in Utah as source protection areas) are defined by the Safe Drinking Water Act (SDWA) as surface and subsurface areas surrounding a water well or well field supplying a public water system through which contaminants are reasonably likely to move toward and reach the supply system. In Utah, public water systems supply drinking water from groundwater sources including wells and springs. The jurisdictional municipalities associated with public water systems are responsible for the management of system protection zones as regulated by the Utah Drinking Water Source Protection Program (UDAR 2009a). These local governments protect wells and springs from contamination by passing ordinances to control land uses within their protection zones. Wellhead protection areas for four community water systems have been identified along the proposed pipeline route in Utah and are listed in table 4.3.1-2. “Community water systems” are defined as serving at least 15 service connections used by year-round residents (UDEQ 2009).

4.3.1.4 Contaminated Groundwater

Contaminated groundwater could be encountered along the proposed pipeline route from MP 25.9 to 27.0 associated with the proposed crossing of the Chevron Products Company petroleum refinery (Chevron Refinery). According to the UDEQ, a contaminated groundwater plume under the Chevron Refinery has been identified. This plume is associated with the on-site tank farm; however neither the extent of the plume nor the contaminations are known. If shallow or perched groundwater is present at the proposed crossings of the Jordan River or the Northwest Oil Drain associated with the Chevron Refinery, contaminated groundwater could also be contacted. The Jordan River is discussed further in section 4.3.2.2 and the Northwest Oil Drain is discussed in detail in section 4.3.2.6. Kern River and its Environmental Inspectors would inspect excavated areas for indicators of contaminated soils and/or groundwater. Identification would be based on observations such as: soil staining, oily sheens, odors, and previously unreported buried tanks, drums, or waste containers. If contaminated groundwater is encountered during construction, Kern River would immediately stop construction activities and would coordinate with the appropriate regulatory agencies or private corporations to develop a plan for treatment and/or disposal of the contaminated groundwater. If contaminated groundwater is encountered during construction at the Chevron Refinery, the water would be disposed of on-site in accordance with Chevron's procedures.

4.3.1.5 Groundwater Impacts and Mitigation Procedures

Construction

Standard pipeline construction procedures would be used by Kern River and would consist of: clearing and grading, trench excavation, dewatering, and fuel handling. These activities could affect groundwater resources, including aquifers, wellhead protection areas, springs, and water supply wells. Clearing and grading would remove vegetation that provides filtration and slows surface runoff. Trenching and soil stockpiling activities would temporarily alter overland flow and groundwater recharge, and could alter near-surface groundwater flows where shallow groundwater is encountered. Heavy equipment used for construction could compact the soil along the right-of-way and slow groundwater recharge rates. The trench could also fill up with water during construction. In general, the potential for impacts on groundwater resources from construction and operation of the proposed Project depends on whether the proposed facilities would cause localized changes to existing groundwater flow and/or quality.

Construction of the pipeline would require trenching and backfilling to a depth of 6 to 8 feet bgs. These construction activities would be generally located 50 feet or greater above most of the water-bearing zones that would be encountered along the Project. However, depth to groundwater is variable, and groundwater can be found near the surface of the ground in some areas where proposed Project activities could impact groundwater. The primary area of concern for shallow groundwater along the pipeline route would be associated with the crossing of the Chevron Refinery between MP 25.9 and 27.0. Shallow groundwater may also be encountered in surficial aquifers in Morgan County. Total suspended solid levels in surficial aquifers could increase if shallow groundwater were encountered during construction activities. Shallow groundwater could also affect the buoyancy of the pipe (i.e., the pipeline would be more likely to rise to the ground surface) and could increase the potential for pipe corrosion. Saturated soil conditions would also increase the difficulty of trench excavation and reduce the stability of the trench wall during pipeline installation and subsequent inspection of the pipeline before backfilling. Where necessary, Kern River would install weights, use concrete-coated pipe, or anchor the pipeline in areas where the positive buoyancy of the pipeline may exceed the combined uplift resistance of backfilled soil and soil adjacent to the ditch. Kern River would use externally coated pipe and install cathodic

protection where necessary to guard against corrosion. Implementation of these measures would reduce impacts associated with shallow groundwater to less-than-significant levels.

During construction, trench dewatering may result in localized, minor changes in the water table. Effects from construction of the proposed pipeline would likely be temporary, and any shallow groundwater systems would recover to equilibrium within a period of days to months. Dewatering of the trench would occur in an adjacent area through a sediment filter and energy displacement device, which would likely recharge the impacted aquifer. Heavy equipment used during construction could compact the soil along the proposed right-of-way and slow groundwater recharge rates. After the trench is backfilled, soils could also be compacted and may have different permeability rates compared to the surrounding undisturbed soils. Disturbed soils could potentially act as a conduit to transport groundwater and increase infiltration of surface water flows. This could cause subsurface erosion and ground subsidence along the pipeline route. Kern River would install trench breakers where necessary to minimize the potential of subsurface water flow along the trench.

Construction of the aboveground facilities, including the proposed Milford Compressor Station, would require minimal subsurface work. However, the development of impervious surfaces and structures associated with the proposed aboveground facilities could result in alteration of localized infiltration/recharge rates. Impervious surfaces would divert runoff from the immediate area. However, the diverted runoff would infiltrate adjacent areas and would likely recharge the local aquifer under the proposed aboveground facilities. Therefore, only negligible effects to groundwater resources would occur. Kern River would limit impacts on water resources during construction of aboveground facilities by implementing the measures in its Plan and SPCC Plan discussed below.

Accidental Spills of Hazardous Materials

Pipeline construction necessitates the use of heavy equipment and associated fuels, lubricants, and other potentially hazardous substances that, if spilled, could affect shallow groundwater and/or unconsolidated aquifers. Accidental spills or leaks of hazardous materials associated with vehicle fueling, vehicle maintenance, and construction materials storage would present the greatest potential contamination threat to groundwater resources. Soil contamination resulting from these spills or leaks could continue to add pollutants to the groundwater long after a spill occurs. Implementation of proper storage, containment, and handling procedures would minimize the chance of such releases. Kern River has developed an SPCC Plan to address the preventative and mitigative measures that would be implemented to avoid or minimize the potential impacts of hazardous material spills during construction. Measures outlined in the SPCC Plan and in Kern River's Plan and Procedures include, but are not limited to:

- spill training for construction personnel;
- regular inspection of construction equipment for leaks;
- prohibition of fueling and lubricating activities and hazardous material storage in or adjacent to sensitive areas;
- secondary containment for storage of fuels, oils, hazardous materials, and equipment;
- collection and disposal procedures for wastes generated during equipment maintenance;
- emergency response procedures; and
- standard procedures for excavation and off-site disposal of any soils contaminated by spillage.

We have reviewed Kern River's SPCC Plan, Plan, and Procedures and find that these protocols adequately address the storage and transfer of hazardous materials and the response to be taken in the event of a spill.

Wellhead Protection Areas and Water Supply Wells

Groundwater flow generally reflects surface topography; therefore, proper restoration of the ground surface would ensure that overland runoff flow and recharge patterns are returned to pre-construction conditions. Kern River would restore surface topography as close as practicable to pre-construction contours, as well as restore the disturbed vegetation for stabilization along the right-of-way. Kern River would alleviate soil compaction by implementation of its Plan, which provides for testing and decompaction measures. Impacts from compaction would be localized, temporary, and minimal compared to the total groundwater recharge area adjacent to the Project area.

Construction through wellhead protection areas must protect against the potential for impaired water quality, decreased yield, or other disruptions of service. Potential impacts on wellhead protection areas would be avoided or minimized by the measures described above to prevent impacts on groundwater resources. Furthermore, Kern River has agreed to consult with each of the municipalities affected by the proposed Project for development and approval of the Project-specific Storm Water Pollution Prevention Plan (SWPPP). Kern River would also comply with other state and municipal regulations, including the Utah Drinking Water Source Protection Program, as well as their SPCC Plan when working in wellhead protection areas.

Kern River has identified three groundwater well protection zones within the proposed construction workspaces. Potential construction-related impacts could include localized decreases in groundwater recharge rates, changes to overland water flow, contamination, decreased well yields, decreased water quality (such as increased turbidity or odor in the water), interference with well mechanics, or complete disruption of the well or spring. These impacts could result from trenching activities and/or heavy equipment traffic. Kern River has agreed to perform pre- and post-construction monitoring for well yield and water quality for private wells and springs within 200 feet and for public wells and springs within 400 feet of the proposed construction right-of-way (table 4.3.1-1). Should the integrity of any water supply well or springs be impacted during construction, Kern River would provide an alternative water source and would restore the water yield and quality to pre-construction conditions or install a new comparable well. Kern River would implement measures in its Groundwater Monitoring Plan to address the preventative and mitigative measures that would be implemented to avoid or minimize the potential impacts of construction on wells and springs. As previously discussed, we have recommended that right-of-way surveys and landowner consultations be completed to definitively determine the location of each well and spring within 150 feet of the right-of-way and that site-specific mitigation measures be provided as applicable.

Blasting

Kern River identified several portions of the proposed construction right-of-way in Utah (MP 0.0 to 20.5) where blasting may be required for pipeline installation. Blasting could affect groundwater quality by temporarily changing groundwater levels and increasing groundwater turbidity near the proposed construction right-of-way. Kern River would attempt to utilize specialized excavation methods to reach the required pipeline design burial depth in areas where shallow bedrock is encountered. These excavation methods could include ripping or the use of hydraulic hammers or rock saws. However, blasting may be necessary to achieve the required trench depth if excavation methods prove to be ineffective or inefficient. Blasting would likely be required along the pipeline route in areas where hard, non-rippable bedrock occurs within 5 feet of the ground surface. Kern River has developed a Blasting

Plan to minimize potential adverse impacts on the environment, nearby water sources, structures, or utilities. As stated in the Blasting Plan, blasting activities would be conducted by licensed blasting contractors in accordance with all applicable federal, state, and local regulations. All necessary permits would be obtained if blasting were required. If blasting is required, increased turbidity could occur at shallow aquifers located beneath the trenchline; however, this impact would likely be temporary, and rock particles and sedimentation would be expected to settle out quickly.

No wells or springs have been identified within 150 feet of the proposed workspaces near potential blasting locations. Kern River's Blasting Plan has set peak particle velocity to a level that should protect water wells, springs, and other nearby structures from any structural damage. For instance, the industry standard for many years has been 12 inches per second maximum peak particle velocity on any underground structures. Kern River expects peak particle velocities to be 4 inches per second or lower on any underground structures and 2 inches per second or lower on wells and aboveground structures. We anticipate that any effect to nearby wells and springs from blasting would be temporary and would likely dissipate shortly after blasting or after a well has been flushed several times. As stated in section 4.3.1.5, Kern River has agreed to test all private wells and springs for water quality and yield prior to and after construction, and provide an alternative water source or mutually agreeable solution to a well or spring problem that arises.

Operations

No significant impacts on groundwater resources are anticipated during the operation of the proposed Project. The pipeline would be a fixed below ground structure, coated in accordance with USDOT standards, hydrostatically tested prior to the commencement of operation to avoid initial leaks, and monitored in accordance with USDOT requirements during operations to minimize potential impacts of corrosion and leaks. In the unlikely event of a pipeline rupture, groundwater impacts would be minimal due to the marginal solubility of natural gas and its rapid dispersal once exposed to air. Although the impervious surfaces and structures associated with the proposed aboveground facilities could result in alteration of localized infiltration/recharge rates, runoff would be diverted and would infiltrate adjacent areas. Thus the local aquifer under the proposed aboveground facilities would be recharged, and only negligible effects to groundwater resources would occur.

No long-term groundwater impacts would be anticipated from construction or operation of the Project because disturbances would be temporary, erosion controls would be implemented, and natural ground contours would be restored. Groundwater impacts during construction would be minimized or avoided by implementing construction practices outlined in Kern River's Plan and Procedures, such as installing trench plugs to prevent the movement of water along the buried pipeline; restricting or modifying construction practices during heavy rains and potential rutting circumstances; and limiting fertilizer, lime, and herbicides application to comply with state or federal requirements.

Temporary minor impacts could result during trenching activities in areas with shallow groundwater (depth less than 10 feet bgs) that would be crossed by the proposed pipeline. The greatest threat posed to groundwater resources would be a hazardous material spill or leak into groundwater supplies. The FERC has reviewed Kern River's SPCC Plan and believes that it adequately addresses strategies and methods to prevent or limit such contamination should a spill occur. No significant impacts on aquifers would be expected to occur by the construction and operation of the Project given the depth of the aquifers and the relatively shallow nature of construction.

PacifiCorp Electrical Distribution Line

The construction of the PacifiCorp electrical distribution line to the Milford Compressor Station would require the installation of 23 poles approximately 6.5 feet bgs. Groundwater resources along the distribution line would be the same as those described above for the Milford Compressor Station. Impacts on groundwater resources would be similar to the effects associated with pipeline construction.

4.3.2 Surface Water Resources

The Apex Expansion Project would cross three watershed basins located in Utah within the Great Basin Region. Watershed descriptions and approximate locations are provided in table 4.3.2-1. No waterbodies would be impacted by construction at the four existing compressor stations. Therefore, construction and operation impacts at these compressor stations are not discussed further.

The Apex Expansion Project would cross 21 waterbodies, including 12 perennial, seven intermittent, and two ephemeral streams. However, one perennial waterbody would be crossed three times which would account for a total of 23 proposed waterbody crossings. Three waterbodies have also been identified within the proposed Project workspace; however these waterbodies are not included in the 23 waterbody crossing total because they would not be crossed by the pipeline and would not be directly affected by construction. “Perennial streams” are defined as waterbodies that hold water continually throughout the year. “Intermittent streams” hold water during wet or seasonal portions of the year. Intermittent streams may be fed by numerous sources, including groundwater, snowmelt, or precipitation, and do not flow continuously - typically ceasing during dry periods. Intermittent stream channels are well defined but lack the hydrological characteristics associated with perennial streams. “Ephemeral streams” or channels hold water only during and immediately after rain events or snowmelts. Ephemeral stream channels, also known as arroyo and drywash, are not always well defined and may lie above the water table at all times.

4.3.2.1 Water Classifications

CWA Section 303(d) requires that each state review, establish, and revise water quality standards for all surface waters within each state. State classification systems develop monitoring and mitigation programs to ensure that water standards are attained as designated. Waters that fail to meet their designated beneficial use are considered impaired and are listed under a state’s 303(d) list of impaired waters.

**TABLE 4.3.2-1
Watershed Basins Crossed by the Proposed Apex Expansion Project**

Watershed	Approximate Milepost Range^a	HUC / Drainage Area	Description
Lower Weber River	0.0 – 19.8 19.9 – 20.0	16020102 / 1,260 square miles	The Lower Weber River watershed is located in northern Utah within the larger Weber River watershed which has a drainage area of nearly 2,500 square miles. The Wasatch Mountains stretch north and south within the basin and separate the valley floors from the rolling hills.
Jordan River	19.8 - 19.9 20.0 – 28.0	16020204 / 791 square miles	The entire Jordan River Basin has a drainage area of about 3,800 square miles and is located in north-central Utah. The watershed is bounded on the east by the Wasatch Mountains, on the west by the Oquirrh Mountains, and on the south by the Traverse Range. The Great Salt Lake is the eventual recipient of water in the north-flowing Jordan River.
Beaver Bottoms-Upper Beaver	Milford CS	16030007 / 1,720 square miles	The Beaver Bottoms-Upper Beaver watershed is located in southwestern Utah within the larger Beaver River watershed which has a drainage area of about 320,000 acres including 306,000 acres in Beaver County. The watershed is encircled by the Tushar Mountains to the northeast and east, Circleville Mountains to the southeast, and the Mineral Mountains to the west.
<hr/> Notes: HUC = Hydrologic unit code CS = Compressor station ^a Mileposts have been rounded up for purposes of this table and do not reflect exact locations. Sources: USGS 2008, USU 2008, UU 2004.			

The State of Utah designates five major management and protection classifications to surface waters to protect waters for drinking, fishing, boating, irrigation, stock watering, aquatic wildlife, and other legitimate beneficial uses (UDAR 2009b). A waterbody can have several use classifications, as detailed in table 4.3.2-2. The five major- and sub-classifications are as follows:

**TABLE 4.3.2-2
Waterbodies Crossed by the Proposed Apex Expansion Project**

County	Project Component	Milepost^a	Water Width/Crossing Distance (ft)	Channel Width (ft)	Waterbody Name	Type^b	State Quality Classification^c	Proposed Crossing Method^d
Morgan	Pipeline	0.6	10	15	Unnamed tributary to Dip Hollow	I	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	1.2	12	20	Dixie Hollow	P	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	2.4	3	12	Rocky Canyon	E	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	3.4	3	6	Tuscon Hollow	E	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	4.8	3	12	Redrock Canyon	P	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	5.0	4	12	Redrock Canyon	P	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	5.0	4	12	Redrock Canyon	P	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	5.4	20	35	East Canyon Creek	P	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	6.3	12	30	Sheep Canyon	P	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	7.0	2	20	Unnamed tributary to East Canyon Creek	I	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	7.2	12	40	Jones Hollow	I	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	7.8	2	25	Woods Creek	I	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	8.1	1	20	Unnamed tributary/reservoir inlet	I	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	8.8	20	20	Tom Adams Hollow	I	1C, 2B, 3A, 4	Flume
Morgan	Pipeline	10.1	2	40	Tucker Hollow	P	1C, 2B, 3A, 4 Category 1 Water	Flume
Morgan	Pipeline	11.8	2	30	Hardscrabble Creek	P	1C, 2B, 3A, 4 Category 1 Water	Flume
Davis	Pipeline	16.5	12	20	Holbrook Creek	P	2B, 3A, 4 Category 1 Water	Dam-and-pump
Davis	Pipeline	17.6	1	10	Kenney Creek	I	2B, 3A, 4 Category 1 Water	Flume

**TABLE 4.3.2-2 (continued)
Waterbodies Crossed by the Proposed Apex Expansion Project**

County	Project Component	Milepost^a	Water Width/Crossing Distance (ft)	Channel Width (ft)	Waterbody Name	Type^b	State Quality Classification^c	Proposed Crossing Method^d
Davis	Pipeline	19.0	10	30	Mill Creek	P	2B, 3A, 4 Category 1 Water	Dam-and-pump
Davis	Pipeline	20.6	2	10	North Canyon Creek	P	2B, 3A, 4 Category 1 Water	Flume
Davis	Pipeline	26.8	30	42	Northwest Oil Drain	P	3E ⁵	Conventional Bore
Davis	Pipeline	27.2	40	80	Jordan River	P	2B,3B,3D,4	Conventional Bore
Salt Lake	Pipeline	27.5	20	40	City Drain	P	2B, 3E	Conventional Bore

Notes:

^a Mileposts have been rounded up for purposed of this table and do not reflect exact locations.

^b P = Perennial; I = Intermittent; E=Ephemeral

^c Waterbodies not specifically identified as Category 1 in the table are considered Category 3 waters
All watersheds not specifically classified by the Utah Department of Environmental Quality are presumptively classified as Classes 2B and 3D.
All irrigation canals and ditches statewide if not designated would be Classes 2B, 3E and 4.
All drainage canals and ditches statewide if not designated would be Classes 2B and 3E.

^d Except for those waterbodies designated as conventional bore and dam-and-pump, Kern River proposes to cross all waterbodies with water at the time of construction using flume methods. If water is not present at the time of construction these waterbodies would be open-cut.

Class 1: Protected for use as a raw water source for domestic water systems.

Class 1A and 1B - Reserved.

Class 1C - Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water.

Class 2: Protected for recreational use and aesthetics.

Class 2A - Protected for frequent primary contact recreation where there is a high likelihood of ingestion of water or a high degree of bodily contact with the water.

Class 2B - Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water.

Class 3: Protected for use by aquatic wildlife.

Class 3A - Protected for coldwater species of game fish and other coldwater aquatic life, including the necessary aquatic organisms in their food chain.

Class 3B - Protected for warmwater species of game fish and other warmwater aquatic life, including the necessary aquatic organisms in their food chain.

Class 3C - Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.

Class 3D - Protected for waterfowl, shore birds, and other water-oriented wildlife not included in Classes 3A, 3B, or 3C, including the necessary aquatic organisms in their food chain.

Class 3E - Severely habitat-limited waters. Narrative standards are applied to protect these waters for aquatic wildlife.

Class 4: Protected for agricultural uses including irrigation of crops and stock watering.

Class 5: The Great Salt Lake.

Classes 5A through 5E –Specific waters associated with the Great Salt Lake.

In addition to the use classifications defined above, Utah designates waterbodies as Category 1, Category 2, and Category 3 waters (UDAR 2009b). The three categories are defined as follows:

Category 1: “Waters of high quality” to be of exceptional recreational or ecological significance or have been determined to be a state or national resource requiring protection. New point source discharges of wastewater, treated or otherwise, are prohibited.

Category 2: “Waters of high quality” that are treated as Category 1 waters except that a point source discharge may be permitted provided that the discharge does not degrade existing water quality

Category 3: All other waters of the state of which point source discharges are allowed and degradation of water quality may occur.

Six Category 1 waters, no Category 2 waters, and 15 Category 3 waters would be crossed by the pipeline route. Category 1 waters are considered state high-quality waters and are further discussed in section 4.3.2.2.

The FERC classifies surface waters based on size: major waterbodies are greater than 100 feet wide, intermediate waterbodies are between 10 and 100 feet wide, and minor waterbodies are less than 10 feet wide. No major waterbodies would be crossed by the Apex Expansion Project.

Table 4.3.2-2 lists the location, name, type, proposed crossing method, and use classification for each of the proposed waterbody crossings. No surface waters would be located within or immediately adjacent to the boundaries of the existing or proposed new aboveground facilities, including the Milford Compressor Station.

4.3.2.2 Sensitive Waterbodies

By reviewing various databases and consulting with relevant agencies, Kern River identified 10 sensitive waterbodies that would be crossed by the pipeline. “Sensitive waterbodies” include those streams designated as one or more of the following: state-listed impaired waterbodies, agency-identified waterbodies of concern, and waterbodies that provide habitat for aquatic species of special concern. No crossing would occur within 3 miles upstream of a potable water intake structure. Furthermore, no state or national Wild and Scenic Rivers would be crossed by the proposed pipeline route.

Of the 10 sensitive waterbodies that would be crossed by the Project route, one is categorized as having impaired water quality by EPA, nine have been identified as supporting species of special concern, and six are considered state-designated high-quality waters (several waterbodies have multiple designations). Table 4.3.2-3 provides the sensitive waterbodies that would be crossed by the pipeline, the approximate locations by milepost, and the sensitive designations of each waterbody. Detailed information on aquatic species of special concern is provided in section 4.6.3.

Sensitive Waterbodies	Milepost ^a	Type ^b	Proposed Crossing Method	Aquatic Species of Special Concern	Impaired Water	State High Quality Water
Dixie Hollow	1.2	P	Flume	X		
East Canyon Creek	5.4	P	Flume	X		
Sheep Canyon Creek	6.3	P	Flume	X		
Tucker Hollow	10.1	P	Flume	X		X
Hardscrabble Creek	11.8	P	Flume	X		X
Holbrook Creek	16.5	P	Dam-and-pump	X		X
Kenney Creek	17.6	I	Flume	X		X
Mill Creek	19.0	P	Dam-and-pump	X		X
North Canyon Creek	20.6	P	Flume	X		X
Jordan River	27.2	P	Bore		X	

Notes:

^a Mileposts have been rounded up for purposes of this table and do not reflect exact locations.

^b P = Perennial; I = Intermittent

The segment of the Jordan River (MP 27.2) that would be crossed by the pipeline is designated as a 303(d) impaired water for dissolved oxygen and total dissolved solids levels (UDQW 2006). Six state-designated high-quality waters would be crossed by the pipeline route: Tucker Hollow (MP 10.1), Hardscrabble Creek (MP 11.8), Holbrook Creek (MP 16.5), Kenney Creek (MP 17.6), Mill Creek (MP 19.0), and North Canyon Creek (MP 20.6). All six of these state-designated high-quality waters are located on lands (including public or private lands) within or near the outer boundaries of the UWCNF. Therefore, these waterbodies are classified as Category 1 waters because they have exceptional recreational or ecological significance or are state or national resources that require protection (UDAR 2009b). As previously stated, category designations are in addition to assigned use classifications (detailed in section 4.3.2.1) and as identified in table 4.3.2-2.

4.3.2.3 Surface Water Protection Areas

Public water systems supply drinking water from surface water sources such as streams, rivers, and canals. In Utah, the jurisdictional municipality associated with each public water system is responsible for the management of system protection zones, as regulated by the Utah Drinking Water Source Protection Program (UDAR 2009c). Surface water protection zones within two water systems have been identified along the proposed pipeline route between MP 0.6 and 17.9 and are listed in table 4.3.2-4. Sixteen waterbodies would be crossed within these protection zones as identified in table 4.3.2-2. Protection zones are delineated and defined into the following four categories (UDAR 2009c):

- Zone 1:** Area on both sides of the source (streams, river, or canal) for 0.5 mile on each side of the source laterally from the high water mark (bank full), and from 100 feet downstream of the point of diversion to 15 miles upstream, or to the limits of the watershed or to the state line, whichever comes first.
- Zone 2:** Area from the end of Zone 1, and an additional 50 miles upstream (or to the limits of the watershed or to the state line, whichever comes first), and 1,000 feet on each side of the source measured from the high water mark of the source.
- Zone 3:** Area from the end of Zone 2 to the limits of the watershed or to the state line, whichever comes first, and 500 feet on each side measured from the high water mark of the source.
- Zone 4:** Remainder of the area of the watershed (up to the state line, if applicable) contributing to the source that does not fall within the boundaries of Zones 1 through 3.

**TABLE 4.3.2-4
Surface Water Protection Areas Crossed by the Proposed Apex Expansion Project Construction Workspaces^a**

Public Water System	Surface Water Source	Utah County	Approximate Milepost^b	Protection Zone Category	Protection Zone Acreage Crossed	Distance/Direction to Surface Water Source from Construction Workspaces^{a,b}
Weber Basin	Weber River/Stoddard	Morgan	0.0 – 4.3	4	63.2	Adjacent and 9 miles north of MP 0.0 to 4.3
		Morgan	2.7 – 2.7	2	5.19	0.4 mile south of MP 2.7
		Morgan	4.4 – 7.2	1	45.6	9 miles north of MP 4.4 to 7.2
		Morgan	7.2 – 11.1	4	56.9	9 miles north of MP 7.2 to 11.1
		Morgan	8.4 – 8.4	1	10.1	1.7 miles north of MP 8.4
		Morgan	11.7 – 12.3	1	18.7	Adjacent and 9 miles north of MP 11.7 to 12.3
		Morgan	12.3 – 14.7	4	29.9	9 miles north of MP 12.3 to 14.7
	Stone Creek	Morgan	14.7 – 14.9	1	2.2	Adjacent and 9 miles north of MP 14.7 to 14.9
		Davis	15.2 – 15.3	1	1.8	2.2 miles northwest of MP 16.5
		Davis	15.3 – 15.5	1	3.7	2.2 miles northwest of MP 16.5
Bountiful	Mill Creek	Davis	15.7 – 15.9	1	2.4	2.2 miles northwest of MP 16.5
		Davis	17.7 - 17.9	4	1.3	0.4 mile southeast of MP 18.8

Notes:
^a Workspaces may include: permanent right-of-way, temporary workspaces, ATWSs, and staging areas.
^b Mileposts have been rounded up for purposes of this table and do not reflect exact locations.
Source: Jensen 2009a.

4.3.2.4 PacifiCorp Electrical Distribution Line Crossings

The proposed approximately 1.4-mile PacifiCorp electrical distribution line would cross over two waterbodies located within the Beaver Bottoms-Upper Beaver Watershed in Beaver County Utah: the Trans River Canal and the Beaver River. The Trans River Canal is a Category 3 intermittent waterbody classified for recreational use (2B) and aquatic wildlife (3E). The canal has an ordinary high-water mark and a bank-to-bank width of 25 feet. The Beaver River is also a Category 3 intermittent waterbody. This river is classified for recreational use (2B), aquatic wildlife (3E), and agriculture (4). It has a bank-to-bank width of 20 feet and an ordinary high-water mark of 15 feet. Category designations and use classifications are detailed in section 4.3.2.1 and in table 4.3.2-2. No impacts on the Trans River Canal or the Beaver River are anticipated to occur as the electrical distribution line would be constructed on 23 poles in upland areas. Erosion controls would be implemented, and upland contours would be restored to pre-construction conditions.

4.3.2.5 Potential Surface Water Impacts

Pipeline construction could impact surface waters in several ways. Clearing and grading of streambanks, instream trenching, trench dewatering, and backfilling could result in modification of aquatic habitat, increased sedimentation, turbidity, decreased dissolved oxygen concentrations, releases of chemical and nutrient pollutant from sediments, and introduction of chemical contaminants such as fuel and lubricants.

One potential impact on surface waters could result from the temporary increase in sediments during instream construction. The extent of the impact would depend on sediment loads, stream velocity, turbidity, bank composition, and sediment particle size. These factors would determine the density and downstream extent of sediment migration. Instream construction could cause the dislodging and transport of channel bed sediments and the alteration of stream contours. Changes in the streambottom contours could alter stream dynamics and increase downstream erosion or deposition. Turbidity resulting from resuspension of sediments from instream construction or erosion of cleared right-of-way areas could reduce light penetration and photosynthetic oxygen production. Instream work could also introduce chemical and nutrient pollutants from sediments. Resuspension of deposited organic material and inorganic sediments could cause an increase in biological and chemical use of oxygen, potentially resulting in a decrease of dissolved oxygen concentrations in the affected area. Lower dissolved oxygen concentrations could cause temporary displacement of motile organisms, such as fish, and may kill non-motile organisms within the affected area.

The clearing and grading of streambanks could expose soil to erosional forces and would reduce riparian vegetation along the cleared section of the waterbody (see section 4.5.2 for a discussion of riparian habitat and impacts). The use of heavy equipment for construction could cause compaction of near-surface soils, an effect that could result in increased runoff into surface waters in the immediate vicinity of the proposed construction right-of-way. Increased surface runoff could transport sediment into surface waters, resulting in increased turbidity levels and sedimentation rates in the receiving waterbody. Disturbances to stream channels and streambanks could increase the likelihood of scour after construction.

Refueling of vehicles and storage of fuel, oil, or other hazardous materials near surface waters could create a potential for contamination. If a spill were to occur, immediate downstream users of the water could experience degradation in water quality. Acute and chronic toxic effects to aquatic organisms could also result from such a spill.

Blasting may be required along the proposed pipeline route between MP 0.0 and 19.0, and could include blasting within streams. Instream blasting has the potential to injure or kill aquatic organisms, displace organisms during blast-hole drilling operations, and temporarily increase stream turbidity. By products from the blast could also be released and could potentially contaminate the water. Kern River developed a Blasting Plan to minimize potential adverse impacts on the environment, nearby water sources, structures, and utilities. As stated in the Blasting Plan, blasting activities would be conducted by licensed blasting contractors in accordance with all applicable federal, state, and local regulations. All necessary permits would be obtained if blasting were required.

4.3.2.6 Waterbody Construction and Mitigation Procedures

Kern River has proposed to use several different waterbody crossing methods depending on waterbody-specific conditions at the time of construction. Kern River proposes to utilize the flume, dam-and-pump, horizontal bore, or open-cut crossing methods at all waterbodies crossed by the proposed pipeline. Refer to section 2.3.2.2 for a description of the proposed waterbody crossing methods. Based on Kern River's field data, nine perennial, seven intermittent, and two ephemeral streams would be crossed using either the flume or dam-and-pump method. Three perennial waterbodies would be crossed by the horizontal bore crossing method. Both the flume and the dam-and-pump method are considered dry-ditch crossings and would involve diverting the flow of water from the work area using a flume or a dam so that the trench itself would be relatively dry during trenching, pipeline installation, and backfilling. In addition, Kern River may temporarily utilize dam-and-pump techniques during flume installation to allow for placement of the flumes in a stable environment. The use of dry-ditch methods are generally restricted to waterbodies less than 30 feet wide as it is more difficult to achieve a good seal around the flume pipes or dam at wider waterbodies. Use of dry-ditch waterbody crossing methods generally results in less sedimentation and turbidity in and downstream of the waterbody being crossed. Kern River proposes to utilize dry-ditch methods to cross waterbodies with the potential to contain aquatic species of special concern and would conduct stream crossings during the construction windows established by federal and state agencies, the FERC, and its Procedures to protect aquatic resources. Furthermore, Kern River has agreed to conduct fish salvage activities to minimize adverse impacts on aquatic species at those waterbodies where the dam-and pump method would be implemented. Fisheries impacts and mitigation are further discussed in section 4.6.1.

Kern River would prepare all waterbody crossings, except for the three proposed for conventional bore and the two proposed for dam-and-pump, as flume crossings. However, if water is not present at the time of construction, these waterbodies would be crossed using open-cut methods. Based on Kern River's field data, 18 waterbodies could be crossed by open-cut methods if conditions are dry at the time of construction. Materials needed for a flume crossing would be installed at all waterbodies, regardless of whether water is present at the time of construction. If water is not present and rain is not in the forecast, the flume would be removed and the waterbody would be crossed by open-cut methods. If a rain event occurs during construction and a "dry" waterbody begins to flow, Kern River would reinstall the flume and construction would proceed via the flume method. Furthermore, in regard to "dry" waterbody crossings and in accordance with its Procedures, Kern River would install a barrier across the streambed downstream to prevent downstream sedimentation, place excavated trench material a minimum of 10 feet from the high-water mark of the waterbodies, and stabilize the banks at dry waterbody crossings immediately following backfilling activities.

Three perennial waterbodies would be crossed using the conventional horizontal boring method: Northwest Oil Drain (MP 26.8), Jordan River (MP 27.2), and City Drain (MP 27.5). This method would avoid or reduce impacts at these crossings by boring underneath the resource. The Jordan River is classified as an impaired water. While the Northwest Oil Drain is not classified as an impaired water, the Chevron Refinery located upstream of the Northwest Oil Drain, discharges approximately 1 million

gallons per day (MGD) of treated wastewater into this waterbody. Due to these discharges, the Northwest Oil Drain has attained effluent mass and concentration limitations for several parameters (UDEQ 2007). Kern River proposes to bore under both of these waterbodies to avoid contact with, and suspension of, potential contaminants during proposed construction activities.

Sixteen waterbodies would be crossed within surface water protection zones of two public water systems, as identified in table 4.3.2-2 and table 4.3.2-3. Seven of these waterbodies are classified as perennial, seven are intermittent, and two are ephemeral. Each of these waterbodies is proposed to be crossed by the flume method. However, as previously discussed, if conditions are “dry” at the time of crossing, these waterbodies would be crossed by open-cut methods. Protection and management of these public water systems is required by the Utah Drinking Water Source Protection Program under the municipalities associated with these protection zones. As previously stated, Kern River has agreed to consult with each of the municipalities affected by the proposed Project for development and approval of the Project specific SWPPP.

Specialized construction is proposed for East Canyon Creek (MP 5.4) due to previous crossing difficulties encountered at this location during construction of the existing Kern River pipeline in 1991. Kern River has developed a site-specific crossing plan for this waterbody and proposes to construct at this location in late 2010 when surface water and groundwater levels are typically at their lowest. Kern River proposes to cross East Canyon Creek using the flume crossing method.

Kern River would minimize impacts on waterbodies during construction by implementing the construction and mitigation procedures contained in its Procedures, which include:

- locating temporary extra workspaces at least 50 feet from surface waters, except where adjacent upland is actively farmed or developed or where approved by the FERC and appropriate agencies;
- limiting clearing of vegetation between temporary extra workspaces and the edge of the waterbody to preserve riparian vegetation;
- constructing the crossing as close to perpendicular to the waterbody as site conditions allow;
- maintaining adequate flow rates throughout construction to protect aquatic life and prevent the interruption of existing downstream uses;
- locating equipment parking areas, equipment refueling areas, concrete coating activities, and hazardous material storage at least 100 feet from surface waters;
- requiring construction across waterbodies to be completed as quickly as possible and during the windows specified in the Procedures or required by applicable agency permits;
- requiring temporary erosion and sediment control measures to be installed across the entire width of the construction right-of-way after clearing and before ground disturbance;
- requiring maintenance of temporary erosion and sediment control measures throughout construction until streambanks and adjacent upland areas are stabilized;
- requiring bank stabilization and reestablishment of bed and bank contours and riparian vegetation after construction;
- limiting post-construction maintenance of vegetated buffer strips adjacent to streams; and
- implementing its SPCC Plan if a spill or leak occurred during construction.

Seasonal and flash flooding hazards are a potential concern where the pipeline would cross or would be near major streams, lakes, and small watersheds. Although flooding itself does not present a risk to pipeline facilities, bank erosion and/or scour could expose or cause sections of pipe to become unsupported. Stream scour is a channel process that effectively entrains or mobilizes sediment below the channel at depth and typically occurs during high flows. All proposed pipeline facilities are required to be designed and constructed in accordance with 49 CFR 192. These specifications ensure that pipeline facilities are designed and constructed in a manner to provide adequate protection from washouts and floods. They include specifications for installing the pipeline at a sufficient depth to avoid possible scour at waterbody crossings.

A detailed stream scour analysis study was completed in 1990 for the existing Kern River pipeline. Ten of the waterbody crossings evaluated in the study would also be crossed by the Apex Expansion Project. Thirteen additional waterbody crossings have been identified that were not included in the 1990 study. These crossings would occur at waterbodies with primarily intermittent bedrock. In areas where bedrock is located within 5 feet of the surface, Kern River would place the pipeline within the bedrock to protect it from exposure resulting from scour. Where bedrock is located deeper than 5 feet but shallower than the estimated scour depth (as identified in a 1990 study completed on the existing Kern River mainline), the pipeline would be placed below bedrock. At waterbody crossings where bedrock is deeper than the estimated scour depth, the pipeline would be placed so the top of pipeline would be located at the minimum depth of cover below the estimated scour depth. Where bedrock depth is unknown and no scour depth has been estimated, Kern River would attempt to locate bedrock through potholing or geophysical survey. If bedrock is located within 10 feet of the surface, the proposed pipeline would be placed below that elevation. If bedrock is deeper than 10 feet, Kern River would complete a site-specific scour study to estimate the depth to scour in order to determine the proper depth to place the pipe below the potential scour depth.

In accordance with its Procedures, Kern River would monitor all areas disturbed by construction for at least 3 years after construction, and would conduct aerial and pedestrian surveys of the pipeline right-of-way throughout the life of the proposed Project to identify issues such as streambed scouring or potential pipe exposure. Should issues be identified, Kern River would be required to remediate the problems. The FERC would also conduct periodic field inspections during and after construction, and would review Kern River's inspection and monitoring reports. If the FERC determines that scouring issues are not adequately addressed, Kern River would be required to remediate the problem. In addition to the construction and conservation measures described above, Kern River would need to obtain a COE Section 404 permit and Section 401 state water quality certifications and to comply with all conditions within these authorizations.

4.3.2.7 Alternative Measures to the FERC's Procedures

As mentioned in section 2.3, Kern River's Procedures incorporate the requirements of the FERC's Procedures. The applicable sections of the FERC Procedures and Kern River's associated revisions are described in table 4.3.2-5.

Based on field surveys and engineering evaluations, Kern River has identified certain locations where it would be necessary to perform instream construction outside the FERC time window and to locate ATWS within 50 feet of a waterbody. Section V.B.2.a states that all extra work areas, such as staging areas and additional spoil storage areas, should be located at least 50 feet away from the water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land. Kern River's Procedures indicate their plan to locate extra workspaces within 50 feet of a waterbody at MPs 3.4, 5.0, 5.4, 6.3, 16.5, 26.8, 27.2, and 27.5. We have reviewed these areas and believe that the extra workspace is justified in the above-specified locations.

**TABLE 4.3.2-5
Summary of Proposed Variations to the FERC Procedures for the
Proposed Apex Expansion Project**

Applicable FERC Procedure Section	Resource Issue	Explanation of Variation	Conclusion and Approval Status
I.B.1.d	Waterbody Definitions	Kern River proposes to clarify the definition of "perceptible flow" to be flow from high gradient at the outer boundaries of the construction right-of-way to low gradient at the other edge of the construction right-of-way. Standing water within a feature would not constitute perceptible flow. An Environmental Inspector would determine and document whether any perceptible flow is evident for streams identified as intermittent or ephemeral.	Approved
V.B.1.a	Waterbody Installation Time Window	Kern River proposes to perform instream construction across waterbodies with coldwater fisheries from July 15 through February 28.	Awaiting agency approval (see section 4.6)
V.B.3	General Waterbody Crossing Procedures	Where the Project crosses intermittent or ephemeral waterbodies that are dry, Kern River proposes to use upland construction techniques. Kern River would install hay bales across the width of the streambed downstream of the crossing location. Should a rainfall event occur that leads to perceptible flow in an intermittent or ephemeral waterbody during the period from clearing/grading to re-establishing pre-construction contours, Kern River Environmental Inspectors would conduct an assessment to determine best management practices necessary to protect the resource. The banks of dry waterbodies would be stabilized immediately following backfilling. Kern River would conduct post-rain event monitoring to remedy any issues at dry drainages within 24 hours of precipitation events. Kern River would not perform refueling or handle hazardous materials within an exclusion zone of 100 feet from a dry drainage.	Approved
V.B.4.a	Spoil Pile Placement and Control	Kern River proposes to place spoil at an elevation above top of bank.	Approved
V.B.5.g	Equipment Bridges	Kern River proposes to install temporary bridges at all drainage features to accommodate flow and move construction equipment.	Approved
V.B.7	Crossing of Minor Waterbodies	Kern River proposes to temporarily string welded pipe segments across waterbody features until the pipeline is installed, where practical. The pipeline would be placed in a manner that would not obstruct the highest expected flows of a particular stream.	Approved
VB.10	Temporary Erosion and Sediment Control	On approaches to waterbody crossings and where practical, Kern River proposes to locate drainage control structures at the top of the slope/bank and at the base of the slope/bank. Runoff should be routed to stable slopes on either side of the right-of-way, or be routed via temporary conveyance structures to the base of the approach slope where it can infiltrate into the riparian zone).	Approved

TABLE 4.3.2-5 (continued)
Summary of Proposed Variations to the FERC Procedures for the
Proposed Apex Expansion Project

Applicable FERC Procedure Section	Resource Issue	Explanation of Revision	Conclusion and Approval Status
VII.B.2.	Hydrostatic Testing General	Where pumps are used for hydrostatic testing within 100 feet of a waterbody, Kern River proposes to man these operations continuously to ensure that over filling, leaks or spills do not occur. Where stationary equipment must remain within 100 feet of a waterbody or wetland, adequate secondary containment would be provided.	Approved

4.3.2.8 Hydrostatic Testing and Dust Control

Kern River would verify the integrity of the proposed pipeline before placing it into service by conducting a series of hydrostatic tests. These tests would be conducted in accordance with USDOT regulations to ensure that the system is capable of operating at 125 percent of the MAOP. The tests would involve filling the pipeline with water, pressurizing the pipeline, and checking for pressure losses due to pipeline leakage. The vast majority of the test water would be drawn from local surface waters. A total of about 3,504,364 gallons of water would be required for hydrostatic testing. Of this total, 3,157,364 gallons of water would be withdrawn from two waterbodies for testing the pipeline and about 347,000 gallons of water would withdrawn from five municipal sources for testing at the one proposed and four existing compressor stations. Water for hydrostatic testing would be withdrawn from November 2010 through October 2011. Kern River has identified hydrostatic test water sources and has estimated the approximate amount of water that would be appropriated from each water source (table 4.3.2-6).

Kern River would also implement dust control measures through watering along the pipeline route, at all compressor stations except the Fillmore Compressor Station, and at pipe and contractor yards. A total of approximately 16,883,000 gallons of water would be required for dust control. Of this total approximately 10,128,000 gallons of water would be withdrawn from two surface water sources for workspaces along the pipeline route and about 1,280,000 gallons of water would withdrawn from two municipal sources for use at the pipe and contractor yards. At the Coyote Creek and Milford Compressor Stations, dust control measures would require approximately three water trucks per day (2,500 gallons/truck). At the Elberta and Dry Lake Compressor Stations, approximately two water trucks per day (2,500 gallons/truck) would be required. Dust control measures would not be required at the Fillmore Compressor Station. All water required for dust control during construction of the compressor stations would be withdrawn from municipal sources. Kern River would obtain all appropriate permits and plan authorizations required prior to conducting any dust control activities. Kern River has identified dust control water sources and has estimated the approximate amount of water that would be appropriated from each water source (table 4.3.2-6).

**TABLE 4.3.2-6
Water Withdrawal Volumes for the Proposed Apex Expansion Project**

Project Component	Begin MP	End MP	Potential Source Water	Hydrostatic Testing Approx. Volume (gallons)	Dust Control Approx. Volume (gallons)
Pipeline	0.0	14.8	East Canyon Creek ^a (Alternative Hardscrabble Creek)	1,496,406 ^b (1,830,639) ^b	-
			East Canyon Reservoir	-	7,200,000
Pipeline	14.8	28.0	Jordan River ^a (Alternative Weber Basin Aqueduct)	1,660,958 (1,660,958)	2,928,000
Coyote Creek CS	N/A	N/A	Municipal source	66,000	1,575,000 ^c
Elberta CS	N/A	N/A	Municipal source	48,000	1,050,000 ^c
Fillmore CS	N/A	N/A	Municipal source	5,000	-
Dry Lake CS	N/A	N/A	Municipal source	40,000	1,050,000 ^c
Milford CS	N/A	N/A	Municipal source	188,000	1,800,000 ^c
Pipe yard	N/A	N/A	Municipal source	-	560,000
Contractor yard	N/A	N/A	Municipal source	-	720,000
			Totals	3,504,364	16,883,000^c

Notes:

N/A = Information is not applicable
CS = Compressor Station
MP = Milepost

^a Kern River would discharge hydrostatic test water to an upland area near the source.

^b If the source is East Canyon Creek, pipe sections 1 and 2 would be filled with 1,496,406 gallons of water and tested; then the water would be transferred to sections 3, 4, and 5. If Hardscrabble Creek is used, pipe sections 4 and 5 would be filled with 1,830,639 gallons of water and tested; then the water would be transferred back to sections 1, 2 and 3.

^c Dust control water volumes for the compressor stations were estimated based on water use throughout the entire construction process. Actual dust control water volumes would likely be less than the estimated volumes.

The withdrawal of large volumes of water from the surface water sources could temporarily affect the recreational and biological uses of the resource if the diversions constitute a large percentage of the source's total flow or volume. Water withdrawals could also result in temporary loss of habitat, change in water temperature and dissolved oxygen levels, and entrainment or impingement of fish or other aquatic organisms. Section 4.6 further discusses the potential impacts from water withdrawals on aquatic species.

One of Kern River's proposed water sources (East Canyon Creek) and one alternative (Hardscrabble Creek) are known to contain aquatic species of special concern. Hardscrabble Creek is also state-designated as high-quality water. Kern River would minimize the potential effects of water withdrawals from surface water and groundwater sources by adhering to the measures in its Procedures. As stated in its Procedures, Kern River would screen intake hoses and regulate the rate of withdrawal of test water to prevent the entrainment of fish and other aquatic organisms. Kern River would acquire the

necessary permits and approvals from state and federal agencies, and obtain or comply with water rights before withdrawing hydrostatic test water from surface water and groundwater sources.

Kern River would test the pipeline in 11 test sections. Upon completion of hydrostatic testing of a segment, the water would either be discharged or transferred to another pipeline segment to be reused for hydrostatic testing purposes. Test water would be discharged within the same eight-digit hydrologic unit code (HUC) watershed from which it was withdrawn. This would prevent the inadvertent transfer of invasive organisms to new watersheds. No chemicals would be used during testing of the pipe. Kern River would discharge the pipeline test water to upland areas within or immediately adjacent to the construction right-of-way at a rate to prevent scour and erosion, and to prevent sediment migration to sensitive resources such as wetlands and waterbodies. Hydrostatic test water from the existing Coyote Creek, Elberta, Fillmore, and Dry Lake Compressor Stations would be disposed of at a local wastewater treatment facility or treated (if necessary) and disposed of on-site. Hydrostatic test water from the Milford Compressor Station would be tested and either released on-site or disposed of at a wastewater treatment facility. All used hydrostatic test water from the compressor stations would be stored in a tank, tested in accordance with state permits, and held until proper disposal or discharge methods are determined and approved. Discharges would be monitored by Environmental Inspectors and compliance monitors, and energy dissipation and erosion control devices would be used to prevent soil erosion and scouring at upland discharge sites. Discharge rates would be controlled to ensure that the discharged flows would not flow above the carrying capacity of the dissipation structure(s).

No long-term impacts on surface waters are anticipated as a result of the proposed Project because designated water uses would not be permanently affected, the pipeline would be installed beneath the bed of all waterbodies, erosion controls would be implemented, and the streambanks and streambed contours would be restored as close as practical to pre-construction conditions.

Operation of the Project would not cause impacts on any surface waters, unless maintenance activities involving pipe excavation and repair in or near streams or wetlands are required. For maintenance activities, Kern River would employ protective measures similar to those proposed for use during construction. As a result, any impacts derived from maintenance would be short term and similar to those discussed above for the initial pipeline construction.

4.3.3 Wetlands

Wetlands are areas that are inundated or saturated with surface water or groundwater at a frequency and duration sufficient to support (and that under normal circumstances do support) a prevalence of vegetation typically adapted for life in saturated soil conditions (Environmental Laboratory 1987). Wetlands in the proposed Project area include salt lakes and associated salt flats, forested wetlands, riparian wetlands, seeps, bogs, fens, and similar areas (COE 2008a, 2008b). The Apex Expansion Project would be located in arid and semi-arid environments, where wetlands account for a very small proportion of the total land surface but perform a number of valuable functions. Among these are flood flow attenuation, sediment retention, nutrient retention, wildlife habitat, groundwater recharge and discharge, recreation, and erosion control.

Section 404 of the CWA established standards to minimize impacts on wetlands under the regulatory jurisdiction of the COE. These standards require avoidance of wetlands where possible and minimization of disturbance where impacts are unavoidable, to the degree practical. Any unavoidable crossings would be subject to review and approval by the Sacramento District of the COE, including the provisions of any required wetland compensatory mitigation.

The soil, hydrology, and vegetation criteria for determining wetland and deepwater habitat areas are described in the COE Wetlands Delineation Manual (Environmental Laboratory 1987). In addition to the 1987 COE Wetlands Delineation Manual, Interim Regional Supplements to the COE manual provide regionally specific standards for wetland classification (COE 2008a, 2008b). The proposed Project falls under the jurisdiction of the Interim Regional Supplement to the COE Manual: Western Mountains, Valleys, and Coast Region (COE 2008b) and the Interim Regional Supplement to the COE Manual: Arid West Region (COE 2008a).

4.3.3.1 Existing Environment

The Apex Expansion Project would be located within two arid to semi-arid ecoregions: the Central Basin and Range as well as the Wasatch and Uinta Mountain Ecoregions (EPA 2002). The Central Basin and Range ecoregion contains scattered mountains, salt flats, and extremely dry basins. The Wasatch and Uinta Mountain ecoregion contains high, sheer mountains and valleys. Plant distributions are influenced by the varying elevations within this ecoregion.

Kern River conducted wetland delineations during spring and summer 2009 in accordance with the 1987 COE Manual, the Interim Regional Supplement to the USACE Manual: Western Mountains, Valleys, and Coast Region (COE 2008b) and the Interim Regional Supplement to the COE Manual: Arid West Region (COE 2008a). Prior to field surveys, aerial photographs and map data from the NWI were used by Kern River to identify potential wetland locations in the area of the proposed Project. Kern River also conducted wetland delineation surveys in the area of the proposed Milford Compressor Station, for which NWI data are not available. Wetland surveys at the four existing compressor stations were not necessary since the proposed modification would occur within previously disturbed fence lines which do not contain wetlands.

The proposed pipeline route would affect five wetlands for a combined linear crossing distance of approximately 2,027 feet and a total impact area of 6.0 acres. The temporary impact of proposed pipeline construction would total 2.7 acres within the temporary work spaces, 0.9 acres within the ATWS, and 2.4 acres within the permanent right-of-way. The results of field surveys by Kern River show that there are sensitive wetland resources in the proposed Project area, including a sensitive seep wetland located between MP 19.0 and 19.2. However, Kern River has re-routed the proposed pipeline in this area to avoid impacts on seeps. Table 4.3.3-1 provides a summary of the wetlands crossed by the proposed Project and includes the location, wetland classification, crossing length, and acreage for each wetland that would be affected by construction and operation of the Apex Expansion Project.

No new access roads are proposed by Kern River in wetlands and no wetlands would sustain impacts at any of the existing aboveground facility locations or as a result of construction of the new Milford Compressor Station. Therefore, no impacts on wetlands are expected as a result of aboveground facility and road construction.

**TABLE 4.3.3-1
Wetlands Affected by the Proposed Apex Expansion Project**

Begin Milepost	End Milepost	Wetland Classification^a	Centerline Crossing Length (feet)	Acreage within TWS	Acreage within ATWS	Wetlands in the Permanent Right-of-Way (acres)^b	Total Temporary Wetland Impacts (acres)^c
0.5	0.6	PEM	10.3	<0.1	0.0	<0.1	0.1
5.2	5.4	PFO	32.6	0.2	0.4	0.1	0.6
14.6	14.7	PSS	0.0	0.2	0.0	0.0	0.2
20.4	20.5	PSS	107.2	0.2	0.0	0.1	0.3
26.4	26.9	PEM	1,876.7	2.2	0.5	2.2	4.9
		Total PEM	1,887.0	2.2	0.5	2.2	4.9
		Total PSS	107.2	0.3	0.0	0.1	0.5
		Total PFO	32.6	0.2	0.4	0.1	0.6
		Total	2,026.8	2.7	0.9	2.4	6.0

Notes:

^a Wetland Types:

- PEM = Palustrine emergent
- PSS = Palustrine scrub-shrub
- PFO = Palustrine forested

^b Wetland acreages affected by the permanent right-of-way are those that are within the 50-foot-wide permanent right-of-way.

^c Temporary impacts include wetlands within the construction right-of-way, temporary workspaces (TWSs), additional temporary workspaces (ATWS), and staging areas.

Wetlands identified in the proposed Project area include palustrine emergent wetlands (PEM), palustrine scrub-shrub wetlands (PSS), and palustrine forested wetlands (PFO). Palustrine emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens (Cowardin et al. 1979). The results of field surveys conducted by Kern River include the common species and dominant vegetation in PEM wetlands in the proposed Project area, which include sedges, Baltic rush, Solomon's seal, and scouringrush horsetail. The effects of pipeline construction in PEM wetlands would be considered temporary due to the rapid reestablishment of herbaceous vegetation. No alteration of hydrology is anticipated and topsoil segregation would be implemented. Vegetation in PEM wetlands would be expected to return to a pre-construction state within 1 to 3 years.

PSS wetlands include all wetlands dominated by woody vegetation less than 20 feet tall (Cowardin et al. 1979). Results from field surveys indicate that the dominant vegetation in these wetlands includes willow, red osier dogwood, and Utah honeysuckle. The regeneration time for PSS wetlands to return to pre-construction conditions is expected to be within 3 to 5 years, and would take longer than the regeneration time for PEM wetlands.

Palustrine forested wetlands include wetlands dominated by woody vegetation that is at least 20 feet tall (Cowardin et al. 1979). Field surveys indicate that palustrine forested wetlands in the Project area are dominated by bigtooth maple, curl-leaf mountain mahogany, and narrowleaf cottonwood, in addition to herbaceous plants and shrubs. The regeneration time for palustrine forested wetlands is expected to take up to 30 years or longer.

4.3.3.2 Potential Wetland Impacts

For projects where wetland impacts are proposed, the COE requires that all appropriate and practicable actions be taken to avoid and minimize those impacts, pursuant to its Section 404(b)(1) guidelines. In the semi-arid environment of the Project area, where wetlands comprise a very small percentage of the overall landscape, wetland impacts are of heightened concern-especially if they are not restored appropriately following construction.

All wetland crossings would be subject to review by the COE to ensure that wetland impacts are fully identified and that appropriate wetland restoration and mitigation measures are implemented. Kern River would also comply with all conditions of the Section 404 authorizations that may be issued by the COE.

Section 2.3.2 describes the specialized pipeline construction procedures that Kern River would implement to limit impacts on wetlands. Temporary impacts during construction activities have the potential to diminish the aesthetic value of wetlands through clearing, trenching, spoil placement, vehicle traffic, and related construction disturbances. Pipeline construction within wetland boundaries may also affect wetland structure and function by altering wetland hydrology, vegetation communities, and soil conditions. Vegetation removal and soil disturbance could alter the capability of a wetland to control sediment, aid surface water flow, and attenuate floodwaters. Temporary loss of fish and wildlife habitat and changes in species composition could result from removing wetland vegetation during pipeline construction. Soils and wetland vegetation could be contaminated by spills of construction-related fluids such as fuels, solvents and lubricants. Trenching or blasting through impervious soil layers could impact hydrology by changing soil drainage patterns, thereby altering wetland function. Alteration of wetland soil characteristics as a result of unsuccessful topsoil segregation from the trench could have negative a negative impact on the reestablishment of native hydrophytic vegetation. Compaction of wetland soils and rutting due to a failure to use appropriate equipment mats and low-ground-pressure equipment may inhibit seed germination or the re-colonization and establishment of hydrophytic plant species.

Disturbance of surface soils as a result of construction could result in the deposition of sediments in wetlands and could alter the physical and chemical properties of wetland soils.

In both PEM and PSS wetlands, Kern River would minimize construction impacts according to their Procedures by implementing erosion and sedimentation controls, separating topsoil in unsaturated wetlands, providing cross-drainage during construction and installing of trench plugs at wetland entrances and exits to maintain hydrology, returning contours and topography to pre-construction levels, and implementing and monitoring revegetation efforts.

In wetlands crossed by the pipeline, Kern River's Procedures would allow a 10-foot-wide strip centered over the pipeline to be maintained in an herbaceous state to allow for surveys of pipeline integrity. Additionally, trees may be removed from the permanent right-of-way if they are greater than 15 feet in height and within 15 feet of the pipeline. As stated in Kern River's Procedures, all PSS wetlands would be allowed to regenerate to scrub-shrub cover, including PSS wetland areas within the permanent right-of-way. However, the maintenance of this 10-foot-wide herbaceous corridor would prevent the growth of forested species, thereby resulting in a permanent conversion from forested vegetation to herbaceous vegetation in one area crossed by the permanent right-of-way. This habitat conversion could permanently modify the function of this wetland area as, for example, wildlife habitat. While the transformation of PFO wetlands into PEM and PSS wetlands would not constitute a loss of total wetland area, it does represent a long-term impact and a permanent conversion from forested wetland function.

Kern River does not anticipate that blasting in the vicinity of identified wetlands would be required. However, Kern River has submitted a Blasting Plan to ensure safety during blasting.

PacifiCorp Electrical Distribution Line

No wetlands were discovered during surveys conducted along the route of the PacifiCorp Electrical Distribution Line; therefore construction and operation of the electrical distribution line would have no impact on wetlands.

4.3.3.3 Wetland Construction and Mitigation Procedures

Kern River's Procedures include measures for mitigation of construction impacts on wetlands. These mitigation measures would be implemented to minimize wetland impacts by reducing the duration and total area of disturbance, by minimizing the amount of soil disturbance, and by applying wetland restoration measures after pipeline installation. Kern River's Procedures incorporate the requirements of our Procedures, and include site-specific variations. The applicable sections of our Procedures and Kern River's associated variations, are described in table 4.3.3-2.

TABLE 4.3.3-2
Summary of Proposed Alternative Construction Measures for the
Proposed Apex Expansion Project

Milepost	Applicable FERC Procedure Section	Basis for Alternative Measures	Conclusion and Approval Status
0.5	VI.A.3	Kern River proposes to utilize a 100-foot-wide construction right-of-way in this wetland due to the steep (38%) grade of the land.	Approved
5.2	VI.A.3	Kern River proposes to utilize a 100-foot-wide construction right-of-way in this wetland because of the constraints resulting from proximity to the Highway 66 embankment.	Approved
14.7	VI.A.3	Kern River proposes to utilize a 100-foot-wide construction right-of-way in this wetland because the workspace is near the base of a steep incline.	Approved
20.4	VI.A.3	Kern River proposes to utilize a 100-foot-wide construction right-of-way in this wetland because of the proximity of the wetland to the Mill Creek crossing and topographical constraints resulting from steep inclines along the crossing area.	Approved
26.4	VI.A.3	Kern River proposes to utilize a 100-foot-wide construction right-of-way in this wetland because soils are expected to be saturated and would require a larger area for storage.	Denied
5.2	VI.B.1.a	Kern River proposes to locate ATWS within the wetland beginning at MP 5.2 to allow for the additional space needed to cross East Canyon Creek and the existing Kern River mainline.	Approved
14.6	VI.B.1.a	Kern River proposes to locate ATWS within the wetland beginning at MP 14.6 to allow for the additional space needed to avoid a mature treeline on the west side of the proposed right-of-way.	Approved
20.4	VI.B.1.a	Kern River proposes to locate ATWS within 50 feet of the wetland beginning at MP 20.4 to allow for the additional space necessary to cross North Canyon Creek.	Approved
26.4	VI.B.1.a	Kern River proposes to locate ATWS within the wetland beginning at MP 26.8 to allow the necessary workspace for bored crossings of Redwood Road and the Northwest Oil Drain.	Approved

Pursuant to our Procedures, the construction right-of-way in a wetland should be limited to 75 feet or less. However, Kern River proposes to allow for a construction right-of-way width of up to 100 feet in wetlands. Kern River has provided sufficient justification for utilizing a 100-foot-wide construction right-of-way for four of five wetland areas (MPs 0.5, 5.2, 14.6, and 20.4). These wetland crossings and workspaces are constrained by steep inclines and, in the wetland at MP 5.2, the Highway 66 embankment. For one wetland, located at MP 26.4, Kern River proposes to use a 100-foot-wide right-of-way due to the presence of saturated soils that would require additional workspace for storage. Because soil saturation is variable with precipitation and other hydrologic factors, it is possible that the soil would not be saturated at the time of construction. Therefore, **we recommend that:**

- **Kern River limit the construction right-of-way width in the wetland at MP 26.4 to 75 feet unless Kern River files evidence that the soil conditions within this wetland at the time of construction warrant a wider right-of-way, and Kern River receives written approval from the Director of OEP to expand the construction right-of-way.**

Kern River is also proposing to utilize ATWS in three wetlands and one area within 50 feet of a wetland which are site-specific variations to our Procedures. After evaluation of these deviations, we have determined that Kern River has provided adequate justification for the area where ATWS would be located within 50 feet of wetlands (MP 20.4), and for the use of ATWS within the wetlands located at MPs 5.2 and 14.6. Topographic constraints in these areas necessitate the use of workspace in and near wetland areas. Kern River has also provided sufficient justification for the proposed ATWS within the wetland where workspace is required for the bored crossings of the Northwest Oil Drain and Redwood Road (located between MP 26.4 and 26.9). The specific wetland areas where Kern River proposes to use alternative construction measures are found in table 4.3.3-2. During construction in and near wetland areas, Kern River would adhere to the wetland protection and remediation measures outlined in its Procedures.

Further wetland mitigation and restoration measures included in Kern River's Procedures are as follows:

- limit clearing of vegetation to the certified construction right-of-way in wetland areas;
- utilize the construction right-of-way for access only when it has been appropriately stabilized or when wetland soil is firm enough to avoid rutting;
- restrict access to construction equipment necessary to install the pipeline where appropriate wetland stabilization is not feasible;
- limit access to wetland areas using only existing roads or the construction right-of-way;
- where possible, utilize "push-pull" or "float" crossing techniques;
- in non-saturated wetlands, segregate topsoil excavated from the trench;
- restrict construction equipment within wetlands to that necessary to clear the right-of-way, dig the trench, fabricate and install the pipeline, backfill, and restore the site;
- minimize disturbance of root structure by leaving existing root systems intact;
- constrain grading to the trenchline except when necessary to maintain safety;
- utilize temporary sediment controls, including sediment barriers;
- construct trench breakers or seal the trench bottom at wetland boundaries to preserve original wetland hydrology and avoid draining wetlands;
- develop a Project-specific wetland restoration plan in coordination with appropriate state or land management agencies; and
- limit vegetation maintenance of the permanent right-of-way to a 10-foot-wide corridor centered over the pipeline and trees greater than 15 feet in height within 15 feet of the pipeline.

4.3.3.4 Wetland Restoration

Kern River's Procedures include stipulations to facilitate the revegetation of disturbed areas with appropriate wetland herbaceous and woody plant species. For example, herbicide and pesticide use would be prohibited within 100 feet of a wetland unless dictated by the appropriate state or land management agency. As stated in Kern River's Procedures, Kern River would monitor wetland revegetation for the first 3 years following construction, and wetland revegetation would be considered successful if the cover of herbaceous and/or woody species is at least 80 percent of the cover type, density, and distribution of the vegetation in adjacent wetland areas not disturbed by construction. If the success criteria were met in 3 years, monitoring would cease. Should the success criteria not meet requirements after 3 years, a remedial revegetation plan would be implemented to actively revegetate wetlands as required, and monitoring would continue. The revegetation efforts would continue until the success criteria are met.

The dry climate in the western United States has historically made pipeline right-of-way restoration of wetlands challenging. In a study of wetland recovery in post-construction pipeline rights-of-way, over two-thirds of the wetlands studied in the Temperate Steppe eco-division defined by the FERC and the USFS, which encompasses the proposed Project, failed to satisfy the success criteria in the FERC Procedures following pipeline construction (FERC 2004). The primary criterion failing the wetland restoration requirement was that less than 80 percent of native species cover was present in disturbed wetlands after 3 years. The cover requirement was not met in the Temperate Steppe eco-division primarily because (a) clay soils supporting perched water tables were not restored, leading to a lowered water table; and (b) drought conditions and human disturbance limited vegetative success (FERC 2004). Given this low success rate for wetland restoration in the western United States, Kern River has developed a draft Wetland Remedial Revegetation Plan (Appendix K). Kern River's Wetland Remedial Revegetation Plan outlines proposed mitigation measures that Kern River would implement if disturbed wetlands do not successfully recover. Examples of the proposed mitigation measures include: installing fencing to prevent livestock and wildlife grazing, decompacting soil, reseeding, and/or implementing noxious weed control measures as outlined in Kern River's Noxious Weed Control Plan.

Kern River would be required to comply with state-issued Section 401 water quality certifications or waivers and the COE's Section 404 permit conditions, as well as the mitigation measures described above. By complying with federal and state permit conditions, as well as implementing the restoration and mitigation measures outlined in Kern River's Plan and Procedures, significant adverse impacts on wetlands are not anticipated as a result of the proposed Project.

4.3.3.5 Wetlands of Special Concern or Value

One wetland is located within the Lazy H. Ranch Cooperative Wildlife Management Unit, an area of privately held land which contains a diverse suite of habitat types, including wetlands, and is used for fishing and big-game hunting. A more detailed assessment of the impacts of the proposed Project to the Lazy H. Ranch Cooperative Wildlife Management Unit special use area is provided in section 4.8.3.

4.4 VEGETATION

The proposed Apex Expansion Project, except for the existing Coyote Creek Compressor Station, is located within two physiographic provinces in Utah and Nevada: the Middle Rocky Mountains physiographic province (MP 0.0 to 19.0) noted for dissected mountainous terrain with alluvial basins, and the Basin and Range physiographic province (MP 19.0 to 28.0) which is noted for alternating north-south aligned basins and mountain ranges. The existing Coyote Creek Compressor Station is located within the

Wyoming Basin physiographic province, which has predominantly sandstone and limestone sedimentary layers with low to moderate relief.

Vegetation growth in the Project area is constrained by water availability both annually during late summer and episodically during multi-year droughts. Vegetation communities are developed in response to elevation, aspect, exposure to wind, and snowpack development, and have marked transitional areas where environmental factors change abruptly.

4.4.1 Vegetation Resources

The Project would cross eight vegetation cover types: Great Basin sagebrush, mountain mahogany-oak scrub, Douglas fir, riparian canyon woodlands, open grassland, saline-alkaline wetlands, improved pasture, and industrial/disturbed lands.

The Great Basin sagebrush cover type includes sagebrush, horsebrush, rabbitbrush, hopsage, saltbush, Mormon tea, winterfat, and numerous species of grasses and forbs.

The mountain mahogany – oak scrub cover type occurs in the lower slopes of the Wasatch range where Gambel oak stands include curl leaf mountain mahogany, maple, serviceberry, and snowberry.

The Douglas fir cover type occurs at higher elevations where it can form dense mature-growth forests and transitions to other cover types while occurring with lodgepole pine, white fir, and blue spruce. The understory often includes barberry, snowberry, fringepod, and some grasses and forbs.

Riparian and canyon woodlands occur adjacent to streams and watercourses, and include willows, mountain alder, narrowleaf cottonwood, water birch, and box elder in upland areas. In riparian areas, species composition includes sandbar willow, Fremont cottonwood, Russian olive, and tamarisk.

Open grassland includes tallgrass and shortgrass prairies and meadows often dominated by wheatgrass, bunchgrasses, and bluegrass.

Improved pastures are areas where woody (often shrub) vegetation has been removed and seeding of grasses (often non-native) has occurred. These areas are often used for livestock grazing and vary in their intensity of disturbance from grazing pressure.

Saline-alkaline wetlands occur in topographically flat areas where the soil has high salt content and the water table fluctuates frequently at a level near the surface. The vegetation is salt-loving (halophytic) and, depending on the salt content, varies even within a wetland from higher to lower salt-tolerant species depending on the water quality. Typical vegetation includes saltgrass, iodine bush, and greasewood. Wetlands are further discussed in section 4.3.3.

Industrial/disturbed lands are areas where human use has largely eliminated native vegetation or reduced vegetation to only disturbance-tolerant herbaceous species or planted species. These areas may have gravel, asphalt, or concrete that is partly overgrown from historical use and abandonment, or may currently be in use with structures, roads, paths, lawns, or other maintained uses present.

The vegetation composition of the proposed construction right-of-way, ATWSs, aboveground facilities, and pipe storage/contractor yards is provided in table 4.4.1-1.

TABLE 4.4.1-1 Acreages of Vegetation Types Impacted by Construction Activities for the Proposed Apex Expansion Project		
Vegetation Type	Acres Temporarily Impacted	Acres Permanently Impacted
Great Basin sagebrush	36.0	65.3 ^a
Mountain mahogany – oak scrub	119.3	87.1
Improved pasture	77.9	7.9
Douglas fir forest	24.1	19.3
Riparian and canyon woodlands	1.7	0.9
Open grasslands	10.4	8.5
Saline-alkaline wetlands	4.2	3.6
Industrial/disturbed lands	128.2	10.1
Total	401.9	202.7
<hr/>		
Note:		
^a 33.2 acres of Great Basin sagebrush would be permanently impacted at the proposed Milford Compressor Station.		

The pipeline route, including ATWSs, pig launchers/receivers, contractor and pipe yards, and MLV sites, would impact approximately 401.9 acres during construction and approximately 202.7 acres during operations of the proposed Project. Two MLVs would be located along the proposed pipeline route at MPs 7.1 (within improved pasture) and 24.6 (within open grassland). Both valves would be located entirely within the permanent right-of-way. The Milford Compressor Station site is within the Great Basin sagebrush cover type, but in an area where woody vegetation is present but very sparse due to grazing pressure. The Milford Compressor Station would contain two MLVs, two pig launchers, and two pig receivers and would permanently impact 33.2 acres of land. The vegetation at the compressor station site is predominantly cheatgrass and sand dropseed, with some broom snakeweed, Mormon tea, rabbitbrush, crested wheatgrass, and common yarrow.

The proposed upgrades to four of Kern River's existing compressor stations (Coyote Creek, Elberta, Fillmore, and Dry Lake) would involve disturbance within existing facility fence lines. These existing compressor stations are all industrial/disturbed lands, and no other vegetation cover types would be affected.

Kern River has identified five pipe yards and four contractor yards that could be used to support construction. Kern River has stated that it anticipates ultimately using only four yards rather than all nine for construction. The proposed nine yards total 176.2 acres, including 112.6 acres of developed lands and 63.6 acres of agricultural lands. All yards are proposed for temporary use, and would be restored to pre-construction cover in accordance with Kern River's Reclamation Plan.

Kern River would use 37 existing access roads and would construct one new temporary access road for construction of the Project. Existing access roads would be improved where required in order to support transport of construction equipment and materials. The new temporary access road would be constructed at MP 27.5; and would disturb approximately 0.1 acre of land.

PacifiCorp Electrical Distribution Line

The vegetation along the PacifiCorp electrical distribution line corridor is predominantly cheatgrass and sand dropseed, with some broom snakeweed, Mormon tea, rabbitbrush, crested wheatgrass, and common yarrow.

4.4.2 Vegetation Communities of Special Concern

Although no Conservation Reserve Program (CRP) lands or FWS-designated critical habitat are located within the proposed Apex Expansion Project area, regulatory agencies (the USFS, Utah Division of Wildlife Resources [UDWR], and the FWS) identified three vegetation communities of special concern: Douglas fir forest, Great Basin sagebrush, and riparian areas. Douglas fir forest within the UWCNF is of concern because it is the primary habitat for the northern goshawk (see section 3.7). Great Basin sagebrush was identified because of its value to greater sage-grouse and pygmy rabbit. Riparian zones are areas adjacent to creeks and rivers with vegetation that is dependent on increased soil moisture and a higher water table. Riparian areas are an important component for protection of stream water quality and healthy biologic function in the immediate area and downstream.

Existing access roads occur near Great Basin sagebrush and Douglas fir forest sensitive vegetation communities. Great Basin sagebrush occurs along approximately 9 miles of proposed access roads. Kern River would disturb 1-foot on either side of the existing roads through this community. The area immediately on either side of a road serves as a transition area; therefore, impacts on Great Basin sagebrush would not be expected. Douglas fir forest occurs along approximately 3 miles of proposed access roads. Approximately 2.6 miles would not be widened and therefore would not impact Douglas fir communities. The additional 0.5 mile would be widened, but activities would be limited to tree branch trimming rather than removal.

4.4.3 Noxious Weeds

Construction of the proposed Project has the potential to introduce noxious weeds to disturbed areas. Under the Federal Plant Protection Act of 2000, a “noxious weed” is defined as “any plant or plant product that can directly or indirectly injure or cause damage to crops, livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health, or the environment.” Under the Utah Noxious Weed Act, three categories of noxious weeds are identified in the state: Class A (Early Detection Rapid Response), Class B (Control), and Class C (Containment).

Kern River conducted noxious weed surveys in 2009 and found six species of noxious weeds within the proposed Project area. Kern River’s surveys identified two Class A species: leafy spurge and yellow starthistle; three Class B weeds: hoary cress, Dalmatian toadflax, and Scotch thistle; and one Class C weed: houndstongue. See section 4.4.5.2 for more information on Kern River’s proposed mitigation measures as outlined in its Noxious Weed Control Plan.

4.4.4 Vegetation Pathogens

Douglas fir beetle and the fir engraver potentially exist along the proposed pipeline route. Both species are beetles which infest and kill weak or felled Douglas fir trees. Douglas fir trees are also

susceptible to root rot. Kern River's proposed mitigation measures for vegetation pathogens are discussed below in section 4.4.5.1.

4.4.5 Vegetation Impacts and Mitigation

The primary impacts on vegetation from the Apex Expansion Project would be the clearing and removal of vegetation that would occur within the proposed 100-foot-wide construction right-of-way, in the ATWSs, at the proposed Milford Compressor Station, and in areas where road widening is proposed. The severity of impacts would depend on the type of vegetation impacted, the size of the area cleared, the time required for vegetation to become re-established, and any subsequent maintenance practices in cleared areas. Following construction, all affected areas outside of the aboveground facility sites would be restored and allowed to revert to their former vegetative cover type.

The permanent 50-foot-wide right-of-way would be maintained in an herbaceous and low-growth woody vegetation state. During operation, the entire width of the permanent right-of-way would be mowed up to once every 3 years. In addition, annual mowing may be conducted along a 10-foot-wide corridor centered over the pipeline to facilitate inspection. In no case would routine vegetation maintenance clearing occur between April 15 and August 1 of any year. It is not expected that mowing would be required on grasslands or rangelands, within open lands, or on agricultural lands; however, maintenance of the permanent pipeline right-of-way may limit restoration of sagebrush and forested habitat.

The cutting or removal of vegetation during construction could lead to increased soil erosion, an increase in invasive or exotic plant species, and a reduction in wildlife habitat. Clearing and construction activities along the pipeline right-of-way and associated facilities also could result in soil compaction. Additionally, heavy machinery could damage riparian vegetation associated with waterbodies, whether the equipment is moving or parked for extended periods.

The use of all-terrain vehicles (ATVs) and off-highway vehicles (OHVs) along the right-of-way could result in impacts on vegetation. Kern River has developed an ATV and OHV Barrier Plan which contains measures to create new ATV/OHV barriers to prevent access to the right-of-way. Additional discussion is provided in section 4.8.3.

Most impacts on agricultural lands would be short-term, as these areas are disturbed annually to produce crops and would typically return to their previous condition shortly following construction, cleanup, and restoration. Lands currently dominated by herbaceous growth may revegetate quickly or may require more than 1 year, depending on a number of factors. The most important of these is probably the resumption of normal hydrologic inputs (such as precipitation, streamflow, or groundwater discharge) following restoration and planting of the right-of-way. While many of the factors affecting revegetation can be optimized for success, the resumption of normal hydrologic inputs is a necessary but uncertain one. Grazing and compaction by livestock also may slow revegetation of areas affected by construction.

Lands with scrub-shrub vegetation that would be cleared during construction would likely require 3 to 10 years to regain their woody composition and may require decades to develop a mature seral stage (Knight 1994). Forested lands that are cleared would require decades to be restored. Areas of scrub-shrub may be affected on a longer-term basis; sagebrush would require more time to recover following disturbance due to its slow growth rate and long lifespan (NRCS 2009).

The clearing of forested lands represents the largest impact due to the pronounced change in appearance, structure, and function; mature trees would be replaced by earlier successional stage species and would require decades to be restored. During operation of the pipeline, trees would not be allowed to

grow over a 10-foot-wide corridor over the pipeline, resulting in a permanent conversion of cover type in that area to an herbaceous state.

To minimize construction-related effects, Kern River would implement its Plan, which is based largely on our Plan with modifications as discussed in section 4.2. The intent of Kern River's Plan is to identify baseline mitigation measures for minimizing erosion and enhancing revegetation in upland areas. Implementation of Kern River's Plan would aid in restoration. Some of the restoration and best management practices identified in Kern River's Plan include the following:

- employment of at least one Environmental Inspector for the proposed Wasatch Loop, who would ensure compliance with the Plan, Procedures, and other required conditions;
- segregation of topsoil in specific areas from the 100-foot-wide corridor consisting of the trench, the working side of the construction right-of-way, and a portion of the spoil side of the construction right-of-way;
- installation of temporary erosion control measures, such as slope breakers, sediment barriers, and mulch;
- commencement of cleanup immediately after backfilling and completion of restoration generally within 20 days;
- installation of permanent erosion control devices, such as trench breakers and slope breakers;
- revegetation in accordance with the recommendations of the BLM and the USFS, the local soil conservation authority, other land management agencies, and the affected landowners;
- placement of barriers to control off-road vehicle activities; and
- post-construction monitoring, maintenance, and reporting results of revegetated areas.

Kern River developed the seedbed preparation procedures, seed mixtures, seeding rates, and seeding methods outlined in its Reclamation Plan in coordination with the USFS, the BLM, the UDWR, and the NRCS. Kern River would continue to coordinate with these agencies in order to stay apprised of specific information that would increase vegetation recovery. Kern River proposes to conduct final seedbed preparation, seeding, and planting in September and October of 2011.

The FERC would continue to monitor post-construction revegetation until vegetation is at least 80 percent of the type, density, and distribution of vegetation in adjacent undisturbed areas. The USFS may require additional monitoring on USFS-managed lands.

Kern River has sited the proposed route along existing easements to the extent possible, including the existing Kern River mainline, and has minimized the construction right-of-way and ATWSs to that necessary for safe construction. This strategy minimizes impacts on vegetation resources in areas traversed by the proposed Project. Construction activities would comply with the Kern River Plan. Furthermore, Kern River's Reclamation Plan and Noxious Weed Control Plan have been developed in order to restore native vegetation to the right-of-way and other construction areas, and to minimize the potential spread of any noxious weeds that occur in the Project vicinity.

PacifiCorp Electrical Distribution Line

Potential impacts on vegetation associated with the construction of the PacifiCorp Electrical Distribution Line are expected to be minimal. The 23 single wood pole structures would be installed using a rubber tire line truck-mounted auger. Once the pole structures are set in place, the space

surrounding the poles would be backfilled. No vegetation clearing or contorting would be necessary based on the flat topography of the area. The work area for each pole would be reclaimed and seeded, if determined necessary, with a BLM-approved reclamation plan. Access for the electrical distribution line would be via the existing Imperial Road.

4.4.5.1 Impacts on Vegetation Communities of Special Concern

Great Basin sagebrush areas and Douglas fir forests would be temporarily impacted during construction of the 100-foot-wide right-of-way for the proposed pipeline, and by ATWSs. The permanent 50-foot-wide right-of-way for the pipeline would be converted to grassland through the mowing anticipated to occur every 3 years in Great Basin sagebrush, but Douglas fir forests trees would be allowed to revegetate to within 10 feet of the pipeline centerline. The loss of these two habitat types along the right-of-way would introduce increased fragmentation to the landscape where greenfield routing is proposed. In areas where the proposed pipeline parallels an existing right-of-way, the existing grassland area would be widened. Great Basin sagebrush and Douglas fir forests are important communities for wildlife (section 4.5), and the loss of these habitats could introduce habitat edges into their communities.

The riparian areas would be cleared of vegetation within the construction right-of-way width of 100 feet, and the permanent width of cleared riparian vegetation would be 20 feet wide centered over the pipeline. Any trees within 15 feet of the pipeline and over 15 feet in height may be removed from the permanent right-of-way. Natural revegetation would be allowed to occur within 25 feet of the high-water mark on each side of each waterbody crossed, although woody vegetation over 15 feet high and within 15 feet of the pipeline would still be removed.

As stated in section 4.4.4, Douglas fir trees along the proposed pipeline route could be impacted by various vegetative pathogens such as Douglas fir beetles, fir engraver, and root rot. To prevent the spread of Douglas fir beetle and fir engraver, Kern River's Environmental Inspectors would identify beetle-infested areas prior to construction, and Kern River would grind, chip, or bury felled Douglas fir trees or remove the bark from the trees and leave the downed woody portion. In order to minimize the spread of root rot, the Environmental Inspectors would document root rot sites prior to construction, and Kern River would apply dry borax to freshly cut tree stumps and wounds of inflicted trees. Kern River proposes to plant areas infested with root rot with resistant conifer species such as native cedars, pines, and spruces.

4.4.5.2 Noxious and Invasive Weeds

Noxious and invasive weeds within the construction workspace would be eradicated and replaced with appropriate native vegetation following construction. Areas of concern identified by land management agencies would be controlled for weed species. Kern River would conduct restoration of disturbed areas in accordance with its Plan and Noxious Weed Control Plan.

Kern River would adhere to construction procedures that would ensure that vehicles arrive at work sites weed free each day. Following construction, Kern River would monitor and treat occurrences of noxious and invasive weed infestations on the construction right-of-way and ATWSs for 3 years, or until self-sustaining native vegetation communities have been re-established.

4.4.6 Operation Impacts

Inspection and maintenance of the pipeline would be conducted regularly. Periodically, the pipeline inspection results could identify areas where replacement of pipeline segments would be

required. At these locations, the pipeline would be excavated, and each excavated site would be restored to grade and revegetated with native species in accordance with Kern River’s Plan and the landowner’s preference for seed mixtures.

4.5 WILDLIFE

4.5.1 Wildlife Resources

The proposed Apex Expansion Project area is inhabited by a diversity of animal taxa, including large and small mammals, raptors, waterfowl, game birds, non-game birds, reptiles, and amphibians. Wildlife species common to the Project area are included in table 4.5.1-1. Information is also provided for sensitive resources in the Project area, including big game, raptors, and migratory birds. The dominant vegetative cover types are discussed in section 4.4.

TABLE 4.5.1-1 Common Representative Wildlife Species That Potentially Occur in the Proposed Apex Expansion Project Area		
Mammals		
American badger	Least chipmunk	Pronghorn
Bats	Moose	Red squirrel
Coyote	Mule deer	Sagebrush vole
Elk	Northern flying squirrel	Uinta ground squirrel
Gray fox	Northern raccoon	White-tailed jackrabbit
Great Basin pocket mouse	Porcupine	
Birds		
American avocet	Ducks	Red-napped sapsucker
American goldfinch	Gray catbird	Red-tailed hawk
American robin	Gray jay	Sage sparrow
Bald eagle	Green-tailed towhee	Sage grouse
Black-bellied plover	Hermit thrush	Sage thrasher
Black-billed magpie	Ferruginous hawk	Song sparrow
Black-necked stilt	Killdeer	Spotted towhee
Brewer’s sparrow	Lazuli bunting	Steller’s jay
Broad-tailed hummingbird	Least sandpiper	Swainson’s hawk
Burrowing owl	Long-billed curlew	Vesper sparrow

TABLE 4.5.1-1 (continued)
Common Representative Wildlife Species That Potentially Occur in the
Proposed Apex Expansion Project Area

Birds (continued)

California quail	Mountain bluebird	Warbling
Canada goose	Mourning dove	Western kingbird
Cedar waxwing	Northern flicker	Western meadowlark
Chukar	Olive-sided flycatcher	Western tanager
Clark's nutcracker	Orange-crowned warbler	Willet
Common nighthawk	Plumbeous vireo	Yellow warbler
Dark-eyed junco	Red-breasted nuthatch	

Reptiles and Amphibians

Great Basin gophersnake	Sagebrush lizard	Western fence lizard
Great Basin spadefoot	Striped whipsnake	Woodhouse's toad
Northern sideblotched lizard	Tiger salamander	
Racer	Wandering gartersnake	

Note:

The species listed in this table are considered to be representative, common species that are likely to occur in the area of the proposed Project; additional species may be encountered.

The wildlife habitats in the Project area include Douglas fir forest, mountain mahogany-oak scrub, Great Basin sagebrush, riparian and canyon woodlands, open grassland, saline-alkaline wetlands, improved pasture, and developed lands (see section 4.4). The predominant wildlife habitats in the Project area are mountain mahogany-oak scrub, Great Basin sagebrush, and Douglas fir forest. These habitats provide local wildlife with areas for foraging, cover, and breeding. Although they comprise a relatively small proportion of the Project area, riparian areas adjacent to waterbodies crossed by the proposed Project route are an important wildlife habitat and are discussed in section 4.5.2.2. In addition to these general habitat types, the Project would cross through the East Canyon Wildlife Management Area (WMA) and the UWCNF, both of which are considered conservation lands and support quality wildlife habitat.

4.5.2 Wildlife Construction Impacts and Mitigation

Construction of the Apex Expansion Project, including the construction right-of-way, ATWSs, and pipe storage/contractor yards would temporarily disturb 604.6 acres. Impacts on vegetation are discussed in section 4.4.

The impact of the Project on wildlife species and their habitats would vary depending on the life history of each species and the habitat present along the pipeline route. During construction, more mobile species would be temporarily displaced from the construction right-of-way and surrounding areas to similar habitat nearby. Some wildlife displaced from the right-of-way would return to the newly disturbed area and adjacent, undisturbed habitats after completion of construction. Less mobile species, such as small mammals, reptiles, amphibians, and nesting birds, may experience direct mortality or permanent displacement. Displacement of species could lead to increased competition for the same resources. Potential impacts on wildlife could result from clearing of vegetation; alteration of the landscape from scraping the ground, soil disturbance, and recontouring; blasting; deposition of trash and debris; use of chemicals and herbicides; conflicts with vehicles; human presence; activities associated with trenching; increased predation; and edge effects and habitat fragmentation.

Clearing of vegetation on the construction right-of-way and ATWSs would reduce cover, foraging, breeding, and nesting habitat for some wildlife. The degree of impact would depend on the type of habitat affected, the timing of clearing and construction activities, and the rate at which the area recovers after disturbance from construction. Seasonal habitat use is discussed for big game species and migratory birds in sections 4.5.3 and 4.5.4, respectively. The effect on species that rely on open land habitats such as open grassland and improved pasture would be short term, as the area would be reseeded during the growing season following pipeline installation and habitat would be expected to recover within approximately 1 to 3 years following disturbance. Areas of scrub-shrub may be affected on a longer-term basis, as sagebrush would require more time to recover following disturbance due to its slow growth rate and long lifespan (NRCS 2009). Additional information regarding the expected recovery time of vegetation is provided in section 4.4. Shrub habitat and the species that inhabit these areas, especially Great Basin sagebrush and mountain mahogany-oak scrub obligate species, would incur long-term impacts from construction of the Project. The effect on forest-dwelling wildlife species would also be long term, as forested lands would take decades to return to pre-construction maturity. Forested areas impacted during construction would be allowed to reestablish following construction except for within 10 feet of the pipeline centerline and at aboveground facilities.

The alteration of the landscape through removal of vegetation, scraping of the ground, soil disturbance, and recontouring would reduce seed banks, disturb soil-dwelling species, and could alter drainage patterns. The degree of impact would depend on the species. Soil-dwelling invertebrates would be impacted directly through movement of soil from one place to another, resulting in some mortality and displacement. This could reduce the forage potential for insectivores that inhabit the area. Other animals would be indirectly affected through the reduction in seed banks, resulting in longer recovery times for vegetation that could provide forage, cover, and nesting habitat. Recontouring the land could result in changes to drainage patterns, resulting in some areas becoming wetter than normal and others drier. This could affect surface water supplies and change vegetative cover in areas, which could result in certain species avoiding areas they previously inhabited. These impacts, however, are expected to be minimal due to the temporary nature and limited extent of construction in the proposed Project area. Kern River, in accordance with its Plan and Procedures, would restore the construction right-of-way and waterbody crossings to pre-construction conditions; therefore, impacts would be temporary or short term.

Blasting is anticipated along approximately 9 percent of the pipeline route. Blasting impacts could include removal of adjacent habitat, direct mortality of wildlife, injury of wildlife in the vicinity of the blasting, noise disturbance, and dust and rock fragments thrown off by the blasts. These impacts would be minimized by implementation of Kern River's Blasting Plan, which requires site-specific blasting plans that would include measures to prevent excessive noise and flyrock impacts.

Trash and debris could impact wildlife by enticing certain species to eat contaminated or dangerous items; providing a feeding area where animals come into close contact and can spread disease

or condensing animals into a small area, attracting predators. It also could impact wildlife by encouraging certain species to move into areas where humans are working, resulting in potential wildlife-human interaction and conflict. To minimize the potential for wildlife attraction, food wastes would be stored in containers and disposed of daily at existing, permitted waste disposal facilities.

The use of chemicals and herbicides could directly impact wildlife through direct ingestion or ingestion of contaminated material. If chemicals or herbicides are stored near or placed in the same container as any material that would attract wildlife, certain species could potentially ingest the chemicals inadvertently. In addition, if certain plants are treated with herbicides, or chemicals are spilled in an area, wildlife could eat contaminated plant material, resulting in potential illness or mortality. The impacts from chemicals or herbicides are expected to be minimal through adherence to Kern River's SPCC Plan and Noxious Weed Control Plan. While the risk of chemical exposure to individual animals would be low through proper implementation of these plans, there is virtually no risk of population-level impacts on any wildlife species.

Project-related traffic on paved and unpaved roads during construction could cause an increase in wildlife-vehicle collisions and could temporarily disturb birds and big game in proximity to the roads. Individuals of highly mobile species could experience an increase in direct mortality from increased vehicle traffic on new or improved roads during construction. Due to the short timeframe of construction, impacts on animals from increased vehicular traffic are expected to be minor. An increase in Project-related traffic also could have a negative impact during hunting season, when the increased traffic could disrupt normal movement patterns of big game species and reduce hunter success.

In addition to direct impacts from construction, blasting, noise, and trash/debris disposal, wildlife movement patterns could be disrupted by human presence as well as by the presence of trenches and spoil piles. Many species of wildlife tend to avoid areas where humans are, and this could cause certain species to avoid migration corridors or migratory stopover areas, avoid nesting areas, or avoid certain habitats altogether and potentially become displaced. These impacts, however, are expected to be minimal and short term with adherence to requirements in Kern River's Plan and Procedures regarding mitigation and habitat restoration such as beginning restoration immediately following backfill operation. Additionally, Kern River plans to conduct all clearing activities as well as some construction activities in fall and winter 2010, outside of the breeding season. Clearing in the fall would preclude breeding birds from locating in the proposed right-of-way and work areas proposed for construction.

Trenching activities and the spoil piles generated during construction could create potential traps for wildlife species and barriers to movement for less mobile species. Wildlife could fall into trenches; and spoil piles could create barriers to some less mobile species such as small reptiles and amphibians. Trenches would remain open for an average of 30 days during construction; however, Kern River would install ramps at 0.25-mile intervals (0.5-mile intervals on steep slopes) to allow animals to escape the trench. If an animal is seen in the trench but not using the existing escape ramps, Kern River would install an additional escape ramp, and inspection personnel would encourage the animal to move toward the ramp. With implementation of these measures and Kern River's Plan, impacts from open trenches and spoil piles are expected to be minor and temporary.

Increased predation could occur during construction and operation of the proposed pipeline due to the removal of vegetation and increased line-of-sight over large areas. Many animals also may choose to use the pipeline right-of-way as a travel corridor, artificially concentrating individuals into a small area which could elevate the risk of predation. Although some species may experience higher mortality, the Project is unlikely to cause any population-level impacts from this effect.

4.5.2.1 Habitat Fragmentation and Edge Effect

Construction of the Apex Expansion Project would cause habitat fragmentation, especially in forested areas and shrub habitats. Fragmentation can alter species composition in a given community because biophysical conditions near habitat edge can significantly differ from those found in the center of the contiguous habitats. As a result, edge species could recruit to the fragmented area and species that occupy interior habitats could be displaced. The disturbance of these areas could create a long-term impact on some species that require undisturbed interior habitats, such as northern goshawk, by forcing the species to relocate to other suitable habitat or by reducing survival and reproductive success.

Other species that could be adversely affected by the long-term or permanent conversion of forested and sagebrush habitat to other habitat types include certain migratory birds, discussed below, as well as various other birds, small mammals, amphibians, and reptiles. Less mobile species, such as reptiles and amphibians, could experience greater impacts from habitat fragmentation, as they are less mobile and less likely to relocate to more suitable habitat. To minimize potential impacts on wildlife, the pipeline would be constructed adjacent to existing rights-of-way for much of its length using previously disturbed areas to the extent practical. This would reduce habitat fragmentation and the potential impact on wildlife habitat for many species.

Douglas fir forests comprise approximately 7 percent of the total proposed Project area, and mountain mahogany-oak scrub is present through 33 percent of the area. Although Kern River has collocated 18.4 of the 28.0 miles of the proposed right-of-way, habitat fragmentation and increased edge effects would occur in these communities. Of the 9.6 miles that are not collocated, approximately 5 miles would be located on USFS-managed lands. The amount of forested habitat that would be affected during construction and operation of the pipeline would cause some species to be disrupted temporarily or permanently. Disturbance and fragmentation of scrub-shrub habitats such as Great Basin sagebrush and mountain mahogany-oak scrub could negatively impact certain species that require large tracts of habitat, especially for breeding and nesting. Disturbance and fragmentation of habitat could reduce pairing success and the number of available nesting areas; encourage the expansion of non-native species; and inhibit migration, dispersal, foraging, and other movements of sagebrush-obligate species. Fragmentation also could increase nest predation, parasitism, or interspecific competition. Migration of birds and large mammals could be affected by fragmentation through the reduction of forage and cover. Kern River would adhere to restoration and reclamation protocols outlined in Kern River's Plan and Reclamation Plan; therefore, impacts associated with fragmentation and edge-effect in shrub habitat would be minimized as much as possible. Over the long-term (likely within 10 years) habitats would be restored except for in the 10-foot-wide maintained portion of the operational right-of-way and at permanent facilities such as the proposed Milford Compressor Station and MLV sites.

The reduction of vegetative cover could provide the opportunity for noxious weeds to invade. If noxious weeds outcompete native vegetation, crucial habitat for breeding and foraging for many species, especially sagebrush-obligate species, could be reduced or eliminated. Kern River would implement its Noxious Weed plan during construction to minimize the spread and proliferation of noxious weeds and the impact on wildlife. Sagebrush and forested areas would be allowed to revegetate naturally and by reseeding, except for a 10-foot-wide maintained strip over the proposed pipeline within the right-of-way and where aboveground facilities are located. These impacts would be minor given the overall extent of similar habitats within the Project area.

4.5.2.2 Riparian Habitats

Riparian habitats are important components of the larger ecosystem, as the proposed Project occurs in a semi-arid landscape. These habitats provide shelter, foraging areas, breeding and nesting

areas, and/or roosting areas for many species of birds, mammals (both large and small), reptiles, amphibians, and invertebrates. The structure and function of these riparian habitats are important to preserve, as most of the wildlife species in the area are somewhat, if not fully, dependent on the resources they provide. Potential impacts on wildlife from the removal of riparian habitat include temporary displacement of species to adjacent suitable habitat and alteration of migration routes by mammals and birds, especially waterfowl. Although broad-scale fragmentation does not generally occur in riparian habitats, fragmentation of a riparian zone during construction could impact the structure and function of the habitat as a whole and affect certain wildlife species, — especially those with small ranges such as certain amphibians (Krueper 2000). A total of 2.6 acres of riparian habitat would be cleared during construction; however, with implementation of Kern River's Procedures, impacts on waterbodies and their associated riparian areas would be minimized. Species that utilize these environments (amphibians and invertebrates) could experience displacement or direct mortality during clearing activities. During operations, a 25-foot buffer would be maintained adjacent to the waterbody with the exception of a 10-foot-wide corridor directly over the pipeline to assist with operational surveys. Although impacts on riparian areas would be minimized as much as possible, these impacts would be long-term. Impacts on waterbodies are addressed in section 4.3 and special status amphibians are discussed in section 4.7.

4.5.3 Big Game

The four big game species that occur within the proposed Project area are mule deer, elk, pronghorn, and moose. Crucial ranges for big-game are areas where big game are concentrated during certain times of the year because of environmental constraints or forage availability. Table 4.5.3-1 presents the crucial habitat for each of the four big game species in the proposed Project area. Crucial winter ranges are used when snowpack excludes big game from being able to forage in other portions of their range. Crucial summer ranges are used for fawning habitat when forage availability is required to support young of the year. High-value summer/fall habitat areas have preferred cover type, water availability, and forage abundance to support higher use by big game. Although the highest use of these ranges is generally defined by the season, the UDWR and the USFS have indicated that crucial winter habitat for big game species should be avoided between November 15 and April 30, depending on snow coverage, and elk calving habitat should be avoided between May 1 and June 30. Kern River expects that construction would be precluded during the season of highest use for crucial winter habitat and elk calving habitat due to snowpack. If conditions allow, however, Kern River would consult with the applicable agencies to determine whether spring construction through crucial winter habitat is feasible based on species utilization at that time and location.

Kern River is proposing to clear vegetation along the entire Wasatch Loop between October and early December 2010; construction between MP 0.0 and 5.5 and between 25.5 and 28.0 would also take place during this timeframe. All remaining construction activities would take place between late spring and fall 2011. Although clearing and some construction activities would occur during the season of high use for crucial winter habitat, the overlap would be limited to approximately 1 month of the 5-month winter period noted by the applicable agencies (November 15 through April 30). In addition, late 2010 construction would avoid impacts on a limited amount of crucial summer habitat. Although big game may avoid areas of active clearing during late 2010, it is unlikely that early clearing would result in a significant adverse impact on big game species.

**TABLE 4.5.3-1
Big Game Crucial Habitat in the Proposed Apex Expansion Project Area**

Location	Species	Season	Value	Temporary Impact (acres)	Permanent Impact (acres)
Pipeline Right-of-Way					
MP 0.0 – 0.7	Mule deer	Summer ^a	Crucial	9.8	4.2
MP 0.7 – 3.6 ^b	Mule deer	Winter	Crucial	40.0	18.0
MP 3.6 – 3.9 ^b	Mule deer	Summer ^a	Crucial ^a	2.6	0.9
MP 3.9 – 5.4 ^b	Mule deer	Winter	Crucial	21.9	9.5
MP 5.4 – 6.6 ^b	Mule deer	Summer ^a	Crucial ^a	18.8	7.2
MP 6.6 – 7.6 ^b	Mule deer	Winter	Crucial	14.7	5.9
MP 7.6 – 7.7	Mule deer	Summer ^a	Crucial	2.4	1.2
MP 7.7 – 8.0	Mule deer	Winter	Crucial	3.4	1.4
MP 8.0 – 16.4 ^b	Mule deer	Summer ^a	Crucial	119.6	51.2
MP 9.1 – 18.4 ^b	Moose	Year-long ^c	Crucial	134.9	56.4
MP 9.5 – 17.1	Elk	Summer/fall ^d	Crucial	109.2	45.8
MP 16.4 – 16.6	Mule deer	Winter	Crucial	3.1	1.0
MP 16.6 – 17.6	Mule deer	Summer ^a	Crucial	17.5	6.3
MP 17.6 – 24.6	Mule deer	Winter	Crucial	93.6	42.8
Staging Areas, Pipe Yards, and Contractor Yards					
South Hardscrabble Staging Area	Elk	Summer/fall	Crucial	0.7	NA
Hardscrabble Staging Area	Elk	Summer/fall	Crucial	0.6	NA
Skyline Staging Area	Elk	Summer/fall	Crucial	3.6	NA
Questar ROW Staging Area	Elk	Summer/fall	Crucial	2.7	NA
Rees Enterprises Contractor Yard	Elk	Winter	Crucial	4.7	NA
Dennis Wright Contractor Yard	Moose	Summer	Crucial	19.7	NA
Wasatch Rail Siding	Moose	Summer	Crucial	6.5	NA
Rees Enterprises Contractor Yard	Moose	Winter	Crucial	1.9	NA
MLV 96 Laydown Area	Mule deer	Summer ^a	Crucial	4.2	NA
Hardscrabble Staging Area	Mule deer	Summer ^a	Crucial	0.6	NA

**TABLE 4.5.3-1 (continued)
Big Game Crucial Habitat in the Proposed Apex Expansion Project Area**

Location	Species	Season	Value	Temporary Impact (acres)	Permanent Impact (acres)
Staging Areas, Pipe Yards, and Contractor Yards (continued)					
East Canyon Staging Area	Mule deer	Winter	Crucial	5.2	NA
Wasatch Rail Siding	Mule deer	Summer ^a	Crucial	6.5	NA
North Hardscrabble Staging Area	Mule deer	Summer ^a	Crucial	9.6	NA
North Hardscrabble Road Staging Area	Mule deer	Winter	Crucial	0.5	NA
South Hardscrabble Staging Area	Mule deer	Summer ^a	Crucial	0.7	NA
Skyline Staging Area	Mule deer	Summer ^a	Crucial	3.6	NA
Highway 66 Staging Area	Mule deer	Winter	Crucial	0.5	NA
North Bountiful Staging Area	Mule deer	Winter	Crucial	2.2	NA
Questar Right-of-Way Staging Area	Mule deer	Summer ^a	Crucial	2.7	NA
Forest Service Staging Area	Mule deer	Winter	Crucial	0.6	NA
Aboveground Facilities					
Milford Compressor Station	Pronghorn	Year-long	Crucial	33.2	33.2
Total Impact				702.0	285.0
Notes:					
NA = Not available					
MP = Milepost					
^a Fawning area					
^b All or a portion of this range would likely require blasting; blasting would occur between October and early December 2010 for areas between MP 0.0 and 5.5; and between April 15 and August 31, 2011, for areas between MP 5.5 and 25.5.					
^c Calving area					
^d Elk calving area occurs from approximately MP 13.2 to 17.0.					

Kern River’s proposed construction timeframe between late spring and early fall would result in active construction occurring in crucial summer, summer/fall, and year-long habitats for big game species. Active construction would occur within these habitats during the season of highest use, and it is likely that big game would experience some adverse effects during these periods. However, as clearing activities would be conducted during late 2010, active construction during 2011 would have a slightly shorter duration. In addition, Kern River anticipates that some blasting would occur between April 15 and August 31 within crucial habitat, including portions of mule deer summer and moose year-long

crucial habitat (see table 4.5.3-1). Although Kern River has stated that it would attempt to conduct blasting outside of the mule deer fawning times (May 1 through June 30), any blasting that occurs within fawning habitat during that period, or within other crucial habitat that would be utilized during the summer, could result in adverse effects to big game species. To minimize these impacts, **we recommend that:**

- **Prior to construction, Kern River file a revised blasting plan that either stipulates that any blasting within big game crucial habitat would occur outside of the season of highest use or includes site-specific measures developed in consultation with the USFS, BLM, and UDWR that would minimize impacts on big game species during blasting activities.**

The Wasatch Loop would cross 7.6 miles of high-value elk summer and fall habitat. About 109.2 acres of elk habitat would be disturbed during construction, and 45.8 acres would be retained within the permanent right-of-way. Additionally, due to the extent of crucial habitat in the Project vicinity, three staging areas (totaling 4.0 acres) and one pipe storage area (3.6 acres) would be located within elk high-value summer/fall range, and a contractor yard (4.7 acres) would be located in elk crucial winter range.

Year-long crucial moose calving habitat is present along the Wasatch Loop for 9.3 miles, which would temporarily impact 134.9 acres and permanently encumber 56.4 acres of habitat. A contractor yard (19.7 acres) and a pipe yard (6.5 acres) proposed for temporary use during construction would be located in moose crucial summer range. In addition, one contractor yard (1.9 acres) would be within moose crucial winter range.

Mule deer crucial summer fawning habitat is present along the Wasatch Loop at six locations; the 11.7 miles of this habitat that would be crossed by the proposed pipeline would result in a temporary and permanent impact of 170.7 and 71.0 acres, respectively. Six staging areas and one pipe yard are proposed within mule deer crucial summer fawning habitat on 27.9 acres. Mule deer crucial winter habitat occurs at six locations along the Wasatch Loop, totaling 12.9 miles; the Wasatch Loop would result in 176.7 acres of temporary impact and 78.6 acres of permanent impact. Five staging areas on a total of 9.0 acres in mule deer crucial winter range are proposed to support the Wasatch Loop construction.

The proposed Milford Compressor Station site is entirely within pronghorn year-long crucial habitat and would permanently encumber 33.2 acres of land managed by the BLM. Two managed areas, the East Canyon WMA and the UWCNF, would be crossed by the pipeline. Both of these areas contain crucial habitat for big game. The East Canyon WMA would be crossed from MP 4.0 to 5.0, which is entirely within the crucial winter habitat for mule deer; however, Kern River has stated that it would not construct within the boundaries of the WMA between January 1 and the second Saturday in April to protect wintering wildlife, or during open season rifle hunting (the week beginning October 17). Kern River is consulting with the UDWR to develop a site-specific crossing plan for the East Canyon WMA. The UWCNF would be crossed between MP 13.3 and 24.5, approximately 7.1 miles of which would occur in mule deer crucial winter habitat and 4.1 miles of which would occur in mule deer crucial summer range. Kern River is consulting with the USFS to resolve timing conflicts between the proposed construction schedule and the USFS forest plan.

As previously discussed, construction would primarily occur during the summer and fall months which would minimize crucial winter range impacts by avoiding construction during the season of highest use. One of the exceptions is the planned crossing of East Canyon Creek, which would be constructed in late fall or early winter 2010 in crucial winter range for mule deer. Kern River proposes to cross East Canyon Creek during the fall/winter in order to complete the crossing during a time of low water flow to minimize potential effects to critical fish species. Construction at East Canyon Creek would represent a

short-term, minor impact on crucial winter range for mule deer when compared to the overall availability of habitat in the region.

Summer and fall construction would impact elk high-value summer/fall range, crucial calving habitat for moose, and crucial fawning habitat for mule deer. These are highly mobile species that would disperse from construction areas and move to other portions of the high-value and crucial ranges during spring and summer in order to find suitable forage and cover. While dispersal away from construction areas would increase energetic use by these species at a vulnerable time, the localized nature of construction would make it easier for big game to move short distances to avoid the construction areas.

The proposed right-of-way would cross through productive forage habitat for big game; therefore, this habitat would be unavailable between initial clearing and the end of construction. Although the amount of foraging habitat would be slightly reduced, clearing in 2010 would not be likely to result in a significant adverse effect to big game. In addition, an increase in traffic during the season of highest use for either winter or summer crucial habitat could increase the potential for vehicular impacts on big game species within crucial winter and summer habitats. Construction traffic would be limited to existing roads that may require up to 2 feet of widening on each side (with the exception of one 410-foot road that would be newly constructed within a developed area for temporary use) and the construction right-of-way. In addition, there would be a maximum of 10 trips per day, generally occurring during daylight hours; therefore, construction traffic is not expected to have a significantly different impact on big game than normal traffic flows.

Kern River continues to consult with the resource agencies to develop appropriate measures to minimize impacts on wildlife, including avoidance and timing restrictions, where feasible and appropriate. Kern River has also coordinated with federal and state agencies in the development of its Reclamation Plan to restore native cover types and the wildlife habitat they sustain, and is continuing to consult with the applicable agencies to develop and implement a restoration plan that would provide habitat for big game outside of the permanent right-of-way after construction.

4.5.4 Raptors and Other Migratory Birds

The MBTA (16 USC 703-711) is a domestic law that implements the United States' commitment to international conventions with Canada (1916), Mexico (1936), Japan (1972) and Russia (1978) for protection of shared migratory bird resources (FWS 2002). The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. Executive Order (EO) 13186 (2001) directs departments and agencies to take certain actions to further implement the MBTA. The EO, among other things, directs federal agencies to identify where unintentional takes reasonably attributable to agency actions have, or are likely to have, a measureable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. With respect to those actions so identified, agencies are directed to develop and use principles, standards, and practices that will lessen the amount of unintentional take, developing any such conservation efforts in cooperation with the FWS.

Kern River has reviewed Utah's Partners in Flight (PIF) list and has consulted with the UDNR, USFS, and FWS to determine which migratory birds potentially occur in the Project area. The results of these consultations have indicated that 26 migratory bird species could occur in the Project area (see table 4.5.4-1). These species generally mate, nest, and rear their young between April 1 and August 31 (UDWR 2009). Between June and July of 2009, Kern River conducted bird surveys in the proposed Project area that targeted the species identified. Although additional migratory bird species were encountered, surveys confirmed the presence of 11 of the 26 identified species: osprey, northern goshawk, golden eagle, broad-tailed hummingbird, Lewis's woodpecker, cordilleran flycatcher, gray

catbird, Virginia's warbler, Brewer's sparrow, Cassin's finch, and evening grosbeak. A separate survey was conducted in May 2009 in the area of the proposed Milford Compressor Station; five additional species were encountered, including the horned lark, common raven, western meadowlark, long-billed curlew, and mourning dove. As a species of concern to the USFS, the northern goshawk is specifically discussed in section 4.7.

Common Name	Scientific Name	Identifying Agency				Survey Results
		UDNR	FWS	USFS	Utah PIF	
American white pelican	<i>Pelecanus erythrorhynchos</i>	X			X	Not encountered
Osprey	<i>Pandion haliaetus</i>			X		Encountered along the right-of-way
Bald Eagle	<i>Haliaeetus leucocephalus</i>	X	X	X		Not encountered
Northern Goshawk	<i>Accipiter gentilis</i>	X		X		Encountered along the right-of-way
Ferruginous Hawk	<i>Buteo regalis</i>	X	X		X	Not encountered
Golden Eagle	<i>Aquila chrysaetos</i>		X			Encountered along the right-of-way
Peregrine Falcon	<i>Falco peregrinus</i>		X	X		Not encountered
Black-necked stilt	<i>Himantopus mexicanus</i>				X	Not encountered
American Avocet	<i>Recurvirostra americana</i>				X	Not encountered
Long-billed curlew	<i>Numenius americanus</i>	X	X		X	Encountered at the proposed Milford Compressor Station
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	X		X	X	Not encountered
Flammulated Owl	<i>Otus flammeolus</i>		X	X		Not encountered
Burrowing Owl	<i>Athene cunicularia</i>	X	X			Not encountered
Short-eared owl	<i>Asio flammeus</i>	X	X			Not encountered
Broad-tailed hummingbird	<i>Selasphorus platycercus</i>			X	X	Encountered along the right-of-way
Lewis's Woodpecker	<i>Melanerpes lewis</i>	X	X	X	X	Encountered along the right-of-way
Williamson's Sapsucker	<i>Sphyrapicus thyroideus</i>			X		Not encountered

TABLE 4.5.4-1 (continued)						
Migratory Bird Species of Concern in the Proposed Apex Expansion Project Area						
Common Name	Scientific Name	Identifying Agency				Survey Results
		UDNR	FWS	USFS	Utah PIF	
Three-toed woodpecker	<i>Picoides tridactylus</i>	X		X	X	Not encountered
Cordilleran Flycatcher	<i>Empidonax occidentalis</i>				X	Encountered along the right-of-way
Gray Catbird	<i>Dumetella carolinensis</i>			X		Encountered along the right-of-way
Virginia's Warbler	<i>Vermivora virginiae</i>			X	X	Encountered along the right-of-way
Brewer's Sparrow	<i>Spizella breweri</i>			X	X	Encountered along the right-of-way
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	X	X		X	Not encountered
Bobolink	<i>Dolichonyx oryzivorus</i>	X			X	Not encountered
Cassin's Finch	<i>Carpodacus cassinii</i>		X			Encountered along the right
Evening Grosbeak	<i>Coccothraustes vespertinus</i>			X		Encountered along the right
Notes:						
	FWS	=	U.S. Fish and Wildlife Service			
	PIF	=	Partners in Flight			
	UDNR	=	Utah Department of Natural Resources			
	USFS	=	U.S. Department of Agriculture, U.S. Forest Service			

Kern River is proposing to clear vegetation along the entire Wasatch Loop between October and early December 2010. Kern River would also construct approximately 8 miles (MP 0.0 to 5.5 and 25.5 to 28.0) of the pipeline during this time. All remaining construction activities would take place between late spring and fall 2011. Clearing in late fall/early winter 2010 would avoid or minimize direct impacts on migratory birds as well as preclude them from utilizing the right-of-way during active construction in 2011, when they will be prevalent in the area. Construction between spring and fall 2011, however, could still result in indirect impacts on the species that occur in the area, especially nesting birds. Although direct effects to both tree- and ground-nesting birds would be largely avoided by clearing during 2010, indirect effects could occur as a result of the noise created by construction and human activity in the area. Construction activities also could disorient birds during migration or cause them to avoid a nesting area. Activities occurring adjacent to nesting individuals could result in nest abandonment, which would subsequently result in the mortality of eggs and young or premature fledging and ejection from the nest.

To further minimize impacts on migratory birds, Kern River has collocated much of the right-of-way adjacent to other pipelines or proposed pipelines, which minimizes fragmentation of habitat and the

potential for predaceous species to invade large contiguous habitats where some obligate bird species breed and fledge young.

Kern River has committed to conducting additional aerial surveys (followed by pedestrian verification if necessary) in 2010 to document locations of nesting raptors. Burrowing owl surveys will also be conducted in 2010 in accordance with the Burrowing Owl Consortium's survey protocols. Although surveys will be conducted, Kern River has indicated that the seasonal and spatial buffers recommended by the FWS would likely not be feasible due to the short construction window. Measures that would be implemented to minimize impacts on nesting raptors include reducing speeds on access roads when within 0.5 mile of an active nest to reduce roadkill and consequently, raptor presence in the roads; performing nest-detering activities and potentially forage/prey habitat improvement if nests are discovered within the right-of-way; and post-construction monitoring of active and inactive nests within 0.5 mile of the Project to document the nest usage and brood status. Suitable habitat for the burrowing owl exists along the first 5 miles of the proposed Project and would be avoided during the breeding season by fall/winter 2010 construction in that area. Kern River is continuing to coordinate with resource agencies regarding implementation of protective measures for raptors and will resume coordination after 2010 surveys have been completed. However, Kern River's currently proposed mitigation measures are inconsistent with those recommended by the FWS in its Guidelines for Raptor Protection (FWS 2002), therefore, **we recommend that:**

- **Prior to construction, Kern River file the results of the raptor surveys and copies of consultations with the FWS, UDWR, USFS, and BLM, as applicable, to develop appropriate spatial buffers and/or other mitigation measures to protect raptors.**

We note that EO 13186 requires federal agencies to avoid or minimize negative impacts on migratory bird populations. The EO also requires a federal agency to identify where an unintentional "take" is likely to have a measurable negative effect on migratory bird populations. Effects to non-sensitive bird species (those that do not have significantly reduced populations) would not result in long-term or significant population-level impacts given the stability of local populations, the abundance of available habitat outside the Project right-of-way, and the linear nature of the Project. Potential impacts on tree-nesting species would be minor, given the limited amount of forested land crossed by the proposed Project, collocation of the pipeline, and by conduction tree-clearing in the fall, outside of the nesting season. Non-nesting individuals may be temporarily displaced by human activity, noise, and other construction activities but are expected to return to the disturbed area shortly after construction ceases.

In addition to protections provided under the MBTA, bald and golden eagles are provided protection under the BGEPA, which also prohibits the direct or indirect take, possession, commerce, or disturbance of bald eagles or any of their parts, including eggs, nests, and feathers. Four adult golden eagles (including one pair) and a golden eagle nest were identified during the 2009 breeding bird surveys.

Bald eagles, although not encountered during the breeding bird surveys, could be present during winter months (November through March) using conifer forests and trees in riparian areas for roosting habitat, and the USFS has noted that the species is present in East Canyon Creek and near East Canyon Reservoir, in Morgan County. Kern River has committed to conduct winter bald eagle surveys in suitable roosting habitat during early 2010. These surveys are intended to identify bald eagle usage within the proposed Project area, specifically areas proposed for winter construction such as East Canyon Creek. As discussed above, Kern River has committed to conduct spring and summer aerial surveys for raptors and raptor nests, including bald eagles. Kern River will provide the results of the raptor surveys to the applicable agencies in order to determine appropriate mitigation and avoidance measures, such as spatial and temporal buffers, where feasible, that would be implemented for the proposed Project. Because many

forested areas used for roosting by wintering bald eagles are present in the vicinity of the proposed Project, winter construction in bald eagle roost areas would likely displace eagles from roost sites during active construction. Kern River's commitment to conducting surveys for bald eagles and to coordinate with the FWS and the UDWR to determine appropriate mitigation and avoidance measures (as applicable) should minimize any potential effects. Impacts on the golden eagle would be similar to those incurred by other migratory species, as discussed above.

4.5.5 Operation Impacts

Land within the permanent right-of-way, at aboveground facility locations, and the modified access roads would be permanently encumbered by the Project. The majority of the acreage required for operations would be within the pipeline permanent right-of-way, which would be allowed to revegetate following construction except for a 10-foot-wide strip over the pipeline that would be maintained in an herbaceous state. Kern River has proposed to minimize impacts from maintenance of the pipeline right-of-way by overlapping the permanent rights-of-way of its mainline and the Wasatch Loop by 15 feet in areas where construction allows. In addition, with the exception of the 10-foot-wide strip over the pipeline that could be maintained annually, Kern River would not conduct any clearing more than once every 3 years, and never between April 15 and August 1 in order to minimize disturbance to migratory birds during the nesting period.

A total of 95.2 acres would be permanently converted (Milford Compressor Station) or maintained as developed land (Coyote Creek, Elberta, Fillmore, and Dry Lake Compressor Stations). Herbaceous vegetation would be expected to fully recover within 3 years. The loss of woody shrubs and trees during construction would result in a minor short- to long-term effect on wildlife given the overall extent of these habitats in the Project area and the limited amount of forest fragmentation associated with the Project due to the collocations of much of the proposed pipeline route with existing rights-of-way.

Wildlife could also be affected by general human presence during operation of the Project. Many species of wildlife tend to avoid areas where humans are and this could cause certain species to avoid migration corridors or migratory stopover areas, avoid nesting areas, or avoid certain habitats altogether and potentially become displaced. These impacts, however, are expected to be minor and short-term after construction since monitoring would be accomplished by a minimal number of people and major right-of-way maintenance is not expected.

PacifiCorp Power Electrical Distribution Line

The electrical distribution line to the Milford Compressor Station would be installed on approximately 23 single wood pole structures on BLM land. No access road would be required for pole placement. All areas necessary for the construction and maintenance of the distribution line lie within the proposed 25-foot distribution line right-of-way. No toxic substances are proposed for use or storage, would be generated or used during any phase of construction, or used for operation. As the habitat that would be crossed by the electrical distribution line would be similar to that at the proposed Milford Compressor Station, impacts on wildlife, including big game and migratory birds, would be similar in nature to those discussed above. The main wildlife habitat impact would be on pronghorn crucial year-long habitat, as construction of the distribution line would temporarily impact 3.4 acres of the habitat and permanently encumber approximately 1.7 acres of habitat. As the distribution line would be aboveground, it would be supported on a single wood pole designed to deter raptor perching.

4.6 FISHERIES AND AQUATIC RESOURCES

4.6.1 General Fisheries and Aquatic Resources

The Apex Expansion Project would cross 21 waterbodies: 12 perennial, 7 intermittent, and 2 ephemeral. According to the UDWR, six of the perennial streams crossed are capable of supporting a fishery, including one warmwater fishery (Jordan River) and five coldwater fisheries (East Canyon Creek, Sheep Canyon, Hardscrabble Creek, Holbrook Creek, and Mill Creek). The proposed Project area has no outlet to coastal regions and therefore supports no anadromous fish species or any species managed by the National Marine Fisheries Service under the Magnuson-Stevens Fishery Conservation and Management Act. There is no defined essential fish habitat crossed by the proposed Project. There are no fisheries at any of the proposed compressor station sites, staging areas, or construction support yards, or associated with the proposed access roads.

Representative coldwater fishes that occur in streams crossed by the proposed Wasatch Loop include Bonneville cutthroat trout, brown trout, rainbow trout, sculpin, and mountain whitefish. Representative warmwater fishes include largemouth bass, smallmouth bass, channel catfish, black bullhead catfish, and Utah sucker.

Construction of the Project could result in impacts on waterbodies and fisheries from sedimentation and turbidity, habitat alteration, streambank erosion, fuel and chemical spills, water depletions, entrainment or entrapment due to water withdrawals or construction crossing operations, blasting, and operational pipeline failure. The extent of the impact on aquatic resources from pipeline construction would depend on the waterbody crossing method, the existing conditions at each crossing location, the restoration procedures and mitigation measures employed, and the timing of construction. Most short-term impacts on aquatic resources would be associated with the immediate crossing activity itself (e.g., trenching and laying of the pipe, and substrate sediment being re-deposited downstream) and would dissipate within a few days of the crossing being completed. Other short-term impacts could last from the initiation of construction up to 3 years after construction ends, as streambank restoration efforts become established. Long-term impacts on aquatic organisms and habitat would be expected to last for more than 3 years in areas where mature trees are cleared within riparian areas. Long-term degradation of aquatic habitat could also occur if stream contours are modified in the area of the crossing, which would effectively change the flow patterns and increase sedimentation downstream of the crossing location.

Construction of aboveground facilities along the proposed pipeline route (MLV stations, pig launcher/pig receiver stations) would have similar effects to fisheries and aquatic resources as pipeline construction and are considered with those discussions. No waterbodies are in close proximity to any of the compressor stations requiring modifications or the proposed Milford Compressor Station site. Therefore, construction at these facilities would have no effect on aquatic resources.

4.6.1.1 Sediment Loads and Turbidity

As discussed in section 4.3.2, pipeline construction through waterbodies could increase sediment loads and turbidity during and following construction. Open-cut crossings could loosen soils and temporarily increase turbidity and sedimentation. The extent of the impact would depend on sediment loads, stream velocity, turbidity, bank composition, and sediment particle size. These factors would determine the density and downstream extent of sediment migration. Instream work could also introduce chemical and nutrient pollutants from sediments. Resuspension of deposited organic material and inorganic sediments could cause an increase in biological and chemical use of oxygen, potentially resulting in a decrease of dissolved oxygen concentrations in the affected area. Lower dissolved oxygen concentrations could cause temporary displacement of motile organisms, such as fish, and may kill non-

motile organisms within the affected area. In addition, soil-dwelling invertebrates would be impacted directly through movement of soil from one place to another, resulting in some mortality and displacement.

Kern River has proposed to use several different waterbody crossing methods (e.g., flume, open-cut, dam-and-pump, or conventional horizontal bore) depending on waterbody-specific conditions at the time of construction. Kern River would initially prepare all waterbody crossings, except for those proposed for conventional bore and dam-and-pump, as flume crossings (dry-ditch crossings). However, if water is not present at the time of construction, these locations would be crossed using conventional upland construction methods. In addition, if water is present but not flowing, Kern River would use an open-cut crossing method, as this should not impact fisheries resources.

4.6.1.2 Timing of Construction

The season in which construction takes place can influence the degree of impacts associated with instream activities, such as the amount of sedimentation. Construction during periods of sensitive fish activity (such as spawning and migration) could cause greater impacts on fish than construction during other periods. As stated in Kern River's Procedures, instream construction within coldwater fisheries would generally occur from July 15 through February 28 and from June 1 through November 30 for coolwater and warmwater fisheries, unless otherwise permitted or restricted by an applicable agency. Kern River's proposed instream construction window for coldwater fisheries deviates from our Procedures, which states: "Unless expressly permitted...by the appropriate state agency in writing on a site specific basis, instream work, except that required to install or remove equipment bridges, must occur in coldwater fisheries from June 1 through September 30." Kern River has requested and is awaiting agency concurrence from the COE, the FWS, and the UDWR for its proposed deviation in order to install equipment bridges at Sheep Canyon Creek and Hardscrabble Creek and cross East Canyon Creek outside of the permitted timing window. Because agency concurrence is still outstanding **we recommend that:**

- **Prior to construction, Kern River file a revised version of its Procedures specifying that the time window for crossing coldwater fisheries is between June 1 and September 30, unless expressly permitted by the appropriate agencies.**

4.6.1.3 Vegetation Removal and Streambank Erosion

Erosion could be increased because of clearing of vegetation on the channel banks at waterbody crossings, which could destabilize and loosen soils and leave them susceptible to erosion during rainfall or snowmelt. Erosion and the associated increase in sediment loading could negatively impact benthic macroinvertebrates, which are an important component of stream ecosystems and a food resource for fish.

During construction, properly installed and maintained sediment controls would prevent or minimize sedimentation of waterbodies from the adjacent construction right-of-way. Immediately following instream construction, Kern River would install temporary erosion controls (such as straw bales and silt fencing) to further minimize sediment from entering waterbodies until the streambanks are restored. Kern River would also use erosion control fabric and other mitigation measures to improve the probability of successful revegetation and bank stabilization. As outlined in Kern River's Plan and Procedures, temporary sediment barriers would be installed immediately after initial disturbance as necessary and at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody.

Kern River would leave a 10-foot-wide buffer of vegetation along streambanks at waterbody crossings in order to minimize the effects of vegetation removal, except where the trench would be

excavated or in forested areas. Kern River would use on-site markers to identify these “no-clearing” zones. Although matting and bridging would suppress and damage vegetation at waterbody crossings, the roots of riparian vegetation left intact would support rapid regrowth of most species (excluding sagebrush) during the spring following construction. Spoil storage generally would be located at least 50 feet from the waterbody edge in the ATWS, in order to minimize the potential for erosion of soil back into the channel or burial of riparian vegetation. An exception to this would be at eight locations where Kern River is requesting a variance from this standard procedure and proposes to locate ATWS no closer than 10 feet from the waterbody edge (see section 4.3.2).

Following construction, Kern River would implement its Plan, Procedures, and Reclamation Plan in order to minimize the risk of streambank erosion or erosion of soils from the construction areas into waterbodies. Should Kern River need to introduce riprap into jurisdictional waterbody channels for long-term stabilization of the channel, Kern River would submit an application for such work and be permitted by the COE prior to such activities.

4.6.1.4 Contaminated Sediment Resuspension

As discussed in section 4.3.2, three proposed perennial waterbody crossings could contain contaminated sediments. To avoid impacts and minimize the risk of contaminated sediment being suspended within the water column and potentially harming aquatic species, Kern River proposes to cross the Northwest Oil Drain (MP 26.8), Jordan River (MP 27.2), and City Drain (MP 27.5) via conventional horizontal bore. Therefore, impacts on aquatic organisms would not be expected from the crossings of these waterbodies.

4.6.1.5 Entrainment and Entrapment

Dam-and-pump crossing methods could result in some fish being trapped between the upstream and downstream dams of the waterbody crossing. Currently, Kern River has proposed to potentially cross two waterbodies by the dam-and-pump method (Holbrook Creek, at MP 16.5 and Mill Creek, at MP 19.0). The final decision on the crossing method would be determined by the Environmental Inspector at the time of construction, depending on site conditions. Kern River may also use dam-and-pump methods temporarily during installation of flumes in flume crossings or during hydrotesting. To protect fish from entrainment during dam-and-pump operations, Kern River would screen the water intake. Kern River is currently coordinating with the resource agencies to determine the appropriate screen mesh size. To protect fish from entrapment during dam-and-pump operations, Kern River would capture any fish that become trapped between the upstream and downstream dam and transfer them downstream of the construction area. Kern River would have a qualified fish biologist onsite during fish salvage activities. In addition, Kern River has contacted the UDWR to determine whether or not any state permits would be required for these activities.

Small fish and benthic macroinvertebrates could be entrained by water pumps during hydrostatic test water withdrawal. As discussed in section 4.3.2, Kern River has identified three surface water sources for hydrostatic testing and dust control. As stated in its Procedures, Kern River would screen intake hoses and regulate the rate of water withdrawal to prevent the entrainment of fish and other aquatic organisms. Kern River would acquire the necessary permits and approvals from state and federal agencies, and obtain or comply with water rights before withdrawing hydrostatic test water from any surface water or groundwater sources.

4.6.1.6 Water Temperature

Loss of riparian cover could reduce shading of the waterbody, thereby increasing the temperature of the water at that location. Both warmwater and coldwater fishes have upper limits of water temperatures that can be tolerated for reproduction and persistence. Since the right-of-way would be narrow and less than 100 feet of width would be cleared during construction at waterbody crossings, the effect of vegetation removal on water temperatures would be negligible and likely would result in no measureable change. Therefore, the proposed Project would not likely have any noticeable effect on water temperatures or aquatic species.

4.6.1.7 Blasting

Kern River identified several portions of the proposed construction right-of-way in Utah (MP 0.0 to 20.5) where blasting may be required for pipeline installation. Blasting could cause injury to or death of aquatic species because of the shock waves in the area blasted, debris fall from the blast, or elevated turbidity from soil introduced to the channel from the blast. If blasting were required, Kern River would adhere to its Blasting Plan, which outlines conditions for blasting and protections for the environment during and following blasting. These protections include using a pre-blast scare charge to disperse fish and immediately removing any post-blast debris that could impede flow in a waterbody. Kern River would provide additional blasting details for specific crossings where blasting may be required, and would obtain a COE permit prior to construction.

4.6.1.8 Hydrostatic Testing and Water Withdrawals

As stated above, Kern River has identified three waterbodies, East Canyon Creek, East Canyon Reservoir, and the Jordan River, that would provide source water for hydrostatic testing and dust control for the Wasatch Loop. Kern River proposes to use municipal water sources for dust control at the existing and proposed compressor stations. All necessary federal, state, and local permits would be obtained prior to water withdrawal. Withdrawal of water could reduce streamflows, deplete oxygen, increase temperatures, change or reduce habitat availability for fish, or potentially entrain fish if flow reduction is sufficiently large in proportion to the flow of the creeks at the time of withdrawal. Water would be discharged to uplands in the watershed from which water was withdrawn; in stable, well-vegetated areas; and with a dissipating device for flow dispersion and sediment control barriers. Kern River would monitor return flows to ensure that no significant erosion occurs during test water discharge. No chemical additives would be used for hydrostatic testing. Additional information regarding hydrostatic testing can be found in section 4.3.2.

Because whirling disease is known to be present in East Canyon Creek, Kern River proposes to return water to upland areas adjacent to the creek following testing to prevent the introduction of the disease-causing parasite to other waterbodies. Equipment used for hydrostatic testing within East Canyon Creek would be cleaned thoroughly with hot water (greater than 130 degrees Fahrenheit [°F]).

4.6.1.9 Fuel and Chemical Spills

The potential exists for fuel spills from storage containers, from equipment working in or near streams, and from fuel transfers. In order to minimize the potential for accidental releases to waterbodies and thus potentially harming aquatic organisms, fuel would not be stored within 100 feet of a waterbody, and fueling of construction equipment would not be allowed within 100 feet of a waterbody or wetland unless specifically identified by Kern River and approved by the FERC and other regulatory agencies. The only exceptions to the 100-foot buffer would be for portable pumps used for the dam-and-pump crossing method and hydrostatic testing. Kern River would use temporary containment for the pumps,

such as the use of straw bales or earthen berms with impervious liners. Kern River would perform frequent maintenance and inspection of pumps and containment structures in order to minimize the potential for a release, and would adhere to its SPCC Plan.

4.6.2 Invasive Aquatic Species

Two invasive aquatic species are present within the proposed Project area, the New Zealand mudsnail and the parasite that causes whirling disease. Both species are known to occur in East Canyon Creek. The mudsnail shares similar habitats and food resources as native benthic macroinvertebrates, which is ecologically problematic because it displaces native species. Furthermore, the mudsnail is not a suitable food resource for fish, so it is causing a secondary effect of reducing food availability for fish by displacing native benthic macroinvertebrates. Whirling disease targets trout and whitefish, causing deformities to the head and spine and eventually leading to a whirling behavior that is fatal.

According to Kern River's site-specific crossing plan, East Canyon Creek would be crossed by the flume method in the late fall/early winter 2010. This timing would isolate equipment from potential cross-contamination with other waterbodies, which would be crossed during the following year. All equipment used at the East Canyon Creek crossing (as well as all other stream and waterbody crossings) would be cleaned following construction, which involves removal of all mud and debris and then spraying the equipment with water greater than 130 degrees (F).

With adherence to Kern River's proposed equipment cleaning methods, there is minimal risk of introducing invasive species to new streams in the proposed Project area.

4.6.3 Fisheries of Special Concern

The Bonneville cutthroat trout is the only fish species of concern identified within the proposed Project area. While the northern leatherside chub and least chub occur in the general vicinity of the Project, the UDWR has confirmed that these species are not found in waterbodies that Kern River proposes to cross. The FWS completed a review of the status of the Bonneville cutthroat trout and determined that federal listing is not warranted at this time. However, the species continues to be protected by the State of Utah.

The Bonneville cutthroat trout could be present in three waterbodies that would be crossed by the Project: East Canyon Creek, Sheep Canyon Creek, and Hardscrabble Creek. The UDWR recommends avoidance of construction outside the work window, which is from July 15 to February 28; however, Kern River has proposed to cross East Canyon Creek within the avoidance window to take advantage of lower water flows. Additionally, the use of a dry crossing method would minimize sedimentation and turbidity within the waterbody during construction. As discussed above, Kern River is requesting to install equipment bridges at Sheep Canyon Creek and Hardscrabble Creek and cross East Canyon Creek outside of the permitted timing window. We have included a recommendation that Kern River must cross during the permitted timing window unless expressly permitted by the applicable agencies.

Pipeline construction could cause effects to the Bonneville cutthroat trout, as described in section 4.6.1. Kern River is consulting with the COE, FWS, and UDNR to ensure that its work plan includes all the necessary mitigations and protections. Kern River is currently waiting for concurrence from the applicable agencies on its proposed waterbody crossings outside of the standard timing window.

4.6.4 Operation Impacts

Operation of the Apex Expansion Project is not anticipated to have any negative effects to fisheries. In the event that vegetation maintenance would be required along specific streambanks, impacts on fisheries would be minor. No aboveground facilities would be located adjacent to waterbodies; thus, no impacts would occur from aboveground facilities operations.

The pipeline would be designed; installed, tested, and maintained such that the chance of a pipeline rupture would be extremely remote (see section 4.12). However, if once operational, a pipeline rupture were to occur beneath a waterbody crossing, natural gas would percolate through the soil and sediments underlying the waterbody, rise through the water column, and rapidly dissipate into the atmosphere. The potential outcome would depend on the volume of natural gas released and whether an ignition source is available. A pipeline break could result in soil, sediment, and debris being thrown from the area of the break, destruction of streambank vegetation, and, in the case of ignition, explosion, or fire potentially resulting in a severe impact on nearby fisheries and habitat. For a less severe release, natural gas would displace oxygen within the interstitial water of the sediments, resulting in temporary hypoxia within the sediments. As natural gas ascends through the water column, it would displace oxygen, possibly producing hypoxic conditions in the immediate vicinity of the release and for some distance downstream. Fish in the vicinity of a natural gas release could be impacted by temporary hypoxia. Considering the narrow width of the waterbodies that would be crossed along the proposed pipeline route and the relatively shallow depth of the crossing, most of the natural gas would be rapidly released to the atmosphere, and any change in water chemistry or quality would be minor. Because fish are mobile, most would have the ability to avoid or leave the areas with unfavorable environmental conditions resulting from such a release. We believe that the chance for a pipeline rupture to affect aquatic resources is extremely remote.

Overall, construction impacts on fisheries would be temporary and minor due to the relatively small area in which each waterbody would be affected. Kern River's intention to use dry-ditch crossing methods at waterbodies, unless they are dry at the time of crossing, would further reduce impacts on fisheries resources. In addition, compliance with timing restriction windows, our recommendation, and implementation of Kern River's Procedures, we believe that impacts on fishery resources would be minimized during construction. Direct impacts on fisheries and aquatic resources are expected to be minor and short-term. No significant impacts on fisheries resource would be anticipated as a result of Project operations.

4.6.4.1 PacifiCorp Electrical Distribution Line Impacts

The channels of the Beaver River and Trans River Canal proposed to be crossed by the 7.2 kV distribution line are ephemeral and narrow. To mitigate impacts, the BLM would require setbacks from the river and canal banks for the placement of pole structures. These distances have not yet been determined. Upon determining setback pole locations, PacifiCorp would submit a site-specific engineering drawing of the pole setbacks and spacing for the administrative record. Therefore, impacts on the Beaver River and Trans River Canal would not be expected.

4.7 THREATENED, ENDANGERED, AND OTHER SPECIAL STATUS SPECIES

Special status species are those species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Included in this category are species federally listed as endangered or threatened, are considered as candidates for such listing by the FWS, or are petitioned for listing under the ESA; species managed by the BLM or USFS to prevent listing under the ESA; and those species that are designated as Utah state species of concern or receive special management considerations.

In accordance with the ESA the FWS lists certain species as endangered, threatened, candidate, or petitioned, and the FWS regulates and permits actions that occur in areas where listed-species or their critical habitats occur. Section 7 of the ESA requires each federal agency to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of federally listed threatened or endangered species, or result in the destruction or adverse modification of the designated critical habitat for any federally listed species. The FERC, as lead agency in the review of the proposed Project, is required to consult with the FWS to determine whether federally listed species or their designated critical habitat, may occur in the proposed Project area and to determine the proposed action's potential effects to these species and critical habitats. For actions involving major construction activities with the potential to affect listed species or designated critical habitats, the FERC must report its findings to the FWS in a BA.

Kern River, as the non-federal representative to the FERC, conducted informal consultation with FWS offices in Wyoming and Utah. In addition, Kern River consulted with appropriate USFS, BLM, and state agencies possessing expertise regarding sensitive species, and reviewed threatened and endangered species-related database information.

We have reviewed the information submitted by Kern River, performed our own independent analysis, and consulted directly with the FWS. Our analysis of the potential for Project-related impacts on federally listed species and their designated critical habitats is provided in this EIS. Table 4.7.1-1 lists the species with the federal status that could occur in the Project area along with any ESA determinations of effect. Those species cross-listed with state or USFS status are also noted. Additionally, the BGEPA recently had protections clarified for the bald and golden eagles (FWS 2009), and although the bald eagle was delisted from the ESA, both species could require consultation under the BGEPA and possibly permitting discussions with the FWS (see section 4.5.4).

To comply with Section 7 of the ESA, we are requesting that the FWS consider this EIS as our official BA for the proposed Project. Because ESA consultation with the FWS is ongoing and to ensure that Kern River does not begin construction until Section 7 consultation is complete, **we recommend that:**

- **Kern River not begin construction of the proposed Project facilities until:**
 - a. **the FERC staff completes any necessary consultations with the FWS; and**
 - b. **Kern River has received written notification from the Director of OEP that construction and/or use of mitigation (including implementation of conservation measures) may begin.**

Additionally, the BGEPA recently had protections clarified for the bald and golden eagles (FWS 2009). Although the bald eagle was de-listed from the ESA, both species could require consultation under the BGEPA and possibly permitting discussions with the FWS (see section 4.5.4).

Prior to initiation of field surveys, the USFS, BLM, and UDWR were consulted to identify sensitive species that could occur within the proposed Project area. State of Utah and USFS species that could occur or are found within the proposed Project vicinity are shown in table 4.7.2-1 and analyzed in greater detail in section 4.7.2.

**TABLE 4.7.1-1
Federally Listed, Candidate, and Petitioned Species Potentially Occurring in the Proposed
Apex Expansion Project Area**

Species	Federal Status ^a	State Status ^b	USFS Status ^c	County (Portion of Potential Range Crossed by the Proposed Project)	Determination
Birds					
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	C	SPC	X	Morgan, Salt Lake, and Beaver	Not applicable ^d
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	C	S- ESA,SPC		Morgan, Davis, and Salt Lake	Not applicable ^d
Mammals					
Pygmy rabbit (<i>Brachylagus idahoensis</i>)	P			Salt Lake and Beaver	Not applicable ^d
Utah prairie dog (<i>Cynomys parvidens</i>)	T	S-ESA		Beaver	May affect, not likely to adversely affect
Amphibian					
Northern leopard frog (<i>Rana pipiens</i>)	P			Morgan, Davis, and Salt Lake	Not applicable ^d
Vascular Plant					
Ute ladies'-tresses (<i>Spiranthes diluvialis</i>)	T	S-ESA		Salt Lake	May affect, not likely to adversely affect
Notes:					
^a E= Endangered; T=Threatened; C=Candidate; P=Petitioned					
^b SPC = Species of Concern; S-ESA= State sensitive because species is listed federally or a federal candidate.					
^c X = Included on USFS listing of sensitive species within the UWCNF.					
^d Petitioned and candidate species are not protected by the ESA and do not require official ESA determinations.					

4.7.1 Federally Listed Threatened, Endangered, Candidate, and Petitioned Species

4.7.1.1 Greater Sage-grouse

The greater sage-grouse was petitioned for ESA listing in 2002 and in 2003. Although the species was not found to warrant listing under the original petition, subsequent legal challenges led to additional review, and on March 5, 2010 the FWS determined that the species warrants listing but that

listing is currently precluded due to the need to list higher priority species first. The greater sage-grouse is now considered a candidate species under the ESA and the individual states will continue to be responsible for managing the species. BLM, under an Instruction Memorandum dated March 5, 2010, disclosed its intent to develop a range-wide map of “priority” habitat, or habitat with the highest conservation value relative to maintaining sustainable sage-grouse populations, that would be used to ensure development does not occur to an unreasonable extent in those habitats. The greater sage-grouse is considered a wildlife species of concern in the State of Utah and is listed as a Utah and BLM sensitive species. It is found in Morgan, Salt Lake, and Beaver Counties, but is not known to occur in Davis County.

The greater sage-grouse generally moves through varying habitat types through the year (Braun et al. 2001, Connelly et al. 2004). In the spring (March through mid-May), lek sites are selected for courtship and breeding in open areas surrounded by sagebrush. Following courtship, greater sage-grouse use nesting habitat from April through June with moderate sagebrush cover of varying heights with grasses and forbs. Nesting generally occurs between 0.6 and 3.9 miles from the nearest lek, although females have been known to nest more than 12 miles away. Brood-rearing habitat changes from the early season (mid-May through July), when greater sage-grouse use open sagebrush habitat, to the late season (July through November), when the preferred habitat is riparian meadows and lush grasslands of herbaceous vegetation surrounded by sagebrush. Winter habitat is in sagebrush areas where snow cover leaves about 1 foot of sagebrush above the snow line, and is occupied from November through February (Hupp and Braun 1989, UDWR 2009). FWS has indicated that leks must be avoided by a 4-mile buffer during the breeding season.

Greater sage-grouse crucial wintering and brooding habitat occurs from MP 0.0 to 2.5, MP 3.8 to 4.6, and MP 11.5 to 11.8 (totaling 3.6 miles of intersection, of which all but 0.3 mile would be collocated with an existing right-of-way). It is not yet known if the BLM will classify any or all of this range to be priority habitat for the greater sage-grouse. Although sagebrush habitat occurs in other areas, the slopes are too steep to support ordinary greater sage-grouse use. There are five known active or historical leks located within 5 miles of the proposed Project area, with combined buffer zones that intersect the first 5 miles of the pipeline route. The closest leks occur less than 1 mile from the proposed Project centerline. Brooding habitat has also been identified approximately 0.6 mile from the proposed location of the Milford Compressor Station; however, the sagebrush habitat within the footprint of the Milford site has been degraded by cattle grazing and does not provide suitable habitat for sage-grouse. A total of 14 existing access roads would be used and/or improved within wintering and brooding habitat; improvements to these roads would result in 2.3 acres of temporary impact and 1.0 acre of permanent impact on the areas immediately adjacent (up to 2 feet on either side) to the existing roads. Greater sage-grouse habitat does not occur within any of the other proposed Project areas, and no leks are located within 4 miles of any of the other areas proposed for disturbance.

Construction of the pipeline, use of access roads and ATWSs, and permanent operational facilities and associated traffic could disrupt the greater sage-grouse during the non-breeding and breeding seasons. Traffic to and from the construction areas and pipeline construction in the right-of-way could disrupt courtship and breeding behavior, as well as use of brood-rearing habitat depending on the location and timing of Project activities. Greater sage-grouse nest abandonment could occur if construction activity occurs near or in nesting or brood-rearing habitat. Individuals could be more widely dispersed, reducing courtship success, and Project traffic could cause direct mortality from collision with birds. In addition, blasting is likely to occur between MP 3.8 and 4.6, and is currently expected take place between April 15 and August 31, 2011.

Long-term habitat fragmentation and loss could occur with installation of the pipeline, facilities, and access roads located in greater sage-grouse habitat. Eventually, sagebrush should recolonize most of

the construction right-of-way so habitat could be restored where maintenance mowing does not occur. However, annual maintenance of a 10-foot-wide strip, and periodic mowing of the 50-foot-wide permanent right-of-way through sagebrush habitat could lead to disruption of greater sage-grouse movements and potentially leave individuals more susceptible to predation in the open areas.

Kern River has committed to conducting sage-grouse surveys during March and April of 2010 in accordance with UDWR guidelines, and to provide those survey results to the applicable agencies. Kern River has proposed to construct through the sagebrush habitat between MP 0.0 and 5.5 during the late fall/early winter of 2010 to avoid impacts on sage-grouse during the breeding season. Kern River has also committed to the following measures which would minimize impacts on greater sage-grouse:

- requiring a qualified Environmental Inspector, with the ability to halt active construction, to be on-site during all construction activities within active sage grouse breeding, nesting, and brooding areas;
- staking or flagging construction workspace limits, ATWS locations, wetland and waterbody crossings, and sensitive resource areas prior to clearing operations;
- minimizing blade work within the right-of-way, and, where practical, crushing vegetation in-place;
- scalping or blading previously undisturbed portions of the right-of-way such that root systems remain intact;
- limiting vehicle traffic to approved areas such as the construction right-of-way and access roads;
- removing construction-related materials from the Project area as soon as practical following installation of the pipeline and backfilling;
- constructing water bars, according to USFS standards, on slopes and in areas with erodible soils to minimize erosion;
- decompacting any compacted soils, as identified by the Environmental Inspector, to a minimum of 6-inches in non-agricultural areas; and
- replanting all Great Basin sagebrush habitats with seed mixtures that are compatible with the Utah's Standards and Guidelines for Healthy Rangelands (BLM 1997).

Although Kern River has minimized impacts on sage-grouse habitat through collocation with existing rights-of-way, we believe that additional measures should be implemented to further minimize impacts on the suitable lekking habitat between MP 0.0 and 4.6. In addition, the USFS has noted that greater sage-grouse can utilize Great Basin sagebrush habitats with steep slopes and although Kern River has acknowledged that these areas occur along the proposed route, the areas are not currently proposed for inclusion in the 2010 surveys. Therefore, to minimize impacts on lekking habitat during the active season, and to further minimize the effects of habitat fragmentation and potential loss of greater sage-grouse, **we recommend that:**

- **Kern River adopt the following measures to minimize impacts on greater sage-grouse:**
 - a. **identify all areas of Great Basin sagebrush within the right-of-way and access roads that are potential habitat for sage-grouse, regardless of slope gradient, and include those areas in the lek surveys proposed for spring 2010;**

- b. **avoid clearing and construction activities between March 1 and July 31 within a 4-mile radius of any active leks encountered during its 2010 surveys;**
- c. **file a site-specific blasting plan developed in consultation with the FWS and UDWR for the sagebrush habitat between MP 3.8 and 4.6 that includes measures for both sage-grouse and pygmy rabbit; and**
- d. **plant Great Basin sagebrush within the construction work area during restoration at MP 0.0-2.5, 3.8-4.6, and 11.5-11.8.**

Due to the relatively high presence of greater sage-grouse within the Project area, individual sage-grouse would likely be affected by construction of the Project. In addition, the USFS has indicated that the sage-grouse population in the East Canyon WMA is relatively isolated geographically, and that construction activities in the area could result in localized population declines. However, given the small area of suitable habitat that would be disturbed, the extent of collocation through that habitat, Kern River's proposed measures, and our recommendation, we conclude that population-level effects are unlikely and that construction and operation of the proposed Project would not lead to a trend toward federal listing.

4.7.1.2 Yellow-billed Cuckoo

The western population of the yellow-billed cuckoo is a federal candidate species, and because of this federal designation it also is a State of Utah sensitive species. The western population of the yellow-billed cuckoo inhabits large tracts of deciduous forested wetland and floodplain habitats with a dense scrub understory. The species is found sporadically and in localized areas with suitable habitat in Utah, and is threatened by habitat fragmentation. In the proposed Project area, suitable habitat exists at MP 0.9, 5.0 - 5.4, 17.3, 19.8, and 21.2 (totaling 0.8 mile of right-of-way intersection with suitable habitat). Of these areas of potential habitat, all but the locations at MP 17.3 and 19.8 would be collocated with existing rights-of-way, minimizing the chance for habitat fragmentation.

Breeding occurs from mid-June through July. In June 2009, Kern River used audio vocalizations to survey for the yellow-billed cuckoo at the five noted locations but did not observe or infer their presence; however, as the species is migratory, future use of the potential habitat is possible. If adult yellow-billed cuckoos were present in or near the Project area during construction, they could be displaced by noise or ground-disturbing activities. They would likely return to the area following construction. During the breeding season, the potential exists for yellow-billed cuckoos to abandon nests, causing the loss of eggs or young, if they are located near construction activities. In order to avoid the potential for loss of nesting success of yellow-billed cuckoos, **we recommend that:**

- **If construction is to occur through suitable yellow-billed cuckoo habitat at MP 0.9, 5.0-5.4, 17.3, 19.8, and 21.2 during the breeding season, Kern River conduct audio surveys immediately prior to such construction. If individuals or evidence of yellow-billed cuckoos are found, Kern River should not begin construction in these areas until we have reviewed Kern River's proposed avoidance and/or mitigation measures, as well as any agency comments on these measures, and Kern River has received written notification from the Director of OEP that construction or use of mitigation may begin.**

We believe that the proposed Project may have an impact on individual yellow-billed cuckoos or their habitat; however, given the small area of suitable habitat that would be disturbed and our recommendation, no population-level effects are anticipated and the Project would not lead to a trend toward federal listing.

4.7.1.3 Pygmy Rabbit

The pygmy rabbit is a federally petitioned species under the ESA and is a State of Utah sensitive species. The FWS review of the pygmy rabbit is on-going. If FWS determines that the species warrants listing under the ESA, and if evidence of the pygmy rabbit is found within the proposed Project area, then formal consultation with the FWS and a BO would be required. Like the greater sage-grouse, the pygmy rabbit is a sagebrush-obligate species. The pygmy rabbit uses burrows for refuge and breeding and generally stays within 100 feet of their burrows, although they may roam farther. Breeding occurs from February to May (Keinath and McGee 2004). Although the Utah Natural Heritage Database has indicated that no current or historical burrows are known within 5 miles of the proposed Project, suitable habitat for this species is found along the proposed right-of-way from MP 0.0 to 2.5, 3.8 to 4.6, and 11.5 to 11.8, totaling 3.6 miles. Additionally, suitable habitat is present at the proposed Milford Compressor Station site.

Kern River has committed to conducting pygmy rabbit surveys in the spring of 2010 using the UDWR field survey protocols (UDWR 2004). Where burrows are found, Kern River would attempt to realign the Project workspace to avoid disturbance within 100 feet of each burrow. If avoidance of the burrow in this manner is not possible, Kern River would consult with the UDWR and the FWS to develop mitigation measures to minimize and/or offset disturbance to individuals. Because surveys for the pygmy rabbit have not been completed, **we recommend that:**

- **Prior to construction, Kern River file the results of its 2010 pygmy rabbit surveys, and submit the results to the FWS, BLM, and UDWR. If individuals or evidence of pygmy rabbits are found, Kern River should file a plan detailing pygmy rabbit avoidance/mitigation measures developed in consultation with the applicable agencies, for review and written approval of the Director of OEP.**

Construction activities could cause direct mortality to pygmy rabbits if an individual or an occupied burrow is within the trenching area. Additionally, burrows could be covered during ground-disturbing activities. Pygmy rabbits are highly mobile and would likely leave areas during surface activities and therefore are unlikely to suffer from traffic-induced injury or mortality. Short-term impacts on pygmy rabbit use of sagebrush areas near Project construction may occur; however, individuals would likely return following restoration. As discussed in section 4.7.1.1, blasting would likely take place within sagebrush habitat between MP 3.8 and 4.6; therefore, we have recommended that Kern River develop a site-specific blasting plan developed in consultation with the applicable agencies to minimize impacts to the species.

We believe that the proposed Project may have a negative impact on individual pygmy rabbits and their habitat; however, because of the small area of suitable habitat that would be disturbed by the Project and our recommendation, no population-level effects would occur and the Project would not lead to a trend toward federal listing.

4.7.1.4 Utah Prairie Dog

The Utah prairie dog is an ESA listed threatened species that is found in low-slope areas in desert scrub regions in the southwestern quarter of Utah. A known population of Utah prairie dogs is within 5 miles of the proposed Milford Compressor Station site and associated electrical distribution line. In addition, suitable habitat is present at the compressor station site. Preliminary field surveys did not identify any burrows at the compressor station site, although these were not species-specific surveys. Therefore, Kern River proposes to conduct Utah prairie dog surveys in 2010, during prairie dog active season in accordance with draft FWS survey protocols and in coordination with the BLM.

In order to avoid impacts on Utah prairie dog, we further recommend that:

- **Prior to construction, Kern River file the results of its 2010 Utah prairie dog surveys, and submit the results to the FWS, BLM, and UDWR. If individuals or evidence of Utah prairie dogs are found, Kern River should file a plan detailing Utah prairie dog avoidance/mitigation measures developed in consultation with the applicable agencies, for review and written approval of the Director of OEP.**

If the species is encountered, then the FERC would re-open Section 7 consultation with the FWS to develop suitable mitigation and minimization measures, such as the spatial and temporal buffers around active colonies noted in FWS's Biological Opinion for Utah Resource Management Plans (FWS 2007). Kern River has also indicated that it might seek an alternative location for the Milford Compressor Station if any Utah prairie dogs are found during surveys. We analyzed the alternative compressor station site in section 3.6, and we determined that it is environmentally acceptable if Kern River determines that the Milford Compressor Station needs to be relocated because of Utah prairie dog presence at the proposed location. If it is determined that the alternative location needs to be used, then Kern River would be required to obtain the appropriate approvals from the FERC and the BLM. Based on the lack of burrows on the proposed site, our recommendation, and Kern River's commitment to conduct surveys in 2010, we believe that the Project *may affect, but is not likely to adversely affect*, the Utah prairie dog.

4.7.1.5 Northern Leopard Frog

The northern leopard frog, a petitioned species, is currently under a 12-month review by the FWS to determine whether listing under the ESA is warranted. The northern leopard frog occurs in well-vegetated slow-moving aquatic areas, including streams where emergent vegetation is present along the margins. Potentially suitable habitat is present for the northern leopard frog at MP 0.5, 1.2, 5.2, 5.4, 6.3, 10.1, 11.8, 16.5, 19.0, 20.4, 20.6, and 27.0. During the 2009 field surveys, Kern River tentatively identified a frog as a northern leopard frog; therefore, field surveys will be conducted in spring 2010 to definitively determine the presence or absence of the species within potential habitat.

If the species is determined to be present, Kern River has proposed to conduct pre-construction clearance surveys to clear the right-of-way of individuals and would conduct population monitoring for 3 years after construction in order to determine the impacts of pipeline construction on the species. Kern River also proposes to use best management practices to minimize impacts on the northern leopard frog, including clearing vegetation during the winter in order to avoid direct impacts on breeding frogs and leaving 1 to 2 feet of vegetative growth in riparian areas to promote bank stability during the spring flood season. Kern River's Reclamation Plan would ensure revegetation of wetland areas following construction; therefore, no long-term impact on this species is expected. Individual frogs could be run over or buried by construction equipment. We believe that the proposed Project could have a negative impact on individual leopard frogs or their habitat; however, because of the small area of suitable habitat that would be disturbed, we do not anticipate any population-level effects and that the Project would not lead to a trend toward federal listing of the northern leopard frog.

4.7.1.6 Ute Ladies'-tresses

The Ute ladies'-tresses is an ESA-listed threatened plant that is found in riparian edges, seeps, and lake shores. Within Utah, the species is known to occur in Daggett, Duchesne, Garfield, Salt Lake, Tooele, Uintah, Utah, Wayne, Wasatch, and Weber Counties (UDWR 2010). The Wasatch Loop would cross Salt Lake County and the Elberta Compressor Station would be located in Utah County, although it would not be improved outside of the existing facility boundaries. The majority of the riparian and wetland habitat along the proposed Project is lacking in the gravel deposits and alluvial geomorphology

required by this species although potential habitat for Ute ladies'-tresses was identified in Morgan County near MP 0.2 and 11.6. Kern River conducted surveys within the potential habitat in May and June 2009 and did not identify any Ute ladies'-tresses or suitable habitat; however, as the flower generally blooms between late July and August, it is possible that the species was not in bloom during the previous surveys and was therefore not identified (UDWR 2010). In addition, the USFS has indicated that potential habitat is present in the area. Therefore, **we recommend that:**

- **Kern River not begin construction of the proposed Project facilities until:**
 - a. **it consults with USFS and FWS regarding potential habitat for the Ute ladies'-tresses within the proposed Project area and, if applicable, develop a survey protocol that would promote identification of the species; and**
 - b. **files the results of any surveys completed for the Ute ladies'-tresses.**

If the Ute Ladies'-tresses are found in the Project areas, our general recommendation at the beginning of section 4.7 would ensure that any necessary Section 7 consultation would be complete before construction is authorized.

Because of the absence of Ute Ladies'-tresses during previous surveys, the project area lacking the gravel deposits and alluvial geomorphology the Ute ladies'-tresses requires, and our recommendation, we believe that construction and operation of the proposed Project *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses.

4.7.2 Other Special Status Species

The State of Utah has identified sensitive species for management and protection in order to avoid the need for a species to be federally listed under the ESA. By rule, wildlife species that are federally listed, candidates for federal listing, or for which a conservation agreement is in place automatically qualify as Utah Sensitive Species. Additional species on the Utah Sensitive Species list, "wildlife species of concern," are those species for which there is credible scientific evidence to substantiate a threat to continued population viability. It is anticipated that wildlife species of concern designations will identify species for which conservation actions are needed, and that timely and appropriate conservation actions implemented on their behalf will preclude the need to list these species under the provisions of the ESA.

The State of Utah has identified "tiers" for each of their sensitive species. Utah Tier I species are federally threatened, endangered, or candidate species under the ESA, or have a conservation agreement in place. Tier II species are Utah's wildlife species of concern, which the UDWR manages to prevent from being federally listed. Utah Tier III species are those species that: (a) have need for more information; (b) indicate a habitat at risk; (c) demonstrate a marked decline in status; or (d) are facing an immediate threat. By Instruction Memorandum 2007-078, the Utah BLM adopts the existing UDWR *Utah Sensitive Species List*.

The USFS also has identified sensitive species on USFS lands and manages their lands in order to increase protections for these species to avoid listing under the ESA. Kern River reviewed and discussed the list of USFS sensitive species with the USFS in order to identify species that were recommended for avoidance, minimization, or mitigation measures.

State of Utah, BLM (in adopting the State of Utah's *Sensitive Species List*), and USFS sensitive species that could potentially occur or are known to occur within the proposed Project area are

summarized in table 4.7.2-1. Species noted to be of particular concern to the USFS, BLM, and the State of Utah are discussed further below. Migratory bird species are discussed in more detail in section 4.5.

Northern goshawk is a Forest Service Intermountain Region Sensitive Species, a UWCNF management indicator species, and a species under a Conservation Agreement between the USFS and the FWS. Protection of the northern goshawk is of special concern to the USFS. Field surveys conducted between MP 11.5 and 15.0 identified the presence of four northern goshawks, but did not identify specific nests or nesting activity. Survey of potential habitat between MP 17.3 and 17.4 did not identify any individuals or nests. The USFS, however, has identified two northern goshawk nest sites along the proposed pipeline route near MP 12.0 and 14.5. The raptor surveys proposed for 2010 will include northern goshawks, and broadcast acoustical surveys will be conducted specifically to identify northern goshawks in late June/early July 2010 to further identify nests and individuals in the area. In section 4.5, we have included a recommendation that Kern River file the results of the raptor surveys and copies of consultations with the applicable agencies, and to develop appropriate spatial buffers and/or other mitigation measures to protect raptors. The USFS has indicated that much of the potential effect of the Project on northern goshawk may be able to be mitigated by timing construction activities to avoid the nesting season (March 1 through mid-August) and nest buffer zones (0.5 mile). However, Kern River has stated that avoidance of nests and nesting impacts, either through adherence to agency-recommended timing windows or through route variations, would not be feasible due to topographical limitations and the local season of constructability. In February 2010, Kern River, the FWS, the USFS, the BLM, and the UDWR agreed to table discussions regarding specific mitigation measures for northern goshawk until field surveys have been completed. Kern River and the applicable agencies will continue discussions once site-specific data is available. Kern River has agreed to prepare a site-specific mitigation plan in the event that northern goshawk are actively nesting in proximity to the proposed pipeline route.

The American pika was a petitioned species and was being reviewed for listing status under the ESA by the FWS; however, on February 5, 2010, the FWS determined that the American pika did not warrant listing and that the only potential threat to the species is climate change. The American pika is also considered a sensitive species in Utah and is in need of further information regarding population and habitat monitoring (UDWR 2005). This mammalian species inhabits rocky areas above the treeline in subalpine and alpine mountainous areas. This species is particularly sensitive to warm periods, causing the pika to retreat to cooler, higher elevation areas in response to the trend toward longer, warmer summers. The proposed Project area has one rocky area with a few boulders at about 8,400 feet elevation at MP 15.8 that is not likely to be suitable habitat for the American pika; however, Kern River has agreed to survey this area in June and September 2010 to assess whether the species is present. As the FWS has determined that the pika does not warrant federal listing, Kern River has stated that it would provide the results of the surveys to the applicable agencies but would otherwise not mitigate impacts on any American pikas that are found. Utah requires that a Certificate of Registration be obtained for the take of an American pika as a non-game species. Because of the lack of suitable habitat and Kern River's commitment to complete additional surveys, we believe no population-level effects to the American pika would occur and the Project would not lead to a trend toward future federal listing.

TABLE 4.7.2-1
State of Utah and USFS Sensitive Species Potentially Occurring within the Proposed Apex Expansion Project Area

Common Name (Scientific Name)	BLM and Utah State Rank ^a	Utah Tier Level ^b	U.S. Forest Service List ^c	Comments
Birds				
Bobolink (<i>Dolichonyx oryzivorus</i>)	SPC	II	-	Inhabits wet meadows and grasslands during summer in Utah; potentially suitable habitat from MP 0.0 to 2.5.
Burrowing owl (<i>Athene cunicularia</i>)	SPC	II	-	Occurs in open shortgrass and low-density sagebrush areas; potential habitat from MP 0.0 to 2.5. Surveys for this species are planned for 2010.
Ferruginous hawk (<i>Buteo regalis</i>)	SPC	II	-	Nests and hunts in large-tract low-disturbance sagebrush grasslands; could occur from MP 0.0 to 2.5. Surveys for raptors planned for 2010.
Flammulated owl (<i>Otus flammeolus</i>)	-	-	X	Occupies coniferous forests with aspen or oaks and a scrub understory; suitable habitat from MP 10.4 to 10.7, 12.0 to 14.7, and 16.4 to 16.8. Surveys for raptors planned for 2010.
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	SPC	II	-	Forages and breeds in grasslands and open sagebrush areas, could occur from MP 0.0 to 2.5 and 23.7 to 25.7.
Lewis's woodpecker (<i>Melanerpes lewis</i>)	SPC	II	-	Nests in open Ponderosa pine stands and in riparian woodlands, winters in oak woodlands. Species observed in 2009 at MP 0.0. Suitable habitat at MPs 0.0, 4.6 to 5.7, along access roads, and at creek crossings.
Long-billed curlew (<i>Numenius americanus</i>)	SPC	II	-	Breeding range in open grasslands or low-density sagebrush communities, sometimes agricultural fields; suitable habitat from MP 0.0 to 2.5 and 23.7 to 25.7.
Northern goshawk (<i>Accipiter gentilis</i>)	CS	I	X	Primarily found in coniferous forests and at edges with sagebrush habitat, nests in forested areas; suitable habitat from MP 12.0 to 14.7, along access roads, and at creek crossings. Surveys for raptors planned for 2010.
Sharp-tailed grouse (<i>Tympanuchus phasianellus</i>)	SPC	II	X	Occupies open grasslands and sagebrush habitat, sometimes at edges of coniferous forests; breeding and winter habitat from MP 0.0 to 2.5.

TABLE 4.7.2-1 (continued)
State of Utah and USFS Sensitive Species Potentially Occurring within the Proposed Apex Expansion Project Area

Common Name (Scientific Name)	BLM and Utah State Rank ^a	Utah Tier Level ^b	U.S. Forest Service List ^c	Comments
Birds (continued)				
Short-eared owl (<i>Asio flammeus</i>)	SPC	II	-	Occurs in grasslands and sagebrush communities throughout year; suitable habitat from MP 0.0 to 2.5 and 23.7 to 25.7. Surveys for raptors planned for 2010.
Three-toed woodpecker (<i>Picoides tridactylus</i>)	SPC	II	X	Nests and forages in coniferous montane forests and will forage in wetland areas year-round; potentially suitable habitat from MP 12.0 to 14.7, at 17.5, along access roads and at creek crossings.
Mammals				
American pika (<i>Ochotona princeps</i>)	-	III	-	Inhabits rocky slopes; could be present suitable habitat at MP 15.8.
Northern flying squirrel (<i>Glaucomys sabrinus</i>)	-	III	-	Inhabits coniferous forests; could be present in suitable habitat from MP 10.4 to 10.7, 12.0 to 14.7, and 16.4 to 17.2.
Spotted bat (<i>Euderma maculatum</i>)	SPC	II	X	Occurs in low desert, scrub-shrub, and mountain conifer forests year-round; roosts in caves; could forage in Project area, but no roosting habitat present.
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	SPC	II	X	Inhabits coniferous and mixed forests, deserts, grasslands, and riparian areas year-round; roosts in caves; could forage in potential habitat from MP 8.0 to 17.0, but no roosting habitat.
Amphibians				
Western boreal toad (<i>Bufo boreas</i>)	SPC	II	-	Breeds in sandy-bottomed slow-water wetlands and waterbodies, adults also forage in grasslands and forests. Multiple areas of potential habitat. Kern River will conduct species surveys in spring 2010.
Columbia spotted frog (<i>Rana luteiventris</i>)	CS	I	-	Occurs and breeds in marshes, pond edges with emergent vegetation, and slow-moving coldwater streams, and springs. Multiple areas of potential habitat. Kern River will conduct species surveys in spring 2010.

TABLE 4.7.2-1 (continued)
State of Utah and USFS Sensitive Species Potentially Occurring within the Proposed Apex Expansion Project Area

Common Name (Scientific Name)	BLM and Utah State Rank^a	Utah Tier Level^b	U.S. Forest Service List^c	Comments
Reptiles				
Smooth greensnake (<i>Liochlorophis vernalis</i>)	SPC	II	-	Occurs in wet meadows, marshes, riparian areas, and grasslands; suitable habitat from MP 0.0 to 14.9 and 27.3 to 28.0.
Fish				
Bonneville cutthroat trout (<i>Oncorhynchus clarkii utah</i>)	CS	I	-	Occurs in high-elevation streams with forested riparian zones down to low-elevation streams in scrub-shrub areas. Spawning and fry periods are from late May to mid-July. Presence assumed in East Canyon Creek (MP 5.4), Sheep Canyon Creek (MP 6.3), and Hardscrabble Creek (MP 11.8).
Plants				
Alpine cinquefoil (<i>Potentilla pensylvanica</i> var. <i>paucijuga</i>)	-	-	X	Open, often rocky sites in sagebrush communities to above timberline.
Alpine pepper plant (<i>Lepidium montanum</i> var. <i>alpinum</i>)	-	-	X	Sagebrush and spruce-fir communities from 5,000 to 10,000 feet.
Arctic poppy (<i>Papaver radicum</i> var. <i>pygmaeum</i>)	-	-	X	Occurs in alpine tundra communities, with <i>Polemonium</i> , <i>Smelowskia</i> , <i>Erigeron</i> , sedges and saxifrages, between 11,100 and 12,800 feet.
Broad-leaf beardtongue (<i>Penstemon platyphyllus</i>)	-	-	X	Open rocky sites in mountain brush communities between 4,850 and 8,850 feet.
Brownie ladyslipper (<i>Cypripedium fasciculatum</i>)	-	-	X	Duff in spruce-fir or lodgepole pine forests and along shaded streams between 8,000 and 9,000 feet.
Burke's draba (<i>Draba burkei</i>)	-	-	X	Talus slopes and rocky outcrops of quartzite, limestone or calcareous shale, in Douglas-fir, mixed conifer, and maple-oak communities at 5,500 to 9,200 feet. The USFS identified potential habitat between MP 15.0 and 16.0. Surveys conducted by Kern River did not identify any habitat for Burke's draba.

TABLE 4.7.2-1 (continued)
State of Utah and USFS Sensitive Species Potentially Occurring within the Proposed Apex Expansion Project Area

Common Name (Scientific Name)	BLM and Utah State Rank ^a	Utah Tier Level ^b	U.S. Forest Service List ^c	Comments
Plants (continued)				
Cache beardtongue (<i>Penstemon compactus</i>)	-	-	X	Openings in coniferous communities, growing with <i>Monardella</i> , clematis, columbine and other penstemon species, on limestone and dolomite parent material between 7,000 and 9,800 feet.
Cottam cinquefoil (<i>Potentilla cottamii</i>)	-	-	X	Cracks and crevices in quartzite outcrops, often shaded from direct midday sunlight, at 7,500 to 10,400 feet.
Cronquist daisy (<i>Erigeron cronquistii</i>)	-	-	X	Crevices in limestone cliffs and talus between 5,750 and 8,500 feet.
Echo spring-parsley (<i>Cymopterus lapidosus</i>)	-	-	X	Among rocks, endemic to western Summit County in southwest Wyoming.
Garrett bladderpod (<i>Lesquerella garrettii</i>)	-	-	X	Alpine tundra and spruce-fir communities on limestone parent material, often in talus or on rock outcrops between 10,000 and 12,000 feet.
Garrett's daisy (<i>Erigeron garrettii</i>)	-	-	X	Moist rock crevices and cliffs between 9,000 and 12,400 feet.
Lesser yellow lady's slipper (<i>Cypripedium calceolus</i> var. <i>parviflorum</i>)	-	-	X	Boggy fens from sea level to 9,800 feet elevation. Potential habitat is located at Mill Creek (MP 19.0), unnamed tributary to Mill Creek (MP 19.0), and North Canyon Creek (MP 20.5).
Logan buckwheat (<i>Eriogonum brevicaulis</i> var. <i>loganum</i>)	-	-	X	Sagebrush-bunchgrass communities on rocky outcrops at 4,800 to 6,700 feet.
Maguire draba (<i>Draba maguirei</i>)	-	-	X	Open areas in spruce/fir forests, on dolomite, between 8,000 and 9,500 feet.
Maguire's primrose (<i>Primula maguirei</i>)	-	-	X	Limestone crevices.

TABLE 4.7.2-1 (continued)
State of Utah and USFS Sensitive Species Potentially Occurring within the Proposed Apex Expansion Project Area

Common Name (Scientific Name)	BLM and Utah State Rank ^a	Utah Tier Level ^b	U.S. Forest Service List ^c	Comments
Plants (continued)				
Rockcress draba (<i>Draba globosa</i>)	-	-	X	Gravelly, open soil of rocky slopes and exposed ridges in the montane to alpine zones.
Rydberg's musineon (<i>Musineon lineare</i>)	-	-	X	Limestone cliffs in Cache County.
Sierra fumwort (<i>Corydalis caseana</i> ssp. <i>Brachycarpa</i>)	-	-	X	Mid-montane growing in or along streams or nearby drainages between 6,200 and 10,000 feet elevation. Holbrook Canyon (MP 16.5) and Kenney Creek (MP 17.6).
Slender moonwort (<i>Botrychium lineare</i>)	-	-	X	Grass-forb meadows, under trees in woods and on shelves on limestone cliffs, mostly between 4,900 and 6,600 feet.
Smith violet (<i>Viola franksmithii</i>)	-	-	X	Cracks, crevices and holes in outcrops of limestone and dolomite, in humid, shady places at 5,300 to 5,900feet.
Spruce wormwood (<i>Artemisia norvegica</i> var. <i>piceetorum</i>)	-	-	X	Meadow, spruce-fir, lodgepole pine communities, talus, above timberline between 10,000 and 11,500feet.
Starvling milkvetch (<i>Astragalus jejunus</i> <i>jejunus</i>)	-	-	X	Sagebrush and sagebrush-juniper communities, often on windswept ridgetops at 6,000 to 7,000feet.
Tower mustard (<i>Arabis glabra</i> var. <i>furcatipilis</i>)	-	-	X	Sagebrush to aspen-fir between 5,200- and 10,400-foot elevations. Potential habitat occurs between MP 13.3 to 14.8, 16.4 to 17.2, 19.0 to 19.1 (Douglas fir forests); MP 14.8 to 15.1, 17.2 to 17.3 (Great Basin sagebrush).
Uinta green thread (<i>Thelesperma</i> <i>pubescens</i>)	-	-	X	Grassland, sagebrush-grassland, or low prostrate forb communities on the Oligocene Bishop conglomerate on cobbly soils between 8,300 and 8,850 feet.

TABLE 4.7.2-1 (continued)
State of Utah and USFS Sensitive Species Potentially Occurring within the Proposed Apex Expansion Project Area

Common Name (Scientific Name)	BLM and Utah State Rank ^a	Utah Tier Level ^b	U.S. Forest Service List ^c	Comments
Plants (continued)				
Utah angelica (<i>Angelica wheeleri</i>)	-	-	X	Boggy or very wet areas, often in riparian communities, seep and spring between 5,000 and 10,000 feet. Potential habitat occurs at Mill Creek (MP 19.0), unnamed tributary to Mill Creek (MP 19.0), and North Canyon Creek (MP 20.5).
Utah ivesia (<i>Ivesia utahensis</i>)	-	-	X	Open rocky slopes in spruce-fir communities to above timberline between 9,950 and 11,000 feet.
Utah shooting star (<i>Dodecatheon dentatum</i> var. <i>utahense</i>)	-	-	X	Wet rock crevices in Salt Lake County.
Wasatch daisy (<i>Erigeron arenarioides</i>)	-	-	X	Rock crevices between 6950 and 9,950 feet in Salt Lake, Utah, Tooele, and Box Elder Counties.
Wasatch draba (<i>Draba brachystylis</i>)	-	-	X	Aspen-fir communities in Salt Lake and Utah Counties.
Wasatch jamesia (<i>Jamesia americana</i> <i>macrocalyx</i>)	-	-	X	Mountain brush and spruce-fir communities, mostly on cliffs and other rocky places between 5,700 and 9,000feet.
Notes:				
USFS = U.S. Forest Service				
^a State Status Key: SPC = Wildlife species of concern; CS = Species receiving special management under a Conservation Agreement in order to preclude the need for federal listing. By Instruction Memorandum 2007-078, the Utah Bureau of Land Management adopts the existing Utah Division of Wildlife Resources (UDWR) Utah Sensitive Species List.				
^b Utah Tier I species are federally threatened, endangered, and candidate or conservation agreement species. Tier II species are Utah's State Species of Concern that are managed by the UDWR to prevent them from being federally listed. Tier III species are those species that (a) have need for more information; (b) indicate a habitat at risk; (c) demonstrate a marked decline in status; or (d) are facing an immediate threat.				
^c X = Included on U.S. Forest Service listing of sensitive species within the Uinta-Wasatch-Cache National Forest.				

The Bonneville cutthroat trout is a Tier 1 species that is overseen by a multi-agency Conservation Agreement and is known to be present within streams that would be crossed by the Project. The Project would cross through the Northern Bonneville Management Unit, which is threatened by habitat degradation (especially fragmentation from diversion structures), recreational use, disease through introduced fish, and inadequate regulations regarding water use (UDWR 1997). The proposed Project has the potential to impact the species through habitat degradation during stream crossings and blasting, and through water use during water withdrawals from East Canyon Creek for hydrostatic testing. To minimize impacts on the species and to comply with the intent of the Conservation Agreement, Kern River would adhere to timing restrictions recommended for coldwater fisheries by the UDWR (instream work would be conducted between July 15 and February 28), restore streambed contours to the extent practicable, screen hydrostatic intakes, and maintain downstream flow for the protection of aquatic species. Following construction through the species' habitat, Kern River would submit a summary report to the UDWR detailing construction through East Canyon, Sheep Canyon, and Hardscrabble Creeks. In the unlikely event of an impact on the Bonneville cutthroat trout, Kern River would mitigate impacts through support of a state-funded stocking program. Since blasting would likely be required for construction through Sheep Canyon Creek, impacts on the species through blasting would also be mitigated through the stocking program.

Two amphibians of special concern, the western (boreal) toad and the Columbia spotted frog, potentially occur along the proposed right-of-way at MPs 0.5, 1.2, 5.2, 5.4, 6.3, 10.1, 11.8, 16.5, 19.0, 20.4, 20.6, and 27.0. Kern River originally assumed that the boreal toad was present in the Project area as suitable habitat is located at multiple locations. However, at the request of the USFS, Kern River has agreed to conduct boreal toad surveys prior to ground disturbance. The Columbia spotted frog also has potential habitat within the Project area. Impacts on this species are guided by a multi-agency Conservation Agreement to ensure that listing under the ESA does not become necessary. As proposed for the northern leopard frog, if boreal toads or Columbia spotted frogs are found in the Project area, Kern River would conduct pre-construction clearance surveys as well as population sampling at known toad locations for 3 years following construction. In addition, Kern River would minimize clearing in riparian areas as well as adhere to BMPs as outlined in its Procedures. Kern River is continuing to consult with the FWS, the USFS, the BLM, and the UDWR, as applicable, to determine supplemental mitigation methods to offset impacts on these species.

Consultation between Kern River and the USFS indicated that 32 plant species of concern were identified in the Forest Service Plan (including the Ute ladies'-tresses which was previously discussed), of which six species potentially had habitat in the vicinity of the proposed Project. These six species included the Utah angelica, tower mustard, lesser yellow lady's slipper, Sierra fumewort, Starvling milkvetch, and Burke's draba. Kern River conducted habitat level surveys along the Wasatch Loop and determined that five of these six species (all but the Starvling milkvetch) do have potential habitat along the proposed right-of-way. Kern River has proposed to conduct surveys for these five species in 2010. If the tower mustard or Utah angelica were encountered during surveys, Kern River would segregate adjacent topsoil and seeds from the plants to be used during restoration. Similarly, topsoil surrounding Sierra fumewort and lesser yellow lady's slipper would be segregated and the roots dug up and preserved for use during restoration. As Burke's draba grows on talus slopes and rocky outcrops, that habitat would be lost during construction and converted to a vegetative state. Kern River would conduct post-construction monitoring of the transplanted roots and seeds to ensure successful reestablishment of a population.

Impacts on USFS and state-listed sensitive species would typically be similar to those described for general wildlife and fish populations, as discussed in sections 4.5 and 4.6. Terrestrial wildlife, such as mammals and reptiles, could be subject to mortality or displacement during clearing and could lose habitats along the right-of-way. Birds could be affected by loss of nesting or foraging habitat during

clearing for the proposed Project, and they could be disturbed by human activity. Although all streams with flowing water would be crossed by a dry crossing method which would decrease turbidity within the stream, fish could be affected by the limited increases in turbidity and sediment load associated with dry crossings. Sensitive plants could be lost through habitat disruption.

The generalized impacts described above would largely be avoided or minimized through implementation of the measures that Kern River has proposed and additional measures that we have recommended. These measures include collocation with existing disturbance where possible, as well as implementation of Kern River's Plan, Procedures, Reclamation Plan, and Noxious Weed Control Plan. Implementation of these plans would decrease the potential for erosion, restore pre-construction contours within wetlands and streambeds, increase the potential for successful revegetation of habitats, and prevent or control the spread of weeds. We believe that, given the nature of the species present and the measures that would be implemented as part of this proposed Project, impacts on special status species would be adequately avoided or minimized.

In conjunction with the construction of the proposed Milford Compressor Station, PacifiCorp would extend an approximately 1.4-mile electrical distribution line to provide necessary power for the compressor station. This electrical distribution line would be constructed at the request of Kern River for the sole use of powering the compressor station. The electrical distribution line would cross land managed by the BLM. The electrical distribution line would operate at 7.2 kV and would be installed on approximately 23 single wood pole structures. No access roads would be required for the placement of poles. All areas necessary for the construction and maintenance of the distribution line would lie within the proposed distribution line 25-foot right-of-way. The estimated total acreage required for the electrical distribution line right-of-way would be approximately 4.1 acres.

With regard to sensitive species, brooding habitat for greater sage-grouse has been identified approximately 0.6 mile from the proposed Milford Compressor Station site and the electrical distribution line corridor; however, the sagebrush habitat within the site footprint has been degraded by cattle grazing and does not provide suitable habitat for sage-grouse. In addition, potential habitat for the Utah prairie dog is present in the area. Kern River will conduct surveys for the species in 2010 and we have recommended that appropriate mitigation be determined in consultation with the FWS and the BLM if the species is found.

4.8 LAND USE AND VISUAL RESOURCES

The proposed Apex Expansion Project includes 28.0 miles of pipeline through the Wasatch Mountains (Wasatch Loop) in Utah; a new compressor station near Milford, Utah; and modifications to four existing compressor stations located in Utah, Wyoming, and Nevada. Six new MLVs, three pig launchers, and two pig receivers would also be installed or connected to the proposed pipeline loop. A detailed description of the proposed Project and associated facilities can be found in section 2.0.

This section of the EIS includes land requirements for construction and operation of the proposed Project, as well as the existing land uses and an analysis of impacts on those lands for both construction and operation. This section also identifies designated recreation or other special use areas and includes discussions of potential visual impacts of proposed facilities on designated scenic rivers, areas, roads, recreation areas, and public lands or residential areas.

In general, lands required for construction of the Project would experience temporary impacts, considered either short term or long term based on the time for land to recover to pre-construction conditions. Lands required for operation would experience permanent impacts. Short-term impacts would recover within a 3-year period following construction, while long-term impacts require more than

3 years to recover but less than the expected lifetime of the Project. Permanent impacts would last for the life of the Project or beyond.

Because the majority of the pipeline would be collocated with the existing Kern River and/or other pipeline rights-of-way, the pipeline would be consistent with the existing environment for these land uses or areas, such that new impacts would be minimized to the extent possible. Kern River would continue to coordinate with the landowners/land managers to ensure that impacts would be adequately minimized.

4.8.1 General Impacts and Mitigation

Six land use types would be affected by the Apex Expansion Project, including agricultural land, open water, forested land, open land, developed land, and recreation land. Table 4.8.1-1 lists the acreages for each land use type affected by construction and operation of the proposed Project. The definitions of each land use type are as follows:

- Open land – includes non-forested open lands including grassland/rangeland and grazing land;
- Forested land – includes upland forest lands or woodland;
- Agricultural land – includes active crop lands, hayfields, and pasture land that is not considered rangeland;
- Developed land – includes all developed rights-of-way, such as those for roads, railroads, or utility corridors; developed industrial areas; and developed residential land;
- Open water – includes all emergent and scrub-shrub wetland areas and ephemeral, intermittent, and perennial streams, as well as open water areas; and
- Recreation land – includes lands that are directly used for recreational activities.

Construction of the Apex Expansion Project would predominately affect developed land (42.5 percent), open land (23.4 percent), and forested land (22.0 percent). The remaining impacts would be to agricultural land, recreation land, and open water. The majority of the land required for operation of the Apex Expansion Project, including land for the Milford Compressor Station, would consist of open land (40.0 percent), developed land (33.9 percent) and forested land (23.1 percent). As discussed in section 2.1.2, proposed upgrades at four existing compressor stations would occur on previously disturbed lands within the existing fence line.

In conjunction with the construction of the proposed Milford Compressor Station, PacifiCorp would construct approximately 1.4-miles of 7.2 kV electric distribution line to provide necessary power for the new compressor station. The electrical distribution line would have a permanent right-of-way width of 25 feet, with an estimated footprint of 4.2 acres of open land, used primarily for grazing.

**TABLE 4.8.1-1
Land Use Types and Acres Impacted by Construction and Operation of the Proposed Apex Expansion Project**

County/Type of Facility	Open Land		Forested		Agricultural		Developed		Open Water		Recreation ^a		Total	
	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op
Morgan County, UT														
Right-of-way and extra workspaces	85.2	43.3	80.0	25.2	7.8	2.9	35.7	18.1	2.5	1.0	0.0	0.0	211.2	90.5
Access roads ^b	0.0	0.0	0.0	0.0	0.0	0.0	46.9	31.8	0.0	0.0	0.0	0.0	46.9	31.8
Pipe yards, staging areas, and contractor yards ^c	11.9	0.0	0.0	0.0	10.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	22.4	0.0
Aboveground facilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Davis County, UT														
Right-of-way and extra workspaces	27.0	18.1	81.8	28.7	0.0	0.0	48.0	19.5	0.2	0.1	0.2	0.1	157.2	66.4
Access roads ^b	0.0	0.0	0.0	0.0	0.0	0.0	14.7	11.6	0.0	0.0	0.0	0.0	14.7	11.6
Pipe yards, staging areas, and contractor yards ^c	11.3	0.0	0.2	0.0	0.0	0.0	24.0	0.0	0.0	0.0	0.0	0.0	35.5	0.0
Aboveground facilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salt Lake County, UT														
Right-of-way and extra workspaces	8.1	4.2	6.7	3.1	3.8	1.7	4.8	2.2	0.0	0.0	3.7	1.5	27.1	12.6
Access roads ^b	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.5	0.0	0.0	0.1	0.0	0.7	0.5
Pipe yards, staging areas, and contractor yards ^c	2.6	0.0	0.3	0.0	0.0	0.0	48.6	0.0	0.0	0.0	0.0	0.0	51.5	0.0
Aboveground facilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Summit County, UT														
Yards	0.0	0.0	0.0	0.0	63.6	0.0	11.1	0.0	0.0	0.0	0.0	0.0	74.7	0.0
Weber County, UT														
Pipe yards, staging areas, and contractor yards	0.0	0.0	0.0	0.0	0.0	0.0	29.4	0.0	0.0	0.0	0.0	0.0	29.4	0.0
Uinta County, WY														
Aboveground facilities ^d	0.0	0.0	0.0	0.0	0.0	0.0	26.9	0.0	0.0	0.0	0.0	0.0	26.9	0.0

TABLE 4.8.1-1 (continued)
Land Use Types and Acres Impacted by Construction and Operation of the Proposed Apex Expansion Project

County/Type of Facility	Open Land		Forested		Agricultural		Developed		Open Water		Recreation ^a		Total	
	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op
Utah County, UT														
Aboveground facilities ^d	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0
Millard County, UT														
Aboveground facilities ^d	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0
Beaver County, UT														
Aboveground facilities ^d	33.2	33.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.2	33.2
Clark County, NV														
Aboveground facilities ^d	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0
Facility Totals														
Right-of-Way and extra workspaces	120.2	65.5	168.5	57.0	11.7	4.6	88.4	39.8	2.7	1.1	4.0	1.6	395.5	169.5
Access roads ^b	0.0	0.0	0.0	0.0	0.0	0.0	62.2	43.9	0.0	0.0	0.1	0.0	62.3	43.9
Pipe yards, staging areas, and contractor yards ^c	25.9	0.0	0.5	0.0	73.7	0.0	113.5	0.0	0.0	0.0	0.0	0.0	213.5	0.0
Aboveground facilities	33.2	33.2	0.0	0.0	0.0	0.0	61.9	0.0	0.0	0.0	0.0	0.0	95.1	33.2
Total	179.3	98.7	169.0	57.0	85.3	4.6	326.0	83.7	2.7	1.1	4.1	1.6	766.4	246.6

Notes:

^a Recreation Lands are defined as lands that are used exclusively for recreation purposes such as trails and parks.

^b Three access roads crossed multiple counties thus the access road acreages reported for Morgan, Davis, and Salt Lake Counties are estimates based on the approximate length of the access road contained in the respective county.

^c These acreages include impacts associated with staging areas to be used during construction. Impacts on specific land types for staging areas were estimated based on a review of Applicant-provided alignment sheets.

^d Construction at existing facilities would be confined to previously disturbed lands within the existing property boundary, as such no permanent impacts would result.

Approximately 17.8 miles (63.6 percent) of the proposed pipeline route would be collocated with Kern River’s existing right-of-way. An additional 0.6 mile would be collocated with the UNEV pipeline project, which is expected to be constructed by November 2010. Table 4.8.1-2 provides locations by milepost where the proposed pipeline is collocated with or adjacent to existing rights-of-way. The construction right-of-way for the pipeline would use a total of 24.8 acres of existing Kern River right-of-way. The remaining approximately 9.6 miles (34.3 percent) of the pipeline route would deviate from the existing pipeline rights-of-way due to topographic conditions and other land use constraints.

State/County	Kern River Pipeline (miles)	UNEV Pipeline ^a (miles)	Total (miles)
Utah			
Morgan	12.1	N/A	12.1
Morgan/Davis	0.5	N/A	0.5
Davis	4.0	0.6	4.6
Salt Lake	1.2	<0.1	1.1
Total	17.8	0.6	18.4
<hr style="width: 20%; margin-left: 0;"/> Note: ^a The UNEV pipeline is not yet constructed; however construction is scheduled to be complete by November 2010.			

Kern River would access construction areas along existing public or private roads, to the maximum extent practicable, especially those roads used for access during construction of the existing Kern River pipeline. Formal access road agreements would be pursued with landowners. Kern River has proposed the temporary use of 37 existing access roads ranging in length from less than 0.1 mile to up to 11.9 miles. The access road at MP 13.9 (Powerline Road) is listed as an alternative access road. This road was identified by the USFS as an unauthorized road on USFS lands and would be used by Kern River only if approved by the USFS. If approval is granted, once construction is complete, Kern River would remove the road and restore the area according to USFS specifications. A portion of another access road (Skyline Drive) was also identified as an unauthorized road on USFS land. If approval to use that portion of the road is granted, Kern River would remove the unauthorized portion of the road according to USFS specifications following construction. Appendix C lists the access roads, locations, modifications required, surface area potentially affected, and current land use for each. Kern River has identified 35 of the existing access roads that would require modifications to support construction-related traffic and equipment. Modifications may include grading, placement of additional gravel, and/or the addition of a temporary bridge on the existing surface. One new road totaling 410 feet in length would be constructed for use during construction. This new access road would temporarily disturb approximately 0.1 acre of recreation land. Following construction, this road would be removed; the area would be restored to pre-construction conditions, in consultation with the landowner and in accordance with Kern River’s Reclamation Plan.

In addition to the use of access roads, Kern River has stated that they would utilize aerial transfer of pipe to some areas of the right-of-way. While limiting impacts on access roads, aerial transfer would increase the potential for noise and visual impacts. For further discussion on noise impacts, refer to section 4.11. Visual impacts are discussed in section 4.8.4.

Following construction, 15 roads totaling 43.9 acres would be used and maintained as permanent access roads. The remaining access roads would revert to their pre-construction uses.

4.8.1.1 Open Land

Construction of the Apex Expansion Project would affect 179.3 acres of open land, which is concentrated from MP 0.0 to 3.0 and 9.0 to 12.0. The majority of these lands are used for grazing by free-ranging herds of sheep and cattle. The Project would not cross any sensitive rangeland areas such as remnant prairies or public land used for grazing allotments.

In general, standard overland construction techniques would be used for installation of the pipeline and Kern River would use measures included in their Plan and Procedures to minimize impacts. Following construction, all open land acreage would be restored as described in Kern River's Reclamation and Noxious Weed Control Plans, and in accordance with any specific requirements identified by agencies or landowners. Approximately 65.5 acres of open land would be located within the permanent right-of-way and 33.2 acres of open land would be permanently impacted by the Milford Compressor Station. While open land within the permanent right-of-way would be restored, this land would be subject to routine maintenance as discussed in Kern River's Plan. For further discussion on impacts and mitigation to vegetation, see section 4.4.

The 7.2 kV PacifiCorp electric distribution line would consist of a 25-foot-wide right-of-way for a distance of approximately 1.4 miles. The electric distribution line would impact 4.2 acres of open land on BLM and private lands. All non-permanent disturbances along this right-of-way would be reclaimed and reseeded to BLM reclamation requirements.

4.8.1.2 Forest Land

The 169.0 acres of forest land that would be affected by the proposed Project include mountain mahogany-oak scrub, Douglas fir, and riparian canyon woodlands and are primarily concentrated from MP 3.0 to 24.0. This acreage includes forested lands within the UWCNF. Impacts specific to the UWCNF are discussed in section 4.8.3.1. There are no privately owned old-growth forests, pine plantations, or other forest crops (e.g. timber, maple sugar, or Christmas trees) within the 169.0 acres.

Following construction, Kern River may restore these lands by incorporating special plantings of trees and shrub species. As discussed in section 4.4.5., impacts on forested land would be long term to permanent, depending on the time it takes lands to re-grow to pre-construction conditions. A total of 57.0 acres of currently forested land would be permanently converted to open land within the permanent pipeline right-of-way. Further information on maintenance of the permanent right-of-way can be found in Kern River's Plan and in section 4.4.

4.8.1.3 Agricultural Land

Approximately 85.3 acres of agricultural land would be affected by construction of the Project, which would primarily include active crop lands or hayfields, as well as pasture land that is not used for grazing. In general, agricultural lands are concentrated at the western end of the pipeline route with row crops comprised of winter wheat or alfalfa, and small pasture lands associated with farms and used for

both horse and cattle grazing. At this time, Kern River has not identified any CRP lands within these tracts.

The primary impact in these areas would be short-term loss of production due to construction-related activities. Following construction, agricultural land within the pipeline right-of-way would be allowed to revert to pre-construction conditions and use. In accordance with Kern River's Reclamation Plan, Kern River would implement special construction procedures in actively cultivated or rotated cropland, pastures, and hayfields to minimize potential impacts. Topsoil would be removed and stockpiled separately from excavated subsoils, and the natural flow patterns of all fields would be maintained by providing breaks in topsoil and subsoil stockpiles. During backfilling of the trench, the subsoil material would be replaced first, and cobbles would be removed from the surface of all exposed subsoil and disposed of at locations previously approved by the landowner or appropriate public disposal facilities. Following construction, crop yields would be monitored for a period of at least 3 years to ensure that yields in areas affected by construction return to yields similar to those of adjacent, undisturbed areas, as described in section 2.3 and in Kern River's Reclamation Plan. Finally, the owners of agricultural land would be compensated for the loss of agricultural production in accordance with the terms of landowner agreements. Impacts on agricultural lands would be short term and offset by compensation agreed to during easement negotiations.

4.8.1.4 Developed Land

As depicted in table 4.8.1-1, the majority of the land affected by the proposed Project is classified as developed land (38.5 percent). Approximately 326.0 acres of developed land would be required for construction; including 88.4 acres for the pipeline right-of-way and temporary workspace; 113.5 acres for pipe yards, staging areas, and contractor yards; 62.2 acres for access roads; and 61.9 acres for aboveground facilities. Developed lands in the proposed Project area are comprised of industrial areas (e.g., energy facilities, manufacturing or industrial plants), commercial areas (e.g., retail facilities), roads, railroads, mines, quarries, landfills, and residential areas (e.g., subdivisions and planned residential developments).

Areas of industrial/commercial land are concentrated from MP 25.0 to 27.0 and include facilities associated with the Chevron Refinery, an active gravel mine, transportation infrastructure and light industrial facilities, and commercial enterprises. The Wasatch Loop would cross two private roads within the Chevron Refinery property at four different locations. Additionally, the pipeline would cross an existing railroad spur which extends from the interior of the Chevron Refinery property to the Utah Transit Authority (UTA) railroad. Consultation between Kern River and Chevron regarding construction activities within the refinery property are ongoing; however, Kern River has identified several preliminary mitigation measures to help minimize impacts on refinery operations during construction, including:

- limiting the hours of construction within the refinery property;
- coordinating access along, and avoiding peak use of, access roads and the railroad spur;
- providing alternative access roads to the refinery property; and/or
- boring the access roads and railroad spur within the refinery property.

Overall, impacts on industrial/commercial land from construction activities would be short term, limited to the time of construction. Following construction, areas outside of the permanent pipeline right-of-way and aboveground facilities would be graded, seeded, or otherwise restored and allowed to revert to pre-construction conditions, except where individual landowner agreements dictate other acceptable restoration measures. As a result, land use impacts on industrial/commercial areas would be temporary.

In general, residential areas are sporadically distributed along the entire route, with a slightly higher concentration at the east end tie-in and a more substantial concentration along the western end of the proposed route (MP 24.0 to 27.0). Potential impacts and mitigation to residential areas are discussed in detail in section 4.8.2.3.

4.8.1.5 Open Water

The Apex Expansion Project would affect 2.7 acres of open water in the proposed right-of-way and ATWSs during construction. Construction procedures within all waterbodies would be conducted in accordance with all federal and state regulations, permit requirements, and Kern River's Procedures. Following construction, 1.1 acres of open water would be within the permanent right-of-way. Water resources are discussed in more detail in section 4.3 and section 4.8.3.

4.8.1.6 Recreation Land

The Apex Expansion Project would affect 4.1 acres of recreation land in the proposed right-of-way and ATWSs during construction. Construction procedures would be conducted in accordance with all federal and state regulations, permit requirements, and Kern River's Plan and Procedures. Following construction, 1.6 acres of recreation land would be within the permanent right-of-way. For further discussion of recreation and special use areas, refer to section 4.8.3.

4.8.2 Land Ownership

Approximately 59.2 percent of the land that would be affected by construction of the Wasatch Loop is considered private land (16.6 miles). The remaining land impacted by the Project would be distributed among federal and state lands. No tribal land would be crossed by the Project. Negotiated easements would be used to confer rights-of-way by a landowner to Kern River, on either a permanent or temporary (usually for construction) basis. The easement would give Kern River the right to construct, operate, and maintain the pipeline within a permanent or temporary right-of-way. In return, Kern River would compensate the landowner for use of the land. Typically, easement agreements between a company and landowner specify compensation for loss of use during construction, loss of resources, damage to the property, and allowable uses for the permanent right-of-way after construction has been completed.

If an easement cannot be negotiated with a landowner and the proposed Project has been certificated by the FERC, Kern River could use the right of eminent domain granted to it under Section 7(h) of the NGA and the procedure set forth under the Federal Rules of Civil Procedure (Rule 71A) to obtain the right-of-way and ATWSs. Although Kern River would compensate the landowner for the right-of-way and for any damages incurred during construction, a court would determine the level of compensation if a Certificate was issued. In either case, the landowner would be compensated for the use of the land. Eminent domain would not apply to lands under federal ownership.

4.8.2.1 Federal Lands

BLM Land

The 33.2-acre property proposed for the Milford Compressor Station is owned by the BLM. It is located within BLM's Minersville No.4 Grazing Allotment No. 061004 and is leased to four individuals. Kern River would be required to obtain a right-of-way grant from BLM to construct and operate the proposed aboveground facility on federal land. The entire 33.2 acres that would be impacted by the

construction of the compressor station is open land. Construction of the compressor station would result in a permanent conversion of the land to developed land.

Approximately 1 mile of the 7.2 kV PacifiCorp distribution line would be located on BLM land. It would consist of a 25-foot-wide right-of-way for a maximum disturbance of 3.4 acres on BLM lands. All non-permanent disturbances along the right-of-way would be reclaimed and reseeded to BLM reclamation requirements.

The existing Dry Lake Compressor Station is also owned by the BLM but is leased to Kern River for use as an industrial facility. Construction within the existing Dry Lake Compressor Station would be contained to the existing property boundary. As such, this action would not result in a land use change.

USFS Land

The proposed Project would affect 6.3 miles of USFS lands of the UWCNF managed by the Salt Lake Ranger District. Kern River is currently in consultation with the USFS regarding the proposed pipeline route (see section 3.5.8) and the necessary approvals to construct and operate the proposed Wasatch Loop and utilize and/or improve access roads within the UWCNF. For further discussion on the potential impacts and mitigation to USFS lands, refer to section 4.8.3.1.

The proposed pipeline alignment is within the North Wasatch Ogden Valley Management Area. The proposed Project would cross lands allocated to one of four broad management prescriptions. Each of these management prescriptions has an associated set of prescription standards and guidelines that allow, restrict or prohibit certain activities. Standards are a required course of action and any deviation requires a Forest Plan amendment. Guidelines describe a preferred or advisable course of action that is generally expected to be carried out. Deviation from compliance does not require Forest Plan amendment, but that the rationale for such deviation be documented in the project decision document (USDA 2003 pp.4-36). Pipeline construction is not specifically addressed, though associated road construction is addressed. The following summarizes the management prescriptions, and management-area specific standards and guidelines relevant to the proposed Project.

Watershed Emphasis (3.1W): Emphasis is on maintaining or improving quality of watershed conditions and aquatic habitats. Watershed function and aquatic habitat values are recognized as important and may require restoration to reach desired conditions. Areas of municipal watershed and public drinking water sources will be managed to maintain or improve soil processes and watershed conditions. A 1 acre staging area is proposed in this prescription.

(S3.1W) Timber harvest, road construction and new recreation facility development are not allowed.

Emphasis on Recreation Non-motorized Settings (4.2): These areas provide recreation opportunities in a semi-primitive to modified setting where visitors can obtain various degrees of solitude within a near-natural environment. About 2.9 miles of pipeline, 1 mile of access road, a 2 acre staging area and 0.6 acre of ATWS are proposed in this prescription.

(S4.2) Timber harvest and road construction are not allowed.

Emphasis on Recreation Motorized Settings (4.4): These areas provide recreation opportunities within a range of semi-primitive to rural settings. About 2.5 miles of pipeline and 10 miles of access road are proposed in this prescription.

(G4.4-1) Timber harvest, vegetation/fuel treatment, road construction, prescribed fire and wildland fire use are allowed to mimic historic conditions, to restore ecosystem functioning, and to protect property in the wildland urban interface, and are designed to be compatible with motorized recreation, but must not detract from the recreation setting over the long-term.

Emphasis on maintaining or restoring non-forested ecosystem integrity while meeting multiple resource objectives (6.1) Emphasis is on non-forested vegetation properly functioning conditions. About 1.3 miles of pipeline and 0.4 acre of ATWS are proposed in this prescription.

(G6.1-3) Road construction, new recreation development, and new trail construction are allowed.

Within the UWCNF, the proposed Project is inconsistent in one area of management direction in the LRMP. Access roads proposed as part of the proposed Project are not consistent with management direction for Prescription 4.2. The “significance” of an amendment must be determined. Determination of “significance” for a forest plan amendment is based on the following criteria defined in the Forest Service Manual 1926.5 (Amendment No. 1900-2006-2, January 31, 2006). Changes to the land management plan that are not significant can result from one of the four actions listed below.

1. Actions that do not significantly alter the multiple-use goals and objectives for long-term land and resource management.
2. Adjustments of management area boundaries or management prescriptions resulting from further on-site analysis when the adjustments do not cause significant changes in the multiple-use goals and objectives for long-term land and resource management.
3. Minor changes in standards and guidelines.
4. Opportunities for additional projects or activities that will contribute to achievement of the management prescription.

4.8.2.2 State Lands

The Wasatch Loop right-of-way would affect 21.6 acres of state-owned lands. These lands span four areas located in East Canyon WMA, Jordan River Parkway Trail and Jordan River Crossing, Jordan River Off-Highway Vehicle Park, and the multi-use path along State Road 89. Kern River is in consultation with the appropriate state agencies to obtain the necessary permits and approvals to construct and operate the proposed pipeline on state-owned lands. Potential impacts and mitigation to state-owned lands are discussed throughout section 4.8.3.

4.8.2.3 Residential Lands

As currently designed, approximately 11.1 acres of residential land would be required for construction of the Wasatch Loop. Following construction, approximately 6.2 acres of this residential land would be restored to pre-construction conditions to the extent possible, in accordance with Kern River’s Reclamation Plan and in accordance with any specific requirements identified by landowners. The remaining 4.9 acres of residential land would be considered permanent right-of-way for the Wasatch Loop. In most cases, property owners would be able to use the permanent right-of-way as they did before construction as long as the use does not conflict with the rights granted to Kern River in the negotiated easement agreement with the landowner. Therefore, Kern River would also restore these portions of the permanent right-of-way to residential land consistent with the Reclamation Plan and landowner requirements, to the maximum extent practical.

Planned Developments

There are no planned residential or commercial areas within 50 feet of the proposed Milford Compressor Station or the four existing compressor stations (Coyote Creek, Elberta, Fillmore, and Dry Lake). The Wasatch Loop would cross three planned residential developments, as discussed below. Kern River would continue to consult with local agencies to identify any other planned development within 0.25 mile of the proposed Apex Expansion Project. Additionally, there are two existing residences and a barn within 50 feet of the proposed construction workspaces, as shown in table 4.8.2-1 and discussed below.

Facility ^a	County, State	Milepost	Number/Type of Residences/Buildings	Distance from Construction Work Area (feet)	Distance from Pipeline Centerline (feet)
Wasatch Loop	Morgan County, UT	5.0	1 (barn)	30	109
	Davis County, UT	24.5	1 (unoccupied residence in foreclosure) ^b	34	99
	Salt Lake County, UT	27.5	1 residence (occupied and for sale) ^b	42	67

Notes:

UT = Utah

^a There are no existing residences or buildings within 50 feet of the construction workspace for any of the aboveground facilities, except the existing compressor station buildings for Coyote Creek, Elberta, Fillmore, and Dry Lake, which are not included in this table.

^b Foreclosure and for sale information as of November 2009.

Kern River has identified three planned residential developments within 0.25 mile of the proposed right-of-way. Planned development projects would include those that are permitted but not yet constructed and those with submitted permit applications that have been filed but not yet approved. Only two of three planned developments identified would be crossed, the Shady Meadow Campground and the Edgewood/Eaglepointe Development. These developments would be crossed between MP 5.0 and 5.2 and between 24.4 and 25.1, respectively. Development of Shady Meadow Campground into six residential lots ranging between 15 and 22 acres has not been platted or recorded at the Morgan County Courthouse. This development is also located within the Lazy H. Ranch Cooperative Wildlife Management Unit (CWMU), which is discussed in section 4.8.3.5. Alternatively, construction has begun within portions of the Edgewood/Eaglepointe Development. The currently proposed route would cross the portions currently under construction, as well as portions planned for development that are not yet approved. Portions of this development are adjacent to the UWCNF and the Bonneville Shoreline, which are discussed in sections 4.8.3.1 and 4.8.3.2, respectively. Finally, the Lower Area of the Eaglewood Village development is not crossed by the proposed Project but is immediately adjacent to portions of Kern River's existing right-of-way and where the proposed Project route is sited (MP 25.2 to 25.5). Kern River is currently in consultation with the developers/landowners to identify measures to avoid and mitigate impacts on these developments.

Existing Residences and Buildings

Kern River has identified two residences and several structures within 50 feet of the construction right-of-way and associated work areas (table 4.8.2-1). The first residence at MP 24.5 is currently not occupied and would be about 34 feet from the construction workspace. In addition to the proposed right-of-way, an MLV would be close to this residence. The second residence, at MP 27.5, would be about 42 feet from the construction workspace. This property is currently for sale. Finally, Kern River has identified a barn at MP 5.0 that would be approximately 30 feet from the proposed construction workspace. However, as described in section 3.5, we are recommending that Kern River adopt the North Salt Lake III Route Variation which would avoid impacts on the residence at MP 24.5.

To minimize potential disruptions to residential areas near construction work areas, Kern River would coordinate construction work schedules with affected landowners prior to starting construction. In addition, Kern River would work to ensure that construction activities progress in a timely manner to minimize the exposure to noise, dust, and the general presence of construction activities. To further minimize impacts on residential areas within the vicinity of construction work areas, Kern River would implement the following measures:

- maintain access and traffic flow to the property, particularly for emergency vehicles;
- apply dust minimization techniques as needed;
- remove all construction debris and litter on a daily basis;
- install temporary safety fencing to control access and minimize the hazards associated with an open trench;
- preserve mature trees and landscaping to the extent practicable; and
- restore all areas disturbed by construction work areas to “as before or better” conditions.

As requested by the City of North Salt Lake, Kern River would install a decorative cement wall with appropriate landscaping around the MLV proposed near the residence at MP 24.5.

Kern River would be responsible for monitoring and ensuring compliance with all environmental mitigation measures required by the FERC Certificate. Landowners would be able to contact Kern River if they have any concerns or issues during the construction period. A toll-free number has been established for landowners and other stakeholders to obtain information on the Apex Expansion Project. This landowner hotline would continue to operate throughout the winter and during spring restoration efforts. Landowners would also have continued access to Kern River land representatives.

Overall impacts on residences from construction of the Apex Expansion Project would be short term to long term depending on the specific vegetation impacted and its ability to be restored to pre-construction conditions. These impacts would be partially offset by the compensation negotiated between individual landowners and Kern River during the easement process.

Operational impacts would be limited to the 4.9 acres of land within the permanent right-of-way, which would have restricted use. Specifically, no trees over five feet tall or permanent structures would be permitted within the permanent right-of-way. Also, landowners would need prior approval from Kern River before grading or removal of cover could be completed within the permanent right-of-way.

4.8.3 Recreation and Special Use Areas

The Apex Expansion Project would cross several recreation and special interest areas, including a National Forest, BLM land, two state parks, two gravel pits, hunting land, and other recreation areas, as shown in table 4.8.3-1 and figure 4.8.3-1. The most prominent of these special use areas is the UWCNF, which would be crossed between MP 13.3 and 24.5. The Project as proposed would not cross any National Wild and Scenic Rivers, National Scenic Byways, National Wildlife Refuge land, National Monument lands, Wilderness Areas, or Wilderness Study Areas. Further, no sensitive receptors (e.g., churches, schools, cemeteries, or hospitals) are within 0.25 mile of the proposed route. The duration of any impacts at any single point would last approximately 6 to 10 weeks. This period includes the initial surveying and clearing to the backfilling and finish grading.

4.8.3.1 Uinta-Wasatch-Cache National Forest

The Apex Expansion Project would cross approximately 10.7 miles of the proclaimed boundary of the UWCNF from MP 13.3 to 21.3 and 21.8 to 24.5. Parcels of land within the proclaimed boundary are owned by the USFS and private landowners. The USFS manages only those areas within the UWCNF that it directly owns. For purposes of this EIS, impacts on the UWCNF will be based on the proclaimed boundary (unless stated otherwise) and would therefore, be an overestimate of those impacts under the jurisdiction of the USFS. Kern River is currently in consultation with the UWCNF to obtain the necessary approvals to construct and operate the proposed Wasatch Loop within the UWCNF and to improve and/or utilize access roads through the UWCNF. The portion of the UWCNF that would be crossed is managed by the Salt Lake Ranger District and consists of approximately 216,000 acres of public lands. This area is used heavily by residents for a variety of activities, including hiking, backpacking, horseback riding, mountain biking, and ATV riding. Fishing, hunting, and nature viewing are other activities that occur in this area. Winter activities within the UWCNF include winter camping, snow shoeing, backcountry skiing, snowmobiling, and alpine resort skiing. Four recreational facilities would be crossed by the proposed Project, including three trails and Mueller Park. The pipeline route would also be located within or adjacent to two roadless areas, Hogsback Roadless Area and Mueller Park Roadless Area, where activities such as hunting, hiking, camping, and snowmobiling are allowed. Based on consultations with the USFS, we evaluated route variations that would either avoid or minimize impacts on the roadless areas (see section 3.5.8). For further discussion on roadless areas, refer to section 4.8.3.2.

Construction of the Project would impact a total of 119.1 acres of the UWCNF. Recreational activities, such as use of trails, hunting, and snowmobiling, may be limited during the period of construction. Other than the initial right-of-way clearing in the winter of 2010, construction within the UWCNF is scheduled to occur between the end of May through the beginning of October; and actual construction at any single point would last for only 6 to 10 weeks. Following construction, 60.9 acres would be restored to its previous condition to the extent possible in accordance with both Kern River's Reclamation Plan and any specific requirements identified by the UWCNF or private landowners of in-holdings within the UWCNF. However, 58.2 acres within the permanent right-of-way would be permanently converted to open lands. All authorized recreational activities could resume within the permanent right-of-way once construction and restoration activities are completed.

**TABLE 4.8.3-1
Public Land, Recreational Areas, and Other Designated or Special Use Areas Crossed by the
Proposed Apex Expansion Project**

Facility	County, State	Milepost(s)	Name of Area	Collocated with Existing Right- of- Way/Compressor Station	Approximate Crossing Length (in miles unless otherwise indicated)	Approximate Acreage Affected by Construction
Wasatch Loop	Morgan County, UT	1.2 ^a	Goldfleck Recreation Area ^b	Yes	Not available	Not available
		1.4	Broad Hollow Pioneer Trail	Yes	12.5 feet	0.0
		4.0-5.0	East Canyon WMA	Yes	1.0	12.3
		5.0-5.6	Lazy H Ranch CWMU	Yes	0.6	5.6
		5.0-5.2	Shady Meadow Campground	Yes	0.2	2.2
		9.7-13.3	Hardscrabble CWMU	Yes	3.6	52.7
		13.3-21.3	UWCNF	Yes	8.0	97.1
		21.8-24.5	UWCNF	No	2.7	22.0
	14.8	Great Western Trail	Yes	13.2	0.0	
	15.1	North Holbrook Route Trail	Yes	12.5 feet	0.1	
	Davis County, UT	15.9	North Holbrook Route Trail	Yes	12.5 feet	0.1
		16.5	Holbrook Canyon Trail	Yes	5 feet	0.0
		18.48	Kenny Creek Trail	Yes	3 feet	0.0
		18.9	Mueller Park ^b	No	Not available	Not available
		20.6	North Canyon Creek Trail	Yes	8 feet	0.0
21.0		North County Line Trail	Yes	8 feet	0.0	

TABLE 4.8.3-1 (continued)
Public Land, Recreational Areas, and Other Designated or Special Use Areas Crossed by the Proposed Apex Expansion Project

Facility	County, State	Milepost(s)	Name of Area	Collocated with Existing Right-of-Way/Compressor Station	Approximate Crossing Length (in miles unless otherwise indicated)	Approximate Acreage Affected by Construction
Wasatch Loop (cont)	Davis County, UT (cont)	21.9	South Hooper Ridge Trail	No	8 feet	0.0
		24.6	Bonneville Shoreline	No	40 feet	0.1
	Salt Lake City UT	25.5-25.6	Monte Thomas, Sr. Trust gravel pit	Yes	0.1	2.3
		25.7	Multi-use path along U.S. Route 89	No	8 feet	0.0 ^a
		27.1-27.2	Jordan River Parkway Trail and Jordan River	Yes	0.03	0.0 ^a
		27.2-27.5	Jordan River Off-Highway Vehicle Park & Modelport	Yes	0.3	4.3
Milford Compressor Station	Beaver County, UT	326.9 (existing KRG T system)	BLM land (rangeland)	No	Not applicable	33.2
Dry Lake Compressor Station	Clark County, NV	500.1 (existing KRG T system)	BLM land (Kern River-leased Industrial Land)	Yes	Not applicable	0.0 ^c

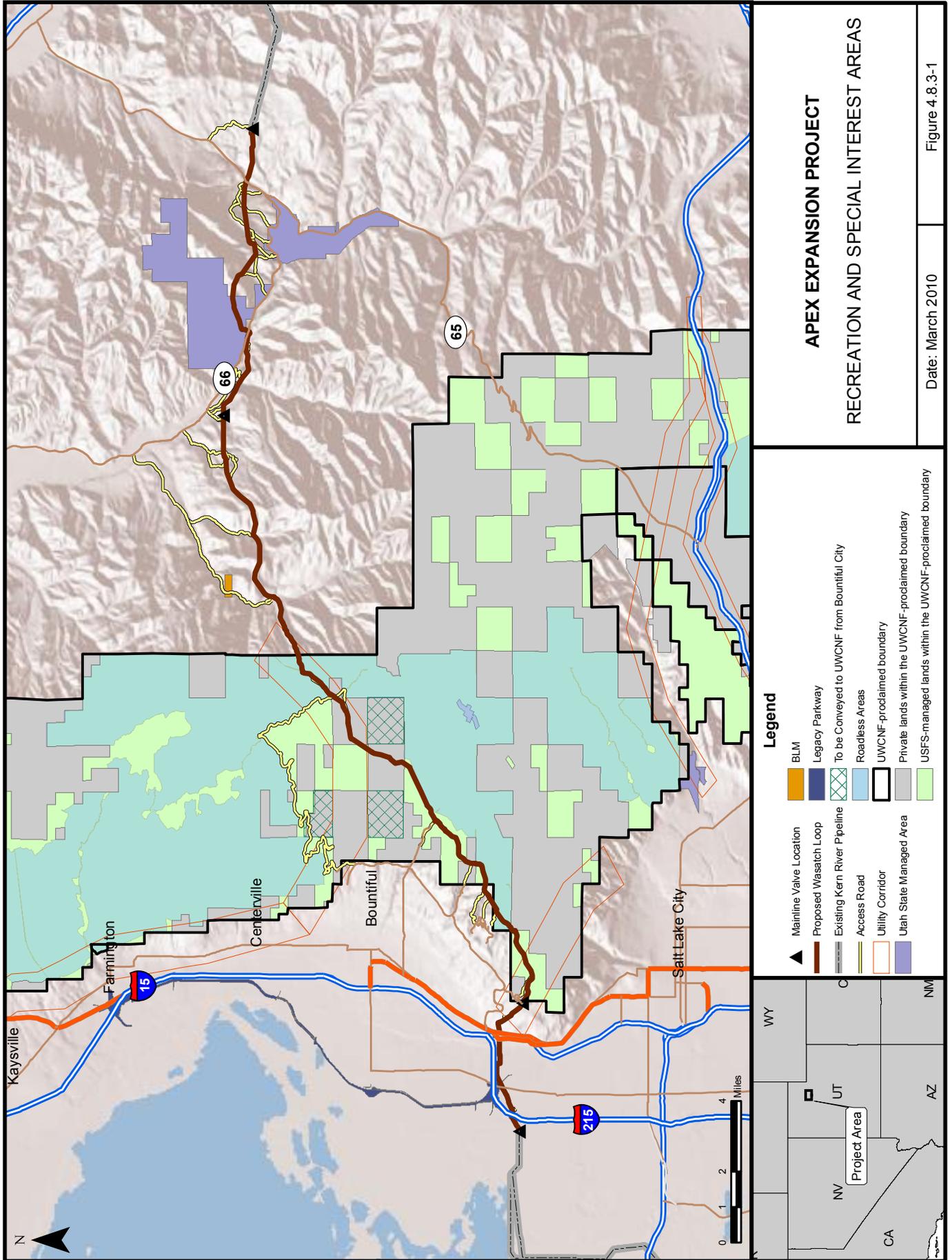
Notes:

- BLM = U.S. Bureau of Land Management.
- CWMU = Cooperative Wildlife Management Unit
- KRG T = Kern River Gas Transmission
- NV = Nevada
- UT = Utah
- UWCNF = Uinta-Wasatch-Cache National Forest
- WMA = Wildlife Management Area.

^a Resource would be bored and would not be affected during construction.

^b Exact boundaries of the Goldfleck Recreation Area and Mueller Park have not yet been obtained from landowners.

^c Construction would be entirely within the existing Dry Lake Compressor Station property, which is considered industrial land.



APEX EXPANSION PROJECT
RECREATION AND SPECIAL INTEREST AREAS

Date: March 2010 Figure 4.8.3-1

- Legend**
- ▲ Mainline Valve Location
 - BLM
 - ▬ Proposed Wasatch Loop
 - ▬ Legacy Parkway
 - ▬ Existing Kern River Pipeline
 - ▬ To be Conveyed to UWCNF from Bountiful City
 - ▬ Access Road
 - ▬ Roadless Areas
 - ▬ Utility Corridor
 - ▬ UWCNF-proclaimed boundary
 - ▬ UWCNF-proclaimed boundary
 - ▬ Private lands within the UWCNF-proclaimed boundary
 - ▬ USFS-managed lands within the UWCNF-proclaimed boundary
 - ▬ Utah State Managed Area



During consultations, the USFS raised concerns about the unauthorized use of the permanent right-of-way through the national forest by ATV users. As stated in Kern River's Plan, Kern River would install and maintain measures such as signs, fences, and barriers to control unauthorized vehicle access to the right-of-way. Kern River has also developed an ATV and OHV Barrier Plan (Appendix M). The measures contained within this plan include the creation of new ATV/OHV barriers where access roads and trails intersect or are within 100 yards of the proposed right-of-way; improving existing rock, earthen berm, and buck rail fencing barriers already in place at various access road crossings; and installing signage at all barrier locations indicating that ATV/OHV usage is not permitted within the right-of-way. After construction is completed, Kern River would monitor these areas for 5 years to assess their condition. For the first 3 years of the monitoring period, annual foot surveys would be conducted. For the last 2 years, surveys would be conducted in conjunction with annual aerial surveys.

4.8.3.2 Roadless Areas

Roadless areas are designated by the USFS, and are regulated under the Roadless Area Conservation Act (36 CFR 294), which limits road construction, road reconstruction, and timber harvesting in inventoried roadless areas on National Forest System lands. The proposed Apex Expansion Project would impact two roadless areas within the UWCNF: the Mueller Park Roadless Area and the Hogsback Roadless Area. The Hogsback roadless area is identified in the set of inventoried roadless area maps contained in the November 2000 Forest Service Roadless Area Conservation Final Environmental Impact Statement, Volume 2. It was further identified in the 2003 Wasatch-Cache NF LRMP. Mueller Park is identified only in the LRMP. For the purposes of this EIS effects to both roadless areas are evaluated. Appendix C2 of the Final Environment Impact Statement for the Wasatch Cache Revised Forest Plan is a document entitled "Evaluation of Roadless Area Values and Analysis of Effects of Individual Roadless Areas." Every roadless area on the Forest was evaluated according the roadless values that the area possessed.

The proposed Wasatch Loop would cross the Hogsback Roadless Area between MP 13.7 and 14.7. The effects of the proposed pipeline on wilderness attributes and roadless area characteristics are limited and are described in greater detail in Appendix N. Roadless characteristics include soil, water, diversity of plant and animal communities, habitat for special status species dependant on large undisturbed blocks of land, primitive and semi-primitive non-motorized and motorized recreation, reference landscapes for research, study and interpretation, landscape character and scenic integrity, traditional cultural properties and sacred sites and other identified unique conditions. Wilderness attributes include untrammled, natural, undeveloped, outstanding opportunities for solitude or a primitive and unconfined type of recreation, special features and manageability. The Hogsback Roadless Area is a 7,900-acre area located in Morgan County. Activities permitted in the area include hunting, hiking, camping, snowmobiling, heliskiing, OHV use, and grazing. The Mueller Park Roadless Area is a 7,000-acre area along the Salt Lake and Davis County line. Activities permitted include hiking, picnicking, and biking.

The proposed pipeline route would be collocated with the existing right-of-way through the Hogsback Roadless Area, limiting the level of impact. Approximately 4.9 acres within the Hogsback Roadless Area would be impacted by the proposed Project, all of which would require tree clearing. Approximately 4.4 acres of the forested area would be allowed to re-vegetate, while 0.5 acre would represent a permanent impact. Trees would be allowed to grow back to within 10 feet of the pipeline centerline to offset some of the tree clearing impacts. As described in section 3.5, we are recommending that Kern River adopt the Mueller Park Route Variation in order to eliminate impacts on the Hogsback Roadless Area. The Mueller Park Route Variation would generally utilize previously cleared areas along the existing rights-of-way; due to challenging terrain a minor deviation from the existing right-of-way

would be required, resulting in approximately 0.4 mile of greenfield construction within the UWCNF and the Mueller Park Roadless Area.

The proposed Project would cross the Mueller Park Roadless Area in three locations: between MP 13.3 and 13.7, between 20.7 and 20.8, and between 21.8 and 22.5. A total of approximately 15.7 acres of forested land would be cleared within the Mueller Park Roadless Area for construction of the proposed pipeline. Between MP 13.3 and 13.7, the proposed pipeline would not be collocated with the existing right-of-way due to the area being too steep and narrow; however, the proposed pipeline route is located entirely within a designated utility corridor through the area. Of the approximately 4.7 acres of tree clearing that would be required within this portion of the crossing, 2.3 acres would be maintained in an herbaceous state upon completion of pipeline construction. Between MP 20.7 and 20.8, a total of 1.6 acres would be impacted due to construction within this segment of the Mueller Park Roadless Area. Of the 1.6 acres that would be impacted, approximately 1.4 acres would require tree clearing; however, 0.5 acre would be allowed to revegetate with trees, while 0.9 acre would remain permanently cleared. The section of the roadless area that would be crossed between MP 21.8 and 22.5 would not be collocated with Kern River's existing right-of-way. This is due to a number of homes that have been built close to the existing right-of-way, preventing collocation. Construction of the new right-of-way would result in the clearing of approximately 9.6 acres of forested land. However, trees would be allowed to revegetate greater than 10 feet from the centerline. As described in section 3.5, we are recommending that Kern River adopt the North Salt Lake III Route Variation in order to avoid steep slopes, mule deer wintering habitat, and historic CCC terracing. Additionally, the North Salt Lake III Route Variation would reduce impacts on the UWCNF.

4.8.3.3 Recreational and Historic Trails

The proposed Apex Expansion Project would cross 11 trail systems, including the Broad Hollow Pioneer Trail, Great Western Trail, North Holbrook Route Trail, Holbrook Canyon Trail, Kenny Creek Trail, Mueller Park Trail, North Canyon Creek Trail, North County Line Trail, South Hooper Ridge Trail, the Bonneville Shoreline Trail, and the Jordan River Parkway Trail. Three National Historic Trails are located in proximity to the proposed construction right-of-way; however, they are not crossed by the proposed Project.

Eight of the trails that would be crossed by the pipeline would be within the UWCNF: Great Western Trail, North Holbrook Route Trail (crossed twice at MP 15.1 and 15.9), Holbrook Canyon Trail, Kenny Creek Trail, Mueller Park Trail, North Canyon Creek Trail, North County Line Trail, and South Hooper Ridge Trail. The Great Western Trail has been proposed for study for designation as a National Scenic Trail. The trail is an approximately 4,500-mile-long system extending through five states, linking National Forests, tribal, state, and BLM-administered lands. The portion of the trail that would be crossed by the pipeline at MP 14.8 is an unpaved, two-track road that is accessible between May and October. Less than 0.1 acre of the Great Western Trail would be impacted during construction of the proposed Wasatch Loop. The North Holbrook Route Trail would be crossed by the pipeline at MP 15.1 and 15.9, impacting a total of 0.1 acre of the trail. This trail is managed by a number of state and federal agencies, including the USFS and the UDNR. There are a number of recreational activities associated with the trail including biking, horseback riding, and hiking. Motorized vehicles are not permitted on the trail. The Holbrook Canyon Trail would be crossed by the pipeline at MP 16.5, impacting less than 0.1 acre of the trail. The Kenny Creek Trail would be crossed at MP 18.5 and impact less than 0.1 acre. The Mueller Park Trail would be crossed at MP 19.2, impacting less than 0.1 acre of the trail. Mueller Park Trail is a 13-mile-long multi-use trail that begins at the Mueller Park Picnic Grounds and ends at Rudy's Flats. The trail is open to hikers, horse users, mountain bikers, and motorcycles and can be crowded during weekends and holidays (Utah 2009). The North Canyon Creek Trail would be crossed at MP 20.6, where the pipeline route is collocated with Kern River's existing right-of-way. Construction of the

Project would impact less than 0.1 acre of the North Canyon Creek Trail. The trail is a 4-mile-long trail used by recreationalists for hiking and biking. The North County Line Trail would be crossed at MP 21.0, impacting less than 0.1 acre. The South Hooper Ridge Trail is an unclassified trail that would be crossed at MP 21.9 and sustain less than 0.1 acre of temporary impacts.

The Broad Hollow Pioneer Trail at MP 1.4 is located on privately-owned property and is considered to have historical significance. The pipeline would cross the trail at a location where it is collocated with the existing Kern River right-of-way. Less than 0.1 acre of the trail would be affected for this crossing. The Bonneville Shoreline Trail, which would be crossed by the pipeline at MP 24.6 and impact 0.2 acre, supports a variety of recreational activities including biking and hiking. This trail coincides with a parallel dirt trail called Eagle Ridge Trail, which is used for similar activities.

Kern River is currently proposing to use the open-cut crossing method for construction across all of these trails. Installation of the proposed pipeline by the open-cut method would result in temporary disruption of recreational uses and activities at the site of the crossing for a period of 6 to 10 weeks. Construction is scheduled to occur sometime between May and September for most of the trails that would be crossed by the Wasatch Loop. Kern River is currently consulting with the landowners to determine any additional impacts or mitigation measures at the various crossings, and would continue to coordinate with the landowners in order to develop mitigation measures to ensure minimal disruption for trail users. Kern River has committed to work with the UWCNF and any vendors to ensure appropriate compensation for loss of any revenues that may result due to construction activities.

Following construction, all trails would be restored to their previous condition to the extent possible in accordance with Kern River's Reclamation Plan and any specific requirements identified by UWCNF and other appropriate land management agencies.

The Jordan River Parkway Trail and Jordan River are located between MP 27.1 and 27.2. The trail is on land owned by Provo-Jordan River Parkway Authority and administered by the UDNR. The trail itself parallels the Jordan River and is used by recreationalists for hiking, biking, and horseback riding. No motorized vehicles are permitted along the trail. Kern River currently proposes to bore beneath the Jordan River Parkway Trail and Jordan River, which would result in no direct impacts on the trail system or river. Construction could temporarily disrupt users of the river and trail as use of the trail could be limited during construction due to safety reasons. Kern River would continue to coordinate with the Jordan River Parkway Authority to identify impacts associated with the Apex Expansion Project and to develop mitigation measures to minimize disruption to users of the path.

4.8.3.4 Parks and Recreation Areas

The Apex Expansion Project would cross a number of recreation areas and parks, including the Goldfleck Recreation Area, Shady Meadow Campground, Mueller Park, a multi-use path, East Canyon WMA, and the Jordan River OHV Park and Modelport. The Goldfleck Recreation Area would be crossed by the pipeline at MP 1.2. This area is privately owned and Kern River is currently working with the landowner to determine the boundaries of the recreation area. This recreational area is used for hunting by employees of Goldfleck and their guests. Approximately 5.2 acres of the East Canyon State Park would be used as a temporary staging area during construction of the Project. The park is a 680-acre park administered by the Utah Division of Parks and Recreation. Recreational activities that occur within the park are swimming, camping, boating, fishing, hiking, biking, and equestrian trails. The Shady Meadow Campground would be crossed by the pipeline between MP 5.0 and 5.2. The campground is for sale as residential lots. Mueller Park would be crossed by the pipeline at MP 18.9; impacts on the Mueller Park Trail are discussed above in section 4.8.3.2. A multi-use path along State Road 89 would be crossed by the Project at MP 25.6. The path is utilized by bikes and pedestrians. The Jordan River Off-Highway

Vehicle Park and Modelport would be crossed by the Project from MP 27.2 to 27.5. This park consists of tracks for OHV, motorcross, ATV, and off-highway motorcycles.

Construction of the Apex Expansion Project would result in the temporary disruption of recreational activities, including hunting and camping, to all parks and recreation areas. These disruptions may include limited hunting and camping opportunities in the vicinity of the construction area and restricted use or access to trails and waterways. These disruptions would be expected to last for 6 to 10 weeks at any one location. Construction at the Goldfleck Recreation Area, Shady Meadow Campground, and the Jordan River OHV Park would occur sometime between April and September, while construction at Mueller Park would occur sometime between June and September. The exceptions would be for the East Canyon State Park, where the facilities supporting these activities would be more than 0.25 mile from the Project area, and the multi-use path along State Road 89, which would be crossed by a conventional bore resulting in no disruptions to recreational activities at these two locations. Kern River would coordinate with landowners and vendors to compensate for any lost revenue due to construction of the proposed Project. Kern River is currently in consultation with the landowners in regard to additional mitigation measures to ensure minimum disruption of activities.

Following construction, all affected areas would be restored to the pre-construction condition, to the extent possible, according to Kern River's Reclamation Plan and any requirements specified by the landowners or appropriate agencies. Kern River would regularly maintain or mow the permanent right-of-way about every 3 years as described in Kern River's Plan and section 4.4. However, annual maintenance within a 10-foot-wide strip centered on the pipeline would be required to remove trees that may grow immediately adjacent to the pipeline as the roots may be detrimental to pipeline integrity.

4.8.3.5 Wildlife Management Areas and Cooperative Wildlife Management Units

The Apex Expansion Project would cross one WMA and two CWMUs. The East Canyon WMA would be crossed by the pipeline between MP 4.0 and 5.0, it is located on land owned by the State of Utah and managed by the UDWR. It is used for deer hunting, wildlife viewing, hiking, and horseback riding. CWMUs are privately-owned hunting areas that have been recognized for big game habitat and managing big game animals. The Lazy H Ranch CWMU is approximately 5,000 acres and would be crossed by the pipeline between MP 5.0 and 5.6. Hunting for elk, mule deer, bobcat, ruffed and blue grouse, and a variety of other species is allowed within this CWMU with the appropriate permit. The Hardscrabble CWMU is approximately 16,400 acres and would be crossed by the pipeline between MP 9.7 and 13.3. Hunting for deer, elk, and moose is allowed within the Hardscrabble CWMU.

Approximately 12.3 acres within the East Canyon WMA would be impacted by construction of the Project. Construction within the WMA would result in temporary disruption of habitat and recreational activities. Kern River consulted with the UDWR to determine the timing of construction in order to ensure minimal disruption of the function and uses of the WMA. Based on these consultations, the UDWR indicated that the WMA is closed annually from January 1 through the second Saturday of April to protect wintering wildlife; construction would be avoided during this period. In addition, construction would also be avoided during the open season rifle hunt dates of October 17-18 and for the duration of that week to avoid displacing animals from public land onto surrounding private lands. Therefore, construction at the East Canyon WMA would occur sometime in November, December, and between the end of April and September. After construction is complete, all disturbed areas would be restored in accordance with Kern River's Reclamation Plan. Approximately 5.78 acres would be maintained as permanent right-of-way.

Approximately 5.6 acres of the Lazy H Ranch CWMU and 52.7 acres of the Hardscrabble CWMU would be impacted by construction of the Project. Construction of the Project would result in the

disruption of habitat used for game and other species, and recreational uses and activities within both CWMUs. Kern River is currently in consultation with the landowners and the UDWR as necessary in regard to the timing of construction in order to minimize any disruptions to these activities. No timing restrictions are required at the Lazy H Ranch CWMU. Approximately 2.1 acres of the Lazy H Ranch CWMU and 22.1 acres of the Hardscrabble CWMU would be retained as permanent right-of-way. All recreational activities would be allowed to resume once construction and restoration efforts are completed.

4.8.3.6 Gravel Pits

The Monte Thomas, Sr. Trust Gravel Pit would be crossed between MP 25.5 and 25.6. This is an active gravel pit that is currently mined for both gravel and sand. Approximately 2.3 acres of the gravel pit would be impacted during construction of the Apex Expansion Project. Once construction is completed, 1.5 acres of the impacted land would be restored to its current condition, to the extent possible. The remaining 0.8 acre would be converted to permanent right-of-way. Mining operations would be prohibited within the permanent right-of-way. Kern River is currently coordinating with the landowner and the operator of the pit to identify specific minimization measures and to determine appropriate compensation for any lost product.

4.8.4 Visual Resources

“Visual resources” refers to the composite of basic terrain features, geologic features, hydrologic features, vegetative patterns, and anthropogenic features that influence the visual appeal of an area for residents or visitors. The Project would cross federal, state, and privately owned lands. The responsibility for protecting visual resources on federal lands was established by the Federal Land Policy and Management Act, which places emphasis on the protection of scenic resources on public land, and the Forestland and Rangeland Renewable Resources Planning Act, which empowers the USFS to manage scenery resources.

4.8.4.1 Visual Resource Federal Land Classifications

The BLM assigns Visual Resource Management (VRM) classes to the various landscapes under its management. VRM classes range from Class I to Class IV, with Class I being the most restrictive and Class IV being the least restrictive. These classes describe the different degrees of modification, or contrast, allowed to the basic visual elements of the landscape. VRM classes and the allowable visual changes in each class include:

- Class I – The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- Class II – The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- Class III – The objective of this class is to partially retain the existing character of the landscape. The level of change to characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer.

Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

- Class IV – The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

As currently proposed, the Apex Expansion Project would be consistent with the objectives and definitions of Class III and Class IV designations as defined by the BLM. The proposed Project, however, may not be consistent with the objectives and definitions of Class I and Class II designations.

Nationally, the USFS is moving toward the Scenery Management System (SMS), which is currently used by the UWCNF. The SMS is based on the idea that landscape management that tends to preserve positive scenic elements would maintain or increase the overall scenic integrity of the landscape, and landscape management that eliminates or obscures positive scenic elements would degrade scenic integrity. “Scenic integrity” has to do with the state of disturbance created by human activities or alterations. The SMS acknowledges that it takes a longer period of time for vegetation to recover and reach the scenic management objectives after completion of a project. It also allows the project to blend into the landscape using characteristic patterns for the vegetation type. The SMS uses Scenic Integrity Objectives (SIOs) to classify landscapes by degree of alteration and are defined as follows:

- High – Landscapes where the valued landscape character appears intact and are said to have high scenic integrity. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.
- Moderate – Landscapes where the valued landscape character appears slightly altered. Noticeable deviations must remain visually subordinate to the landscape character being viewed.
- Low – Landscapes where the valued landscape character appears moderately altered. Deviations begin to dominate the valued landscape character being viewed.
- Very Low – Landscapes where the valued landscape character appears heavily altered. Deviations may strongly dominate the valued landscape character. Deviations must be shaped and blended with the natural terrain so that the unnatural elements do not dominate the composition.
- Unacceptable Low – Landscapes where the valued landscape character being viewed appears extremely altered and that are considered to have unacceptable low scenic integrity. Deviations are extremely dominant and borrow little if any form, line, color, texture, pattern, or scale from the landscape character.

In consultation with the USFS, Kern River is conducting a visual assessment for USFS lands crossed by the proposed Apex Expansion Project. Kern River plans to complete the assessment in the spring of 2010. To ensure that Kern River’s visual assessment is evaluated in the final EIS, **we recommend that:**

- **Prior to the end of the draft EIS comment period, Kern River complete and file with the Secretary and the USFS, a visual assessment report for the USFS-managed lands.**

4.8.4.2 Impacts and Mitigation

The proposed Project could alter existing visual resources in three ways: (1) construction activity and equipment may temporarily alter the viewshed; (2) lingering impacts along the right-of-way from clearing during construction could alter existing vegetation patterns; and (3) aboveground facilities would represent permanent alterations to the viewshed. The significance of these visual impacts primarily would depend on the quality of the viewshed, the degree of alteration of that view, the number of potential viewers, and the perspective of the viewer.

The majority of the land traversed by the pipeline consists of steep terrain with significant forested areas. Open land and agricultural areas can also be found in the proposed Project area. There are several existing pipelines in the vicinity of the Project, and the Apex Expansion Project would parallel some of these existing rights-of-way. Some areas along the pipeline route are either inaccessible or do not provide long-range unobstructed views, but public viewpoints are present along some of the roadways in the area. The Project as proposed would not cross any National Wild and Scenic Rivers, National Scenic Byways, National Wildlife Refuge land, National Monument lands, Wilderness Areas, or Wilderness Study Areas.

Construction and operation of the pipeline may affect visual resources by altering the terrain and vegetation patterns during construction or right-of-way maintenance. Upgrades at the existing compressor stations would impact developed lands, while construction of the new compressor station would impact open lands.

Construction of the proposed Project could result in impacts on the viewshed due to the presence of construction activities, construction equipment, and modification or clearing of vegetation along the construction right-of-way. The degree of visual impacts would depend on the quality of the existing viewshed, the magnitude of the alteration, and the number of viewers potentially impacted. The temporary alteration to the views could be perceived as detrimental to some, while others may derive enjoyment from viewing construction activity.

The landscape setting along the proposed pipeline route is generally flat, and views of the construction activities may extend for some distance. However, the construction work areas would be restored as near as possible to pre-construction contours and revegetated. Once revegetation is complete, there would be no significant alteration of the landscape of the region.

The Milford Compressor Station would be located on open land at Kern River's mainline MP 326.9 in Beaver County, Utah. The entire station would comprise approximately 33.2 acres. As described in section 2.1.2, the compressor station would contain a number of components, including a new Titan 250 compressor, three filet/separators, a gas cooler, two MLVs, two pig launchers, and two pig receivers.

The Milford Compressor Station would be located in an area characterized by grazing lands, extending 0.25 mile in each direction. The compressor station would be 0.3 mile from Highway 129, thus it would be visible to motorists approaching the area. The nearest residence would be almost 2 miles from the Milford Compressor Station site. Due to the rural location of the compressor station, it is anticipated that the presence of the station would not result in visual impacts on residents in the area; however, the change in the existing landscape would be permanent.

The electrical distribution line associated with the Milford Compressor Station would be constructed along Imperial Avenue. In general, visual impacts resulting from installation would be short

term, typically lasting no longer than 1 month. Visual impacts from operation of the electrical distribution line associated with the proposed Project would be minor but long term.

Upgrades to the existing four compressor stations would occur within the previously defined property boundaries and would be visually similar to the existing components at these sites. As such, no permanent visual impacts are expected from these proposed Project-related activities.

After construction is completed, Kern River would reseed all areas affected by construction in accordance with their Reclamation Plan to return the impacted vegetation to pre-existing conditions and minimize visual impacts. Further discussion on restoration of impacted vegetation can be found in section 4.5.

4.9 SOCIOECONOMICS

The Apex Expansion pipeline route and the Milford Compressor Station would traverse four counties in Utah (Morgan, Davis, Salt Lake, and Beaver); and upgrades to existing facilities would occur in two counties in Utah (Utah and Millard), one county in Wyoming (Uinta), and one county in Nevada (Clark). For the purposes of our socioeconomic analysis, these counties are defined as the “region of influence” for the proposed Project.

Several socioeconomic effects could impact the region of influence during construction of the Project. These include alteration of population levels or local demographics, increased employment opportunities, increased demand for housing and public services, transportation impacts, and an increase in government revenue associated with sales and payroll taxes. Potential socioeconomic impacts associated with operation of the Project could include employment opportunities, ongoing local expenditures by the operating company, an increased tax base, and an increase in the demand for provision of public services. Section 4.9.7 contains an analysis of environmental justice, as per CEQ guidelines (1997).

4.9.1 Population and Employment

Table 4.9.1-1 provides a summary of selected socioeconomic and demographic information for the states and counties that would be traversed by the Apex Expansion Project. Population densities in the region of influence range from a low of 1.9 persons per square mile in Millard County, Utah to a high of 1,219 persons per square mile in Salt Lake County, Utah. Five of the eight affected counties have population densities above that of their respective state.

The civilian labor force in the region of influence includes approximately 2.0 million people. The major industries within the counties traversed by the proposed Project include educational, health, and social services; management, professional, and related occupations; agriculture, forestry, fishing and hunting, and mining; and arts, entertainment, recreation, accommodation, and food services. Per capita income ranges from \$13,408 in Millard County, Utah to \$21,785 in Clark County, Nevada. Six out of the eight affected counties have per capita incomes that are below that of their respective states.

**TABLE 4.9.1-1
Existing Socioeconomic Conditions for States and Counties in the Region of Influence of the
Proposed Apex Expansion Project**

State/County	Population (2008)^a	Population Density (2000)^a (persons/sq. mile)	Per Capita Income (2007)^b	Civilian Labor Force^c	Unemployment Rate (%)^c	Major Industries (2000)^a
UTAH	2,739,424	27.2	\$31,944	1,369,400	6.0	
Morgan	8,669	11.7	\$28,071	3,971	5.5	Management, professional, and related occupations
Davis	295,332	786.2	\$31,518	144,710	5.8	Educational, health and social services
Salt Lake	1,022,651	1,219	\$35,805	558,427	6.2	Educational, health and social services
Beaver	6,162	2.3	\$27,240	3,231	4.7	Agriculture, forestry, fishing and hunting, and mining
Utah	530,837	184.5	\$21,668	220,409	5.8	Educational, health and social services
Millard	12,082	1.9	\$26,397	6,371	4.4	Educational, health and social services
WYOMING	532,668	5.1	\$48,608	292,547	5.9	
Uinta	20,167	9.5	\$42,621	11,581	7.2	Educational, health and social services
NEVADA	2,600,167	18.2	\$41,182	1,402,450	11.4	
Clark	1,865,846	173.9	\$39,188	1,010,318	11.6	Arts, entertainment, recreation, accommodation and food services
Total	3,761,746			1,958,964		

Notes:

^a Source: State and County QuickFacts (U.S. Census Bureau 2009a)

^b Source: BEA 2009

^c Source: Utah data as of July 2009 from Utah Department of Workforce Services; Wyoming data as of September 2009 from Wyoming Department of Employment, Research and Planning 2009; and Nevada data as of 2009 from Nevada Workforce Informer 2009.

The unemployment rates within the affected counties are generally lower than their respective states' rates. The unemployment rates range from 4.4 percent in Millard County, Utah to 11.6 percent in Clark County, Nevada. All unemployment rates are the most recently available estimates from September 2009 from the respective states employment or workforce divisions. Only three counties have employment rates that are higher than their respective states: including Clark County, Nevada; Uinta County, Wyoming; and Salt Lake County, Utah.

Kern River proposes to utilize one construction spread; construction is expected to begin in October 2010 with an in-service date of November 2011. Kern River estimates that the peak construction workforce would be 871 workers, with 541 workers associated with the Wasatch Loop and 330 workers associated with upgrades at four compressor stations and construction of the one new compressor station (Milford Compressor Station) (table 4.9.1-2). The actual workforce for each Project component would vary over the course of the 13 month construction phase. The Milford Compressor Station is expected to take 8 months to construct, and installation of the associated electrical distribution line would generally coincide with this timeframe. The proposed additional compression at the existing Coyote Creek, Elberta, and Dry Lake Compressor Stations is anticipated to be completed within 7 months, and the proposed updated compression at the Fillmore Compressor Station would occur over an estimated 3 month period. Although construction of the new compressor station and upgrades at the existing compressor stations could occur at any time during the 13 month construction phase, for the purposes of this analysis, we assume that these construction activities would coincide with the peak construction workforce for the pipeline. This results in a more conservative analysis of the potential socioeconomic impacts.

Kern River estimates that approximately 50 percent of the pipeline construction workforce would be non-local workers. Therefore, at the peak of construction, up to 271 pipeline installation workers would be non-local workers while approximately 270 pipeline installation workers would be local. Kern River has stated that 50 percent of the entire workforce for the Milford Compressor Station would be hired locally, (i.e., from Utah). However, the proposed site for the compressor station is in a rural area that could result in unrealistic commute times from population centers located to the northeast. Therefore, it is likely that workers hired from within Utah would require temporary housing; thus, for the purpose of this analysis, all workers are assumed to be non-local workers. The workforce for the updates at the remaining compressor stations would be non-local. Overall, for the compressor stations a peak of 330 workers would be considered non-local. The influx of approximately 601 non-local workers would result in a temporary, but negligible population growth within the affected counties. Any additional workforce required for the electrical distribution line would likely be small and negligible.

Based on the available information, the Project would be expected to result in an increase in local populations within the region of influence. This would represent only a minor, temporary population increase and would be confined to the period of Project construction.

Additional jobs would also be created as a result of secondary activity associated with construction of the Project, as purchases made by non-local workers on food, clothing, lodging, gasoline, and entertainment would have a temporary, stimulatory effect on the local economy. These jobs would represent a temporary, minor increase in employment opportunities within the region of influence.

During operation, Kern River has indicated that one additional employee would be required to operate and maintain the proposed Milford Compressor Station. This position would represent a negligible, long-term increase in employment.

TABLE 4.9.1-2 Estimated Construction Workforce for the Proposed Apex Expansion Project	
Facility/Activity	Number of Workers (Local and Non-Local)
PIPELINE FACILITIES – Wasatch Loop	
Peak Construction Workforce	541
Average Construction Workforce	262
COMPRESSOR STATIONS	
Coyote Creek Compressor Station	
Peak Construction Workforce	70
Average Construction Workforce	40
Elberta Compressor Station	
Peak Construction Workforce	70
Average Construction Workforce	40
Fillmore Compressor Station	
Peak Construction Workforce	30
Average Construction Workforce	20
Milford Compressor Station	
Peak Construction Workforce	90
Average Construction Workforce	50
Dry Lake Compressor Station	
Peak Construction Workforce	70
Average Construction Workforce	40
<i>Compressor Stations Peak Construction Workforce (Total)</i>	330
<i>Compressor Stations Average Construction Workforce (Total)</i>	190
Peak Construction Workforce	871
Average Construction Workforce	452

4.9.2 Housing

Table 4.9.2-1 reports selected housing statistics for counties that would be traversed by the Apex Expansion Project. Within these counties, there are approximately 31,340 vacant rental units, as well as about 39 campgrounds and RV parks used for seasonal, recreational, or occasional use. Approximately 375 hotel or motels supplement this potential housing stock.

TABLE 4.9.2-1 Vacant Accommodation Housing Units for the Proposed Apex Expansion Project				
State/County	Rental Vacancy Rate (%)^a	Vacant Housing Units for Rent^a	Hotels and Motels^b	RV Parks and Camps^b
UTAH				
Morgan	4.0	10	0	0
Davis	5.6	950	15	2
Salt Lake	6.4	6,259	112	7
Beaver	19.5	101	12	0
Utah	3.2	1,096	35	5
Millard	7.7	65	7	0
WYOMING				
Uinta	17.7	363	15	0
NEVADA				
Clark	9.7	22,496	179	25
Total	8.9	31,340	375	39
Notes:				
^a Source: American Factfinder (U.S. Census Bureau 2009b)				
^b Source: Kern River 2009				

At its peak, construction of the pipeline would require about 271 non-local workers, as described in section 4.9.1. The terminus of the Wasatch Loop would be located within Salt Lake City, while the start of the Wasatch Loop would be approximately 28 miles from the city limits. Due to the large number of hotel/motels and vacant rental units available in Salt Lake County, especially in Salt Lake City, it is anticipated that the majority of the workforce for the Wasatch Loop would be housed within Salt Lake County, generally limiting housing impacts on Morgan and Davis Counties. Given the large number of accommodations within the Salt Lake area, we feel the housing accommodations would be sufficient to house the workforce without displacing tourists.

At its peak, construction of the compressor stations would require about 330 non-local workers, as described in section 4.9.1. However, this workforce would be spread across the five counties where the facilities are located. It is anticipated that the majority of the workers for the compressor stations would temporarily relocate to the county where the compressor station is located to avoid long commutes. Because the workforces would be small (as detailed in table 4.9.2-1), there would be adequate housing for the compressor station workforces.

During operation, Kern River has indicated that one additional employee would be required to operate and maintain the proposed Milford Compressor Station. Housing demand for this single individual would have a negligible, long-term increase in housing demand.

4.9.3 Public Services

Demand for medical, police, and fire protection services would temporarily increase during construction of the Project. Table 4.9.3-1 summarizes the medical, police, and fire protection facilities in the counties traversed by the proposed Project. Based on the 2008 estimates (U.S. Census Bureau 2009a), these facilities serve a population of about 3,761,746 people (table 4.9.1-1). Due to the temporary nature of the work, it is assumed that the majority of the workers would not relocate with school-age children. Therefore, any impacts on the education sector are expected to be temporary and minor.

State/County	Police / Sheriff Departments ^a	Fire Departments ^a	Nearest Medical Facilities ^b
UTAH			
Morgan	1	3	St. Marks Hospital (Salt Lake City, UT)
Davis	13	10	Lakeview Hospital (Bountiful, UT)
Salt Lake	18	12	LDS Hospital (Salt Lake City, UT)
Beaver	4	2	Beaver Valley Hospital (Beaver, UT)
Utah	14	18	Mountain View Hospital (Payson, UT)
Millard	1	7	Fillmore Community Medical Center (Fillmore, UT)
WYOMING			
Uinta	5	3	Evanston Regional Hospital (Evanston, WY)
NEVADA			
Clark	8	6	Sunrise Hospital and Medical Center (Las Vegas, NV)
Notes:			
^a Source: Capitol Impact Government Gateway 2009			
^b Source: American Hospital Directory 2009			

Multiple construction activities may require the assistance of fire, police, or medical services. Local police may need to assist in maintaining traffic flow during construction at road crossings or would need to respond to emergencies associated with pipeline construction. Fire departments would be needed in case of project-related fire or emergencies. Increased need for medical services would be mainly due to any illness or injury of workforce personnel.

Construction of the proposed pipeline would traverse Morgan County, Davis County, and Salt Lake County, Utah. Davis and Salt Lake Counties contain emergency medical services, and all three counties contain police and fire protection services. Morgan County does not contain a hospital; however, it does have ambulance services. The closest hospitals to Morgan County are in Davis County. Considering the relatively small number of workers, it is anticipated that the increased demand of these services would be within the capacity of the existing departments.

Operation of the pipeline would require the addition of one full-time permanent position. The impacts on public services due to this employee would be negligible but permanent.

4.9.4 Transportation

Construction activities associated with both the proposed pipeline and the compressor stations could result in short-term impacts on transportation infrastructure. These activities include increased traffic flow due to movement of construction vehicles, personnel, and equipment; construction of the pipeline across roadways; and potential damage to local roadways from heavy construction equipment.

Construction of the pipeline would require a peak workforce of 541 workers, while the peak workforce for the upgrades at the existing compressor stations and construction of the newly proposed Milford Compressor Station would be 330 workers. Kern River expects the majority of the workforce to be on-site prior to peak morning commuting hours and to depart after peak evening commuting hours.

Kern River would have to obtain all appropriate permits prior to crossing any roads. These permits would be a direct result of consultation between Kern River and the associated county or municipal agency and thus would include specific guidance on detour routes; speed/load limits; and other use limitations, conditions, restrictions, or requirements by the issuing agency. Highly utilized and/or paved railroads, state highways, and county roads would generally be crossed by horizontal bore in order to avoid disruption to traffic. The primary impact at these locations would be associated with equipment crossing the roadway or entering and exiting the construction right-of-way. Currently, Kern River proposes to bore 13 roadways (table 2.3.2-1).

The open-cut construction method would be used to cross driveways as well as minor or unpaved roads where permitted by local authorities and landowners. For these roads, the open-cut method would require temporary use of one lane or road closures. In the event that a road closure would be required, Kern River would make provisions for detours or other measures to permit traffic flow during construction. If a reasonable detour cannot be found, a minimum of one lane would be kept open, except when it is essential to close the road for construction across the roadway. To the extent possible, roads would not be closed during peak traffic hours.

To maintain safe roadway conditions, Kern River would utilize fencing, signs, warning devices, and flaggers. In addition, Kern River would request that contractors remove all soil that is left on roadways from construction equipment. Tracking mats or sweeping would be used to minimize the transfer of soil. Impacts due to construction across roadways are expected to be minor and temporary.

4.9.5 Property Values

The potential impact of natural gas pipelines on the value of any land parcel depends on a number of factors, including the size of the property, the presence of other pipelines in the area, the current value of the parcel and its land use, and the value of other nearby properties. The compensation paid by Kern River to landowners for the acquisition of temporary and permanent easements also depends on these factors. If properties crossed by the proposed Apex Expansion Project are for sale during or following construction, potential buyers may choose not to purchase the property if the presence of the Project would conflict with their intended use of the property. If, following construction, a landowner believes that the presence of the pipeline or aboveground facility reduced his property value, the landowner could appeal to the local property taxation agency to obtain a reassessment of their property value that incorporated the easement.

As described in sections 4.4 and 4.8, construction and operation of the proposed Project would result in a short-term loss of agricultural productivity. After construction is complete, agricultural practices would be allowed to resume along the right-of-way. Kern River would compensate landowners for any demonstrated losses or decreases in productivity due to construction of the Project.

4.9.6 Economy and Tax Revenues

Based on the projected workforce, Kern River estimates that the construction payroll would be approximately \$35.4 million. While the purchase of specialized construction materials and equipment would occur outside of the region of influence, non-specialized material such as fuel and basic supplies would be purchased locally. Kern River estimates that \$8.0 million would be spent locally on material purchases associated with the Project. Portions of the construction payroll would be spent locally for the purchase of housing, food, gasoline, and entertainment during construction. While the exact amount would depend on the proportion of the workforce hired locally, the behavior of individual workers, and the duration of their stay, a portion of these expenditures would be subject to state and county sales tax. Kern River estimates that approximately \$1.3 million would be spent on local fuel purchases for the Project. The increases in sales tax revenues would represent a minor, short-term increase in state revenues for Utah, Wyoming, and Nevada.

Construction of the Apex Expansion Project may also result in temporary secondary impacts on employment. Local businesses, such as restaurants and hotels/motels, may add staff or increase work hours for existing staff to accommodate any increases in demand. These impacts would likely be greatest in areas where workers are being housed, and are discussed in section 4.9.2.

Long-term economic losses could be incurred to livestock operators who utilize the 33.2 acres of public leased grazing lands that would be permanently impacted from construction of the Milford Compressor Station. However, the total grazing allotment contains over 17,000 acres of public land. The removal of the public lands by the Project would represent much less than 1 percent in the total area of the allotment. Therefore, it is unlikely that the Apex Expansion Project would cause a significant economic loss to livestock operators.

Overall, economic impacts due to construction of the Project may be beneficial at the local, county, and state level. However, these impacts would be limited to the duration of the construction period.

Operation of the Apex Expansion Project would also produce economic impacts on the region. Table 4.9.6-1 summarizes Kern River's estimate of the annual property (ad valorem) taxes that would be payable to each county traversed by the Project. Ad valorem taxes would be allocated to affected states, and then to affected counties according to the proportion of miles of the Project within each jurisdiction during the pipeline's operational period, which is estimated to be 50 years. The total annual property tax would be approximately \$2.2 million. Thus, operation of the Apex Expansion Project would provide a permanent increase in government revenues over the life of the Project. The one full-time employee that would be required during Project operation would provide a permanent but negligible impact on the state, county, and local economy through contribution in various taxes and the purchases of goods and services locally.

TABLE 4.9.6-1 Estimated Annual Property (Ad Valorem) Tax for the Proposed Apex Expansion Project	
State/County	Estimated Tax
UTAH	
Morgan	\$558,000
Davis	\$626,000
Salt Lake	\$44,000
Beaver	\$370,000
Utah	\$5,000
Millard	\$236,000
WYOMING	
Uinta	\$179,000
NEVADA	
Clark	\$200,000
Total	\$2,218,000

4.9.7 Environmental Justice

EO 12898 on Environmental Justice recognizes the importance of using the NEPA process to identify and address, as appropriate, any disproportionately high and adverse health or environmental effects of its programs, policies, or activities on minority populations and low-income groups. The provisions of EO 12898 apply equally to Native American programs. Consistent with EO 12898, the CEQ has called on federal agencies to actively scrutinize the following issues with respect to environmental justice (CEQ 1997):

- the racial and economic composition of affected communities;
- health-related issues that may amplify project effects to minority or low-income individuals; and
- public participation strategies, including community or tribal participation in the NEPA process.

The EPA provides guidance on determining whether there is a minority or low-income community to be addressed in a NEPA analysis. According to this guidance, minority population issues must be addressed when they comprise over 50 percent of an affected area or when the minority population percentage of the affected area is substantially greater than the minority percentage in the larger area of the general population. Low-income populations are those that fall within the annual statistical poverty thresholds from the U.S. Department of Commerce, Bureau of the Census Population Reports, Series P-60 on Income and Poverty.

Minority populations comprise less than 50 percent of the population in all of counties traversed by the proposed Project, and minorities do not comprise more than 50 percent of the population in the region of influence as a whole (table 4.9.7-1). To further assess whether the minority population in the

region of influence is substantially greater than the minority population in surrounding areas, we compared county-level demographics to the respective statewide proportions. The proportion of individual minority populations is greater than respective state-level statistics in two of the eight counties that make up the region of influence for the Project (table 4.9.7-1). Guidance from the CEQ states that “minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis” (CEQ 1997). These statistics indicate that a disproportionate effect on minority populations is unlikely.

**TABLE 4.9.7-1
Racial/Ethnic Comparison for Counties Crossed by the Proposed
Apex Expansion Project
(in percent)^a**

State/County	White (2008)	Black or African American (2008)	American Indian and Alaska Native (2008)	Asian (2008)	Native Hawaiian and Pacific Islander (2008)	Persons Reporting Two or More Races (2008)	Persons of Hispanic or Latino Origins (2008)^b
UTAH	92.9	1.3	1.4	2.0	0.8	1.7	12.0
Morgan	98.3	0.1	0.2	0.3	0.0	1.2	2.2
Davis	94.1	1.4	0.6	1.7	0.4	1.7	7.6
Salt Lake	90.8	1.8	1.1	3.1	1.4	1.9	16.3
Beaver	95.8	0.4	1.3	0.8	0.1	1.6	8.1
Utah	94.9	0.7	0.7	1.4	0.6	1.7	9.6
Millard	96.2	0.3	1.6	0.6	0.2	1.1	12.6
WYOMING	93.9	1.3	2.5	0.7	0.1	1.5	7.7
Uinta	97.0	0.3	1.1	0.4	0.1	1.2	7.6
NEVADA	80.9	8.1	1.5	6.2	0.5	2.8	25.7
Clark	77.7	10.4	1.1	7.3	0.6	3.0	28.4

Notes:

^a Source: State and County QuickFacts (U.S. Census Bureau 2009a)

^b People who identify their origin as Hispanic or Latino may be of any race. Thus, the percent Hispanic or Latino should not be added to the race as percentage of population categories.

“Low-income populations” are defined as those living below the established poverty level. The U.S. Census Bureau also reports the percentage of county populations with an income below the poverty level of \$10,590 in 2007, as summarized in table 4.9.7-2. In order to evaluate the potential for a low-income population to be impacted disproportionately, we compared the poverty level rates for counties within the region of influence to those of their respective state levels.

**TABLE 4.9.7-2
Economic Statistics for Counties Crossed by the
Proposed Apex Expansion Project**

State/County	Median Household Income (2007)^a	Persons below Poverty (%) (2007)^a	Households Receiving Public Assistance (%)^b
UTAH	\$55,220	9.8	3.1
Morgan	\$68,174	4.2	2.4
Davis	\$65,767	6.3	2.9
Salt Lake	\$56,378	9.0	3.0
Beaver	\$39,465	9.5	4.0
Utah	\$57,113	11.4	2.4
Millard	\$44,948	12.7	5.1
WYOMING	\$52,433	9.5	2.6
Uinta	\$57,858	9.8	2.8
NEVADA	\$54,996	10.6	2.3
Clark	\$55,960	10.7	2.4

Notes:
^a Source: State and County Quickfacts (U.S. Census Bureau 2009a)
^b Source: American FactFinder (U.S. Census Bureau 2009b)

The majority of the counties crossed by the proposed Project have poverty rates that are similar to or lower than the respective statewide levels, but four of the counties within the region of influence have poverty rates that are higher than the respective state levels (table 4.9.7-2). These include Utah (11.4 percent compared to 9.8 percent) and Millard (12.7 percent compared to 9.8 percent) Counties in Utah, Uinta County (9.8 percent compared with 9.5 percent) in Wyoming, and Clark County (10.7 percent compared to 10.6 percent) in Nevada. While these statistics are indicative of a potentially disproportionate effect on low-income communities, the county levels are only slightly higher than their respective state levels. Also, these counties represent the locations of the four existing compressor stations, therefore, we do not believe that the potential for disproportionate effects to low-income communities exists.

As described above, the Apex Expansion Project would have negligible to minor effects on socioeconomic characteristics and economies within the region of influence, and many of the Project-related effects, while minor, would generally be viewed as positive. As discussed throughout this EIS, potentially negative environmental effects associated with the Project would be minimized and/or mitigated, as applicable. Although the racial and economic composition of the counties traversed by the proposed Project route shows some deviations from state-level statistics, there is no evidence that the Project would cause a disproportionate share of adverse environmental or socioeconomic impacts on any racial, ethnic, or socioeconomic group.

The primary health issue related to the Apex Expansion Project would be the risk associated with an unanticipated pipeline failure. Section 4.12 discusses the localized risks to public safety that could result from a pipeline failure and describes how applicable safety regulations and standards would minimize the potential for these risks. The routing of the proposed Project through rural, sparsely populated areas would further minimize the number of persons who would be at risk of injury due to a pipeline failure; and there is no evidence that such risks would be disproportionately borne by any racial, ethnic, or socioeconomic group.

4.10 CULTURAL RESOURCES

Section 106 of the NHPA, as amended, requires the FERC, the USFS, and the BLM to take into account the effects of their undertakings (including the issuance of certificates) on properties listed, or eligible for listing, on the NRHP and to afford the ACHP an opportunity to comment on the undertaking. Kern River, as a non-federal party, is assisting the FERC in meeting our obligations under Section 106 and the implementing regulations in 36 CFR 800 by preparing the necessary information, analyses, and recommendations, as authorized by 36 CFR 800.2(a)(3).

Construction and operation of the proposed Project could potentially affect historic properties (i.e., cultural resources listed or eligible for listing on the NRHP). These historic properties could include prehistoric or historic archaeological sites, districts, buildings, structures, and objects, as well as locations with traditional value to Native Americans or other groups. Such historic properties generally must possess integrity of location, design, setting, materials, workmanship, feeling, and association, and must meet one or more of the criteria specified in 36 CFR 60.4.

If an historic property would be adversely affected by the proposed Project, avoidance or other mitigation would be proposed. Avoidance might include, but would not be limited to, realignment of the pipeline route, relocation of ATWSs, use of HDD, boring, or changes in the construction and/or operational design. Mitigation might include the systematic professional excavation of an archaeological site, the preparation of photographs and/or measured drawings documenting standing structures or other historic features, or the use of landscaping or other techniques that would minimize or eliminate effects on the historic setting or ambience of standing structures or other resources.

4.10.1 Cultural Resources Surveys

Class I literature reviews and Class III intensive surveys have been completed for all proposed Project features and ancillary facilities, except for two FERC-recommended route variations and several other small areas. These inventories total 2,707.4 acres of Class III inventory. The Class I inventories examined the possible indirect effects of the proposed Project for a radius of 0.5 mile. Kern River has conducted literature reviews and cultural resources surveys for the proposed Wasatch Loop pipeline right-of-way, access roads, pipe/contractor yards, staging areas, offloading areas, and the proposed Milford Compressor Station and the PacifiCorp electrical distribution line in Utah. Areas that have not yet been inventoried are the North Salt Lake III and Mueller Park Route Variations, small portions of three laydown areas and an ATWS, an alternate contractor yard, an alternate pipe storage yard, and a new access road.

Kern River completed a cultural resources survey of the proposed pipeline route during summer 2009 (Mullen and Zachman 2009). The survey incorporated portions of two previous surveys. Approximately 11.1 miles of the proposed route were surveyed during 2003 as part of a feasibility study for looping the Kern River pipeline through the Wasatch Mountains (Andrews et al. 2005), and approximately 2.3 miles were surveyed during 1997 for the Legacy West Project (Colman et al. 1998). The results of the previously surveyed segments are incorporated into the results of the 2009 survey. The

remainder of the proposed pipeline route was surveyed during the summer of 2009, with the exception of three segments on private land and two of minor route variations. Additionally, the summer 2009 survey included 27.7 miles of access roads and 162.4 acres of potential pipe/contractor yards, staging areas, and offloading areas.

Kern River surveyed a 300-foot-wide corridor abutting the existing pipeline in areas where the proposed pipeline would be collocated with the existing Kern River pipeline. A 600-foot-wide corridor was surveyed where the proposed pipeline would not be collocated with the existing pipeline. A 100-foot-wide corridor was surveyed for proposed access roads. Cultural resources identified during the 1997 and 2003 surveys were re-evaluated during the summer 2009 survey. Kern River provided the survey report to the FERC, the USFS, the BLM-Salt Lake City Field Office (BLM-SLFO), the UDNR, the Utah Department of Transportation (UDOT), and the Utah SHPO.

Kern River surveyed the remaining 1.7 miles of the proposed pipeline route and 322.4 acres of potential pipe/contractor yards, staging areas, and offloading areas during the fall of 2009 and provided an addendum report (Horn and Omvig 2009) to the FERC and the Utah SHPO.

Twenty-five historic or archaeological sites were identified by the cultural resources surveys (table 4.10.1-1). These include 20 sites identified during the summer 2009 survey of the proposed pipeline, access roads and pipe/contractor yards; five sites identified during the fall 2009 survey of the remaining portions of the proposed pipeline and additional pipe/contractor yards, including additional segments of three sites recorded during the summer 2009 survey; and three sites located along the Milford Compressor Station electric distribution line. In addition, 10 isolated finds were identified during the surveys.

Ten historic sites have been previously determined eligible for listing on the NRHP. These are the Donner-Reed/Mormon Trail (Site 42MO29), Hardscrabble Road (Site 42MO41), the Union Pacific Railroad (Site 42MO59); the Denver & Rio Grande Western Railroad (Site 42DV86), the Union Pacific/Utah Central/Utah Southern/Oregon Short Line Railroad (Site 42DV87), the Northwest Oil Canal (42DV126), the Leamington Cutoff of the Los Angeles and Salt Lake Railroad (Site 42SL300), the Salt Lake, Garfield and Western Railroad (Site 42SL306), the City Drain (Site 42SL301), and the Brighton Canal Extension (Site 42SL303). Three newly identified sites are recommended eligible for listing on the NRHP. These are the Devil's Slide townsite (Site 42MO65), the CCC erosion control earthworks (Site 42DV139/42SL635), and Reclamation Ditch (Site 42SL499).

Two segments of the Donner-Reed/Mormon Trail would be intersected by the proposed pipeline route, one of which was also used by the California Trail and Pony Express. One of the segments was destroyed by construction of State Road 65 and the other segment has been destroyed by disturbance from a previous pipeline and a heavily used two-track road. A third segment abuts an existing road proposed for access. It is an intact segment consisting of visible ruts, but would not be impacted by the proposed use of the access road. Kern River would fence the edge of the access road at its intersection with the trail segment during construction to prevent accidental use of the trail segment or other incidental disturbance.

The historic Hardscrabble Road would be used for access to the pipeline right-of-way. The road also would be intersected by a proposed pipeline realignment surveyed during fall 2009. Kern River may grade portions of the road, replace a modern bridge, or otherwise modify the road. The road already receives heavy use, and Kern River recommended the road segment to be non-contributing to NRHP eligibility, so it is not recommending avoidance or mitigation of the road segment.

**TABLE 4.10.1-1
Historic and Archaeological Sites within the Proposed
Apex Expansion Project Area of Potential Effect**

Site No.	Site Type	Land Status^a	NRHP Eligibility Assessment	Proposed Avoidance/Mitigation
42BE2288	Trans River Canal ^{b,i}	BLM-CCFO	Not eligible	None
42BE3301	Historic and prehistoric ^{b,i}	Private	Eligible	Will be required by the BLM
42BE3302	Prehistoric ^{b,i}	Private	Not eligible	None
42DV86	Denver & Rio Grande Western Railroad (two segments ^{d,f,h})	Private	Eligible	Avoid by boring for pipeline Contractor yard dropped ^k
42DV87	Union Pacific/Utah Central Railroad ^{c,f}	Private	Eligible	Avoid by boring
42DV126	Northwest Oil Drain ^{c,f}	Private	Eligible	Avoid by boring
42DV139/ 42SL635	Civilian Conservation Corps terraces/furrows ^{c,f}	USFS	Eligible	Avoid by route variation
42MO28	Prehistoric ^{c,f}	Private	Not eligible	None
42MO29	Donner-Reed/Mormon Trail ^{c,f,g}	UDNR UDOT	Eligible, noncontributing segments	None for pipeline; fence edge of access road
42MO39	Historic/Prehistoric ^{c,f}	Private	Not eligible	None
42MO40	Historic road ^{c,g}	Private	Not eligible	None
42MO41	Hardscrabble Road (two segments ^{d,f,g})	Private/BLM-SLFO	Eligible, noncontributing segment	None ^j
42MO59	Union Pacific Railroad ^{c,h}	Private	Eligible	None
42MO61	Historic/Prehistoric ^{c,f}	Private	Not eligible	None
42MO62	Historic ^{c,f}	Private	Not eligible	None
42MO63	Historic ^{c,f}	Private	Not eligible	None
42MO64	Prehistoric ^{c,h}	Private	Not eligible	None
42MO65	Devil's Slide townsite ^{c,h}	Private	Eligible	No longer in Project ^l
42SL300	Leamington Cutoff-San Pedro, Los Angeles and Salt Lake Railroad ^{c,h}	Private	Eligible	None

**TABLE 4.10.1-1 (continued)
Historic and Archaeological Sites within the Proposed Apex Expansion Project
Area of Potential Effect**

Site No.	Site Type	Land Status ^a	NRHP Eligibility Assessment	Proposed Avoidance/Mitigation
42SL301	City Drain ^{c,f}	Private	Eligible	Avoid by boring
42SL303	Brighton Canal Extension ^{c,h}	Private	Eligible	Avoid by not using part of yard that contains site ^j
42SL306	Salt Lake, Garfield and Western Railroad (two segments ^{d,h})	Private	Eligible	Stockpile yard dropped ^k
42SL499	Reclamation Ditch ^{c,f}	Private	Eligible	Mitigate
42SM294	Transcontinental Telephone Line ^{e,h}	Private	Not eligible	None
42WB466	Utah General Depot rail spur ^{e,h}	Private	Not eligible	None

Notes:

^a Within currently proposed Project's area of potential effect; BLMCCFO = BLM Cedar City Field Office; BLMSLFO = BLM Salt Lake Field Office; UDNR = Utah Department of Natural Resources; UDOT = Utah Department of Transportation; USFS = U.S. Forest Service Uinta-Cache-Wasatch National Forest.

^b Identified during the survey for the Milford Compressor Station electrical distribution line (Mullen 2009a).

^c Identified during the summer 2009 survey (Mullen and Zachman 2009).

^d One segment identified during the summer 2009 survey (Mullen and Zachman 2009) and one segment identified during the fall 2009 survey (Horn and Omvig 2009).

^e Identified during the fall 2009 survey of additional pipeline route segments and pipe/contractor yards (Horn and Omvig 2009).

^f Along proposed Wasatch Loop pipeline corridor.

^g Along access road.

^h Within proposed contractor yard/stockpiling areas.

ⁱ Along the Milford Compressor Station electrical distribution line.

^j As stated in its filing dated February 2, 2010, Kern River no longer intends to use the pipe/contractor yard containing Site 42MO65 or the portion of the pipe yard containing Site 42SL303.

^k As stated in its filing dated January 8, 2010, Kern River no longer intends to use the stockpile/contractor yards at Site 42DV86 and Site 42SL306..

The five historic railroads are all active railroads. The proposed pipeline would avoid the Denver & Rio Grande Western Railroad and Union Pacific/Utah Central/Utah Southern/Oregon Short Line Railroad by boring beneath these properties. The proposed Project would utilize the Union Pacific/Utah Central/Utah Southern/Oregon Short Line Railroad, and the Leamington Cutoff of the Los Angeles and Salt Lake Railroad at proposed contractor/pipe yards surveyed during summer 2009. Associated activities would be limited to transport and offloading pipe and other construction materials. Since use of the railroads to transport materials would not alter the actively maintained route or tracks, Kern River has proposed there would be no effect on these sites. Kern River indicated that the originally proposed

contractor/stockpile yards at the Denver and Rio Grande Western Railroad, and the Salt Lake, Garfield and Western Railroad are no longer under consideration.

The City Drain Canal and the Northwest Oil Drain would be avoided by boring beneath the properties. The Reclamation Ditch would be crossed by the proposed pipeline by means of an open-cut. Kern River would develop a treatment plan in consultation with the FERC and Utah SHPO for mitigating adverse effects to the Reclamation Ditch prior to any disturbance to the site. Mitigation might entail detailed documentation, limitations on construction, and restoration/reconstruction. The CCC erosion control earthworks would be avoided by the North Salt Lake III Route Variation that we recommend in section 3.5.7. In this case, no impact would occur to the site, and no other mitigation would be required. Kern River would be required to complete a cultural resources survey of the route variation.

The Brighton Canal Extension is within a property that Kern River is considering using as a construction materials storage yard. Kern River previously considered using the entire property, including the portion that contains the canal. However, it is now considering use of only the previously developed portion of the property, which does not contain the canal. In that case, the Project would not affect the canal. In either case, Kern River would avoid altering the canal. The Devils Slide townsite is within the boundaries of a previously proposed pipe yard/contractor yard. Kern River no longer intends to use the area during the Project.

The remaining sites and the isolated finds are considered ineligible for listing on the NRHP.

Indirect effects of the proposed Project could include the introduction of visual elements that affect the setting or character of a historic property. Kern River assessed a 1-mile-wide corridor centered on the proposed pipeline centerline for indirect effects. Kern River recommended that none of the historic properties identified within the 1-mile-wide corridor during the file search or cultural resources survey possess characteristics that would be adversely affected by visual impacts resulting from the proposed Project, including the Donner-Reed/Mormon Trail, which has been destroyed in the vicinity of the proposed Project, and the Devil's Slide townsite, for which the standing structures are not considered to contribute to the significance of the site.

The USFS, the BLM-SLFO, the UDNR, and the UDOT have reviewed the report for the proposed pipeline route and agreed with Kern River's NRHP-eligibility evaluations and proposed treatment. In letters dated October 13, 2009 and January 4, 2010, the Utah SHPO indicated it would await an agency letter regarding the project before commenting.

Kern River also completed surveys for a 37.2-acre parcel for the proposed Milford Compressor Station and a 400-foot-wide corridor for the PacifiCorp electrical distribution line (approximately 1.4 linear miles). Kern River provided the reports (Mullen 2009a, Mullen 2009b) resulting from these surveys to the FERC, the BLM-Cedar City Field Office (BLM-CCFO), and the Utah SHPO. As a result of the surveys, no cultural resources were identified at the Milford Compressor Station. Three cultural resources were identified along the electrical distribution line: the Trans River Canal (42BE2288), a prehistoric/historic artifact scatter (42BE3301), and a prehistoric artifact scatter (42BE3302). None of these were recommended as eligible for listing on the NRHP by the contractor. The BLM has determined Sites 42BE2288 and 42BE3302 not eligible and Site 42BE3301 eligible for listing in the NRHP. If avoidance of Site 42BE3301 is not possible through project design of the proposed electrical distribution line, the BLM will require mitigation measures to address adverse impacts on the site. On May 28, 2009, the BLM-CCFO accepted the report for the Milford Compressor Station. In a letter dated June 8, 2009, the Utah SHPO indicated it would await an agency letter regarding the project before commenting.

Kern River contacted the Wyoming SHPO regarding Project activities at the Coyote Creek Compressor Station; the Utah SHPO regarding Project activities at the Elberta and Fillmore Compressor Stations; and the Nevada SHPO and BLM Las Vegas Field Office (BLM-LVFO) regarding Project activities at the Dry Lake Compressor Station. In a letter dated May 19, 2009, the Wyoming SHPO concurred that no historic properties would be affected by the proposed work at the Coyote Creek Compressor Station. We agree. In a letter dated July 8, 2009, the BLM-LVFO approved the proposed work at the Dry Lake Compressor Station. The Nevada SHPO concurred that no historic properties would be affected by the proposed work at the Dry Lake Compressor Station in a letter dated December 9, 2009. We agree. In a letter dated June 1, 2009, the Utah SHPO indicated it would await an agency letter regarding the project before commenting.

4.10.2 Unanticipated Discovery Plan

Kern River prepared an Unanticipated Discovery Plan to provide guidelines in the event that cultural resources or human remains are discovered during the course of construction. The plan was submitted to the FERC; the USFS, the BLM-CCFO and the BLM-LVFO; and the Utah, Wyoming, and Nevada SHPOs for review on October 21, 2009. To date, no comments had been received.

4.10.3 Native American Consultation

On May 15, 2009, we mailed our NOI to 22 federally recognized Native American tribes including the Cedar Band of Paiutes, Chemehuevi Indian Tribe, Colorado River Indian Tribes, Confederated Tribes of the Goshute Reservation, Eastern Shoshone Tribe of the Wind River Reservation, Fort Mojave Indian Tribe, Hopi Tribe, Indian Peaks Band of Paiute Indians, Kaibab Band of Paiute Indians, Kanosh Band of Paiute Indians, Koosharem Band of Paiute Indians, Las Vegas Paiute Tribe, Moapa Band of Paiute Indians, Northern Arapaho Tribe, Northwestern Band of Shoshone Nation, Pahrump Paiute Tribe, Paiute Indian Tribe of Utah, San Juan Southern Paiute Tribe, Shivwits Band of Paiute Indians, Skull Valley Band of Goshute Indians, Shoshone-Bannock Tribes of the Fort Hall Reservation, and Ute Indian Tribe of the Uintah & Ouray Reservation. This notice requested comments on the proposed Project and encouraged attendance at the FERC's public scoping meetings for the Project. No responses to our NOI have been received.

Kern River sent letters to the 22 tribes via certified mail on May 12, 2009. Kern River received a response from Mr. Philbert Swain, Tribal Chairman of the Moapa Band of Paiutes in a letter dated June 30, 2009. The letter states that the Moapa Band has no interest in the proposed Project, but requests that Kern River immediately stop construction and contact the Moapa Band if archaeological remains or resources are discovered during construction. To date, Kern River has not received any other responses from any Native American tribes. In addition, Kern River conducted telephone follow-ups with the tribes. The Las Vegas Paiute Tribe stated that it had no concerns with the Project but that they should be contacted if the Dry Lake Compressor Station would be expanded beyond its current boundaries. The Chemehuevi Indian Tribe stated that it does not have any concerns with the Project but requested that it be contacted if a significant discovery occurs. The Moapa Band of Paiute Indians and Colorado River Indian Tribes indicated that they are not concerned with the proposed Project. No other responses to the follow-ups have been received to date by Kern River.

4.10.4 Compliance with the National Historic Preservation Act

Kern River has not yet completed surveys for the North Salt Lake III or Mueller Park Route Variations, portions of several ATWSs, a new access road, or two alternate contractor/pipe yards. In addition, consultations for the Project are still ongoing. Consequently, the FERC, the USFS, and the BLM have not completed the process of complying with Section 106 of the NHPA. The FERC, in

consultation with the SHPOs, the USFS, the BLM, and other appropriate parties, would determine whether construction of the proposed Project would affect any historic properties. If historic properties would be adversely affected, Kern River would develop a treatment plan for those properties that could not be avoided.

To ensure that the FERC's, the USFS's, and the BLM's responsibilities under the NHPA and its implementing regulations are met, **we recommend that:**

- **Kern River not begin construction of facilities and/or use of staging, storage, or temporary work areas, and new or to-be-improved access roads until:**
 - a. **Kern River files:**
 - (1) **the Utah SHPO's comments on the survey reports;**
 - (2) **the Utah SHPO's comments on the Milford, Elberta, and Fillmore Compressor Stations;**
 - (3) **a survey report for the Mueller Park and North Salt Lake III Route Variations, any outstanding areas and newly identified areas that remain to be surveyed, and the Utah SHPO's, USFS's, and BLM's comments (as appropriate) on the report; and**
 - (4) **any required avoidance and/or mitigation/treatment plan, and the SHPO's, and USFS's and BLM's (as appropriate) comments on the plan;**
 - b. **the ACHP is afforded an opportunity to comment if historic properties would be adversely affected; and**
 - c. **the FERC staff reviews and the Director of OEP approves the cultural resource reports and plans, and notifies Kern River in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.**

All material filed with the Commission that contains location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering —CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE.

4.11 AIR QUALITY AND NOISE

4.11.1 Air Quality

Impacts on air quality for a natural gas pipeline project typically fall into two categories: temporary impacts resulting from construction equipment emissions along the proposed pipeline route, and long-term or life-of-project impacts resulting from operational emissions at the compressor stations.

Air quality would be affected by construction and operation of the Apex Expansion Project. Although air emissions would be generated by operation of equipment during construction of the proposed pipeline and aboveground facilities, most air emissions associated with the Project would result from the long-term operation of the new Milford Compressor Station and existing compressor stations to be modified. The compressor stations would be powered by gas-fired turbines that would result in long-term operational impacts on air quality. Table 4.11.1-1 provides an overview of the equipment proposed for each of the compressor stations.

TABLE 4.11.1-1 Compressor Station Additions/Modifications for the Proposed Apex Expansion Project			
Compressor Station	County, State	Proposed Equipment or Equipment Addition	Site-Rated Horsepower
Coyote Creek	Uinta County, Wyoming	Add one Solar Mars 100 turbine	12,710
Elberta	Utah County, Utah	Add one Solar Mars 100 turbine	13,933
Fillmore	Millard County, Utah	Replace one compressor	Not applicable
Milford (new)	Beaver County, Utah	Install one Solar Titan 250 turbine, one 2,311-horsepower gas fire emergency generator, and one 6.4-MMbtu/hour heater	26,548 (turbine)
Dry Lake	Clark County, Nevada	Add one Solar Mars 100 turbine	15,533

4.11.1.1 Existing Air Quality

The proposed Project would be located in Uinta County, Wyoming; Morgan, Davis, Salt Lake, Utah, Millard, and Beaver Counties, Utah; and Clark County, Nevada. Representative weather data for these counties is provided by four weather stations and presented in table 4.11.1-2. Since Project components are located in distinctly different locations, a large variation between temperatures and rainfall is noted between the more mountainous locations of the Wyoming and Utah meteorological stations and the station located in Las Vegas, Nevada.

TABLE 4.11.1-2 Representative Annual Average Weather Conditions for the Proposed Apex Expansion Project Area				
Meteorological Monitor Name and Location	Maximum Temperature (°F)	Minimum Temperature (°F)	Precipitation (inches)	Snowfall (inches)
483100 Evanston 1E, Wyoming	54.8	25.5	12.0	54.8
4275598 Salt Lake City NWSFO, Utah	63.9	40.4	15.6	60.1
425654 Milford, Utah	65.5	33.3	9.0	33.8
264436 Las Vegas WSO Airport, Nevada	80.1	54.0	4.2	1.0

Note:
 °F = Degrees Fahrenheit
 Source: WRCC 2009

Air Quality Control Regions and Attainment Status

The CAA designates criteria pollutants for which the National Ambient Air Quality Standards (NAAQS) are promulgated. The NAAQS have been set for sulfur dioxide (SO₂), nitrogen dioxide (NO₂),

particulate matter with an aerodynamic diameter less than 10 microns (PM₁₀), particulate matter with an aerodynamic diameter less than 2.5 microns (PM_{2.5}), carbon monoxide (CO), ozone (O₃), and lead. Primary standards set limits to protect public health, including the health of “sensitive” populations such as asthmatics, children, and the elderly; whereas secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. State air quality standards cannot be less stringent than the NAAQS. Some individual state ambient air quality standards in Wyoming and Nevada are more stringent than the NAAQS, as defined in 40 CFR 50; these standards are summarized in table 4.11.1-3. Utah does not have state ambient air quality standards but has adopted the NAAQS.

Air quality control regions (AQCR) are areas established for air quality planning purposes in which implementation plans describe how ambient air quality standards will be achieved and maintained. AQCRs were established by the EPA and local agencies, in accordance with Section 107 of the CAA, as a means to implement the CAA and comply with the NAAQS through state implementation plans. The AQCRs are intra- and interstate regions such as large metropolitan areas where improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Each AQCR, or portion thereof, is designated based on compliance with the NAAQS. AQCR designations fall under three categories: “attainment” (areas in compliance with the NAAQS), “nonattainment” (areas not in compliance with the NAAQS), or “unclassified” (areas with insufficient data to make a determination concerning compliance). Table 4.11.1-4 shows the attainment status of criteria pollutants in the affected counties.

Air Quality Monitoring

A network of ambient air quality monitoring stations has been established by EPA and state and local agencies to measure and track the background concentrations of criteria pollutants across the United States, and to assist in designation of nonattainment areas. To characterize the background air quality in the region surrounding the proposed Project area, data from air quality monitoring stations were obtained. A summary of the available regional background air quality concentrations is presented in table 4.11.1-5.

TABLE 4.11.1-3 Ambient Air Quality Standards for the Proposed Apex Expansion Project Area					
Pollutant	Time Frame	National AAQS		Wyoming AAQS	Nevada AAQS
		Primary	Secondary		
Particulate matter less than 10 microns in diameter	Annual	N/A	N/A	50 µg/m ³	50 µg/m ³
	24-hour ^a	150 µg/m ³	150 µg/m ³	150 µg/m ³	150 µg/m ³
Particulate matter less than 2.5 microns in diameter	Annual ^b	15 µg/m ³	15 µg/m ³	15 µg/m ³	N/A
	24-hour ^c	35 µg/m ³	N/A	35 µg/m ³	N/A
Sulfur dioxide	Annual	0.030 ppm (80 µg/m ³)	N/A	60 µg/m ³	0.03 ppm
	24-hour ^a	0.14 ppm (365 µg/m ³)	N/A	260 µg/m ³	0.14 ppm
	3-hour ^a	N/A	0.5 ppm (1,300 µg/m ³)	1,300 µg/m ³	0.5 ppm
Carbon monoxide	8-hour ^a	9 ppm (10,000 µg/m ³)	N/A	9 ppm	9 ppm, 6 ppm above 5000' elevation
	1-hour ^a	35 ppm (40,000 µg/m ³)	N/A	35 ppm	35 ppm
Nitrogen dioxide	Annual	0.053 ppm (100 µg/m ³)	0.053 ppm	100 µg/m ³	0.053 ppm
Ozone	8-hour ^d	0.075 ppm (147 µg/m ³)	0.075 ppm	0.075 ppm	N/A
	1-hour	N/A	N/A	N/A	0.12 ppm
Lead	Quarterly	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³
Hydrogen sulfide	1-hour	N/A	N/A	N/A	0.08 ppm
	½-hour	N/A	N/A	70 µg/m ³ ^e	N/A
	½-hour	N/A	N/A	40 µg/m ³ ^f	N/A
Suspended sulfates	Annual	N/A	N/A	0.25 mg SO ₃ /100 cm ² /day	N/A
	30-day	N/A	N/A	0.50 mg SO ₃ /100 cm ² /day	N/A

TABLE 4.11.1-3 (continued)
Ambient Air Quality Standards for the Proposed Apex Expansion Project Area

Notes:

- AAQS = Ambient Air Quality Standards
- cm²/day = square centimeters per day
- µg/m³ = microgram(s) per cubic meter
- mg = milligram(s)
- N/A = not applicable
- ppm = part(s) per million
- SO₃ = sulfur trioxide

Wyoming has ambient air quality standards for fluorides. Modifications at Coyote Creek Compressor Station would not result in this station becoming a source of fluorides.

- ^a Standard not to be exceeded more than once per year.
- ^b To attain this standard, the 3-year average of the weighted annual mean particulate matter less than 2.5 microns in diameter concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³.
- ^c To attain this standard, the 3-year average of annual the 98th-percentile 24-hour average values of particulate matter less than 2.5 microns in diameter concentrations must not exceed 35.0 µg/m³.
- ^d To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations, measured at each monitor within an area over each year, must not exceed 0.075 ppm.
- ^e Standard not to be exceeded more than two times per year.
- ^f Standard not to be exceeded more than two times in any 5 consecutive days.

Sources:

EPA 2009a, WYDEQ 2009, NAC 2009

**TABLE 4.11.1-4
Attainment Designations of Counties Affected by the Proposed Apex Expansion Project**

State	County	Attainment Designations						
		CO	Lead	NO ₂	Ozone	PM ₁₀	PM _{2.5}	SO ₂
Wyoming	Uinta	U/A	U/A	U/A	U/A	U	U/A	A
Utah	Beaver	U/A	U/A	U/A	U/A	U	U/A	A
	Davis	U/A	U/A	U/A	A/M ^d	U	U/A ^f	A
	Millard	U/A	U/A	U/A	U/A	U	U/A	A
	Morgan	U/A	U/A	U/A	U/A	U	U/A	A
	Salt Lake	A/M ^a	U/A	U/A	A/M ^d	Non-A	U/A ^f	Non-A
	Utah	U/A ^b	U/A	U/A	U/A	Non-A	U/A ^f	A
Nevada	Clark	U/A ^c	U/A	U/A	Non-A ^e	U ^c	U/A	A

Notes:

A = Attainment
A/M = Area is currently in attainment but has a maintenance plan
Non-A = Nonattainment
U/A = Unclassifiable/Attainment
U = Unclassifiable

^a The portion of Salt Lake County within Salt Lake City is designated a maintenance area for CO.
^b The portion of Utah County within Provo is designated a maintenance area for CO. The Elberta Compressor Station is not located in Provo.
^c The portion of Clark County in hydrographic area 212 is designated as nonattainment. Dry Lake Compressor Station is in hydrographic Area 216.
^d Davis and Salt Lake Counties are a 1-hour ozone maintenance areas.
^e That portion of Clark County that lies in hydrographic areas 164A, 164B, 165, 166, 167, 212, 213, 214, 216, 217, and 218 (but excluding the Moapa River and the Fort Mojave Indian Reservations) is designated non-attainment for the 8-hour ozone standard.
^f On October 8, 2009, the EPA issued a final Federal Register notice for area designations of the 24-hour PM_{2.5} NAAQS. EPA has identified areas as either nonattainment, unclassifiable/attainment, or unclassifiable. Salt Lake County, Davis County, and the Utah Valley portions of Utah County were re-designated as PM_{2.5} nonattainment areas. These final designations became effective 30 days following publication in the Federal Register.

**TABLE 4.11.1-5
Regional Background Air Quality Concentrations in the Regions of the Proposed
Apex Expansion Project (2006–2008)**

Year	PM ₁₀ (µg/m ³)		PM _{2.5} (µg/m ³)		SO ₂ (ppm)			CO (ppm)		NO ₂ (ppm)	Ozone (ppm)	Lead (µg/m ³)
	24- hour	Annual	24- hour	Annual	24- hour	3-hour	8- hour	1- hour	Annual	8-hour	Quarterly	
Murphy Ridge, Uinta County, Wyoming - Monitor No. 560410101												
2008	100	N/A	N/A	0.001	0.003	0.003	0.7	0.9	0.003	0.064	N/A	
2007	62	N/A	N/A	0.001	0.006	0.006	1.5	1.6	0.003	0.070	N/A	
2006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Salt Lake County, Utah - SO₂ from Monitor 490351001, other pollutants from Monitor No. 490350003												
2008	62	10.5	46.8	0.001	0.001	0.002	2.2	2.9	0.018	0.080	N/A	
2007	109	12.5	58.4	0.001	0.003	0.006	2.5	3.8	0.021	0.082	N/A	
2006	76	10.2	39.2	0.002	0.007	0.008	2.3	3.9	0.020	0.084	N/A	
Utah County, Utah – CO and NO₂ from Monitor No. 490490002, particulates from Monitor No. 490494001, ozone from Monitor No. 490495010												
2008	177	9.8	35.5	N/A	N/A	N/A	1.5	3.9	0.017	0.071	N/A	
2007	112	11.7	64.9	N/A	N/A	N/A	2.5	3.8	0.021	0.077	N/A	
2006	90	9.4	32.0	N/A	N/A	N/A	2.1	4.5	0.020	0.079	N/A	
Davis County, Utah - Monitor No. 490110004												
2008	63	10.2	25.8	0.001	0.003	0.009	N/A	N/A	N/A	0.078	N/A	
2007	82	11.6	45.1	0.002	0.007	0.019	N/A	N/A	N/A	0.082	N/A	
2006	56	8.6	34.1	0.002	0.004	0.011	N/A	N/A	N/A	0.082	N/A	
Clark County, Nevada – SO₂ from Monitor No. 320030539, other pollutants from Monitor No. 320032002												
2008	91	8.9	18.8	0.001	0.001	0.002	2.4	3.6	0.016	0.068	N/A	
2007	100	8.8	19.7	0.001	0.003	0.006	2.8	4.5	0.020	0.080	N/A	
2006	91	8.2	22.1	0.002	0.007	0.008	3.7	4.8	0.021	0.081	N/A	
<p>Notes:</p> <p>µg/m³ = microgram(s) per cubic meter N/A = not available ppm = parts per million</p> <p>Numbers in parentheses indicate the number of days the standard was exceeded.</p> <p>Source: EPA 2009b</p>												

4.11.1.2 Regulatory Requirements

Federal Regulations

The CAA (42 USC 7401 et seq., amended in 1977 and 1990) and 40 CFR 50 through 99 are the primary federal statutes governing air pollution. The provisions of the CAA that are potentially relevant to the proposed Project include the following:

- New Source Review (NSR)/Prevention of Significant Deterioration (PSD);
- Protection of Federal Class I areas;
- New Source Performance Standards (NSPS);
- National Emission Standards for Hazardous Air Pollutants (NESHAP);
- Title V operating permits;
- General Conformity;
- Greenhouse Gas Reporting Rule; and
- State regulations.

New Source Review/ Prevention of Significant Deterioration

NSR refers to the pre-construction permitting programs under Parts C and D of the CAA that must be satisfied before construction can begin on new major sources or major modifications to existing major sources located in attainment or unclassified areas. This review may include a PSD review. The review process is intended to keep new air emission sources from causing existing air quality to deteriorate beyond acceptable levels codified in the federal regulations as the NAAQS. For sources located in nonattainment areas, the Nonattainment New Source Review (NNSR) program is implemented for the pollutants for which the area is classified as nonattainment. The Dry Lake Compressor Station is located in an ozone nonattainment area and the Elberta Compressor Station is located in a PM₁₀ nonattainment area. Consequently, NNSR would be applicable to these facilities. The other compressor stations (new and existing) are not located in nonattainment areas; therefore, NNSR is not applicable to these remaining compressor stations.

The PSD review regulations apply to proposed new major sources or major modifications to existing major sources located in an attainment area. The PSD regulations (40 CFR 52.21) define a “major source” as any source type belonging to a list of named source categories that emit or have the potential to emit 100 tons per year (tpy) or more of any regulated pollutant. A major source under PSD can also be defined as any source not on the list of named source categories with the potential to emit such pollutants in amounts equal to or greater than 250 tpy. Modifications to existing major sources have lower emission thresholds, called “significant emission increases”; amounts over these thresholds would trigger PSD review. The proposed Project would not include facilities or operations on the list of named source categories to which the 100-tpy trigger applies. Also, the Project would not include any existing major sources under the PSD program; therefore, the new Milford Compressor Station and existing compressor station modifications would be subject to the 250-tpy applicability threshold.

The PSD review evaluates existing ambient air quality and the potential impacts of the proposed source on ambient air quality (noting in particular whether the source would contribute to any violation of the NAAQS), and reviews the best available control technology (BACT) in order to minimize emissions.

The PSD regulations contain restrictions on the degree of ambient air quality deterioration that would be allowed. These increments for criteria pollutants are based on the PSD review classification of the area.

The new Milford Compressor Station and existing compressor station modifications would not exceed emissions of 250 tpy of any criteria pollutant (see table 4.11.1-8). Therefore, PSD permitting would not be applicable.

Federal Class I Area Protection

PSD also considers AQCR categories or classes. AQCRs are categorized as Class I, Class II, or Class III. Class I areas are designated specifically as pristine natural areas or areas of natural significance; these areas have the lowest increment of permissible deterioration, which essentially precludes development near these areas. Class III designations, intended for heavily industrialized zones, can be made only on request and must meet all requirements outlined in 40 CFR 51.166. The remainder of the United States is classified as Class II. Class II areas are designed to allow moderate, controlled growth. The proposed Project would be located in Class II areas. The Coyote Creek Compressor Station is approximately 217 kilometers (about 135 miles) southwest of the Bridger Wilderness Area. The Elberta Compressor Station is approximately 168 kilometers (about 104 miles) north of Capitol Reef National Park. The Fillmore Compressor Station is approximately 101 kilometers (about 63 miles) north of Capitol Reef National Park. The proposed Milford Compressor Station would be approximately 90 kilometers (about 56 miles) north of Zion National Park. The Dry Lake Compressor Station is 85 kilometers (about 53 miles) west of Grand Canyon National Park. All of the compressor stations, with the exception of the Dry Lake and proposed Milford Compressor Stations, are located farther than 100 kilometers from a Class I area. However, none of the compressor stations would be PSD major sources, and PSD air impacts analyses would not be required.

On October 27, 2009, the EPA issued the proposed PSD and Title V Greenhouse Gas Tailoring Rule, which correlates the major source applicability thresholds for greenhouse gas (GHG) emissions under the CAA's PSD and Title V permitting programs by PSD significance level for GHG emissions. If the final rule is promulgated prior to construction/modification of the compressor stations, they may be subject to the rule. Types of GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and other fluorinated gases including nitrogen trifluoride and hydrofluorinated ethers.

New Source Performance Standards

The NSPS (codified in 40 CFR 60 and incorporated by reference in the Wyoming Air Quality Standards and Regulations, Chapter 5, Section 2[a]; the Utah Air Rules R307-210-1; and the Nevada Administrative Code 445B.221) establish requirements for new, modified, or reconstructed facilities in specific source categories. NSPS requirements include emission limits, monitoring, reporting, and record keeping. The following NSPS requirements were identified as potentially applicable to the specified sources at the new Milford Compressor Station and the existing compressor stations.

Stationary combustion turbines with a heat input of 10 million British thermal units per hour (MMBtu/hour) and larger installed after February 18, 2005, are covered by Subpart KKKK. The proposed turbines at each compressor station (both new and existing) would have a turbine in the range of 50 to 850 MMBtu/hour. The standard imposes a limitation on nitrogen oxides (NO_x) emissions of 25 parts per million (ppm) at 15 percent oxygen in the turbine exhaust for units of this size. The standard also imposes a SO₂ emission limit of 0.9 pound per megawatts per hour or the use of fuel that results in SO₂ emissions of no more than 0.06 pound SO₂/MMBtu. Kern River would comply with all applicable standards of the rule. Kern River would verify NO_x emissions through performance testing in accordance

with 40 CFR 60.4340 and 60.4400. Following turbine start-up, a NO_x performance test would be performed, followed by annual performance tests. If NO_x emissions from the annual performance test are less than or equal to 75 percent of the emission limit, then subsequent performance tests may be reduced to once every 2 years. If the results of subsequent performance tests exceed 75 percent of the NO_x emission limit for the turbine, annual performance testing would resume. Kern River would need to comply with any performance testing requirements stipulated in any air permit issued for each compressor station by the applicable state agency.

Kern River would comply with the SO₂ standard by demonstrating compliant fuel characteristics in a current, valid purchase contract, tariff sheet, or transportation contract for the fuel which would identify the total sulfur content for natural gas as 20 grains of sulfur or less per 100 standard cubic feet.

On January 19, 2008, EPA issued final rules for the NSPS Subpart JJJJ for spark-ignition internal-combustion engines (SI ICE). The emergency generator engine proposed for the Milford Compressor Station would be subject to Subpart JJJJ. Owners and operators of SI ICE emergency engines with a capacity greater than 25 horsepower manufactured after January 1, 2009, must meet new emission limits for NO_x, CO, and volatile organic compounds (VOC). The limitations on non-emergency use of such engines at 40 CFR 60.4243(d) must also be observed. Compliance with these standards would be demonstrated by purchasing an engine certified to the emission standards in 40 CFR 60.4231(a) through (c), as applicable, for the same engine class and maximum engine power. The engine would be operated and maintained in accordance with manufacturer's emission-related written instructions. Records of conducted maintenance would be kept, but no performance testing would be conducted. It should be noted that the Utah Division of Air Quality (UDAQ), who is responsible for issuing the air permit for the Milford Compressor Station, may require performance testing or additional recordkeeping beyond what is described above. Applicable requirements by UDAQ would be stipulated in any air permit issued for the Milford Compressor Station.

The Apex Expansion Project would also be subject to applicable requirements of 40 CFR 60 Subpart A – General Requirements, which covers such administrative issues as notifications, performance testing, and monitoring.

No other NSPSs would be applicable to the Apex Expansion Project.

National Emission Standards for Hazardous Air Pollutants

The NESHAP, codified in 40 CFR 61 and 63, regulates hazardous air pollutant (HAP) emissions. Part 61 was promulgated prior to the 1990 Clean Air Act Amendments (CAAA) and regulates eight types of hazardous substances (asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides, and vinyl chloride).

The 1990 CAAA established a list of 189 HAPs, resulting in the promulgation of Part 63. Part 63, also known as the Maximum Achievable Control Technology (MACT) standards, regulates HAP emissions from major sources of HAP emissions and specific source categories that emit HAPs. Part 63 defines a “major source of HAPs” as any source with the potential to emit 10 tpy of any single HAP or 25 tpy of HAPs in aggregate. MACT standards are intended to reduce emissions of air toxics or HAPs through installation of control equipment rather than enforcement of risk-based emission limits. The compressor stations (proposed and existing) would each emit less than 10 tpy of total HAPs (see table 4.11.1-8). Potential HAP emissions resulting from the Project would be below the 10-tpy and 25-tpy thresholds; therefore, MACT would not be applicable.

On January 18, 2008, final rules for the Reciprocating Internal Combustion Engine (RICE) MACT standard were published as 40 CFR 63 Subpart ZZZZ. Subpart ZZZZ applies to RICE at both major and area HAP sources. Because the emergency generator engine at the proposed Milford Compressor Station would be subject to 40 CFR 60 Subpart JJJJ, no further requirements from 40 CFR 63 Subpart ZZZZ would apply [per 40 CFR 63.6590(c)].

On September 13, 2004, rules were promulgated for an Industrial, Commercial, and Institutional Boilers and Process Heaters MACT standard at 40 CFR 63 Subpart DDDDD. Subpart DDDDD applies only to boilers and heaters at major HAP sources. The Milford Compressor Station would have a 3.85 MMbtu/hour heater. Subpart DDDDD would not be applicable because the Milford Compressor Station would not be a major HAP source.

The regulation in 40 CFR 63 Subpart YYYYY applies to turbines at major HAP sources. Subpart YYYYY would not be applicable to the Project because the compressor stations (proposed and existing) would not be major HAP sources.

Title V Permitting

The Title V permit program, as described in 40 CFR 70, requires sources of air emissions with criteria pollutant emissions that reach or exceed major source levels to obtain federal operating permits. These permits list all applicable air regulations and include a compliance demonstration for each applicable requirement. The major source threshold level in attainment areas is 100 tpy of NO_x, SO₂, CO, PM₁₀, PM_{2.5}, and VOC. Any source with the potential to emit 10 tpy of any single HAP or 25 tpy of HAPs in aggregate is also considered a major source under Title V. The major source thresholds are the same in the Clark County, Nevada ozone nonattainment area and the Salt Lake County and Utah County, Utah PM₁₀ nonattainment areas. The proposed and existing compressor stations would not emit any pollutant at these applicability levels (see table 4.11.1-6). Therefore, Title V is not applicable to the proposed Project.

General Conformity

The regulation in 40 CFR 51 Subpart W and 93 Subpart B defines the requirements for determining conformity of federal actions with federal or state implementation plans. A conformity determination is required for each criteria pollutant where the total of direct and indirect emissions in a nonattainment or maintenance area caused by a federal action would equal or exceed any of the rates specified in 40 CFR 51.853, 40 CFR 93.153, or 10 percent of the entire emission budget for a nonattainment or maintenance area.

For the existing nonattainment and maintenance areas, the conformity determination applicability level specified in 40 CFR 51.853(b) and 93.153(b) is 100 tpy for each applicable pollutant. Ten percent of the emissions budget exceeds the 100 tpy level, so the 40 CFR 51.853(b) and 93.153(b) limits are controlling. Nonattainment and maintenance areas along the proposed Project include construction of the Wasatch Loop in Davis and Salt Lake Counties, Utah; installation and operation of the Elberta Compressor Station in Utah County, Utah; and installation and operation of the Dry Lake Compressor Station in Clark County, Nevada. Estimated emissions from the construction and operation of the Project would not reach the 100 tpy level for any pollutant in any nonattainment or maintenance area, as shown in table 4.11.1-6. A general conformity determination is therefore not required [as specified in 40 CFR 51.853(c)(1) and 40 CFR 93.153(c)(1)].

**TABLE 4.11.1-6
Comparison of Emissions to General Conformity Thresholds for the
Proposed Apex Expansion Project**

Nonattainment/ Maintenance Area	Project Component	Location of Project Activities	Air Pollutant of Concern	Emissions (tpy)	General Conformity Thresholds^a (tpy)
Proposed Salt Lake City PM _{2.5} Nonattainment Area ^b	Construction – Wasatch Pipeline Loop ^c	Salt Lake and Davis Counties, Utah	PM _{2.5}	19	100
			NO _x (PM _{2.5} precursor)	80	100
			SO ₂ (PM _{2.5} precursor)	0.3	100
Proposed Provo PM _{2.5} Nonattainment Area ^b	Construction – Elberta Compressor Station Expansion	Utah County, Utah	PM _{2.5}	1.7	100
			NO _x (PM _{2.5} precursor)	7.3	100
			SO ₂ (PM _{2.5} precursor)	<0.1	72 ^d
	Operation of Proposed New Turbine – Elberta Compressor Station	Utah County, Utah	PM _{2.5}	3.2	100
			NO _x (PM _{2.5} precursor)	0 ^e	100
			SO ₂ (PM _{2.5} precursor)	0 ^c	72 ^d
Salt Lake County PM ₁₀ Nonattainment Area	Construction – Wasatch Pipeline Loop ^d	Salt Lake County, Utah	PM ₁₀	27	100
Salt Lake City CO Maintenance Area	Construction – Wasatch Pipeline Loop ^d	Salt Lake County, Utah	CO	22	100
Davis/Salt Lake O ₃ Maintenance Area	Construction – Wasatch Pipeline Loop ^c	Salt Lake and Davis Counties, Utah	NO _x (ozone precursor)	80	100
			VOC (ozone precursor)	8.7	100
Utah County PM ₁₀ Nonattainment Area	Construction – Elberta Compressor Station Expansion	Utah County, Utah	PM ₁₀	8.7	100
	Operation of Proposed New Turbine – Elberta Compressor Station	Utah County, Utah	PM ₁₀	0 ^c	100

TABLE 4.11.1-6 (continued)
Comparison of Emissions to General Conformity Thresholds for the
Proposed Apex Expansion Project

Nonattainment/ Maintenance Area	Project Component	Location of Project Activities	Air Pollutant of Concern	Emissions (tpy)	General Conformity Thresholds^a (tpy)
Clark County O ₃ Maintenance Area	Construction – Dry Lake Compressor Station Expansion	Clark County, Nevada	NO _x (ozone precursor)	6.7	100
			VOC (ozone precursor)	0.6	100
	Operation of Proposed New Turbine – Dry Lake Compressor Station	Clark County, Nevada	NO _x (ozone precursor)	29	100
			VOC (ozone precursor)	3.3	100

Notes:

CO = Carbon monoxide
NO_x = Nitrogen oxides
PM₁₀ = Particulate matter less than 10 microns in diameter
PM_{2.5} = Particulate matter less than 2.5 microns in diameter
SO₂ = Sulfur dioxide
tpy = Tons per year
VOC = Volatile organic compound

^a Except where noted, de minimis thresholds are listed.

^b This area was previously designated as unclassifiable/attainment for PM_{2.5}; thus, PM_{2.5} precursor emissions in this area were not subject to the General Conformity Rule. However, on October 8, 2009, the EPA issued a final Federal Register notice for area designations of the 24-hour PM_{2.5} NAAQS. EPA re-designated Salt Lake, Davis, and portions of Utah Counties as nonattainment for the 24-hour PM_{2.5} NAAQS. These final designations became effective 30 days following publication in the Federal Register.

^c Listed emissions also include those anticipated from on-road vehicle use in Salt Lake County, during construction activities at the Elberta Compressor Station.

^d Threshold represents 10 percent of total emission inventory for Utah County (UDAQ 2008).

^e Emission reduction credits have been purchased to offset emission increases of PM₁₀, NO_x, and SO₂ due to operation of the proposed replacement turbine at the Elberta Compressor Station.

Greenhouse Gas Reporting Rule

On September 22, 2009, the EPA issued the final Mandatory Reporting of Greenhouse Gases Rule, which requires reporting of GHG emissions from suppliers of fossil fuels and facilities that emit greater than or equal to 25,000 metric tons of GHG (as carbon dioxide equivalent emissions, or CO_{2-eq}) per year. Kern River would be required to comply with all applicable requirements of the rule for all actual GHG emissions from proposed sources at the stations equal to or greater than 25,000 metric tons per year.

State Regulations

In addition to the federal regulations described above, Wyoming, Utah, and Nevada have state-specific air quality regulations (see table 1.5-1 in section 1.0). The WDEQ manages air quality issues in Wyoming, the Division of Air Quality (UDAQ) manages air quality issues in Utah, and the Clark County Department of Air Quality and Environmental Management (CC DAQEM) manages air quality issues in Clark County, Nevada. Subject to EPA oversight, these agencies manage the air permitting, compliance, and enforcement programs. Installation and operation of the additional turbine at the Coyote Creek Compressor Station would require authorization from the WDEQ. An application for a construction permit for the modification of the Coyote Creek Compressor Station was received by the WDEQ and was assigned an application number. Following review of the application, Kern River expects the WDEQ to issue a revised permit for the modification of the compressor station, which will serve as the Permit to Construct and Operate. Installation and operation of the new turbine at the Elberta Compressor Station and the proposed Milford Compressor Station would require authorization from the UDAQ. Following UDAQ's review of the Notices of Intent, Kern River expects UDAQ to issue a revised Approval Order for the modification at the Elberta Compressor Station and a new Approval Order for the proposed Milford Compressor Station. These will serve as Permits to Construct and Operate for the Elberta and Milford Compressor Stations. The additional turbine at Dry Lake Compressor Station would require authorization from CC DAQEM. An application for an Authority to Construct for the modification of the Dry Lake Compressor Station has been submitted to the CC DAQEM. Following review of the application, Kern River expects the CC DAQEM to issue a revised combined Authority to Construct/Operating Permit for expansion of the compressor station. The compressor replacement at Fillmore Compressor Station is not an air pollution emitting unit and authorization to replace the compressor would not be required.

4.11.1.3 Construction Impacts

Construction of the proposed pipeline looping, compressor stations, and access roads would generate air emissions during grading, trenching, backfilling, and operation of construction vehicles, as well as emissions from helicopters. The Project would use existing roads to the extent possible; however, Kern River has proposed to construct one new access road. Some roads used for access may require improvements during construction by widening or adding drain pipes, gravel, or grading. These activities could generate dust and particulate emissions from earth moving and from construction equipment engine exhaust.

Some of the access roads used for construction would continue to be used during operation to provide access to the proposed pipeline looping for maintenance purposes.

Construction of the pipeline, existing compressor station modifications, and construction of the Milford Compressor Station would be performed with mobile equipment similar to that typically used for pipeline and road construction. Kern River would also construct other minor aboveground facilities consisting of MLVs and pig launchers/receivers.

Construction would be expected to cause a temporary impact on local ambient air quality as a result of fugitive dust and combustion emissions generated by construction equipment. Criteria pollutant emissions, primarily NO₂, CO, VOCs, PM₁₀, PM_{2.5}, small amounts of SO₂, and small amounts of HAPs (such as formaldehyde, benzene, toluene, and xylene) would be produced by the gasoline and diesel-powered construction equipment engines. Construction emissions for the proposed Project are shown in table 4.11.1-7. These emissions would occur over the anticipated 13-month duration of construction activity. Impacts from construction equipment would be temporary and is not expected to result in a

significant impact on air quality. In addition to these emissions, construction of the Project is estimated to produce about 26,655 metric tons (tonnes) of CO_{2-eq}.

TABLE 4.11.1-7 Estimated Construction Emissions for the Proposed Apex Expansion Project							
Construction Phase	NO_x (tons)	CO (tons)	VOC (tons)	PM₁₀ (tons)	PM_{2.5} (tons)	SO_x (tons)	CO_{2-eq} (tonnes)
Wasatch Pipeline Loop – Equipment Operation	163.0	251.0	17.0	10.1	10.2	0.6	23,179
Wasatch Pipeline Loop – Fugitive Dust	--	--	--	194.4	26.3	--	--
Coyote Creek CS – Equipment Operation	6.6	3.6	0.6	0.5	0.5	<0.1	763
Coyote Creek CS – Fugitive Dust	--	--	--	12.6	1.5	--	--
Elberta CS – Equipment Operation	8.6	5.3	0.8	0.6	0.6	0.1	875
Elberta CS – Fugitive Dust	--	--	--	8.8	1.2	--	--
Fillmore CS - Equipment Operation	1.8	1.0	0.2	0.1	0.1	<0.1	209
Fillmore CS – Fugitive Dust	--	--	--	6.5	0.7	--	--
Milford CS – Equipment Operation	7.4	4.1	0.7	0.6	0.6	<0.1	853
Milford CS – Fugitive Dust	--	--	--	22.3	3.1	--	--
Dry Lake CS - Equipment Operation	6.7	0.6	3.7	0.5	0.5	<0.1	776
Dry Lake CS – Fugitive Dust	--	--	--	7.8	1.0	--	--
Total	194.1	265.6	23.0	265.4	46.3	1.1	26,655
<hr/> Note: CO = Carbon monoxide CO _{2-eq} = CO ₂ equivalent CS = Compressor Station NO _x = Nitrogen oxides PM ₁₀ = Particulate matter less than 10 microns in diameter PM _{2.5} = Particulate matter less than 2.5 microns in diameter SO _x = Sulfur oxides VOC = Volatile organic compound CS = Compressor Station							

The WDEQ regulates airborne particulate matter resulting from construction activities through its Air Quality Division Standards and Regulations Chapter 3, Section 2(f)(i)(A). The rule requires frequent watering or application of dust control chemicals to reduce fugitive dust. The UDAQ has a similar

fugitive dust requirement at R307-205-5 and the CC DAQEM has a similar requirement in Section 41 of its Air Quality Regulations. Kern River would prepare required dust control plans in accordance with state air quality regulations and would provide these plans to the appropriate state agencies and the Commission prior to construction. Kern River has indicated that these plans would propose to use proven construction practices, such as applying water to roadways and mulching bare areas to control fugitive dust if fugitive dust becomes a problem.

4.11.1.4 Operational Impacts

Kern River proposes to install one Solar Titan 250 gas turbine site-rated at 26,548 horsepower (hp), one natural gas-fired backup generator engine rated at 2,311 hp, a 6.4-MMBtu/hour boiler, and a piping blowdown stack at the proposed Milford Compressor Station. One additional Solar Mars 100 gas turbine is proposed at each of the existing Coyote Creek, Elberta, and Dry Lake Compressor Stations. Each of the proposed turbines would be controlled with Solar's SoLoNO_x technology to reduce NO_x emissions.

Impacts from operation of the Project would result from the proposed turbines and from the additional equipment at the Milford Compressor Station. Operation of the equipment would be subject to permit-to-construction applications, which would require Kern River to complete further air quality analyses. As part of these analyses, NO₂ and formaldehyde emissions (a HAP) at the Coyote Creek Compressor Station would be compared with appropriate PSD increments and the NAAQS. Formaldehyde emissions at the Elberta Compressor Station would be compared with toxic screening levels, and NO_x and CO levels would be compared with and mitigated to below UDAQ thresholds. Emissions of NO₂ and formaldehyde at the Milford Compressor Station would be compared with the NAAQS for NO₂ and the appropriate toxic screening level for formaldehyde. Finally, emissions of NO₂, PM₁₀, and SO₂ at the Dry Lake Compressor Station would be compared with the appropriate PSD increment.

The Milford Compressor Station would include an emergency shut down (ESD or blowdown) system, pursuant to USDOT requirements. The Elberta and Dry Lake Compressor Stations would each have an additional blowdown stack installed, and the Fillmore Compressor Station may also have an additional blowdown stack installed. Activation of the ESD system would vent the piping (expel the natural gas) to the atmosphere in case of an emergency. The ESD would be used only in the event of an emergency. Compressor unit blowdowns would occur as needed to relieve pressure when a unit is taken offline. Natural gas blowdowns would not be part of routine operation.

Operation of the aboveground block valves and pig launcher/receiver would not result in substantial air emissions under normal operating conditions. Typically, only minor emissions of natural gas, called "fugitive emissions," occur from small connections at meter station and valve sites; because such emissions are very small, they are not regulated by permit or source-specific requirements.

Use of the access roads for maintenance would generate occasional, minor, and short-term increases in dust similar to that generated on other unpaved roads in the area. Use of these roads by maintenance and operation personnel would have a negligible effect on air quality; however, any residents near the road may experience short periods of elevated dust levels.

Kern River estimates annual air pollutant emissions from compressor station equipment (excluding the Fillmore Compressor Station, which would have no increase of emissions). Annual emissions, including GHGs, are summarized in table 4.11.1-8.

<p style="text-align: center;">TABLE 4.11.1-8 Annual Air Pollutant Emissions from Compressor Station Equipment for the Proposed Apex Expansion Project</p>									
Compressor Station	Equipment Status	CO (tpy)	NO _x (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	SO ₂ (tpy)	VOC (tpy)	CO _{2-eq} (tons per year)	Total HAPs
Coyote Creek	Existing	52.7	44	2.6	2.6	1.3	13.1	NC	0.4
	Proposed	26	25	3	3	1.5	3.2	53,965	0.5
Elberta	Existing	54.7	44.2	2.9	2.9	1.4	14.1	NC	<0.1
	Proposed	27	27	3.2	3.2	1.7	3.1	57,824	0.5
Fillmore	Existing	94.2	85.2	5.5	5.5	2.8	28.7	NC	0.06
	Proposed	94.2	85.2	5.5	5.5	2.8	28.7	NC	0.06
Milford (new)	Existing	NA	NA	NA	NA	NA	NA	NC	NC
	Proposed	50	47.4	5.4	5.4	2.7	6	98,685	1.1
Dry Lake	Existing	19.4	45.8	3.1	3.1	1.5	3.2	NC	<0.1
	Proposed	29	29	3.4	3.4	1.8	3.3	61,403	1.0-
<p>Notes:</p> <ul style="list-style-type: none"> CO = Carbon monoxide CO_{2-eq} = Carbon dioxide equivalent CS = Compressor Station HAP = Hazardous air pollutant µg = Microgram(s) m³ = Cubic meter(s) NA = Not applicable NC = Not calculated NO_x = Nitrogen oxides PM₁₀ = Particulate matter less than 10 microns in diameter PM_{2.5} = Particulate matter less than 2.5 microns in diameter SO₂ = Sulfur dioxide tpy = Tons per year VOC = Volatile organic compound 									

Greenhouse Gases

Construction of the Project would result in temporary impacts on air quality that would be limited to the duration of construction. Operation of the Project would be expected to result in long-term, minor impacts on air quality at the Milford Compressor Station and the existing compressor stations. All of the compressor stations (with the exception of the Fillmore Compressor Station) would be subject to the conditions of their required air quality permits, including emission limits for each piece of emission-generating equipment. Periodic use of access roads during operations would result in infrequent and minor impacts associated with dust, and these impacts would be localized and temporary at time of use.

GHGs occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. These gases are the integral components of the atmosphere's greenhouse effect that warms the earth's surface and moderates day/night temperature variation. The most abundant GHGs are water vapor, CO₂, CH₄, N₂O, and O₃. The primary GHGs produced by fossil fuel combustion are CO₂, CH₄, and N₂O. During construction and operation of the Project, these GHGs would be emitted

from non-electrical construction equipment and any compressors, line heaters, and generators. Methane is released by blowdown events under routine operations or upset conditions. In addition, CH₄ emissions could occur due to leaks from pipeline and system components such as equipment packing, seals, valves, flanges, pneumatic devices, and connectors at pipeline facilities, compressor stations, and meter and pressure regulation stations. Emissions of GHGs are typically expressed in terms of CO_{2-eq}, where the potential of each gas to increase heating in the atmosphere is expressed as a multiple of the heating potential of CO₂, or its global warming potential.

We calculate the emissions of GHG pollutants associated with the construction and operation of the APEX Expansion Project, including all direct and indirect emission sources. GHG emissions were then converted to total CO_{2-eq} emissions, based on the GWP of each pollutant. A summary of GHG emissions from construction and operation of the Project are provided in tables 4.11.1-7 and 4.11.1-8, respectively. Pipeline operation would result in about 465 metric tons per year (tonnes/year) of CO_{2-eq}. Based on the emission estimates, the combustion-related GHG emissions from operation of the Project may potentially exceed 25,000 metric tons per year. For all actual GHG emissions from the proposed sources equal to or greater than 25,000 metric tons per year, Kern River would be required to comply with all applicable requirements of the Final Mandatory Reporting of Greenhouse Gases Rule.

PacifiCorp Distribution Line

In conjunction with the construction of the Milford Compressor Station, PacifiCorp would extend an approximately 1.4-mile electrical distribution line to provide necessary power for the compressor station. With regard to air quality, the proposed site and a majority of the PacifiCorp electrical distribution line would be on BLM land. Land use at the site, and generally within a 0.25-mile radius is rangeland, used primarily for livestock grazing. The nearest residences are 1.9 miles from the proposed site. Neither construction nor operation of the electrical distribution line would produce air emissions that would significantly impact air quality at the nearest receptors based on distance to the site.

4.11.2 Noise

Noise impacts related to a natural gas pipeline project generally fall into two categories: temporary impacts resulting from operation of construction equipment and long-term or life-of-the-project impacts resulting from operation of compressor units. Construction-related noise from heavy equipment operation would be of a similar nature regardless of the project. We received comments during the public comment period regarding the proposed Project's noise levels during construction and operation; those comments are addressed in this section.

Noise would affect the local environment during both construction of the proposed pipeline and compressor stations (proposed and existing) and operation of each of the compressor stations. The ambient sound level of an area is defined by the total noise generated within the specific environment, and is usually comprised of sound emanating from both natural and artificial sources. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week. This variation is caused in part by changing weather conditions and the effects of seasonal vegetation cover.

Two measures to relate the time-varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level (L_{eq}) and the day-night sound level (L_{dn}). The L_{eq} is the level of steady sound with the same total (equivalent) energy as the time-varying sound of interest, averaged over a 24-hour period. The L_{dn} is the L_{eq} with 10 decibels on the A-weighted scale (dBA) added to nighttime sound levels (10 p.m. to 7 a.m.) to account for people's greater sensitivity to sound during nighttime hours. The A-weighted scale is used because human hearing is less sensitive to low and high

frequencies than mid-range frequencies. The human ear's threshold of perception for noise change is considered to be 3 dBA; 5 dBA is clearly noticeable to the human ear, and 10 dBA is perceived as a doubling of noise. Potential noise impacts on wildlife are discussed in section 4.5.

4.11.2.1 Noise Regulatory Requirements

In 1974, the EPA published its *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. This document provided information for state and local governments to use in developing their own ambient noise standards. The EPA has determined that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity noise interference. The FERC has adopted this criterion and used it to evaluate the potential noise impact from construction of the proposed Project and operation of the modified and new compressor station.

Wyoming, Utah, and Nevada do not regulate noise at the state level. However, the Salt Lake County Board of Health has adopted noise regulations (SLBH 2001). Between 7 a.m. and 10 p.m., noise is limited to 55 dBA in residential areas, 60 dBA in commercial or agricultural areas, and 80 dBA in industrial areas. Nighttime noise limits are 5 dBA lower than daytime limits. We note that the FERC standard (i.e., limiting operational compressor station noise to an L_{dn} of 55 dBA) is the more restrictive standard and therefore, have applied to the APEX Expansion Project.

4.11.2.2 Existing Noise Environment

Impacts are determined at receptors known as NSAs. NSAs include residences, schools, daycare facilities, hospitals, long-term care facilities, places of worship, libraries, and parks and recreational areas specifically known for their solitude and tranquility (such as wilderness areas).

Noise during Project construction would be associated with general pipeline construction and construction of aboveground facilities. HDD is not planned for the proposed Project.

Measurement surveys of existing noise levels at the Elberta and Coyote Creek Compressor Stations were conducted in May 2003 for what was considered full-load conditions following the Kern River's 2003 Expansion Project. The surveys conducted in 2003 are considered representative of the current noise environment near the Elberta and Coyote Creek Compressor Stations. Measurement surveys of existing noise levels at the Fillmore and Dry Lake Compressor Stations were conducted in May 2009. Existing noise levels for the proposed Milford Compressor Station were estimated based on land uses and activities in the area.

The Coyote Creek Compressor Station is currently equipped with one Solar Mars 100 turbine compressor unit. During the 2003 noise survey, the compressor unit was operating at 95-percent load, and noise measurements were recorded at four locations along the property boundary. The L_{eq} noise levels ranged between 36.7 dBA and 46.5 dBA. The nearest NSA is located about 3 miles from the compressor station. Noise from the nearby Anschutz Ranch plant was the most noticeable sound in the area.

The Elberta Compressor Station is currently equipped with one Solar Mars 100 turbine compressor unit. During the 2003 noise survey, the compressor unit was operating under full load, and noise measurements were recorded at four locations along the property boundary and two NSAs. NSA #1, a residence, is located about 6,700 feet east of the compressor station, and NSA #2 is located 7,400 feet to the east-northeast. The L_{eq} noise levels ranged between 41.6 dBA and 49.6 dBA along the property boundaries of the compressor station. The noise levels at NSA #1 and NSA #2 were measured at

42.5 dBA and 46.2 dBA, respectively. The dominant noise sources in the area were traffic on U.S. Highway 6 and State Highway 68.

The Fillmore Compressor Station is equipped with two Solar Mars 100 turbines. During the 2009 noise survey, the two units were operating under full load. Noise levels were measured at four locations along the property boundary. NSA #1, the nearest residence, is located about 1.2 miles north-northwest of the compressor station, and NSA #2 is located about 2.2 miles to the southwest. The L_{eq} noise levels ranged between 44.6 dBA and 55.2 dBA along the property boundary measuring locations.

The immediate area surrounding the proposed Milford Compressor Station site is undeveloped range land. Highway 129 is located within 1,600 feet of the proposed site, and agricultural land use is also present about 4,000 feet away. Sound levels in an area such as this would be expected to range from 35 to 45 dBA, depending on weather conditions. The nearest NSA to the proposed Milford Compressor Station site is located about 1.9 miles to the northeast.

The Dry Lake Compressor Station is currently equipped with one Solar Mars 100 turbine compressor unit. During the 2009 noise survey, the unit was operating under full load, and noise measurements were recorded at five locations along the property boundary. The L_{eq} noise levels ranged between 46.1 dBA and 61.2 dBA. The nearest NSAs are more than 14 miles southwest of the Dry Lake Compressor Station.

4.11.2.3 Construction Noise Impacts

Construction of the Project would be expected to be typical of other pipeline projects in terms of schedule, equipment used, and types of activities. Construction would increase sound levels in the vicinity of Project activities; and the levels would vary during the construction period, depending on the construction phase. Pipeline construction generally would proceed at rates of several hundred feet per day. However, due to the assembly-line method of construction, construction activities in any one area along most of the proposed route could last several weeks on an intermittent basis. Construction at the compressor stations would be concentrated at specific locations and would last for months. Construction equipment would be operated on an as-needed basis during those periods and would be maintained to manufacturers' specifications to minimize noise impacts.

Nighttime noise levels would normally be unaffected because pipeline construction would take place only during daylight hours. As indicated previously, a 3-dBA increase is considered the noticeable threshold, a 5-dBA increase is considered clearly noticeable, and a 10-dBA increase is considered a perceived doubling of noise. Table 4.11.2-1 shows typical noise produced by each piece of pipeline construction equipment expected to be used at various distances from the equipment, and the theoretical combined noise produced by the construction fleet. The combined noise calculation is based on the assumption that all equipment is working simultaneously and is collocated. The calculated noise level is conservative because it is not possible for all the equipment to be concentrated in a small area and it is unlikely that all the equipment would be working simultaneously. In addition to the construction equipment listed in table 4.11.2-1, helicopters would be used to fly in pipe in remote locations. Helicopter noise would peak during takeoff and landing and would be similar to the noise levels for other construction equipment.

**TABLE 4.11.2-1
Typical Sound Pressure Levels from Pipeline Construction Equipment
for the Proposed Apex Expansion Project**

Equipment	Reference dBA at 50 feet	Number of Units	Usage (%)	Estimated Noise Level at (L _{eq})Distance from Source (dBA)					
				50 ft	100 ft	250 ft	500 ft	1,000 ft	2,500 ft
1-ton truck	84	2	40	83	77	69	63	57	49
2-ton truck	84	2	40	83	77	69	63	57	49
Fuel truck	84	1	40	80	74	66	60	55	46
Mechanic truck	55	2	40	54	48	40	34	28	20
Operator truck	55	2	40	54	48	40	34	28	20
Hammer	90	1	20	83	77	69	63	57	49
Excavator	85	2	80	87	81	73	67	61	53
Bulldozer	85	4	80	90	84	76	70	64	56
Sideboom	85	2	80	87	81	73	67	61	53
Borer	85	1	20	78	72	64	58	52	44
Trencher	85	1	80	84	78	70	64	58	50
Tractor	84	3	40	85	79	71	65	59	51
Front-end loader	80	1	70	78	72	64	58	52	44
Boom truck	84	2	40	83	77	69	63	57	49
Water Pumps	77	1	50	74	68	60	54	48	40
Water Truck	84	2	80	86	80	72	66	60	52
Forklift	75	1	40	71	65	57	51	45	37
String Truck	84	1	40	80	74	66	60	54	46
Vacuum Truck	85	1	40	81	75	67	61	55	47
Tack Rig	79	1	80	74	68	60	54	48	40
Theoretical worst-case combined levels				96	90	82	76	70	62

Notes:

dBA = A-weighted decibel scale

Source:

USDOT 2006

There are three areas along the proposed pipeline route where existing residences and buildings are within 50 feet of the construction workspace (see section 4.8.2.3 for further details). Table 4.11.2-2 shows similar data for compressor station construction.

TABLE 4.11.2-2 Sound Pressure Levels from Compressor Station Construction Equipment for the Proposed Apex Expansion Project									
Equipment	Reference dBA at 50 feet	Number of Units	Usage (%)	Estimated Noise Level (L_{eq}) at Distance from Source (dBA)					
				50 ft	100 ft	250 ft	500 ft	1,000 ft	2,500 ft
Excavator	85	1	40	81	75	67	61	55	47
Compactor	80	1	20	73	67	59	53	47	39
Front-end loader	80	2	40	79	73	65	59	53	45
Backhoe	80	1	40	76	70	62	56	50	42
Forklift	80	1	40	76	70	62	56	50	42
300-ton crane	85	1	16	77	71	63	57	51	43
55-ton crane	85	2	16	80	74	66	60	54	46
Welder	73	14	40	80	74	67	60	54	47
Manlift	85	1	20	78	72	64	58	52	44
Caisson drill	84	1	20	77	71	63	57	51	43
Air compressor	80	1	40	76	70	62	56	50	42
Theoretical worst-case combined levels				89	83	75	69	63	55
Notes:									
dBA = A-weighted decibel scale									
Source:									
USDOT 2006									

As discussed in section 4.1.2, Kern River has identified several locations where exposed or shallow-bedrock soils exist along the pipeline route. Where unrippable rock is encountered, blasting for ditch excavation would be necessary. In these areas, blasting mats or soil cover would be used as necessary to prevent the scattering of loose rock. All blasting would be conducted during daytime hours and would not commence until occupants of nearby buildings, stores, residences, places of business and farms have been notified. Kern River expects that blasting would be required in four segments along the proposed pipeline route - MP 2.8 to 3.0, 3.6 to 4.7, 6.0 to 6.8, and 8.9 to 9.4. There are three structures within 50 feet of the construction workspace: at approximately MP 5.0, 24.5, and 27.5, and the nearest blasting could be approximately 0.3 mile from a barn located at approximately MP 5.0. Mitigation measures proposed for blasting areas include the use of blasting mats or soil cover as described above, and limitations on the size of charges in accordance with regulations. More information is provided in Kern River's Blasting Plan.

4.11.2.4 Operational Noise Impacts

During operation of the Apex Expansion Project, potential noise impacts would be limited to the vicinity of the proposed and existing compressor stations. Principal noise sources would include the air inlet, exhaust, and casing of the turbines. Secondary noise sources would include yard piping and valves. Noise from the relief valves, blowdown stack, and emergency electrical generation equipment would be infrequent.

Table 4.11.2-3 summarizes the existing and projected noise levels for the existing Coyote Creek, Elberta, and Dry Lake, and the proposed Milford Compressor Stations. The compressor replacement at the Fillmore Compressor Station would not measurably change current noise levels attributable to station operation.

TABLE 4.11.2-3 Compressor Stations Predicted Noise Impacts at the Nearest NSAs for the Proposed Apex Expansion Project					
Compressor Station	Distance / Direction of NSA from Compressor Building	Ambient L_{dn} (dBA)	Estimated L_{dn} of Compressor Addition (dBA)^a	Total Estimated L_{dn} of Modified/ New Station + Ambient (dBA)^b	Potential Noise Increase (dB)^c
Coyote Creek	2.9 miles / east	51.4	26.7	51.4	0.0
Elberta	1.3 miles / east	48.9	35.3	49.1	0.2
Milford (new)	1.9 miles / northeast	51.4	30.9	51.4	0.0
Dry Lake	14+ miles / southwest	59.5	59.5	59.5	0.0

^a Estimated Project L_{dn} sound levels are from operation of existing and expansion station equipment, with noise control measures installed as recommended.

^b Estimated total L_{dn} = 10 log (10^(Ambient L_{dn} /10) + 10^(Predicted L_{dn} /10)).

^c Estimated increase in the ambient L_{dn} sound levels due to operation of the existing and expansion station equipment.

Noise from blowdown events is designed for a maximum peak sound level of 55 dBA at a distance of 100 feet from the blowdown vent using appropriate silencing. As a result, there would not be a significant impact on the noise environment at any NSA.

During operation of the proposed Project, the potential noise impacts from the pipeline itself would be limited to the vicinity of the new valves. The principal noise source would be gas flowing through the valves. Such gas flow noise is typically not noticeable more than a short distance from the equipment. One of the proposed MLVs (MLV 121B) would be located about 100 feet north of an existing residence at MP 24.6. Kern River would install a decorative cement wall around the MLV at MP 24.6 as requested by the City of North Salt Lake, which may serve to attenuate noise levels. Gas flow noise is expected to be undetectable at the residence. Underground sections of the pipeline are not a significant source of noise.

No significant long-term noise impacts would be expected from normal operation of the new equipment or blowdown events at the Coyote Creek, Fillmore, Elberta, Milford, and Dry Lake Compressor Stations.

Based on the measurements and estimates presented in the acoustical analyses, noise levels attributable to operation of the compressor stations would remain below our criterion of an L_{dn} of 55 dBA at the nearest NSAs. However, to ensure that the noise attributable to operation of the new and expanded compressor stations at nearby NSAs would not exceed an L_{dn} of 55 dBA, **we recommend that:**

- **Kern River file noise surveys no later than 60 days after placing the Milford Compressor Station and the authorized units at the Coyote Creek and Elberta Compressor Stations in service. If the noise attributable to the operation of all of the equipment at the identified compressor stations at full load exceeds an L_{dn} of 55 dBA at any nearby NSAs, Kern River should install the additional noise controls to meet the level within 1 year of each station's in-service date. Kern River should confirm compliance with the above requirement by filing a second set of noise surveys no later than 60 days after it installs the additional noise controls.**

With implementation of the measures proposed by Kern River, impacts related to noise during construction would be minor and temporary. Based on estimated sound levels and the recommendation above, we believe that the noise levels attributable to operation of the expanded compressor stations and the new Milford Compressor Station would not have a significant impact on the surrounding environment.

PacifiCorp Distribution Line

In conjunction with the construction of the proposed Milford Compressor Station, PacifiCorp would extend an approximately 1.4-mile electrical distribution line to provide necessary power for the compressor station. With regard to noise, the proposed Milford Compressor Station and PacifiCorp electrical distribution line are on land administered by the BLM. Land use at the site and generally within a 0.25-mile radius is rangeland, used primarily for livestock grazing. The nearest residences are 1.9 miles from the site. Neither construction nor operational noise would be expected to produce a perceptible change to existing ambient noise levels at the nearest receptors based on this separation distance.

4.12 RELIABILITY AND SAFETY

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture.

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death. Methane has an ignition temperature of 1,000 °F and is flammable at concentrations between 5 and 15 percent in air. Unconfined mixtures of methane in air are not explosive. However, a flammable concentration within an enclosed space in the presence of an ignition source can explode. It is buoyant at atmospheric temperatures and disperses rapidly in air.

4.12.1 Safety Standards

The USDOT is mandated to provide pipeline safety under Title 49, USC Chapter 601. The Pipeline and Hazardous Materials Safety Administration's (PHMSA) Office of Pipeline Safety (OPS) administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards that set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. PHMSA ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the federal, state, and local level. Section 60105(a) of the Natural Gas Pipeline Safety Act (NGPSA) provides for a state agency to assume all aspects of the safety program for intrastate facilities by adopting and enforcing the federal standards, while section 60105(b) permits a state agency that does not qualify under section 60105(a) to perform certain inspection and monitoring functions. Certified states may make an agreement with USDOT that authorizes them to also participate in the oversight of interstate pipeline transportation. Although OPS may authorize a state to act as its agent to inspect interstate pipelines, it retains responsibility for enforcement of the regulations. The majority of the states act as interstate partners, including Utah, Wyoming, and Nevada.

The USDOT pipeline standards are published in 49 CFR 190 to 199. Part 192 specifically addresses natural gas pipeline safety issues.

Under a Memorandum of Understanding on Natural Gas Transportation Facilities (Memorandum) dated January 15, 1993, between USDOT and the FERC, USDOT has the exclusive authority to promulgate federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of the FERC's regulations require that an applicant (1) certify that it will design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection or (2) certify that it has been granted a waiver of the requirements of the safety standards by the USDOT in accordance with section 3(e) of the NGPSA. The FERC accepts this certification and does not impose additional safety standards other than the USDOT standards. If the Commission becomes aware of an existing or potential safety problem, there is a provision in the Memorandum to promptly alert USDOT. The Memorandum also provides for referring complaints and inquiries made by state and local governments and the general public involving safety matters related to a pipeline under the Commission's jurisdiction.

The FERC also participates as a member of the USDOT's Technical Pipeline Safety Standards Committee, which determines whether proposed safety regulations are reasonable, feasible, and practicable.

The pipeline and aboveground facilities associated with the proposed Project must be designed, constructed, operated, and maintained in accordance with the USDOT Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. Part 192 specifies material selection and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion.

Part 192 also defines area classifications, based on population density in the vicinity of the pipeline, and specifies more rigorous safety requirements for populated areas. The class location unit is an area that extends 220 yards (660 feet) on either side of the centerline of any continuous 1-mile length of pipeline. The four area classifications are defined as follows:

- Class 1 - location with 10 or fewer buildings intended for human occupancy;
- Class 2 - location with more than 10 but less than 46 buildings intended for human occupancy;
- Class 3 - location with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building, or small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12-month period; and
- Class 4 - location where buildings with four or more stories aboveground are prevalent.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. Pipelines constructed on land in Class 1 locations must be installed with a minimum depth cover of 30 inches in normal soil and 18 inches in consolidated rock. Class 2, 3, and 4 locations, as well as drainage ditches of public roads and railroad crossings, require a minimum cover of 36 inches in normal soil and 24 inches in consolidated rock. All pipelines installed in navigable rivers, streams, and harbors must have a minimum cover of 48 inches in soil and 24 inches in consolidated rock.

Class locations also specify the maximum distance to a sectionalizing block valve (specifically, 10.0 miles in Class 1, 7.5 miles in Class 2, 4.0 miles in Class 3, and 2.5 miles in Class 4). Pipe wall thickness and pipeline design pressures, hydrostatic test pressures, MAOP, inspection and testing of welds, and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas.

Class locations based on current population density for the proposed Wasatch Loop are listed in table 4.12.1-1 along with the locations of MLVs proposed for the proposed route. Approximately 25 miles of the proposed route would be in Class 1, 1.4 miles would be in Class 2, and 1.5 miles would be in Class 3.

TABLE 4.12.1-1 U.S. Department of Transportation Classifications and Mainline Valve Locations for the Proposed Wasatch Loop					
Wasatch Loop Milepost		Pipeline Length (Miles)			Mainline Valve Locations (WLMP)
Begin	End	Class 1	Class 2	Class 3	
0.0	24.3	24.3	-	-	0.0
24.3	25.2	-	0.9	-	7.1
25.2	25.7	0.5	-	-	24.5
25.7	26.6	-	-	0.9	27.4
26.6	26.8	0.2	-	-	
26.8	27.4	-	-	0.6	
27.4	27.9	-	0.6	-	
Totals		25.0	1.5	1.5	

In 2002, Congress passed an act to strengthen the nation's pipeline safety laws. The Pipeline Safety Improvement Act of 2002 was passed by Congress on November 15, 2002, and signed into law by the President in December 2002. That law requires that all gas transmission operators develop and follow a written integrity management program that contains all the elements described in part 192.911 of the

USDOT regulations and addresses the risks on each covered transmission pipeline segment. Specifically, the law established an integrity management program that applies to all high consequence areas (HCAs). As described below, the USDOT (68 FR 69778, 69 FR 18228, and 69 FR 29903) defines HCAs as they relate to the different class zones, potential impact circles, or areas containing an identified site as defined in section 192.903 of the USDOT regulations.

OPS published a series of rules from August 6, 2002, to May 26, 2004 (69 FR 29903), that defines HCAs where a gas pipeline accident would cause considerable harm to people and their property, and requires an integrity management program to minimize the potential for an accident. This definition satisfies, in part, the Congressional mandate in 49 USC 60109 for OPS to prescribe standards that establish criteria for identifying each gas pipeline facility in a high-density population area.

The HCAs may be defined in one of two ways. In the first method, an HCA includes the following:

- current Class 3 and 4 locations;
- any area in Class 1 or 2 where the potential impact radius¹ is greater than 660 feet and 20 or more buildings are intended for human occupancy within the potential impact circle;² or
- any area in Class 1 or 2 where the potential impact circle includes an identified site.³

In the second method, an HCA includes any area within a potential impact circle that contains 20 or more buildings intended for human occupancy, or an identified site.

Once a pipeline operator has determined the HCAs on its pipeline, it must apply the elements of its integrity management program to those segments of the pipeline within HCAs as required by 49 CFR 192.911.

Kern River has not identified any HCAs along the proposed route, but would re-evaluate the route for HCAs prior to construction. In addition, to maintain compliance with the pipeline classification and pipeline integrity management regulations in Part 192, Kern River would continue to monitor for potential class location changes and HCAs throughout the life of the Project. Monitoring would include Kern River's aerial and ground inspections, review of aerial photography of the route, and surveillance during activities associated with operation. The pipeline integrity management rule for HCAs requires inspection of the entire pipeline for HCAs every 7 years.

Part 192 also prescribes the minimum standards for operating and maintaining pipeline facilities, including the requirement to establish a written plan governing these activities. Under part 192.615, each pipeline operator must also establish an emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency. Key elements of the plan must include the following procedures:

- receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters;

¹ The potential impact radius is calculated as the product of 0.69 and the square root of the MAOP of the pipeline in pounds per square inch multiplied by the pipeline diameter in inches.

² The potential impact circle is a circle of radius equal to the potential impact radius.

³ An "identified site" is an outside area or open structure that is occupied by 20 or more persons on at least 50 days in any 12-month period; a building that is occupied by 20 or more persons on at least 5 days a week for any 10 weeks in any 12-month period; or a facility that is occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate.

- establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response;
- emergency shutdown of the system and safe restoration of service;
- making personnel, equipment, tools, and materials available at the scene of an emergency; and
- protecting people first and then property, and making them safe from actual or potential hazards.

Kern River has an existing emergency plan for the Kern River Gas Transmission System that includes policies and procedures for accomplishing the tasks mentioned for the existing system. Kern River would expand the existing emergency plan to include the facilities included by the Apex Expansion Project.

Part 192 requires that each operator establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency, and to coordinate mutual assistance. The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials. Kern River would expand its existing liaison and continuing education programs for the Kern River Gas Transmission System to include the Apex Expansion Project.

4.12.2 Pipeline Accident Data

OPS maintains a database of pipeline incident reports on the PHMSA website (<http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html>). Except where noted, information on natural gas pipeline incidents presented in this EIS is based on nationwide data for onshore natural gas transmission lines that is available on the PHMSA site for the 20-year period from 1989 through 2008.

As defined by 49 CFR 191.3, a natural gas pipeline incident is an event that involves the release of gas and meets any of the following criteria:

- results in a fatality or injury requiring in-patient hospitalization;
- results in \$50,000 or more in total costs, measured in 1984 dollars; or
- is otherwise considered significant by the operator.

Parts 192.5 and 192.15 require that operators report all of these incidents to PHMSA, and the PHMSA website categorizes any such incident as “significant.” The PHMSA database also includes “serious” incidents as a subset of significant incidents: a serious incident is one that results in a fatality or injury requiring in-patient hospitalization.

Table 4.12.2-1 lists the significant incidents from 1989 through 2008 for onshore natural gas transmission pipelines by cause categories along with the percent of incidents by cause and the annual frequency by cause per 1,000 miles of pipeline in service for the reporting period (based on a total 293,000 miles of natural gas transmission pipelines reported by PHMSA on its website).

TABLE 4.12.2-1 Significant Incidents by Cause for Onshore Natural Gas Transmission Systems (1989 through 2008)^{a, b}			
Cause	Number of Incidents	Percent of Total Incidents	Incidents per 1,000 Miles of Pipeline ^c
Corrosion	163	20.0	0.6
Excavation damage	194	23.8	0.7
Human error	18	2.2	0.1
Material failure	165	20.2	0.6
Natural force damage	64	7.9	0.2
Other outside force damage	27	3.3	0.1
All other causes	184	22.6	0.6
Total	815	100.0	2.9

Notes:

^a Data from Pipeline and Hazardous Materials Administration (PHMSA) website accessed October 2009 (<http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html>).

^b Significant incidents consist of incidents with a fatality or injury requiring in-patient hospitalization; \$50,000 or more in total costs, measured in 1984 dollars; release of gas; or are otherwise considered significant by the operator.

^c Based on the a total of approximately 293,000 miles of natural gas transmission lines in the United States as reported on the PHMSA website (PHMSA 2009a).

The dominant single cause of incidents was excavation damage, which accounted for 23.8 percent of the incidents. Damage in the “all other causes” category (which includes damage by vehicles, fire, or explosion as the primary cause, rupture of a previously damaged pipe, and vandalism) was the second highest cause at 22.6 percent, followed by material failure (20.2 percent) and corrosion (20.0 percent).

Since April 1982, operators have been required to participate in One-Call public utility programs in populated areas to minimize unauthorized excavation activities in the vicinity of pipelines. The “One Call” program is a service used by public utilities and some private sector companies (such as oil pipelines and cable television) to provide pre-construction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts.

The pipelines included in the data set in table 4.12.2-1 vary widely in terms of age, pipe diameter, and level of corrosion control. Each variable influences the incident frequency that may be expected for a specific segment of pipeline.

The frequency of incidents is strongly dependent on pipeline age. Although pipelines installed since 1950 exhibit a fairly constant and low level of incident frequency, pipelines installed before that time have a significantly higher rate, partially due to corrosion since corrosion is a time-dependent process. Further, new pipe generally uses more advanced coatings and cathodic protection to reduce corrosion potential.

Older pipelines have a higher frequency of outside forces incidents partly because their locations may be less well known and less well marked than newer lines. In addition, the older pipelines contain a

disproportionate number of smaller-diameter pipelines. Those pipelines have a higher rate of incident occurrence due to excavation damage and other outside forces than larger diameter pipelines because small-diameter pipelines are more easily crushed or broken by mechanical equipment or earth movements.

Jones et al. (1986) compared reported incidents with the presence or absence of cathodic protection and protective coatings. The results of that study, summarized in table 4.12.2-2, indicated that corrosion control was effective in reducing the incidence of failures caused by external corrosion. The use of both an external protective coating and a cathodic protection system, required on all pipelines installed after July 1971, significantly reduced the rate of failure compared to unprotected or partially protected pipe. The data also indicate that cathodically protected pipe without a protective coating actually has a higher corrosion rate than unprotected pipe. This anomaly reflects the retrofitting of cathodic protection to actively corroding spots on pipes.

TABLE 4.12.2-2 Incidents Caused by External Corrosion and Level of Protection (1970 through June 1984)^a	
Corrosion Control	Incidents per 1,000 Miles per Year
None – bare pipe	0.42
Cathodic protection only	0.97
Coated only	0.40
Coated and cathodic protection	0.11
<hr/> Note: ^a Source: Jones et al. 1986	

4.12.3 Impact on Public Safety

The incident data summarized in table 4.12.2-1 include pipeline failures of all magnitudes, with widely varying consequences. Approximately two-thirds of the incidents were classified as leaks; the remaining incidents were classified as ruptures, indicating more serious failures.

The OPS database provides information on the number of incidents and the associated total fatalities from 1989 through 2008, as well as the number of industry fatalities and public fatalities for the period from 2003 through 2008. The average annual total fatalities for the last 3 years, 5 years, 10 years, and 20 years are listed in table 4.12.3-1. OPS began separating industry fatalities (employees) from public fatalities in the data for 2003. The average annual industry fatalities and average annual public fatalities that occurred for onshore natural gas transmission lines in the United States during the past 6 years are presented in table 4.12.3-2.

TABLE 4.12.3-1 Average Annual Fatalities for Onshore Natural Gas Transmission Systems in the United States^a		
Period	Annual Average	
	Number of Incidents	Fatalities
3-year average (2006 – 2008)	73	1.7
5-year average (2004 – 2008)	78	1.0
10-year average (1999 – 2008)	66	2.6
20-year average (1989 – 2008)	53	3.0

Note:

^a Data from Pipeline and Hazardous Materials Administration (PHMSA) website accessed October 2009 (<http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html>); PHMSA reports the total transmission line distance in the United States is approximately 293,000 miles.

TABLE 4.12.3-2 Fatalities by Sector for Onshore Natural Gas Transmission Systems in the United States (2003-2008)^a			
Year	Number of Fatalities		
	Industry	Public	Total
2003	1	0	1
2004	0	0	0
2005	0	0	0
2006	2	1	3
2007	1	1	2
2008	0	0	0
Total	4	2	6
6-Year annual average	0.7	0.3	1.0

Note:

^a Data from Pipeline and Hazardous Materials Administration (PHMSA) website accessed October 2009 (<http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html>); the PHMSA website reported that the total transmission line distance in the United States in 2008 was approximately 293,000 miles.

The average annual number of fatalities has been relatively consistent over the past 20 years, ranging from about 1 to 3 deaths per year. The 10- and 20-year annual averages are somewhat skewed due to the 15 deaths that occurred during a single incident in Carlsbad, New Mexico in 2000.

The OPS database also lists incidents and total fatalities (public combined with employee) for Utah. For the 3,621 miles of natural gas transmission line in the state, there were only three reported incidents from 2001 through 2008, and none of the incidents resulted in either fatalities or injuries. The incidents occurred in 2001, 2006, and 2007. The 3-year annual average number of incidents (2006 through 2008) was 0.7, and the 10-year annual average was 0.3.

The nationwide totals of accidental deaths from various manmade and natural hazards are listed in table 4.12.3-3 to provide a relative measure of the safety of natural gas transmission pipelines. However, direct comparisons between accident categories should be made cautiously, because individual exposures to hazards are not uniform among all categories. Nevertheless, the average rate of total fatalities of 3.0 per 1,000 miles for the 20-year averaging period (see table 4.12.3-1) and the average rate of public fatalities of 0.3 per year for the 6-year reporting period (see table 4.12.3-2) are relatively small, considering the nearly 293,000 miles of transmission lines in service nationwide. Furthermore, the fatality rate is approximately two orders of magnitude (100 times) lower than the fatalities from natural hazards such as lightning, tornadoes, floods, and earthquakes.

TABLE 4.12.3-3 Nationwide Accidental Deaths^a	
Type of Accident	Fatalities
All accidents	121,599
Motor vehicle	45,216
Other transportation	3,096
Falls	20,823
Accidental discharge of firearms	642
Drowning	3,579
Poisoning	27,531
Fires and burns	3,109
Suffocation by ingested object	5,912
Natural/environmental	1,588
Onshore natural gas transmission pipelines, all fatalities (1989-2008 annual average) ^b	3.0
Onshore natural gas transmission lines, non-employees (2003–2008 annual average) ^b	0.3
Natural gas transmission and gathering lines, non-employees (1970-1984 annual average) ^c	2.6
Notes:	
^a	Source: All data, unless otherwise noted, are for accidental deaths in 2006 from Heron et al. (2009).
^b	Source: Data from Pipeline and Hazardous Materials Administration website accessed October 2009 (http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html).
^c	Source: Jones et al. 1986

The available data indicate that natural gas pipelines continue to be a safe, reliable means of energy transportation. Based on approximately 293,000 miles of natural gas transmission lines in service in 2008 and the worst-case average annual total fatality rate of 3.0 deaths per year (see table 4.12.3-1), the rate of total fatalities for the nationwide natural gas transmission lines in service is approximately 0.01 per year per 1,000 miles of pipeline. Using this rate, implementing the proposed 27.9-mile-long Wasatch Loop might result in a fatality (either an industry employee or a member of the public) on that pipeline every 3,584 years. The recently available PHMSA data for public fatalities indicates that the rate of public fatalities was approximately 0.3 per year for the 6-year reporting period for the entire 293,000 miles of transmission pipelines in service (table 4.12.3-2). These calculations indicate that implementation of the proposed Project represents little increase in risk to the public.

4.12.4 Additional Security and Safety Issues

In the aftermath of the terrorist attacks that occurred on September 11, 2001, terrorism has become a very real issue for the facilities under the FERC's jurisdiction. Increased security awareness has occurred throughout the industry and the nation. The Office of Homeland Security was established with the mission of coordinating the efforts of all executive departments and agencies to detect, prepare for, prevent, and protect against, respond to, and recover from terrorist attacks within the United States. The FERC, in cooperation with other federal agencies and industry trade groups, has joined in the efforts to protect the energy infrastructure, including the approximately 327,000 miles of interstate natural gas transmission pipelines.

The FERC, like other federal agencies, is faced with the dilemma of deciding how much information can be offered to the public while still providing a significant level of protection to energy facilities. Consequently, the FERC has taken measures to limit the distribution of information to the public regarding facility design to minimize the risk of sabotage. Facility design and location information has been removed from the FERC's website to ensure that sensitive information filed as Critical Energy Infrastructure Information is not readily available to the public (Docket No. RM06-23-000, issued October 30, 2007 and effective as of December 14, 2007).

Safety and security are important considerations in any action undertaken by the FERC. The attacks of September 11, 2001 have changed the way pipeline operators as well as regulators must consider terrorism, both in approving new projects and in operating existing facilities. Since September 11, 2001, the FERC has been involved with other federal agencies in developing a coordinated approach to protecting the energy facilities of the United States, and continues to coordinate with these agencies to address this issue. In addition, interstate natural gas companies are actively involved with several industry groups to chart how best to address security measures in the current environment. A Security Task Force has been created and is addressing ways to improve pipeline security practices, strengthen communication within the industry and the interface with government, and extend public outreach efforts.

The likelihood of future attacks of terrorism or sabotage occurring along the proposed Project, or at any of the myriad of natural gas pipeline or energy facilities throughout the United States is unpredictable given the disparate motives and abilities of terrorist groups. Further, the Commission, in cooperation with other federal agencies, industry trade groups, and interstate natural gas companies, is working to improve pipeline security practices, strengthen communications within the industry, and extend public outreach in an ongoing effort to secure pipeline infrastructure.

Kern River would incorporate inspection of the Wasatch Loop into its existing inspection and maintenance program for the Kern River Gas Transmission System. This would include inspection by air and on the ground in accordance with the USDOT surveillance requirements. Security measures at the new Milford Compressor Station would include secure fencing, locked buildings, and security lighting.

Those measures are currently in place at the existing compressor stations that would be modified as a part of the Apex Expansion Project.

Despite the ongoing potential for terrorist acts along any of the nation's natural gas infrastructure, the continuing need for the construction of these facilities is not eliminated. Given the continued need for natural gas conveyance and the unpredictable nature of terrorist attacks, the efforts of the FERC, the USDOT, and the Office of Homeland Security to continually improve pipeline safety would minimize the risk of terrorist sabotage of the Project to the maximum extent practical, while still meeting the nation's natural gas needs. Moreover, the unpredictable possibility of such acts does not support a finding that this particular project should not be constructed.

4.13 CUMULATIVE IMPACTS

Cumulative impacts represent the incremental effects of a proposed action when added to other past, present, or reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over a given period. The direct and indirect impacts of the proposed Apex Expansion Project are discussed in other sections of this EIS.

The purpose of this analysis is to identify and describe cumulative impacts that would potentially result from implementation of the proposed Project. After potential cumulative impacts are identified, cumulative impacts analyses are also used to modify projects where impacts are avoidable, to determine if additional or more appropriate mitigation is necessary, and to include effective monitoring for any impacts of concern. This cumulative impacts analysis uses an approach consistent with the methodology set forth in relevant guidance (CEQ 1997, 2005, EPA 1999). Under these guidelines, inclusion of other potential future actions is based on identifying commonalities between the potential impacts that would result from the proposed Project and the impacts likely to be associated with those other potential future projects. In order to avoid unnecessary discussions of insignificant impacts and projects and to adequately address and accomplish the purposes of this analysis, the cumulative impacts analysis for the proposed Apex Expansion Project was conducted using the following guidelines:

- A project must impact a resource category potentially affected by the proposed Project. For the most part, these projects are located in the same region of influence or counties which are directly affected by the construction of the proposed Apex Expansion Project. The effects of more distant projects are generally not assessed because their impacts would be localized and not contribute significantly to the impacts of the proposed Project. Air quality, however, was considered on a more regional basis.
- The distance into the future which other planned or proposed projects could potentially cumulatively impact the proposed Project area was based on whether the impacts would be short term, long term, or permanent. Most of the impacts would occur during the construction of the Apex Expansion Project, which would begin in October 2010, with the bulk of the compression and pipeline construction occurring during the spring through fall of 2011. Kern River anticipates that all facilities would be placed in-service by November 1, 2011. For projects where the impacts are long term or permanent the temporal range was extended.
- The other projects in the area were identified from information provided by Kern River; field reconnaissance; internet research; and communications with federal, state, and local agencies. Where a potential for cumulative impacts was indicated, those impacts were quantified to the extent practicable; however, in some cases the potential impacts can only be described

qualitatively. This is particularly the case for projects which are in planning stages or are contingent on economic conditions, availability of financing, or the issuance of permits.

For the purposes of the cumulative impact analysis, the region of influence is defined as the eight counties impacted by the proposed Apex Expansion Project. Only three of these counties would be traversed by the proposed Wasatch Loop (Morgan, Davis, and Salt Lake Counties, Utah). In addition to the proposed pipeline, Kern River intends to construct a new compressor station, the Milford Compressor Station, in Beaver County, Utah. In conjunction with the construction of the proposed Milford Compressor Station, PacifiCorp would construct an approximately 1.4-mile 7.2 kV electrical distribution line to provide necessary power for the new compressor station. The electrical distribution line would be supported on approximately 23 single wood pole (raptor-safe) structures. While this electric distribution line is not part of the proposed Project, it is being analyzed throughout this EIS in association with the Apex Expansion Project, and more specifically for this section in conjunction with the proposed Milford Compressor Station. The potential impacts that are most likely to be cumulatively significant with the Project as a whole are related to geology; soils; water resources; vegetation; wildlife, fisheries, and special status species; land use and visual resources; socioeconomics; cultural resources; air quality and noise; and reliability and safety.

Construction of the Apex Expansion Project would also require upgrades at four existing compressor stations (Coyote Creek, Elberta, Fillmore, and Dry Lake), which are located in Uinta County, Wyoming; Utah and Millard Counties, Utah; and Clark County, Nevada, respectively. For the purposes of this analysis, only cumulative impacts related to air and noise are assessed in the counties where compressor stations are already in existence. As discussed in section 2.1.2, construction activities at these sites would be confined within the existing facility boundaries. This is consistent with the first criterion of cumulative impacts, which states that for impacts to occur, a project must impact a resource category potentially affected by the proposed Project.

Current, proposed, or reasonably foreseeable future projects or activities that may cumulatively impact resources that would be affected by the construction and operation of the proposed Apex Expansion Project are identified in table 4.13-1. In some cases these projects do not fit all three guidelines identified to determine the potential for cumulative impacts; however, they were considered to be large enough projects to mention in the analysis in order to portray a more complete picture of the type of projects occurring in the region of influence.

**TABLE 4.13-1
Existing or Proposed Projects which Could Cumulatively Impact Environmental Resources
in the Region of Influence for the Proposed Apex Expansion Project**

Project	Description	Timing	Counties within Region of Influence
Other Natural Gas and Crude Oil Pipeline Projects			
Moxa Arch Area Infill Gas Development Project	1,861 new natural gas wells and the installation and operation of additional ancillary facilities in southwestern Wyoming.	Proposed (construction to occur from 2010 to 2020)	Uinta County, WY
Ruby Pipeline Project	680 miles of 42-inch-diameter natural gas pipeline across Wyoming, Utah, Nevada, and Oregon; 4 new compressor stations; and related facilities.	Proposed (construction to occur from Mid-2010 through March 2011)	Uinta County, WY
UNEV Pipeline Project	399-mile-long petroleum pipeline from Woods Cross, Utah to Apex Industrial Park, north of Las Vegas in Clark County, Nevada. Includes a 2.4-mile lateral line to the Salt Lake City Airport and a 9-mile lateral line to Cedar City, Utah.	Construction occurring from spring 2010 through December 2010	Davis, Salt Lake, Millard, and Beaver Counties, UT; Clark County, NV
Magnum Gas Storage Project	Eight underground natural gas storage salt caverns and related facilities near Delta, Utah. Each cavern contains 4 Bcf working gas capacity with 2 Bcf base gas. Includes approximately 61.5 miles of 36-inch-diameter natural gas pipeline for connection with Kern River and Questar interstate natural gas pipeline systems.	Construction to occur from 2012 through 2014	Millard and Utah Counties, UT
Electrical Transmission Lines			
Energy Gateway Transmission Expansion Project			
Gateway Central – Segment C	100-mile segment from Mona, Utah to Salt Lake City, Utah.	Proposed (construction to occur from January 2010 through June 2012)	Salt Lake City and Utah Counties, UT
Gateway South – Segment G	400 miles of new electric transmission from Mona, Utah to Las Vegas, Nevada and a parallel line, about 160 miles long, from Sigurd, Utah to Red Butte, Utah.	Proposed (construction to occur from 2014 through 2017)	Millard and Beaver Counties, UT; Clark County, NV

TABLE 4.13-1 (continued)
Existing or Proposed Projects which Could Cumulatively Impact Environmental Resources
in the Region of Influence for the Proposed Apex Expansion Project

Project	Description	Timing	Counties within Region of Influence
Electrical Transmission Lines			
TransWest Express Project	725 miles of new 600-kV direct current merchant line from south-central Wyoming to southern Nevada.	Proposed (construction to occur from 2012 through 2014)	Millard, Beaver, Salt Lake City and Utah Counties, UT; Clark County, NV
Wind Energy Projects			
Spanish Fork Wind Park	18.9 MW wind farm that consists of nine wind turbines which is located near Spanish Fork, Utah and owned and operated by Wasatch Wind.	Existing (constructed in 2008)	Utah County, UT
Milford Wind Corridor			
Phase I	203.5 MW-wind energy project with 97 wind turbines, an 88-mile-long 345-kV transmission line, a substation, underground electrical and communication facilities, an operations and maintenance facility, access roads and temporary use areas.	Existing (Constructed in September and November 2009)	Millard and Beaver Counties, UT
Phase II	102-MW wind energy project which includes 68 wind turbines and an approximately 3-mile-long connection transmission line, a substation, underground electrical and communication facilities, an operations and maintenance facility, access roads, and temporary use areas.	Under construction	Millard County, UT
Residential and Commercial Development			
Shady Meadow Campground/ East Canyon Ranchettes	Plans to convert this campground into six residential lots of 15 to 22 acres in size.	Undetermined	Morgan County, UT
Edgewood/ Eaglepointe	Plans to construct additional houses in Edgewood Estates.	Undetermined	Davis County, UT
Eaglewood Village	A planned development off of Highway 89 and Eagle Ridge Drive.	Undetermined	Davis County, UT

Other Natural Gas and Crude Oil Pipeline Projects

Moxa Arch Area Infill Gas Development Project

In the Moxa Arch Area of southwestern Wyoming, EOG Resources, Inc. and several other companies are proposing to expand an existing natural gas drilling and field development operation. This project covers about 475,808 acres of federal, state, and private lands in Sweetwater, Lincoln, and Uinta Counties and would result in the drilling of 1,861 new wells, as well as the installation and operation of additional ancillary facilities; (including roads; gas pipelines; and separation, dehydration, metering, and fluid storage facilities). While the precise locations of the proposed wells are not known at this time, over a 10-year drilling schedule the project is expected to have a surface disturbance associated with drilling and completion activities of 18,650 acres. The long-term disturbance associated with project development, after interim reclamation is complete, would be approximately 5,997 acres (BLM 2007). Uinta County, Wyoming is the only county in common with both the proposed Moxa Arch Infill Gas Development Project and the proposed Apex Expansion Project. As this is the location of Kern River's existing Coyote Creek Compressor Station, only air and noise impacts of the Moxa Arch Infill Gas Development Project are considered in this analysis.

Ruby Pipeline Project

Ruby Pipeline, LLC plans to construct and operate 680 miles of 42-inch-diameter natural gas pipeline across Wyoming, Utah, Nevada, and Oregon, as well as four new compressor stations and related facilities. The main aboveground facilities include 1 electric-powered compressor station, 3 natural gas-powered compressor stations, 5 meter stations containing interconnects to other pipeline systems, 44 MLVs, 20 pig launchers or pig receivers, and 4 new communication towers. Uinta County, Wyoming is the only county in common with both the proposed Ruby Pipeline Project and the proposed Apex Expansion Project. As this is the location of Kern River's existing Coyote Creek Compressor Station, only air and noise impacts of the Ruby Pipeline Project are considered in this analysis.

UNEV Pipeline Project

UNEV Pipeline, LLC is proposing to construct and operate a 399-mile petroleum pipeline from Woods Cross, Utah to Apex Industrial Park, north of Las Vegas in Clark County, Nevada. The UNEV Pipeline Project would include an inlet pumping station at Woods Cross, Utah; a pressure reduction station at the lateral terminal northwest of Cedar City, Utah; a pressure reduction site; and a receiving terminal near Las Vegas. The project would also include a 2.4-mile-long lateral service line to the Salt Lake City International Airport and a 10-mile-long lateral line to Cedar City Terminal in Cedar City, Utah. The project would include both permanent facilities (access roads and all aboveground structures) and temporary facilities (construction and equipment storage yards, extra workspace for pipe stringing, and additional construction access roads) (BLM 2008a). Construction of the UNEV Pipeline Project is scheduled to begin in spring 2010 and be completed by December 2010, around the same time when construction of the Apex Expansion Project would commence. The UNEV Pipeline Project would be paralleled by the Wasatch Loop for approximately 2.25 miles from MP 25.8 through 28.0 in Davis and Salt Lake Counties, Utah, in an urbanized and industrial area. The UNEV Pipeline Project area also corresponds to the proposed Apex Expansion Project in Beaver County, Utah where the Milford Compressor Station and PacifiCorp's electric distribution line would be constructed and in Millard County, Utah and Clark County, Nevada where Kern River would modify the existing Fillmore and Dry Lake Compressor Stations. For the two counties where construction for the Project would only occur within existing facilities, only air and noise impacts of the UNEV Pipeline Project are considered in this analysis. Potential cumulative effects for all other counties are assessed below.

Magnum Gas Storage Project

The proposed Magnum Gas Storage Project involves the construction and operation of an interstate natural gas storage facility including up to four salt caverns developed through in-situ mining, natural gas handling and compression facilities, facilities for the production and handling of water and brine resulting from the cavern creation process, associated gas pipeline header facility (Header), and various appurtenant facilities. The project's Header will consist of a new 61.5-mile, 36-inch-diameter natural gas transmission pipeline to connect the gas storage caverns with separate existing interstate gas transmission facilities operated by Kern River Gas Transmission Company and Questar.

Electrical Transmission Lines

Energy Gateway Project

Pacific Power's Energy Gateway Transmission Expansion Project would add approximately 2,000 miles of new transmission line across the western United States. The Energy Gateway Project is divided into three major projects: Gateway Central, Gateway West, and Gateway South. The proposed route for Segment C of the Gateway Central Project and Segment G of Gateway South Project correspond to several of the counties within the proposed Apex Expansion Project area (Pacific Power 2009).

According to Pacific Power (2009), Segment C of the Gateway Central Project crosses two counties crossed by the proposed Apex Expansion Project (Utah and Salt Lake Counties, Utah) as well as several other Utah counties. This segment includes a 100-mile transmission line that would start at Mona Annex Substation, a new substation near the existing Mona Substation, outside of Mona in Juab County, and north to Limber Substation, another new substation, located in Tooele Valley in Utah. From Limber Substation the line will divide and run to Oquirrh Substation in West Jordan and to Terminal Substation in Salt Lake City (BLM 2009c). This project will traverse the areas around Cedar Fort, Eureka, Grantsville, Mona, Salt Lake City, South Jordan, Stockton, Tooele, and West Jordan communities. Construction of Segment C is planned to occur from 2011 through June 2013.

According to Pacific Power (2009), Segment G (Mona to Crystal) of the Gateway South Project would cross Clark County, Nevada as well as several other counties. This segment includes a 400-mile transmission line from a new substation near Mona, Utah to the existing Crystal Substation, which is north of Las Vegas, Nevada. Construction of Segment G is planned to occur from 2014 through 2017. Given the proximity of this and the proposed Project in Utah and Salt Lake Counties in Utah, the potential cumulative effects are assessed below.

TransWest Express Project

TransWest Express LLC is proposing to construct and operate an extra-high-voltage direct-current electric transmission system. The proposed route would originate in south-central Wyoming, traversing northwestern Colorado and central Utah, and terminating in southern Nevada near Las Vegas. Construction of the TransWest Express Project is planned to occur from 2012 through 2014. The TransWest Express Project area corresponds to the proposed Apex Expansion Project in Beaver County, Utah (where the Milford Compressor Station and PacifiCorp's electric distribution line would be constructed) and in Utah and Millard Counties in Utah and Clark County, Nevada (where Kern River would modify the existing Elberta, Fillmore, and Dry Lake Compressor Stations). For the three counties where construction for the Project would only occur within existing facilities, only air and noise impacts of the TransWest Express Project are considered in this analysis. Potential cumulative effects for all other counties are assessed below.

Wind Energy Projects

Spanish Fork Wind Park

In 2008, Edison Mission Group and Wasatch Wind constructed an 18.9-MW wind farm that consists of nine wind turbines located near Spanish Fork, Utah in Utah County. Spanish Fork Wind Park is not expected to cumulatively contribute to impacts of the proposed Apex Expansion Project for two reasons. First, only air and noise impacts of the Spanish Fork Wind Park are considered in this analysis because construction in Utah County, Utah for the Apex Expansion Project would be limited to the area within Kern River's existing Elberta Compressor Station. Second, because construction of Spanish Fork Wind Park was completed in 2008, the analysis considers only air and noise impacts from the operation of the facility, which are positive or negligible. While wind farms are known to be an attractive nuisance to bats and birds, the proposed Apex Expansion Project would not affect these species; therefore, the Spanish Fork Wind Park was excluded from further analysis.

Milford Wind Corridor

Milford Wind Corridor, LLC (First Wind) filed an application with the BLM to construct and operate the Milford Wind Corridor Project. First Wind proposed a 305.5 -MW wind farm approximately 10 miles northeast of Milford, Utah in Millard and Beaver Counties to be constructed in phases. Phase I of the project, which was completed in fall of 2009, included 97 wind turbines, an 88-mile-long 345kV transmission line, a substation, underground electrical and communication facilities, and an operations and maintenance facility. The BLM determined that no significant impacts would result from this project (BLM 2008b, 2008c).

In Phase II, First Wind amended its plans for the Milford Wind Corridor Project to include 68 wind turbines to yield a total generation capacity of up to 305.5-MW(BLM 2009a, 2009b). The project would be constructed in the same general location. The BLM is currently reviewing First Wind's application to amend the plans for Milford Wind Corridor (BLM 2009b). This project and the proposed Apex Expansion Project are both planned to occur in Millard and Beaver Counties, Utah. Construction in Millard County for the Apex Expansion Project would be limited to the area within Kern River's existing Fillmore Compressor Station, where only cumulative air and noise impacts are to be considered. The Apex Expansion Project's Milford Compressor Station and PacifiCorp's electric distribution line would be located in Beaver County to the south of Milford, Utah and over 10 miles from the proposed site of the Milford Wind Corridor Project. With regard to air quality, very few emissions would be associated with the operation of the Milford Wind Corridor projects. However, if constructed at the same time as the nearest portions of the Apex Expansion Project, cumulative air quality impacts could occur. Construction of the Milford Wind Corridor Project was originally scheduled to begin in October 2008 and continue for 12 to 15 months; however, the plan for this project was amended with the BLM in October 2009 without a projected timeline for construction and completion. Considering the minimum distance of 10 miles separating the two projects and the unlikelihood that the adjacent portions of the Apex Expansion Project would be constructed at the same time, the Milford Wind Corridor Project is not expected to create any cumulative impacts with the construction or operation of the proposed Apex Expansion Project. While wind farms are known to be an attractive nuisance to bats and birds, the proposed Apex Expansion Project would not affect these species; therefore, they are excluded from further analysis.

Residential and Commercial Development

Shady Meadow Campground/ East Canyon Ranchettes

Shady Meadow Campground in Morgan County, Utah is currently listed for sale by Intermountain Realty Group as East Canyon Ranchettes. This proposed development has not been platted or recorded at the Morgan County Courthouse. The entire property is 130 acres in size. Planned residential development of this area would result in six residential lots that would each be 15 to 22 acres in size (Intermountain Realty Group 2009a, 2009b). A seventh lot is not available for sale and would be retained by the owner. Each of the lots is bordered on one side by East Canyon Creek. East Canyon Creek provides fishing opportunities and is abundant in brown, rainbow, and Bonneville cutthroat trout. The property also provides habitat for wildlife such as moose, elk, mule deer, turkeys, and waterfowl; however, hunting would not be allowed in the proposed development. While the Apex Expansion Project's pipeline would cross both the Shady Meadow Campground property and East Canyon Creek, it would not cross these concurrently. The proposed Project would cross the Shady Meadow Campground property between MP 5.0 and 5.2, and East Canyon Creek would be crossed at MP 5.4.

Edgewood/Eaglepointe

There are three additional residential areas planned for the existing Edgewood/Eaglepointe development, which is in North Salt Lake, Utah. One of the planned development areas would be crossed by the Apex Expansion Project between MP 24.7 and 24.9. Several roads have also been constructed in association with the Edgewood/Eaglepointe developments. Edgewood/Eaglepointe is already zoned as planned development. As such, the construction at Edgewood/Eaglepointe is not expected to have a significant impact on land use or other resources with respect to the region of influence.

Eaglewood Village

Eaglewood Village is a planned development off of Highway 89 and Eagle Ridge Drive. The development would be constructed on the site of the City of North Salt Lake's former gravel pit in Davis County, Utah. The lower area of the planned Eaglewood Village development would be within 0.25 mile of the proposed Apex Expansion Project between MP 25.2 and 25.5. The development, which would include town homes, row homes, lofts, and retail and office spaces, was initially planned to be completed by spring of 2009 (Wardell 2008). However, due to current economic conditions, construction of this development has been delayed. As of October 2009, there was no timeline for when construction of Eaglewood Village would resume (Wardell 2009). If the plans for developing Eaglewood Village were to resume, then the development would likely have significant positive socioeconomic impacts, as the plans include a wide range of services such as housing, retail stores, and other businesses. Since the planned development would be located on a formal industrial site, negative land use impacts are unlikely.

4.13.1 Geology

4.13.1.1 Mineral Resources

Cumulative effects on geology and mineral resources crossed by the Apex Expansion Project would be limited primarily to the combined impacts of construction projects located within the same region of influence as the Project and previous construction activities along the same route as the proposed pipeline. These include the UNEV Pipeline Project, the Magnum Gas Storage Project, the Energy Gateway Project, the TransWest Express Project, and the three residential and commercial development projects. Of these projects, the construction of the UNEV Pipeline Project has the largest potential to contribute to cumulative impacts on geology and mineral resources; however, the UNEV

Project, which is being reviewed by the BLM, would take similar precautions and mitigation measures to avoid impacts on geology and mineral resources in accordance with BLM procedures.

The design and construction of the proposed Apex Expansion Project considered various geological issues, of which the following were the most applicable to the Project area: seismicity and faulting, slope stability and landslides, subsidence, and blasting. In areas where it was necessary, a mitigation plan was designed to offset potential geological impacts of the proposed Project. Kern River would implement site-specific construction techniques and best management practices to minimize potential impacts from geological hazards that cannot be avoided completely. As a result of the mitigation measures proposed, these effects are expected to be highly localized and limited primarily to the period of construction. Cumulative impacts would only occur if the other projects would involve excavation and were constructed at the same time and place as the proposed Project. The UNEV Pipeline Project meets these cumulative impacts criteria for geologic and mineral resources, as the pipeline would be paralleled by the Apex Expansion Project for 2.25 miles; however, the UNEV Pipeline Project is scheduled to be completed around the same time that construction of the proposed Project would begin.

As past, present, and future developments in the proposed Project area are limited, potential cumulative impacts on mineral resource development as a result of the Apex Expansion Project are expected to be minor.

4.13.1.2 Paleontological Resources

Cumulative effects on paleontological resources crossed by the Apex Expansion Project would be limited primarily to the combined impacts of construction projects located within the same region of influence as the proposed Project and previous construction activities along the same route as the proposed pipeline. These include the UNEV Pipeline Project, the Magnum Gas Storage Project, the Energy Gateway Project, the TransWest Express Project, and the three residential and commercial development projects. The Apex Expansion Project would cross about 10.5 miles of geologic formation that has moderate to high potential to contain significant fossils, based on surveys and literature review.

Kern River indicated that Quaternary-age sediments exposed from MP 26.0 to 28.0, where the proposed Project would parallel the UNEV Pipeline Project, may also contain fossils deposited in and around the ancient Lake Bonneville. The paleontological sensitivity rating for this segment is moderate; therefore, Kern River would monitor construction activities in this area. The UNEV, the Magnum Gas Storage Project, and the TransWest Express Project, which are being reviewed by the BLM (Magnum is a FERC jurisdictional project and therefore FERC is the lead federal agency for the NEPA review), would take similar precautions and mitigation measures to those taken by Kern River to avoid impacts on paleontological resources, in accordance with BLM procedures. Eaglewood Village is also planned for development in the area of the Lake Bonneville sediments and other Quaternary-aged deposits. The Edgewood/Eaglepointe and Eaglewood Village developments would be crossed by the proposed Project within the Wasatch Front Variation. This is the area of Wasatch Formation and Cambrian-age shales which may contain fossils. While the construction of these two developments could contribute to cumulative impacts on paleontological resources, they would be required to implement the best management and restoration practices in accordance with the appropriate federal, state, and local permitting agencies. Therefore, only minor cumulative impacts on paleontological resources are expected as a result of the proposed Apex Expansion Project.

4.13.2 Soils

Cumulative effects on soils crossed by the Apex Expansion Project would be limited primarily to the combined impacts of construction projects located within the same region of influence as the proposed

Project and previous construction activities along the same route as the proposed pipeline. These include the UNEV Pipeline Project, the Magnum Gas Storage Project, the Energy Gateway Project, the TransWest Express Project, and the three residential and commercial development projects. These projects would implement best management and restoration practices in accordance with the respective federal, state, and local permitting agencies. Past land uses within areas crossed by the proposed Apex Expansion Project have disturbed soils from livestock grazing, agricultural production and irrigation, urban development, and industrial activities. Kern River did not identify any prime farmland soils within the permanent right-of-way or construction workspaces. These land uses have removed soil cover and have altered soils, which results in increased erosion potential and sediment yield. Any additional land clearing and soil disturbance resulting from construction and operation of the proposed Project has the potential to contribute to direct cumulative impacts.

The primary soil concerns in the area of influence are erosion, the introduction of rock to the surface, and compaction. Cumulative impacts could potentially occur if the disturbance areas for other construction projects overlap or are located in proximity to each other. The projects identified in table 4.13-1 that match these criteria are the UNEV Pipeline Project, the Magnum Gas Storage Project, the TransWest Express Project, and the three residential and commercial development projects. The UNEV Pipeline Project has the largest potential to contribute to the cumulative impacts of the proposed Project on soils because it would parallel the proposed pipeline from MP 25.8 to 28.0. The UNEV Pipeline Project is scheduled to be completed in the same period that construction of the Apex Expansion Project would begin. The potential for cumulative soil impacts resulting from one or more of these projects is temporary and low because erosion control practices and mitigation measures would likely be implemented for all construction projects in the Project area. As Kern River would follow the recommended procedures and take the necessary precautions to avoid and mitigate soil impacts, the proposed Project is not expected to significantly contribute to the potential cumulative impact on soils.

4.13.3 Water Resources

Construction and operation of the Apex Expansion Project would likely result in only short-term impacts on water resources (see section 4.3). Short-term impacts, such as increased turbidity, would dissipate over a period of days or weeks following construction in the immediate area of water resources.

4.13.3.1 Groundwater

The major pipeline construction activities of the Apex Expansion Project and the UNEV Pipeline Project which could affect groundwater include: the clearing of vegetation, excavation and dewatering of the trench and bore pits, soil mixing and compaction, and hazardous material handling. Blasting in areas with shallow groundwater could also affect groundwater by decreasing well yields or quality. If these activities cannot be avoided, Kern River would implement appropriate measures to minimize and mitigate impacts on groundwater. The impacts of the proposed Apex Expansion Project on groundwater resources are expected to be short-term and minor. All of the major projects in the region of influence identified in table 4.13-1, as well as the Apex Expansion Project, would be required to obtain water use and discharge permits and would implement SPCC plans as mandated by federal and state agencies. Therefore, we anticipate only minor cumulative impacts on groundwater.

4.13.3.2 Surface Water

Generally impacts resulting from pipeline construction across waterbodies are localized and short-term. Cumulative impacts would only occur in the event of two projects impacting the same waterbody within a similar period of time. Construction of the Apex Expansion Project may result in minor, short-term impacts on waterbodies. However, such impacts would be minimized by

implementation of Kern River's Procedures and other specialized construction and restoration procedures, installing erosion control devices to prevent waterbody sedimentation during construction, and providing bank stabilization and reestablishing bed and bank contours after construction.

The Apex Expansion Project and the UNEV Pipeline Project cross the Jordan River in the same general area; however, the UNEV Pipeline Project is expected to be completed in December 2010, which is approximately the same time that construction of the Apex Expansion Project would commence. The Jordan River, which flows northwest to the Great Salt Lake, historically contains contaminated sediments. The UNEV Pipeline Project plans to cross the Jordan River using HDD (BLM 2008a). Kern River proposes to cross the Jordan River with a horizontal bore to minimize or avoid further impacts from possible in-situ contaminants that may be present. Therefore, no cumulative impacts on the Jordan River are expected.

The Apex Expansion Project would also cross East Canyon Creek which borders the Shady Meadow Campground/East Canyon Ranchettes residential development property. East Canyon Creek has documented spawning habitat for the Bonneville cutthroat trout, which is a species of concern. Kern River would cross this river using the flume crossing method and a site-specific crossing plan during late fall or early winter to avoid the spring Bonneville cutthroat trout spawning season. The Shady Meadow Campground/East Canyon Ranchettes (130-acre property) would be sold as six planned unit development lots, each measuring 15 to 22 acres with an average of 745 feet of East Canyon Creek frontage. As each landowner would independently plan the development of his or her lot, the timing of construction for these sites is unknown at this time. However, Intermountain Realty Group (2009b) did specify that each landowner would be expected to put in a septic system and drain-field. It is assumed that this and other construction on the East Canyon Creek lots would be conducted in accordance with the appropriate state and local regulations after obtaining the appropriate permits to mitigate impacts from runoff. Based on this assumption and the limited East Canyon Creek frontage of the six lots, potential impacts on East Canyon Creek resulting from the Shady Meadow Campground/East Canyon Ranchettes are expected to be negligible. As such, cumulative impacts of the two projects on East Canyon Creek would be negligible.

No other projects listed in table 4.13-1 would contribute to cumulative impacts of the waterbodies crossed by the Apex Expansion Project; therefore, we do not anticipate any significant cumulative impacts on surface water resources in the Project area.

4.13.3.3 Wetlands

Cumulative wetland impacts would occur if wetlands were permanently drained or filled, wetland functionality and characteristics were changed by construction and operation, or more than one project affected the same wetland at the same time and location. In most cases, construction of the proposed Apex Expansion Project may result in minor, short-term impacts on the wetlands crossed. However, there would be long-term and permanent impacts on approximately 0.1 acre of forested wetland that would be crossed by the Wasatch Loop. About 0.5 acre is within the permanent right-of-way. This would represent a permanent conversion from a forested wetland to an emergent wetland. The remaining 0.5 acre would be allowed to return to a forested state; however, given the extended amount of time required for the growth of forest, this would be considered a long-term impact. Adverse impacts of the proposed Project at wetland crossings would be minimized by implementation of Kern River's Procedures and other specialized construction and restoration procedures, by preventing sediment from entering wetlands during construction, and by allowing reestablishment of native wetland vegetation after construction.

The UNEV Pipeline Project, which parallels the Apex Expansion Project for approximately 2.25 miles from MP 25.8 to 28.0, has the largest potential to contribute to cumulative impacts on

wetlands. Within this segment, the Apex Expansion Project would cross one wetland with an estimated temporary wetland impact of 4.9 acres. As both the Apex Expansion Project and the UNEV Pipeline Project would take the appropriate precautions and mitigation measures to minimize wetland impact, cumulative impacts on wetlands would be minor.

4.13.4 Vegetation

Cumulative effects on vegetation disturbed by the Apex Expansion Project would be limited primarily to the combined impacts of construction projects located within the same region of influence as the proposed Project and previous construction activities along the same route as the proposed pipeline. These include the UNEV Pipeline Project, the Magnum Gas Storage Project, the Energy Gateway Project, the TransWest Express Project, and the three residential and commercial development projects. While the vegetation impacts of these projects and the Apex Expansion Project would not be inconsequential, the overall impact of these projects would be considered minor in comparison to the abundance of comparable habitat in the area. Construction of the proposed Project would result in both temporary and permanent impacts on vegetation. Among the temporary vegetation impacts, the most significant would be those impacting vegetation that is slow to regenerate (i.e., sagebrush and forested vegetation).

Limited habitat fragmentation would result from construction, as a majority of the pipeline route would follow existing rights-of-way where habitat fragmentation has been introduced previously; however, some fragmentation would occur to Great Basin sagebrush vegetation and Douglas fir forest in the areas where greenfield routing is proposed for the Apex Expansion Project. The UNEV Pipeline Project would also limit habitat fragmentation by constructing the pipeline within or adjacent to existing cleared rights-of-way (BLM 2008a). No vegetation communities of concern were identified in the segment where the proposed Project and the UNEV Pipeline Project would parallel; however, the two pipelines would cross a very disturbed saline-alkaline wetland between MP 26.4 and 27.0. This wetland is adjacent to a chemical plant and an interstate highway, and the dominant vegetation species are iodine bush, whitetop/hoary cress, reed canary grass, and elm. The cumulative vegetation impacts resulting from the fragmentation of the saline-alkaline wetland are expected to be minor as these are common species and the area of impact would be small.

Approximately 58 miles of the proposed route for the UNEV Pipeline Project (15 percent) is dominated by sagebrush and sagebrush shrub (BLM 2008a). However, no sagebrush communities would be impacted in the segment where the Apex Expansion Project would parallel the UNEV Pipeline Project. While there is potential for cumulative impacts on sagebrush as a whole in the region of influence, no projects were identified which would cumulatively impact the specific sagebrush communities impacted by the proposed Project. Given the abundance of sagebrush habitat in the region of influence, the overall cumulative impact on sagebrush habitat would be minor.

Kern River has developed a Reclamation Plan and would also implement a Noxious Weed Control Plan, both of which would aid in restoring native vegetation. Cumulative vegetation impacts of the Apex Expansion Project, the UNEV Pipeline Project, and other potential projects in the area are expected to be minor or negligible, considering the limited area impacted within the region of influence and because these projects are expected to take the required precautions and mitigation measures in accordance with state and federal regulations to minimize impacts. The incremental effect to vegetation of the proposed Project would be minor.

4.13.5 Wildlife

4.13.5.1 Wildlife Habitat

Cumulative effects on wildlife, fisheries and special status species would occur where projects are constructed in the same general time frame and in proximity or which represent permanent loss of habitat types important to wildlife. There are seven projects in table 4.13-1 that have the potential to coincide with the Apex Expansion Project: the UNEV Pipeline Project, the Magnum Gas Storage Project, the Energy Gateway Project, the TransWest Express Project, and the three residential and commercial development projects. Construction activities such as right-of-way and other workspace clearing and grading would result in loss of vegetative cover and soil disturbance, alteration of wildlife habitat, displacement of wildlife species from the construction zone and adjacent areas, mortality of less mobile species, and other potential indirect effects as a result of the noise created by construction and human activity in the area. Overall impacts would be greatest where projects are constructed in the same time frame and area as the Apex Expansion Project or that have long-term or permanent impacts on the same or similar habitat types.

In general, wildlife would be expected to return to affected areas following construction of the proposed pipeline and other projects in the area. For big game, this represents only a small percentage of the overall habitat within the broader project area. However, affected foraging areas for wintering big game would result in longer term impacts, especially for mule deer, because wintering big game depend on browse species to forage in winter. Plant species suitable for browsing deer require more time to recover and would not be allowed to grow back on the permanent rights-of-way, and on developments in several of these projects. These browse species would, however, be allowed to recover within the construction right-of-way and with other suitable habitat present in the broader project area, cumulative impacts would not be considered significant.

Fragmentation of habitat along the Wasatch Front is a concern for big game species, especially fragmentation of deer winter range. However, not all of these projects occur along the Wasatch Front, and the pipeline and transmission line project proponents have attempted to limited fragmentation effects by collocation to the greatest extent practicable.

Clearing and grading of the construction rights-of-way and ATWSs for the proposed Project, the UNEV Pipeline Project, the Magnum Gas Storage Project, the Energy Gateway Project, and the TransWest Express Project would result in a loss of vegetative cover and soil disturbance. This may result in a cumulative loss of individuals of small mammal species, amphibians, reptiles, nesting species, tree cavity nesting species, and non-mobile species. If construction activities for the proposed pipeline and Shady Meadow Campground/East Canyon Ranchettes were to occur in late spring (May to early June), this would coincide with big game calving and fawning times for moose and mule deer, respectively. These animals may be adversely affected by avoidance of construction areas; however, because the areas affected by construction represent only a small percent of the overall habitat within the broader project area, the cumulative impact would not be significant.

Minor, negligible cumulative impacts are expected from the construction of the proposed Milford Compressor Station. The compressor station would be constructed in an area of highly impacted sagebrush habitat, which has already been significantly degraded due to livestock grazing. Although this construction would result in a permanent conversion of the property to a developed use, the value of the habitat is already significantly reduced.

Construction of these projects would also result in some habitat fragmentation, especially in forested areas and shrub habitats. The Apex Expansion Project would be constructed adjacent to existing

rights-of-way for much of its length, using previously disturbed areas to the extent practical to minimize impacts on wildlife. The UNEV Pipeline Project would also limit habitat fragmentation by constructing the pipeline within or adjacent to existing cleared rights-of-way (BLM 2008a).

Cumulative impacts are expected to be negligible for any individual wildlife species relative to the population in the region of influence. The proposed Project and the UNEV Pipeline Project would cross a very disturbed saline-alkaline wetland between MP 26.4 and 27.0, which is located adjacent to a chemical plant and Interstate Highway. Kern River identified coyote, American badger, porcupine, white-tailed jackrabbit, and rodents as common mammals inhabiting saline-alkaline wetlands. The construction of these two pipelines may result in destruction of the underground burrows used by these mammals; however, the cumulative wildlife impacts resulting from the disturbance of the saline-alkaline wetland are expected to be minor since the area of impact would be small and these are common species.

4.13.6 Fisheries and Aquatic Resources

Cumulative impacts on fisheries and aquatic resources could occur if other projects occur within the same segment of a waterbody and have similar construction timeframes as the proposed Project or that could result in permanent or long-term impact on the same or similar habitat types. This is the case for two projects listed in table 4.13-1: the UNEV Pipeline Project and Shady Meadow Campground/East Canyon Ranchettes residential development. Construction of these projects and the Apex Expansion Project could result in cumulative impacts on waterbodies and fisheries from sedimentation and turbidity, habitat alteration, streambank erosion, fuel and chemical spills, water depletions, entrainment or entrapment due to water withdrawals or construction crossing operations, blasting, and operational pipeline failure. These projects would implement best management and restoration practices in accordance with the respective federal, state, and local permitting agencies. As such none, of these impacts are expected to be cumulatively significant because of their temporary nature and avoidance measures taken by the Apex Expansion Project and the UNEV Pipeline Project. The ensuing operations of the proposed pipeline would not result in any additional impacts unless maintenance activities occur in or near streams.

As discussed in section 4.13.3.2, both the proposed Project and the UNEV Pipeline Project would cross the Jordan River, which is a warmwater fishery. This fishery supports black bullhead catfish, black crappie, channel catfish, common carp, rainbow trout, Utah chub, Utah sucker, walleye, white bass, and yellow perch. Construction of the Apex Expansion Project would occur between June and November to minimize impacts to these species. Construction of the two pipelines would most likely not occur at the same time because the UNEV Pipeline Project is expected to be completed in December 2010, which is approximately the time that construction of the Apex Expansion Project would begin. It is expected that the UNEV Project would take similar precautions and mitigation measures as those for the proposed Project to avoid impacts on the Jordan River, in accordance with BLM procedures. As such, we believe that any cumulative impacts would be minor and short term.

The construction of Shady Meadow Campground/East Canyon Ranchettes residential development could potentially occur during the same period as the Apex Expansion Project. This development borders the East Canyon Creek near the proposed crossing of the proposed Wasatch Loop. Whirling disease is known to occur in East Canyon Creek. Given the devastating effect this disease can have on salmonid populations, Kern River has proposed many measures to ensure no cross-contamination of water from East Canyon Creek to other waterbodies. Kern River would conduct construction through East Canyon Creek independently from work at all other waterbody crossings and would thoroughly clean all equipment that comes in contact with East Canyon Creek prior to moving equipment to another waterbody crossing. In addition, Kern River would clean all equipment between all stream and waterbody crossings. The Shady Meadow Campground/East Canyon Ranchettes residential development

is not expected to impact fisheries or aquatic resources in East Canyon Creek as construction activities would occur within the lots bordering the waterbody. Therefore, we believe that any cumulative impacts on salmonid populations would be minor and short term.

Bonneville cutthroat trout is a species of concern in the proposed Project area. The presence of this species is assumed at the proposed crossings of East Canyon Creek, Sheep Canyon Creek, and Hardscrabble Creek. One of these streams, East Canyon Creek, borders the Shady Meadow Campground/East Canyon Ranchettes residential development property. Kern River would avoid instream disturbance during the spawning season, from late May through mid-July. The development of the Shady Meadow Campground/East Canyon Ranchettes is unlikely to impact the Bonneville cutthroat trout, as construction would not occur within East Canyon Creek. Therefore, we believe that no cumulative impacts to this species would result from construction of these projects.

4.13.7 Special Status Species

The species discussed in section 4.7 of this report could potentially be affected by construction and operation of other projects occurring within the same area as the Apex Expansion Project, such as the UNEV Pipeline Project, the Magnum Gas Storage Project, the Energy Gateway Project, the TransWest Express Project, and the three residential and commercial development projects identified in table 4.13-1. Prior to construction, Kern River and all other companies would be required to consult with the appropriate federal, state, and local agencies to evaluate the types of species that may be found in the Project area; identify potential impacts from construction and operation of the Project to any species identified; and implement measures to avoid, minimize, or mitigate impacts on special status species and their habitat. Because protection of threatened, endangered, and other special status species is part of the federal and state permitting processes, cumulative impacts to such species would be reduced or eliminated through conservation and mitigation measures identified during those relevant permitting processes. Consequently, we believe that past and present projects have had minor cumulative effects to special status species.

4.13.8 Land Use and Visual Resources

4.13.8.1 Land Use

Projects with permanent aboveground components, such as buildings or roads, would have more significant impacts on land use than the construction of a pipeline, which would be buried and thus allow for most uses of the land following construction. With the exception of the aboveground facilities and the permanent right-of-way, pipeline projects typically only have temporary impacts on land use. Maintenance of the permanent right-of-way would prohibit the growth of trees over 5 feet tall, and permanent structures would not be permitted. Therefore, some cumulative impacts to landowners could occur where multiple easements cross one property.

The Apex Expansion Project would result in both temporary and permanent changes to current land uses. The majority of land use impacts associated with the Apex Expansion Project would be temporary, as most land uses would be allowed to revert to prior uses following construction. The proposed Project, if built at the same time as other foreseeable future projects, could result in cumulative impacts on recreation and special-interest areas if other projects would affect the same area or feature (e.g., trails) at the same time. The UNEV Pipeline Project, the Energy Gateway Project, and the three residential and commercial development projects were the only projects in table 4.13-1 which fit these criteria. The proposed Project would cross or be located adjacent to several recreation and special-interest areas, such as the UWCNF and designated roadless areas within the UWCNF, the Great Western Trail, the Sessions Mountain and Holbrook Canyon Trail, Mueller Park, the North Canyon Trail, the Jordan

River OHV Park and Modelport, the California National Historic Trail, the Mormon Pioneer National Historic Trail, and the Pony Express National Historic Trail. Because the Apex Expansion Project would be constructed primarily adjacent to existing rights-of-way and would not substantially affect the current land uses, most Project-related impacts would be short term, often lasting only for the duration of construction through that area, after which the area would be restored to its pre-construction condition.

Approximately 65.7 percent of the Apex Expansion Project would be located adjacent to the existing Kern River and/or the proposed UNEV rights-of-way, thereby minimizing land use impacts. However, this proximity also results in the potential for cumulative impacts along the portion of the Apex Expansion Project which would parallel the proposed UNEV pipeline. The Jordan River was the only public land, recreational area, or other designated or special use area identified that would be crossed by both proposed pipelines. Kern River plans to coordinate with the landowners and land managers so that land use impacts are sufficiently minimized. Potential cumulative impacts on the Jordan River are discussed further in section 4.13.3.2.

The UNEV Pipeline Project is expected to be constructed by December 2010. While the collocation with an existing corridor concentrates the cumulative effects to land use, it also reduces the available space for certain types of future development and/or uses by the landowner. In addition, regardless of whether the project is collocated or through greenfield, the creation of right-of-way is a potential attractor to future linear projects to collocate within the existing corridor.

The pipeline route for the Apex Expansion Project is proposed to cross two planned residential developments. The first is the East Canyon Ranchettes (discussed previously), and the second is a planned expansion in the Edgewood/Eaglepointe development—an existing housing development with vacant lots zoned as planned development. Several roads have already been constructed in association with this development. A third planned development that would not be crossed but would be within 0.25 mile of the proposed pipeline is Eaglewood Village. Kern River has committed to coordinate with each of the developers and landowners to avoid and minimize the impacts on these planned residential developments and/or expansions of existing residential developments. Collectively, these developments would cumulatively add to the acreage of developed land in the Project area.

Overall, there is a potential for cumulative impacts on land use and recreation should other projects also occur in the same areas. These impacts would be primarily associated with the addition of new easements on the properties crossed.

4.13.8.2 Visual Resources

The visual impacts of the various projects in the area of the proposed Apex Expansion Project are expected to be highly variable. The other pipeline projects would likely have similar impacts as the proposed Project. The additive visual effects would be limited based on the existing disturbance in the areas where the Apex Expansion Project is proposed to be collocated with any existing right-of-way. Widening an existing right-of-way to construct the Project would contribute to cumulative visual impacts; however, this impact would be less than if Kern were to build an entirely new greenfield pipeline outside of existing rights-of-way. Kern River is in the process of conducting a visual resources assessment for the proposed Project. Kern River would take the appropriate measures to avoid, minimize, or mitigate visual impacts occurring during restoration activities; thus, the cumulative visual impacts from the Apex Expansion Project are not anticipated to be significant.

In cases where a compressor station or aboveground facility is proposed to be constructed near a transmission line or residential development, cumulative impacts on visual resources may occur. The proposed site for MLV 121B (MP 24.6) is near a residential neighborhood. Kern River proposes to place

a decorative concrete wall around the valve site so that it will blend in more with the surrounding development, similar to MLV 121A. The Milford Compressor Station and the PacifiCorp electrical distribution line would be about 2 miles from any structures; thus, no cumulative visual effects are anticipated from these elements.

4.13.9 Socioeconomics

The socioeconomic issues considered in the proposed Project area were employment, housing, public services, transportation, property values, economy and tax revenues, hunting, and environmental justice. The anticipated workforce expected to relocate to the Project area would cause a minor increase in housing demand during periods of peak construction. However, the current housing inventory within the proposed Project area appears to be sufficient to handle this increased demand, even if construction occurs during the peak tourism period. If other projects requiring non-local workers were to occur at the same time as the proposed Apex Expansion Project, there is the potential for a short-term cumulative effect on housing. These cumulative impacts would be limited to the duration of the time that the projects were present in a common area.

Construction of the Apex Expansion Project would result in short-term, temporary impacts on transportation. The proposed Project would cross several major roads in addition to many secondary roads. The transportation of equipment and materials for the proposed Project would also result in increased traffic, which may have a minor effect on commuter traffic. Kern River plans to minimize local impacts by working on road crossing during non-peak hours and using major highways to transport construction equipment and materials. Any transportation impacts from the Project would be short term and minimal. Therefore, there would be little or no cumulative impact on traffic.

The Apex Expansion Project would have short-term, but minor positive effects on the economy in the Project area, such as increased employment and increased sales and tax revenues. Other major projects in the area, such as the UNEV Pipeline Project and the Energy Gateway Project, would likely have similar impacts on the economy. Thus, short-term positive cumulative effects on the economy in the area are possible but would be minor.

Construction of the UNEV Pipeline Project is expected to be completed in December 2010, which is approximately the time that construction of the Apex Expansion Project would begin, however no cumulative socioeconomic impacts related to hunting area anticipated since the bulk of the Apex Expansion Project would not be built until spring of 2011.

4.13.10 Cultural Resources

Cumulative impacts on cultural resources would only occur if other projects were to impact the same historic properties impacted by the proposed Apex Expansion Project. Twenty-two historical or archaeological sites were identified in the cultural resources inventory of the proposed pipeline, access roads, pipeyards, and staging areas. Twelve of these sites are considered eligible for listing on the NRHP. Kern River's proposed pipeline would directly affect two NRHP-eligible historic properties: CCC earthworks (42DV139/42SL635) and Reclamation Ditch (42SL499). The proposed pipeline would cross these sites by open-cut methods. As discussed in section 4.10-1, Kern River would develop a treatment plan to mitigate adverse effects to these sites prior to disturbance. However, in section 3.5.7, we recommend that Kern River adopt the North Salt Lake III Route Variation that would avoid the CCC earthworks (42DV139/42SL635), in which case no impact would occur to the site. Disturbance would occur only to a portion of one site that does not contribute to its significance. Three NRHP-eligible sites would be avoided by horizontally boring beneath them, two sites would be avoided by not using the pipe yard or part of the pipe yard that contains the site, and disturbance to one site would be avoided by

fencing the edge of an access road at its intersection with the site. No impacts would occur to the other three NRHP-eligible sites. Three historical or archaeological sites were identified along the proposed PacifiCorp electrical distribution line, with one of these determined eligible for listing on the NRHP. If avoidance is not possible the BLM would require mitigation. No cultural resources were identified in the area where the Milford Compressor Station would be located. No new cultural resources surveys are expected to be required for adding or replacing units at the four existing compressor stations. None of the projects identified in table 4.13-1 were determined to occur within the same areas as the cultural resources affected by the proposed Apex Expansion Project. Therefore, no cumulative impacts on cultural resources are expected to occur.

4.13.11 Air Quality and Noise

4.13.11.1 Air Quality

Construction of the Apex Expansion Project and other projects in the area would involve the use of heavy machinery, which would likely result in dust from soil disruption and air contaminants from equipment emissions. Operations of projects such as the Ruby Pipeline Project, the Magnum Gas Storage Project, the Gateway Energy Project, the TransWest Express Project, the Moxa Arch Area Infill Gas Development Project, and the UNEV Pipeline would contribute cumulatively to ongoing air emissions in the Project area, including the addition of compressor units at three of Kern River's existing compressor stations, the proposed Milford Compressor Station, and the proposed Wasatch Loop. State and local requirements for dust control on roads and excavated surfaces would be adhered to for all of these projects. State construction and operating permits would also be required for each compressor station. These permit applications would consider potential interactions with nearby emission sources.

Cumulative increases in air pollution emissions could occur on a local scale where new compressor or pumping stations are sited at or near existing or proposed compressor stations. Where this is the case, each compressor station would be required to obtain state construction and operation permits. These permit applications would consider potential interactions with nearby emission sources. Therefore, no significant cumulative air quality impacts are expected to occur.

4.13.11.2 Noise

The proposed Apex Expansion Project and the other projects listed in table 4.13-1 may impact noise levels during construction in the Project area. These noise impacts would be temporary and only occur during the proposed construction period for each project. For the construction of the pipelines and transmission lines, the noise impacts at any one location would be short-term as construction would move along the proposed routes. The construction of the Wasatch Loop would be temporary and mainly result from on-site construction noise from heavy-duty construction equipment and also blasting activity. The only areas expected to be impacted by operational noise are those near the four existing compressor stations and the proposed Milford Compressor Station. As such, the noise levels at the NSAs surrounding the compressor stations are all expected to remain below the FERC L_{dn} limit of 55 dBA. Due to the proximity of the nearest NSAs, Kern River would be required to conduct noise surveys at each of the existing and proposed compressor stations following startup to confirm that noise levels are below 55 dBA or to mitigate if noise levels exceed 55 dBA, as recommend in section 4.11.2.4. Cumulative impacts would only occur if project construction were planned for the same location and over the same time period. Construction of the UNEV Pipeline Project is expected to be completed in December 2010, which is approximately the time that construction of the Apex Expansion Project would begin, however no cumulative impacts from noise are anticipated since the bulk of the Apex Expansion Project would not be built until spring of 2011.

4.13.12 Reliability and Safety

As the Apex Expansion Project would be designed, constructed, operated, and maintained in accordance with the USDOT Safety Standards in 49 CFR 192, we do not believe that there would be any cumulative operational safety impacts among the pipelines and other projects in the vicinity of the proposed Project. These standards were set to prevent natural gas pipeline accidents and failures, and to ensure that the public is adequately protected. Kern River participates in statewide One-Call programs. Kern River has also developed a comprehensive operations and maintenance program for the Apex Expansion Project. This program's purpose is to prevent operational incidents and to respond effectively to any incidents that may occur. The operations and maintenance program includes corrosion control, leak inspection surveys, and regularly scheduled aerial and ground patrols of the pipeline right-of-way. It is assumed that other projects in the area would take similar safety precautions.

4.13.13 Climate Change

Climate change is the change in climate over time, whether due to natural variability or as a result of human activity, and cannot be represented by single annual events or individual anomalies. For example, a single large flood event or particularly hot summer is not an indication of climate change, while a series of floods or warm years that statistically change the average precipitation or temperature over years or decades may indicate climate change.

The leading U.S. scientific body on climate change is the U.S. Global Change Research Program (USGCRP). Thirteen federal departments and agencies participate in the USGCRP which began as a presidential initiative in 1989 and was mandated by Congress in the Global Change Research Act of 1990.

In June 2009, the USGCRP issued its recent report, Global Climate Change Impacts in the United States, summarizing the impacts climate change has already had on the United States and what projected impacts climate change may have in the future. The report includes a break down of overall impacts by resource and impacts described for various regions of the United States. Although climate change is a global concern, for this cumulative analysis, we will focus on the cumulative impacts of climate change in the project area. The USGCRP's report notes the following observations of environmental impacts that may be attributed to climate change in the Southwest and Great Plains region:

- groundwater pumping is lowering water tables and rising temperatures are reducing river flows in vital rivers, leading to limited water supplies;
- limited water supplies are projected to worsen due to reductions in rain and snowfall in the spring months;
- flooding risks increase due to vegetation die-off, wildfires, loss of wetlands along rivers, and an increased fraction of winter precipitation falling as rain rather than snow;
- rising temperatures and decreased spring snowpack are also leading to increased wildfires; and
- with increased temperatures, some plant species are spreading northward to cooler climates causing noxious weed species to further invade the region.

The GHG emissions associated with construction of the project were identified in section 4.11.1.3. Emissions of GHGs from the proposed project would not have any direct impacts on the environment in the project area. Currently there is no standard methodology to determine how the project's relatively small incremental contribution to GHGs would translate into physical effects on the

global environment. However, the emissions would increase the atmospheric concentration of GHGs, in combination with past and future emissions from all other sources, and contribute incrementally to climate change that produces the impacts previously described. Although we cannot accurately determine the project's incremental addition to the impacts of climate change on the environment, we do not expect the relatively minor amount of CO_{2-eq} produced by the Project to result in significant cumulative impacts related to climate change.

4.13.14 Conclusion

A majority of the cumulative impacts identified would be temporary and minor. Long-term cumulative impacts on vegetation and land use could potentially occur if the reasonably foreseeable projects listed in table 4.13-1 were to affect similar vegetation and land uses within the same geographical areas. Long-term cumulative benefits may result from the local economic benefits of the proposed Project. The creation of jobs, increased wages, and purchases of local goods and services from projects would result in short-term and minor cumulative benefits to the Project area.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSIONS OF THE ENVIRONMENTAL ANALYSIS

The conclusions and recommendations presented in this section are those of the FERC environmental staff. Our conclusions and recommendations were developed with input from the USFS, BLM, and Reclamation as cooperating agencies. The USFS, BLM, and Reclamation could adopt this EIS per 40 CFR 1506.3 if, after an independent review of the document, they conclude that their permitting requirements have been satisfied. However, these agencies would present their own conclusions and recommendations in their respective RODs. Otherwise, they may elect to conduct their own supplemental environmental analysis.

Based on our review of information provided by Kern River; literature research; alternatives analysis; comments from federal, state, and local agencies; and input from public groups and individual citizens, we have determined that construction and operation of the proposed Apex Expansion Project would result in some adverse environmental impacts. However, we believe that environmental impacts would be reduced to less than significant levels if the proposed Project is constructed and operated in accordance with applicable laws and regulations, Kern River's proposed mitigation, and additional measures we recommend in this draft EIS. Most impacts would be temporary and short-term; however, the Project could result in some long-term and potentially permanent impacts on sagebrush, upland forest, forested wetland vegetation, and individual wildlife species. Although the mitigation proposed by Kern River would reduce most of these impacts, as part of our review, we developed specific mitigation measures that we determined would appropriately and reasonably minimize the environmental impacts resulting from construction and operation of the proposed Project. We are therefore recommending that our mitigation measures be attached as conditions to any authorization issued by the Commission. A summary of the anticipated Project impacts and our conclusions is provided below by resource.

5.1.1 Geology

Potential geologic hazards in the Project area include faults, landslides, and subsidence. The proposed Project would cross four faults near MPs 2.0, 2.3, 19.2, and 25.6. Potential hazards associated with faults would be mitigated through the use of extra wall thickness steel pipe and placement of granular/sand backfill material underneath and surrounding the pipeline near the active fault at MP 25.6. Kern River has mitigated for landslide hazards by re-routing the pipeline to areas of low risk. Kern River anticipates that blasting may be necessary between MP 0.0 to 19.0 where hard bedrock occurs at depths of five feet or less. Kern River would follow all applicable state, federal and local regulations regarding blasting as specified in its blasting plan.

Kern River would utilize its PRMP that was developed for the 2003 Kern River Expansion Project to mitigate impacts on paleontological resources. The PRMP would be adapted for the proposed Project and provides procedures for obtaining pre-construction approvals, monitoring identified significant fossil locations during construction and addresses procedures for unanticipated discovery of fossils during construction.

Construction and operation of the Project would cause minimal impact on geological resources. The primary geological effect of the Project construction would be disturbances to the existing topography along the proposed pipeline construction right-of-way, but all areas disturbed during pipeline construction would be finish-graded and restored as closely as possible to pre-construction contours during cleanup and restoration. With the implementation of Kern River's Plan and Procedures, impacts on geological resources would be adequately minimized.

5.1.2 Soils

The Project would traverse a variety of soil types and conditions. Construction activities associated with the proposed Project, such as clearing, grading, trenching, and backfilling, could adversely affect soil resources by causing erosion, compaction, and loss of soil productivity and fertility by mixing of topsoil and subsurface soil horizons and changing drainage patterns. However, Kern River would implement the mitigation measures contained in its Plan, Procedures, and Reclamation Plan to control erosion, enhance successful revegetation, and minimize any potential adverse impacts on soil resources. Specifically, potential soil impacts would be mitigated through measures such as topsoil stripping, compaction treatment, and monitoring of revegetation to ensure that density and cover of non-nuisance vegetation were similar in density and cover to adjacent undisturbed lands. Additionally, Kern River would implement an SPCC Plan during construction and operation to prevent and contain, if necessary, accidental spills of any material that may contaminate soils and to ensure that any inadvertent spills of fuel, lubricant, or solvents are contained and cleaned up in an appropriate manner.

Permanent impacts on soils would mainly occur at the existing and proposed compressor stations and other aboveground facilities where the sites would be graveled and converted to natural gas facility use.

5.1.3 Water Resources

The Apex Expansion Project would transverse portions of two major aquifer systems: the Basin and Range aquifer system in Utah and Nevada and the Upper Colorado River Basin aquifer system in Wyoming.

The Wasatch Loop would be within 150 feet of three public water supply wells. Because all active water wells within 150 feet of the proposed pipeline route have not been identified, we are recommending that Kern River file completed surveys for all potable water supply wells and springs. Kern River would implement measures in its Groundwater Monitoring Plan to address the preventative and mitigative measures that would be implemented to avoid or minimize the potential impacts of construction on wells and springs. This includes Kern River's commitment to perform pre- and post-construction monitoring for well yield and water quality for private wells and springs within 200 feet and public wells and springs within 400 feet of the proposed construction right-of-way and repair or replace any damaged wells or springs or provide an alternate water source.

No surface waters would be located within or immediately adjacent to the boundaries of the existing and proposed new aboveground facilities, including the proposed Milford Compressor Station. The pipeline would cross 12 perennial waterbodies, 7 intermittent waterbodies, and 2 ephemeral waterbodies. If water is flowing at the time of construction, Kern River would cross the waterbodies using a dry crossing method. If water is not present at the time of construction, these waterbodies would be crossed using open-cut methods. All waterbody crossings would be accomplished in accordance with Kern River's Procedures and the terms of any applicable federal and state permits that may be granted.

Kern River proposes to withdraw water from two rivers, one reservoir, and municipal sources for the purposes of hydrostatic testing and dust abatement. Test water would not be chemically treated and would be released within the same hydrologic basin from which it was withdrawn. In addition, Kern River would obtain appropriate NPDES discharge permits prior to conducting hydrostatic testing. Accidental spills during construction and operations would be prevented or adequately minimized through implementation of Kern River's Procedures and SPCC Plan.

The pipeline would cross approximately 2,027 feet of land classified as wetlands. No wetlands would be impacted by construction of the Milford Compressor Station or modifications to the existing compressor stations. All wetland crossings would be subject to review by the COE. Kern River would also comply with all conditions of the Section 404 authorizations that may be issued by the COE.

Kern River proposes to use a construction right-of-way width of up to 100 feet in wetlands. We are recommending that Kern River limit the construction right-of-way width to 75 feet in the wetland at MP 26.4 unless it is determined at the time of construction, that soils within this wetland are saturated to warrant a wider right-of-way. We are allowing a wider right-of-way than 75 in wetlands in specified locations due to site-specific conditions. Additionally, according to Kern River's Procedures, which are consistent with the our Procedures, extra work areas should be located a minimum of 50 feet away from wetland boundaries, except where approved of otherwise. Kern River proposes to locate three ATWSs within wetlands and one ATWS within 50 feet of a wetland boundary and we believe Kern River has provided adequate justification for these sites. With adherence to Kern River's Plan and Procedures, Kern River's Reclamation Plan, our recommended mitigation, and COE permit requirements, overall impacts on water resources would be adequately minimized. Impacts on herbaceous and scrub-shrub wetlands resulting from the proposed Project would be temporary and short-term as wetlands would be expected to return to their pre-construction status within 3 to 5 years. Impacts on the 0.6 acre of forested wetland affected would be long-term due to the length of time for forested species to regenerate. However, 0.1 acre of forested wetland would be permanently impacted by the Apex Expansion Project because it is located within the permanent right-of-way and would permanently be converted from forested to emergent or scrub-shrub wetland.

5.1.4 Vegetation

The Apex Expansion Project would permanently impact eight vegetative cover types: Great Basin sagebrush (65.3 acres), mountain mahogany-oak scrub (87.1 acres), Douglas fir (19.3 acres), riparian canyon woodlands (0.9 acres), open grassland (8.5 acres), saline-alkaline wetlands (3.6 acres), improved pasture (7.9 acres), and industrial/disturbed lands (10.1 acres).

Impacts on agricultural lands would be short-term as these lands would revert to previous conditions following restoration. Lands currently dominated by herbaceous growth may revegetate quickly or may require more than 1 year, depending on a number of factors such as resumption of normal hydrologic inputs following restoration and planting of the right-of-way. Lands with scrub-shrub vegetation that would be cleared during construction would likely require 3 to 10 years to regain their woody composition and may require decades to develop a mature seral stage.

Forested lands that are cleared would constitute the most significant impact due to the pronounced change in appearance, structure, and function as mature trees would be replaced by earlier successional stage species and would require decades for mature trees to be restored. During the operation of the proposed pipeline, trees would not be allowed to grow within the permanent right-of-way corridor, resulting in a permanent conversion of cover type in that area to an herbaceous or scrub-shrub state.

During noxious weed surveys conducted for the proposed Project, six noxious weed species were encountered within the right-of-way. The potential spread of these weeds would be controlled by implementation of Kern River's Noxious Weed Control Plan.

Kern River would restore all disturbed areas in accordance with its Plan and Procedures and the specific recommendations of USFS, BLM, Reclamation, and state and local agencies. Given the

measures in Kern River's Plan, Procedures, and Reclamation Plan, effects to upland vegetation would be effectively minimized.

5.1.5 Wildlife

The wetlands and upland vegetation communities crossed by the proposed Project route support habitats that provide cover and forage for a variety of wildlife species, including birds, mammals, reptiles, and amphibians. The Apex Expansion Project would affect wildlife and wildlife habitats along the proposed route; these impacts could be temporary, short-term, long-term, or permanent. Specifically, wildlife could be displaced, injured, or killed by construction activities; but these impacts would not result in population level effects. Construction of the Project would cause habitat fragmentation, especially in forested areas and shrub habitats where the proposed right-of-way deviates from the existing right-of-way. To minimize potential impacts on wildlife, the pipeline would be collocated or constructed adjacent to existing rights-of-way for much of its length using previously disturbed areas to the extent practical. This would reduce habitat fragmentation and the potential impact on wildlife habitat for many species.

Kern River anticipates that blasting would likely be required, and that some blasting would occur between April 15 and August 31 within crucial habitat, including portions of mule deer summer and moose year-long crucial habitat. To minimize impacts, we are recommending that Kern River conduct all blasting within crucial habitat outside of the season of highest use or develop site-specific measures to minimize blasting impacts in coordination with the applicable agencies.

Four big game species occur within the proposed Project area: mule deer, elk, pronghorn, and moose. Kern River's proposed construction time-frame, between late spring and early fall, would result in active construction occurring in crucial summer, summer/fall, and year-long habitats for big game species. As a result, it is likely that big game would experience some adverse effects during these periods. However, Kern River would conduct clearing activities during fall/winter which would cause active construction during spring/summer to be of a slightly shorter duration.

A variety of migratory bird species, including both songbirds and raptors, are associated with the habitats identified along the proposed Project. Construction could cause direct and indirect impacts on raptors and other migratory birds. In order to minimize these impacts, Kern River has collocated much of the right-of-way adjacent to other pipelines or proposed pipelines which minimizes fragmentation of habitat and the potential for predaceous species to invade large contiguous habitats where some obligate bird species breed and fledge young. In addition, Kern River would conduct clearing and grading in late fall/winter, outside of the bird breeding season. Kern River is continuing to coordinate with resource agencies regarding implementation of protective measures for birds protected by the MBTA and will resume coordination after their 2010 surveys have been completed; however, Kern River's currently proposed mitigation measures are inconsistent with those recommended by FWS's Guidelines for Raptor Protection. Therefore, we are recommending that Kern River provide the results of the raptor surveys to FWS, UDWR, USFS, and BLM and provide any buffers or other mitigation developed.

Implementation of Kern River's Plan, Procedures, Reclamation Plan, our recommendations, and maximizing collocation with existing rights-of-way would minimize impacts on wildlife species.

5.1.6 Fisheries and Aquatic Resources

According to UDWR, six of the perennial streams crossed are capable of supporting a fish, including one warmwater fishery and five coldwater fisheries. There are no fisheries at any of the compressor station sites (proposed and existing), staging areas, construction support yards, or access roads. Construction of the proposed Project could result in impacts on waterbodies and fisheries from

sedimentation and turbidity, habitat alteration, streambank erosion, fuel and chemical spills, water depletions, entrainment or entrapment due to water withdrawals. The extent of impact on aquatic resources from pipeline construction would depend on the waterbody crossing method, the existing conditions at each crossing location, the restoration procedures and mitigation measures employed, and the timing of construction. Kern River proposes to cross all waterbodies either when they are dry or using a dry-crossing method to minimize impacts on aquatic resources. All waterbody crossings would be accomplished in accordance with Kern River's Procedures and the terms of any applicable federal or state permits that may be granted.

Intake screening to limit entrainment of fishes and maintenance of adequate streamflow rates to protect aquatic life during hydrostatic test water withdrawals would further minimize Project-related impacts on aquatic resources.

Kern River would adhere to the FERC and agency timing windows for coolwater and warmwater fisheries to further minimize impacts on fishery resources. We are recommending that it adhere to the timing windows for coldwater fisheries unless it receives state agency concurrence to cross coldwater fisheries outside of the timing window.

If blasting is required within waterbodies, Kern River would adhere to its Blasting Plan which outlines conditions for blasting and protections for the environment during and following blasting. These protections include using a scare charge to disperse fish, and immediately removing any debris that could impede flow in a waterbody. Kern River would provide additional blasting details for specific crossings where blasting may be required, and would obtain any additional required permits prior to construction.

Overall, construction impacts on fisheries would be temporary and minor due to the relatively small area within each waterbody that would be affected. By adhering to the measures in Kern River's Procedures, there would be no significant impacts on fisheries as a result of Project construction and operations.

5.1.7 Special Status Species

Special status species are those species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Included in this category are species federally listed as endangered or threatened, considered as candidates for such listing by the FWS, or petitioned for listing under the ESA; species managed by the BLM or USFS to prevent listing under the ESA; and those species that are state-listed as threatened or endangered or designated as a state species of concern.

Based on Kern River's consultation with FWS and our review of existing records, six federally listed threatened or endangered species, or species that are candidates or petitioned for listing, are reported to potentially occur in the vicinity of the proposed Project. Based on our review of the six federally listed species, we have determined that construction and operation of the proposed Project may affect but would not likely adversely affect, Utah prairie dog and Ute ladies' tresses. The remaining species (greater sage-grouse, yellow-billed cuckoo, pygmy rabbit, and Northern leopard frog) are proposed or candidate species. Known habitat for these species would be crossed by the proposed Project, and individuals could be impacted or lost; however, the Project would not cross any FWS-designated critical habitat. Therefore, should the FWS determine that these species warrant listing under the ESA prior to construction of the proposed Project, formal Section 7 consultation under the ESA would be required. We have requested that the FWS consider this draft EIS as the BA for the proposed Project.

In addition to the federally listed, federally petitioned, and federal candidate species, 49 USFS- or state-identified special status species could occur within the vicinity of the proposed Project. We believe

that, given the nature of the species occurrence and the measures that would be implemented as part of the proposed Project, impacts on special-status species would be adequately avoided or minimized.

We are recommending additional mitigation to avoid or reduce impacts on certain federally listed and other special status species that may be affected by the Project. We are also recommending that construction not begin until after we complete our ESA consultation with the FWS. The analysis in this EIS will also be used by other federal cooperating agencies, as applicable, to fulfill their permitting requirements. For these reasons, impacts on special-status species have been adequately minimized.

5.1.8 Land Use and Visual Resources

As proposed, construction of the Apex Expansion Project would affect approximately 766.4 acres of land, including 395.5 acres for the pipeline construction right-of-way and ATWSs; 213.5 acres for pipe storage and contractor yards; 95.1 acres for aboveground facilities; and 62.3 acres for access roads. For most of the Project, collocation of the pipeline with existing rights-of-way would help to reduce land use, recreational, and visual impacts by decreasing the need for new rights-of-way across these areas. Following construction, all affected areas outside the permanent right-of-way and aboveground facility sites would be restored and allowed to revert to pre-construction conditions and uses. Lands within the permanent right-of-way would be restored; however, this land would be subject to routine maintenance as discussed in Kern River's Plan. During operation of the proposed Project, the permanent pipeline right-of-way, aboveground facilities, and permanent access roads would encumber approximately 246.6 acres. Kern River would retain the easement for a 50-foot-wide permanent right-of-way along the proposed Project route. Kern River would annually maintain a 10-foot-wide area centered over the pipeline and would conduct maintenance mowing the 50-foot-wide permanent right-of-way every three years in non-riparian areas.

Kern River would mitigate any unavoidable impacts on structures located within construction work areas per the terms of the agreements negotiated during the easement acquisition process. Two existing residences and a barn would be located within 50 feet of proposed construction workspaces. Kern River proposes specific measures to reduce residential impacts at these locations including: ensuring construction activities progress in a timely manner; maintaining access and traffic flow to the property; installing safety fence; and restoring all areas disturbed by construction work areas to "as before or better" conditions. We are recommending that Kern River adopt the North Salt Lake III Route Variation which would avoid impacts on one of the residences within 50 feet of the proposed construction workspace.

The Apex Expansion Project would cross several recreation and special interest areas, including, a National Forest, BLM land, two state parks, two gravel pits, hunting land, and other recreation areas. The most prominent of these special use areas is the UWCNF, which would be crossed between MP 13.3 and 24.5. Kern River would use special construction methods such as boring to avoid impacts, or time the construction to occur when the area is least utilized, such as avoiding certain hunting seasons to minimize impacts on these areas. Kern River would consult with the managing agencies to identify appropriate avoidance and minimization measures, as appropriate.

Visual resources along the proposed Project route would be affected by the alteration of existing vegetative patterns associated with clearing of the construction and permanent pipeline rights-of-way. In order to minimize visual impacts, Kern River would reseed all areas affected by construction in accordance with their Reclamation Plan to return the impacted vegetation outside of the permanent right-of-way to pre-existing conditions. We are recommending that Kern River submit its visual assessment report to the USFS and FERC.

With adherence to Kern River's Plan and Procedures, and Kern River's Reclamation Plan, overall impacts on land use would be adequately minimized.

5.1.9 Socioeconomics

The proposed pipeline route and the proposed Milford Compressor Station would affect four counties in Utah (Morgan, Davis, Salt Lake, and Beaver), and upgrades to existing facilities would occur in two counties in Utah (Utah and Millard), one county in Wyoming (Uinta), and one county in Nevada (Clark). For the purposes of our socioeconomic analysis, these counties are defined as the "region of influence" for the proposed Project. Population densities in the region of influence range from a low of 1.9 persons per square mile in Millard County, Utah to a high of 1,219 persons per square mile in Salt Lake County, Utah. Five of the eight affected counties have population densities above that of their respective state.

Kern River proposes to utilize one construction spread for the Wasatch Loop with construction expected to begin in October 2010 and an in-service date of November 2011. Kern River estimates that the peak construction workforce would be 871 workers, with 541 workers associated with the proposed Wasatch Loop and 330 workers associated with upgrades at four compressor stations and construction of the one new compressor station (Milford Compressor Station). Due to the large number of hotel/motels and vacant rental units available in Salt Lake County, especially in Salt Lake City, it is anticipated that the majority of the workforce for the proposed Wasatch Loop would be housed within Salt Lake County, generally limiting housing impacts on Morgan and Davis Counties. It is anticipated that the majority of the workers for the compressor stations would temporarily relocate to the county where the compressor station is located to avoid long commutes. Because the workforces would be small, there would be adequate housing for the compressor station workforces.

There is no evidence that the proposed Project would result in disproportionately high and adverse human health or environmental effects to minority or low-income communities.

5.1.10 Cultural Resources

Kern River has conducted cultural resources surveys and prepared reports covering the entire proposed Wasatch Loop. Kern River also has completed cultural resources surveys at the proposed Milford Compressor Station and along the associated electrical distribution line; at pipe yards/offloading areas; and along Project access roads. Surveys remain to be completed for the two recommended route variations, some laydown areas and contractor yards, one extra work space, and one access road.

In total, the surveys have identified 25 historic or archaeological sites. Twenty sites are historic, three sites are prehistoric, and two sites are both historic and prehistoric. Fourteen sites are considered eligible and 11 are considered not eligible for listing on the NRHP. Of the 14 eligible sites, Kern River would avoid impacts on all but two sites. Kern River would mitigate impacts on one of the eligible sites and it would either avoid or mitigate impacts on the remaining site.

Cultural resources survey reports for the Project have been submitted to the FERC, USFS, BLM, UDOT, UDNR, (as appropriate by jurisdiction) and Utah SHPO for review, and we have received comments and concurrence from the USFS, BLM, UDOT, and UDNR.

We sent our NOI to 22 federally recognized Native American tribes. No responses to our NOI from Native American tribes were received. Kern River also contacted these groups. To date, the Moapa Band of Paiute Indians and Colorado River Indian Tribes have responded, indicating that they had no interest in the Project. The Las Vegas Paiute Tribe and the Chemehuevi Indian Tribe did not have any

concerns, but requested to be contacted in the event of Project changes or significant discoveries, respectively. No other responses have been received to date.

No historic properties would be affected at the Coyote Creek and Dry Lake Compressor Stations. The Section 106 process is complete for these Project components.

To ensure that our responsibilities under Section 106 of the NHPA are met, we are recommending that Kern River not begin construction until all required surveys are completed, survey reports, and any necessary treatment plans have been reviewed by the appropriate parties, and we provide written notification to proceed.

5.1.11 Air Quality and Noise

Air quality impacts associated with construction of the proposed Project would include emissions from fossil-fueled construction equipment and fugitive dust. Such air quality impacts would generally be temporary and localized, and are not expected to cause or contribute to a violation of applicable air quality standards. Operation of the proposed Project would be expected to result in long-term minor impacts on air quality at the proposed Milford Compressor Station and the existing compressor stations. All of the air emissions associated with operation of the compressor stations would meet federal and state ambient air quality standards and would be subject to the conditions of any respective air quality permits each state would issue, including emission limits for each of emission-generating source.

With implementation of the measures proposed by Kern River, impacts related to noise during construction would be minor and temporary. If the proposed Project is approved and constructed, we are recommending that Kern River measure actual noise levels associated with the Coyote Creek, Elberta, and Milford Compressor Stations to confirm that noise levels are below an L_{dn} of 55 dBA at the nearest NSA, or implement the necessary mitigation to ensure that it is. Based on estimated sound levels and our recommendation, noise levels attributable to operation of the existing compressor stations and the new Milford Compressor Station would not have a significant impact on the surrounding environment.

5.1.12 Reliability and Safety

The proposed Project would be designed, constructed, operated, and maintained to meet or exceed all USDOT safety standards for natural gas pipelines. Following construction, Kern River also would initiate a pipeline integrity management plan to ensure public safety during operation. The Project would result in only a slight increase in risk to the nearby public.

5.1.13 Cumulative Effects

Three types of projects (past, present, and reasonably foreseeable projects) could potentially contribute to a cumulative impact when considered with the proposed Project. These projects include other oil and natural gas gathering and transmission pipelines in the Project area, non-jurisdictional facilities associated with the proposed Project, and unrelated projects in the vicinity of the proposed pipeline route. We considered the region of influence for the cumulative impact analysis to be the counties traversed by the proposed Project. The environmental impacts associated with these projects that would be most likely to be cumulatively significant are related to wetlands and waterbodies, vegetation and wildlife (including federally and state listed endangered and threatened species), land use, air quality, and noise.

Impacts associated with the proposed Project would be relatively minor overall, and we have included recommendations in this EIS to further reduce the environmental impacts associated with the

proposed Apex Expansion Project, as summarized in section 5.2. Additionally, Kern River has selected a route that collocates with its existing right-of-way to the largest extent possible considering terrain constraints, safety, and recent development since the existing pipeline was installed. Similarly, each of the other projects considered in our cumulative impacts analysis have been designed to avoid or minimize impacts on sensitive environmental resources. Additionally, it is anticipated that any significant impacts on sensitive resources resulting from these projects would be mitigated. Mitigation generally leads to avoidance or minimization of cumulative impacts. Consequently, only a small incremental cumulative effect would be anticipated after the impacts of the proposed Project are added to those of past, present, or reasonably foreseeable projects.

5.1.14 Alternatives Considered

As an alternative to the proposed action, we evaluated the No Action or Postponed Action Alternatives, system alternatives, major route alternatives, route variations, and aboveground facility site alternatives. While the No Action or Postponed Action Alternative would eliminate or delay the short and long-term environmental impacts identified in this draft EIS, the objectives of the proposed Project would not be met, and Kern River would not be able to provide a new source of natural gas to markets that can be accessed through the proposed Project. We also evaluated the use of alternative energy sources and the potential effects of energy conservation, but these measures would not satisfy the need for the proposed Project.

Our analysis of system alternatives included an evaluation of whether existing or proposed natural gas pipeline systems could meet the proposed Project objectives while offering an environmental advantage over the proposed Project. In addition to the Kern River System, there are two other existing pipeline systems that currently transport natural gas to southern Nevada: El Paso and Transwestern. Both would not meet the capacity requirements of the proposed Apex Expansion Project without substantial system upgrades, such as new or increased compression and new pipeline looping, or construction of additional pipelines. Similarly, it is anticipated that construction and operational impacts associated with other system alternatives involving existing/proposed pipelines in the region (Bison Pipeline Project, Kanda Lateral and Mainline Expansion, Loop Expansion Project, Rex-West Project, Ruby Pipeline Project, and Sunstone Project) would be greater than those of the proposed Project due to the amount of looping and new construction required to connect the systems to the Project origin and terminus. Consequently, no system alternatives are considered available that are environmentally preferable to the proposed Project.

We evaluated five major route alternatives to the proposed Project route. Because none of these would offer significant environmental advantages over the proposed Project route, we eliminated them from further consideration. Lastly, we considered route variations to resolve or reduce construction impacts on localized, specific resources. These minor variations were developed based on comments from landowners, resource agencies, and land-managing agencies to avoid or minimize impacts on natural and cultural resources, reduce or eliminate engineering and constructability concerns, and avoid or minimize conflicts with existing or proposed residential and agricultural land uses. It also is anticipated that minor alignment shifts would be made prior to and during construction to accommodate such site-specific circumstances as landowner concerns. We are recommending that Kern River incorporate the Mueller Park Variation into the proposed Project to avoid an inventoried roadless area within USFS lands. We are also recommending that Kern River incorporate the North Salt Lake III Variation into the proposed Project because it would result in a shorter crossing of USFS lands and would avoid crossing the historic CCC terraces.

We evaluated alternative locations for the proposed Milford Compressor Station to determine whether environmental impacts would be reduced or mitigated by use of alternative facility sites. We did

not identify any alternative sites for the proposed Milford Compressor Station that would offer a significant environmental advantage to the proposed site.

In summary, we have determined that Kern River's proposed Project, as modified by our recommended mitigation measures and route variations, is the preferred alternative that can meet the Project objectives.

5.2 FERC STAFF'S RECOMMENDED MITIGATION

If the Commission authorizes the Apex Expansion Project, we recommend that the following measures be included as specific conditions in the Commission's Order. We believe that these measures would further mitigate the environmental impact associated with construction and operation of the proposed Project. In the following section, "file" means to file with the Secretary at the FERC. Certain recommendations listed below request that Kern River provide information to assist us in the development of the final EIS. Any recommendations that are satisfied by Kern River prior to issuance of the final EIS will not be included as recommended conditions in the final EIS.

1. Kern River shall follow the construction procedures and mitigation measures described in its application and supplemental filings (including responses to staff information and data requests), and as identified in the EIS, unless modified by the Commission's Order. Kern River must:
 - a. request any modification to these procedures, measures, or conditions in a filing;
 - b. justify each modification relative to site-specific conditions;
 - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
 - d. receive approval in writing from the Director of OEP before using that modification.
2. The Director of OEP has delegated authority to take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the Project. This authority shall allow:
 - a. the modification of conditions of the Commission's Order; and
 - b. the design and implementation of any additional measures deemed necessary (including stop-work authority) to assure continued compliance with the intent of the environmental conditions as well as avoidance or mitigation of adverse environmental impact resulting from Project construction and operation.
3. **Prior to any construction**, Kern River shall file an affirmative statement, certified by a senior company official, that all company personnel, Environmental Inspectors, and contractor personnel will be informed of the Environmental Inspectors' authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.
4. The authorized facility locations shall be as shown in the EIS, as supplemented by filed alignment sheets, and shall include the Mueller Park and North Salt Lake III Variations as described in section 3.5.7. **As soon as they are available, and before the start of construction**, Kern River shall file any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of

environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

Kern River's exercise of eminent domain authority granted under NGA section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Kern River's right of eminent domain granted under NGA Section 7(h) does not authorize it to increase the size of its natural gas pipeline to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. Kern River shall file detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area.**

This requirement does not apply to extra workspace allowed by the Kern River's Upland Erosion Control, Revegetation, and Maintenance Plan, and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
 - b. implementation of endangered, threatened, or special concern species mitigation measures;
 - c. recommendations by state regulatory authorities; and
 - d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.
6. **Within 60 days of the acceptance of the Certificate and before construction** begins, Kern River shall file an Implementation Plan for review and written approval by the Director of OEP. Kern River must file revisions to the plan as schedules change. The plan shall identify:
 - a. how Kern River will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EIS, and required by the Order;
 - b. how Kern River will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
 - c. the number of Environmental Inspectors assigned for the Wasatch Loop and aboveground facility sites, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;

- d. company personnel, including Environmental Inspectors and contractors, who will receive copies of the appropriate material;
 - e. the location and dates of the environmental compliance training and instructions Kern River will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change), (with the opportunity for OEP staff to participate in the training session(s));
 - f. the company personnel (if known) and specific portion of Kern River's organization having responsibility for compliance;
 - g. the procedures (including use of contract penalties) Kern River will follow if noncompliance occurs; and
 - h. for each discrete facility, a Gantt or PERT chart (or similar Project scheduling diagram), and dates for:
 - (1) the completion of all required surveys and reports;
 - (2) the mitigation training of onsite personnel;
 - (3) the start of construction; and
 - (4) the start and completion of restoration.
7. Kern River shall employ a team of two or more Environmental Inspectors for the Wasatch Loop. The Environmental Inspectors shall be:
- a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
 - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
 - c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
 - d. a full-time position, separate from all other activity inspectors;
 - e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
 - f. responsible for maintaining status reports.
8. Beginning with the filing of its Implementation Plan, Kern River shall file updated status reports **on a weekly basis until all construction and restoration activities are complete**. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
- a. an update on Kern River's efforts to obtain the necessary federal authorizations;
 - b. the construction status of the Project work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally-sensitive areas;
 - c. a listing of all problems encountered and each instance of noncompliance observed by the Environmental Inspectors during the reporting period (both for the conditions imposed by

- the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
- d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost;
 - e. the effectiveness of all corrective actions implemented;
 - f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
 - g. copies of any correspondence received by Kern River from other federal, state, or local permitting agencies concerning instances of noncompliance, and Kern River's response.
9. **Prior to receiving written authorization from the Director of OEP to commence construction of any Project facilities in each state**, Kern River shall file documentation that it has received all authorizations required under federal law (or evidence of waiver thereof) in each state.
 10. Kern River must receive written authorization from the Director of OEP **before placing into service** the Apex Expansion Project facilities. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.
 11. **Within 30 days of placing the authorized facilities in service**, Kern River shall file an affirmative statement, certified by a senior company official:
 - a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
 - b. identifying which of the Certificate conditions Kern River has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
 12. **Prior to the end of the draft EIS comment period**, Kern River shall incorporate the Mueller Park Variation (MP 13.7-14.7) into the proposed route. In addition, Kern River shall complete and file with the FERC all required biological and cultural resources surveys and consultations for this recommended variation and provide updated alignment sheets. (*Section 3.5.6*)
 13. **Prior to the end of the draft EIS comment period**, Kern River shall incorporate the North Salt Lake III Variation (MP 22.0-24.9) into the proposed route. In addition, Kern River shall complete and file with the FERC all required biological and cultural resources surveys and consultations for this recommended variation and provide updated alignment sheets. (*Section 3.5.7*)
 14. **Prior to construction**, Kern River shall file completed surveys for all potable water supply wells and springs identified within 150 feet of the proposed construction right-of-way and list any site-specific measures that it would implement to avoid, minimize, or mitigate for potential impacts on water supply wells and springs. (*Section 4.3.1.2*)
 15. Kern River shall limit the construction right-of-way width in the wetland at MP 26.4 to 75 feet unless Kern River files evidence that the soil conditions within this wetland at the time of

construction warrant a wider right-of-way, and Kern River receives written approval from the Director of OEP to expand the construction right-of-way. (*Section 4.3.3.3*)

16. **Prior to construction**, Kern River shall file a revised blasting plan that either stipulates that any blasting within big game crucial habitat would occur outside of the season of highest use **or** includes site-specific measures developed in consultation with the USFS, BLM, and UDWR that would minimize impacts on big game species during blasting activities. (*Section 4.5.3*)
17. **Prior to construction**, Kern River shall file the results of the raptor surveys and copies of consultations with the FWS, UDWR, USFS, and BLM, as applicable, to develop appropriate spatial buffers and/or other mitigation measures to protect raptors. (*Section 4.5.4*)
18. **Prior to construction**, Kern River shall file a revised version of its Procedures specifying that the time window for crossing coldwater fisheries is between June 1 and September 30, unless expressly permitted by the appropriate agencies. (*Section 4.6.1.2*)
19. Kern River shall **not begin construction** of the proposed Project facilities **until**:
 - a. it consults with USFS and FWS regarding potential habitat for the Ute ladies'-tresses within the proposed Project area and, if applicable, develop a survey protocol that would promote identification of the species;
 - b. files the results of any surveys completed for the Ute ladies'-tresses;
 - c. the FERC staff completes any necessary consultations with the FWS; and
 - d. Kern River has received written notification from the Director of OEP that construction and/or use of mitigation (including implementation of conservation measures) may begin. (*Section 4.7 and Section 4.7.1.6*)
20. Kern River shall adopt the following measures to minimize impacts on greater sage-grouse:
 - a. identify all areas of Great Basin sagebrush within the right-of-way and access roads that are potential habitat for sage-grouse, regardless of slope gradient, and include those areas in the lek surveys proposed for spring 2010;
 - b. avoid clearing and construction activities between March 1 and July 31 within a 4-mile radius of any active leks encountered during its 2010 surveys;
 - c. file a site-specific blasting plan developed in consultation with the FWS and UDWR for the sagebrush habitat between MP 3.8 and 4.6 that includes measures for both sage-grouse and pygmy rabbit; and
 - d. plant Great Basin sagebrush within the construction work area during restoration at MP 0.0-2.5, 3.8-4.6, and 11.5-11.8. (*Section 4.7.1.1*)
21. If construction is to occur through suitable yellow-billed cuckoo habitat at MP 0.9, 5.0-5.4, 17.3, 19.8, and 21.2 during the breeding season, Kern River shall conduct audio surveys immediately **prior to such construction**. If individuals or evidence of yellow-billed cuckoos are found, Kern River shall not begin construction in these areas until we have reviewed Kern River's proposed avoidance and/or mitigation measures, as well as any agency comments on these measures, and Kern River has received written notification from the Director of OEP that construction or use of mitigation may begin. (*Section 4.7.1.2*)

22. **Prior to construction**, Kern River shall file the results of its 2010 pygmy rabbit surveys and Utah prairie dog surveys, and submit the results to the FWS, BLM, and UDWR. If individuals or evidence of pygmy rabbits or Utah prairie dogs are found, Kern River shall file a plan detailing pygmy rabbit and/or Utah prairie dog avoidance/mitigation measures developed in consultation with the applicable agencies, for review and written approval of the Director of OEP. (*Section 4.7.1.3 and 4.7.1.4*)
23. **Prior to the end of the draft EIS comment period**, Kern River shall complete and file with the Secretary and the USFS, a visual assessment report for the USFS-managed lands. (*Section 4.8.4.1*)
24. Kern River shall **not begin construction** of facilities and/or use of staging, storage, or temporary work areas, and new or to-be-improved access roads until:
 - a. Kern River files:
 - (1) the Utah SHPO's comments on the survey reports;
 - (2) the Utah SHPO's comments on the Milford, Elberta, and Fillmore Compressor Stations;
 - (3) a survey report for the Mueller Park and North Salt Lake III Route Variations, any outstanding areas and newly identified areas that remain to be surveyed, and the Utah SHPO's, USFS's, and BLM's comments (as appropriate) on the report; and
 - (4) any required avoidance and/or mitigation/treatment plan, and the SHPO's, and USFS's and BLM's (as appropriate) comments on the plan;
 - b. the ACHP is afforded an opportunity to comment if historic properties would be adversely affected; and
 - c. the FERC staff reviews and the Director of OEP approves the cultural resource reports and plans, and notifies Kern River in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.

All material filed with the Commission that contains **location, character, and ownership** information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering —**CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE**. (*Section 4.10.4*)

25. Kern River shall file noise surveys **no later than 60 days** after placing the Milford Compressor Station and the authorized units at the Coyote Creek and Elberta Compressor Stations in service. If the noise attributable to the operation of all of the equipment at the identified compressor stations at full load exceeds an L_{dn} of 55 dBA at any nearby NSAs, Kern River shall install the additional noise controls to meet the level **within 1 year** of each station's in-service date. Kern River shall confirm compliance with the above requirement by filing a second set of noise surveys **no later than 60 days** after it installs the additional noise controls. (*Section 4.11.2.4*)