

Federal Lead Agency:

United States
Department of
Commerce
National
Telecommunications
& Information
Administration
1401 Constitution
Ave. NW
Washington, DC
20230

National Environmental Policy Act
Environmental Assessment
ARRA Award: NT10 BIX 5570125

California Environmental Quality Act
Initial Study – Mitigated Negative Declaration
SCH: 2011052083

PSREC-PST
Mid-Mile Fiber Project

Plumas-Sierra Rural Electric Cooperative

Lassen, Plumas and Sierra Counties, California and Washoe County,
Nevada

Final - June 2011



Grant Award:

American Recovery
and Reinvestment Act



State Lead Agency:

California Public
Utilities Commission
Energy Division

505 Van Ness
Avenue,
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**PLUMAS SIERRA RURAL ELECTRIC COOPERATIVE
PSREC-PST MID-MILE FIBER PROJECT
ENVIRONMENTAL ASSESSMENT**

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ACRONYMS AND GLOSSARY OF TERMS

<u>Acronym</u>	<u>Description</u>
A.D.	After Death
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
AGL	Above Ground Level
AN	Audible Noise
APE	Area of Potential Effects
AQMD	Air Quality Management District
ARRA	American Recovery and Reinvestment Act of 2009
AUM	Animal Unit Months
B.C.	Before Christ
BA	Biological Assessment
Backhaul	The portion of a network that comprises of the intermediate links between the core network, or backbone, of the network and the small sub networks at the "edge" of the entire hierarchical network.
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	Best Management Practice
BOR	Bureau of Reclamation
Broadband	Of, relating to or being a high speed communications network and especially one in which a frequency range is divided into multiple independent channels for simultaneous transmission of signals (as voice, data, or video)
BRWM	Bureau of Remediation and Waste Management
BTOP	Broadband Technology Opportunities Program

<u><i>Acronym</i></u>	<u><i>Description</i></u>
CA	California
CAFO	Confined Animal Feeding Operation
CAI	Critical Anchor Institution: Universities, hospitals, sports facilities, performing arts and other cultural facilities (like museums and libraries), public utilities, and some large churches and corporations within a city or state.
CAISO	California Independent System Operator
CARB	California Air Resources Board
CCA	Chromate Copper Arsenate
CCR	California Code of Regulations
CDC	Conservation Data Center
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CH	Methane
CNDDB	California Natural Diversity Database
CNEL	Community Noise Exposure Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO2	Carbon Dioxide
CoE	Plumas County Office of Education

<u>Acronym</u>	<u>Description</u>
CPUC	California Public Utilities Commission
CSLC	California State Lands Commission
CZMA	Coastal Zone Management Act
Dark Fiber	A fiber optic cable that is not being used
dB	Decibels
dba	A-Weighted Decibels
DOD	Department of Defense
DOE	Department of Energy
DWDM	Dense Wavelength Division Multiplexing
EA	Environmental Assessment
EDMS	Emissions and Dispersion Modeling System
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
End User	The end user is the individual who uses the product after it has been fully developed and marketed.
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Administration
FERC	Federal Energy Regulatory Commission

<u><i>Acronym</i></u>	<u><i>Description</i></u>
FHWA	Federal Highway Administration
FM	Fuel Model
FMU	Fire Management Unit
FONSI	Finding of No Significant Impact
FRCC	Feather River Community College
FS	Forest Service
FSC	Full-Service Capability
g/m ³	Micrograms per Cubic Meter
Gbps	Gigabits per second
GHG	Greenhouse Gas
GIBA	Globally Important Bird Area
Gigabit	One billion bits
GIS	Geographic Information System
H ₂ S	Hydrogen Sulfide
HC	Hydrocarbon
HDD	Horizontal Directional Drill
ILEC	Incumbent Local Exchange Carrier
IRU	Indefeasible Right to Use
IS	Initial Study
KOP	Key Observation Point
kV	Kilovolt
kW	Kilowatt
LBP	Local broadband providers
LCAPCD	Lassen County Air Pollution Control District

<u><i>Acronym</i></u>	<u><i>Description</i></u>
LCT	Lahontan Cuthroat Trout
Ldn	Day Night Level
LLC	Limited Liability Corporation
Lmax	Lmax refers to the maximum A-weighted noise level recorded for a single noise event.
LMUD	Lassen Municipal Utility District
LOS	Level of Service
LSC	Limited Service Capability
LUST	Leaking Underground Storage Tank
Mbit	Megabit – one million bits
Mbps	Megabits per second
MBTA	Migratory Bird Treaty Act
MEL	Most Efficient Level
MMRP	Mitigation Monitoring and Reporting Program
MND	Mitigated Negative Declaration
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPE, Inc.	MPE, Incorporated
Mph	Miles Per Hour
MW	Megawatts
N0x	Oxides of Nitrogen
N2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NASS	National Agricultural Statistics Service

<u>Acronym</u>	<u>Description</u>
NCCP	Natural Community Conservation Planning Tool
ND	Negative Declaration
NEPA	National Environmental Policy Act
NEPDG	National Energy Policy Development Group
NESC	National Electrical Safety Code
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NLA	Native Languages of the Americas
NLCD	National Land Cover Database
NMFS	National Marine Fisheries Service
NNHP	Nevada Natural Heritage Program
NO ₂	Nitrogen Dioxide
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Association
NOFA	Notice of Funding Availability
NOI	Notice of Intent
NOX	Nitrogen Oxides
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NRPA	National Resource Protection Act
NSR	New Source Review

<u><i>Acronym</i></u>	<u><i>Description</i></u>
NTIA	National Telecommunications and Information Administration
NV	Nevada
NWCC	National Wind Coordinating Committee
NWI	National Wetland Inventory
NWPCC	Northwest Power and Conservation Council
NZDSF	Non-Zero Dispersion Shifted Fiber
O&M	Operations and Maintenance
O3	Ozone
OCTA	Oregon-California Trails Association
ODTR	Optical time domain reflectometer
°F	Degrees Fahrenheit
OHV	Off-Highway Vehicle
ORV	Off-Road Vehicle
OSHA	Occupational Safety and Health Administration
Pb	Lead
PCBs	Polychlorinated biphenyls
PCP	Pentachlorophenol
PDH	Plumas District Hospital
PG&E	Pacific Gas & Electric
PM	Particulate Matter
PM10	Particulate matter with an aerodynamic diameter less than 10
Pmd	Polarization mode dispersion
PNF	Plumas National Forest
PPE	Personal Protective Equipment

<u><i>Acronym</i></u>	<u><i>Description</i></u>
ps	Picosecond
ps/km	Picosecond per kilometer
ps/km ^{1/2}	Picosecond per kilometer divided by 2
ps/nm	Picosecond per nanometer
PS/nm.km	Picosecond per nanometer times kilometer
PSC	Partial Service Capability
PSD	Prevention of Significant Deterioration
PSREC	Plumas Sierra Rural Electric Cooperative
RAC	Resource Advisory Council
RCRA	Resource Conservation and Recovery Act
RCRC	Regional Council of Rural Counties
RDUP	Rural Development Utilities Program
RFP	Request for Proposal
RMP	Resource Management Plan
ROD	Record of Decision
ROG	Reactive Organic Gas
ROS	Recreational Opportunities Spectrum
ROW	Right of Way
RQD	Rock Quality Designation
RSA	Rotor-Swept Area
RUS	Rural Utilities Service
S0x	Oxides of Sulfur
SB	Senate Bill
SCS	Soil Conservation Service

<u><i>Acronym</i></u>	<u><i>Description</i></u>
sf	Square Feet
SH	State Highway
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMS	Scenery Management System
SMZ	Streamside Management Zone
SO2	Sulfur Dioxide
SPCC	Spill Prevention Control and Countermeasure
SQRU	Scenic Quality Rating Units
SRMA	Special Resource Management Areas
SWA	State Wildlife Area
SWH	Significant Wildlife Habitat
SWPPP	Stormwater Pollution Prevention Plan
Tbps	Terabits per second
TES	Threatened, Endangered and Sensitive
TMDL	Total Maximum Daily Load
U.S.	United States
U.S.C.	U.S. Code
UPRR	Union Pacific Railroad
USACOE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency

<u><i>Acronym</i></u>	<u><i>Description</i></u>
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound
VRAP	Voluntary Response Action Program
VRM	Visual Resource Management
WAN/LAN	Wide Area Network/ Local Area Network
WAPA	Western Area Power Administration
WCB	California Wildlife Conservation Board
WCRM	Western Cultural Resources Management, Inc.
WHR	Wildlife-Habitat Relationships

Executive Summary

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EXECUTIVE SUMMARY

PROPONENT

Plumas Sierra Rural Electric Cooperative (PSREC) is a member-owned electric cooperative that is required to provide electric and related services to its member owners in accordance with the reliability standards defined by the Rural Utilities Service (RUS), Federal Energy Regulatory Commission (FERC), North American Electric Reliability Corporation, and Western Electric Coordinating Council. It also must comply with the regulations of the California Independent System Operator (CAISO), under the direction of FERC. PSREC serves 6,500 customers in Lassen, Plumas, and Sierra counties in California, and the western edge of Washoe County in Nevada.

PSREC, through its wholly owned subsidiary, Plumas Sierra Telecommunications (PST), provides a multitude of telecommunication services to this rural area, and has delivered internet service for more than 14 years.

ENVIRONMENTAL SETTING

The project area is located in northwestern Nevada and northeastern California, within the Diamond Mountains, which form the northeastern edge of the Plumas National Forest just as the Forest transitions into the Honey Lake/Long Valley high desert environment along the US395 north-south corridor. The northeastern edge of the Plumas National Forest is coterminous with the northeastern edge of Plumas County and the western edge of Lassen County. Susanville, California, is located on the northern boundary of the project area; Reno, Nevada forms the southern boundary; Quincy, California is located on the western boundary, and Red Rock Valley, Nevada is located on the eastern boundary of the Proposed Project Area.

The project area is rural in character and there is little evidence of a built environment in the surrounding area. Farm houses, ranches and small settlements are scattered throughout the Honey Lake Valley, mostly concentrated along US 395. The area north of the Forest land is high desert, and though it includes grazing land, the California Correctional facilities, and the Sierra Army Depot, in views north and northeast from within the project area it appears mostly undeveloped, arid and flat with large playa.

Many of the community Critical Anchor Institutions (CAIs) in this rural area of northeastern California currently lack adequate access to the bandwidth required to support e-healthcare, advanced learning opportunities, economic development opportunities, and communication needs. PSREC plans to meet the broadband needs of these institutions by constructing 183 miles of new fiber for a middle mile network to deliver broadband speeds between 45 Mbps and 10 Gbps to anchor institutions and local internet service providers. Among the 18 CAIs currently committed to connect to the PSREC-PST Mid-Mile Fiber Project's network are seven government facilities, two community colleges, county offices of education, two healthcare providers, an Indian Reservation Corporation, and state correctional facilities.

For these reasons, PSREC applied to the federal government through the American Recovery and Reinvestment Act (ARRA) for a grant to build and to operate the Middle Mile Fiber System

to construct sufficient fiber to meet foreseeable demand to all carriers and institutions at a standard, cost-based rate on "just, reasonable and not unreasonably discriminatory" terms. The Project involves implementing a regional middle mile network, which would be the foundation for intra- and inter-state connection and cooperation, as well as the core from which to extend broadband access to remote areas and enterprises in California's northeastern rural area. The Project would support the intent of ARRA to protect existing employment and to promote additional job opportunities.

Awarded the Grant in September 2010, Plumas Sierra Rural Electric Cooperative (PSREC) is proposing to build, operate, and maintain a 183-mile fiber optic communications network in northeastern California and northwestern Nevada. The proposed network would provide access capabilities for the following three California counties: Plumas, Sierra, and Lassen Counties, California. The proposed network would also accommodate future statewide interconnection of major Public Safety Answering Points, a future California statewide and Nevada public safety network.

Of the approximately 183 miles of proposed new fiber cable installation, 162 miles would be placed on existing pole infrastructure, the remaining 21 miles would be installed underground in conduit. New underground construction will occur for eight miles in the CALTRANS US395/SH70 ROW from Bordertown, Nevada to one-quarter mile west of Hallelujah Junction, California; for approximately one mile in existing NDOT US395 ROW on BLM-administered lands (if existing conduit is not utilized); and for seven miles in existing city/county/state ROWs within existing developed areas in California. For approximately five miles in the City of Reno, new fiber is proposed to be placed in existing conduits.

ISSUES IDENTIFIED

On September 22, 2010, the California Governor's Office convened a meeting of the directors of most California State Agencies and the Round 2 Grant Recipients. At this meeting, the Governor's Chief of Staff formally requested the expedited cooperation of applicable state agencies to ensure a seamless and timely coordination that would allow the ARRA Grant Recipients to complete the requisite Environmental Assessment.

Since the September meeting, PSREC has had on-going meetings and coordination with the BLM, Eagle Lake and Carson City Field Offices, the Plumas National Forest, other federal and state regulatory and trustee agencies.

Issues identified during project scoping included the following:

- Cultural and historic resources protection
- Native American Religious Concerns

Other primary issues and concerns addressed:

- Air quality (fugitive dust and greenhouse gas [GHG] emissions during construction)
- Vegetation restoration
- Noxious and/or invasive weeds control
- Direct, indirect, short-term, and long-term impacts to wildlife resources

- Traffic control on federal, state, and local roads during construction

ALTERNATIVES TO THE PROPOSED ACTION

No-Action Alternative

Under the No Action Alternative, NTIA would not fund the Proposed Action and CPUC would not approve or fund the Proposed Action. The construction of the Proposed Action would be infeasible without federal and state funding: thus, it is likely that the proposed fiber optic network would not be constructed and operated in the near future. The rural areas of Plumas, Sierra, Lassen, and Washoe Counties would continue to be unserved or underserved by a wireless broadband network. Other communities and anchor institutions that would be served by the Proposed Action would likely continue to be unserved or underserved by high-speed broadband. Future California and Nevada interconnection of major Public Safety Answering Points, future statewide public safety networks, and a future California Telehealth Network connection of health facilities in the Proposed Action's 4-county service area would not be possible. Under the No Action Alternative, the BLM's Sierra Front Field Office in Carson City, NV, and the Eagle Lake Field Office in Susanville, CA would not amend or issue new right-of-way authorizations under the Federal Land Policy Management Act (FLPMA). The U.S. Forest Service's Plumas National Forest, Beckwourth Ranger District in Blairsden, CA, and Mt. Hough Ranger District in Quincy, CA would not amend or issue new right-of-way authorizations under the Federal Land Policy Management Act (FLPMA).

Alternative 1 – Combination of Aerial and Underground Installation of Fiber Cable (Preferred alternative)

This alternative includes installation of approximately 183 miles of fiber cable, with 162 miles of aerial installation on existing overhead electrical pole structures and 21 miles of underground installation of fiber conduit. The aerial portion of this alternative would follow the existing powerline corridors in existing federal and state/county/city ROWs and easements. The alternative would minimize effects on the environment, cultural and historical resources, biological resources, and disruption of traffic. Constructability of this alternative would be more efficient due to the constraints associated with the seasonal nature of construction activities in this climate and environment, and by utilizing existing power pole infrastructure.

New underground construction will occur for eight miles in the CALTRANS US395 ROW from Bordertown, Nevada to Hallelujah Junction, California; for approximately one mile in existing NDOT US395 ROW on BLM-administered land (if existing conduit is not utilized); and for seven miles in existing city/county/state ROWs within existing developed areas in California. For approximately five miles in the City of Reno, new fiber is proposed to be placed in existing conduits.

Alternatives Considered but Eliminated from Detailed Study

During the planning stages of the Project, PSREC considered using wireless technology to complete the network, or installing new infrastructure as an all-aerial or all underground network. The suitability and reliability of this technology would be compromised because of the

rugged and mountainous terrain of a large portion of the service territory and lack of line of sight. Additionally, this wireless technology would reduce the available bandwidths and speeds across the network and would not optimize the availability of the existing electrical infrastructure, existing ROWs, easements, and PSREC's 75 years of experience in operating and maintaining a wire-based network.

An alternative that would include an all aerial fiber installation was considered because the cost would be less than the preferred alternative. A significant number of PSREC's existing pole structures are over 30 years old and are scheduled for replacement in the near future. These distribution poles are typically not tall enough to support an additional conduit and would require immediate replacement which would result in additional ground disturbance and increased time for permitting activities.

An all underground fiber conduit installation would not maximize the use of existing infrastructure and would result in significant cost increases. Additionally, the environmental disturbance generated by this alternative would be unwarranted, disruptive, and intensely time consuming, which would not allow the Proponent to meet the aggressive time lines of the ARRA Grant.

These aforementioned alternatives would not meet the requirements for a successful and efficient implementation of the Project.

ENVIRONMENTAL CONSEQUENCES

After requisite literature searches and field surveys, the Proposed Action was determined to have low to moderate environmental consequences on the resources of the Project Area. The following table describes the resource and the effects.

Table ES-1: Summary of Environmental Consequences

Resource Issue	Alternatives	
	No Action	Proposed Action
Air Quality	No effect	Temporary and localized increases in criteria pollutant concentrations and GHG emissions would occur during install & construction. No air district thresholds would be exceeded. Up to 1681 metric tons total of CO ₂ would be emitted during construction period over 20 months. Less than significant project and cumulative effect.
Cultural Resources	No effect	A Class 3 intensive pedestrian survey was conducted. Known cultural resources eligible for the NRHP and California Register of Historic Resources to be avoided. Potential impacts to resources that may be discovered during construction would be minimized by applying committed protection measures. Less than significant project and cumulative effect. For inadvertent discoveries, an Inadvertent Discovery Plan (Plan) is proposed, see Appendix F.
Native American Religious Concerns	No effect	Correspondence and/or telephone calls to 38 tribal entities; 9 tribes responded; additional information sent to 3 tribes. Tribal monitor will be on site during 8 miles of construction in US395 ROW in CA; Plan proposed for inadvertent discoveries (Appendix F). See Tribal Consultation in Appendix A3 for Comments. No project or cumulative effect.
Environmental Justice	No effect	No project or cumulative effect
Prime Farmland	No effect	No project or cumulative effect
Flood Hazards	No effect	No project or cumulative effect
Geology, Minerals and Seismicity	No effect	The Proposed Action would result in the permanent disturbance of approximately 0.034 acres from vault placement and buildings. Potential effects to topography would be insignificant. All spoils would be used onsite. The potential for movement along faults and new landslides in the project area would be low. The potential for landslides would be low. Committed protection measures would minimize impacts from erosion or potential geologic shifts. Less than significant project and cumulative effect.
Soils	No effect	During construction, soils would be disturbed, mixed

Resource Issue	Alternatives	
	No Action	Proposed Action
		structurally, compacted, and exposed to wind or precipitation events, resulting in a temporary increase in potential soil erosion. These short-term impacts would be minimized by applying committed protection measures. Construction would temporarily disturb approximately 51.63 acres. Long-term disturbance would affect 0.034 acres of soils. Less than significant project and cumulative effect.
Noise	No effect	Construction, primarily underground installation, would create both intermittent and continuous noise; overall noise levels would be low to moderate. Committed protection measures would limit noise to daylight hours. Potential noise impacts would be short term during construction. Anticipated noise levels would range from 60 dBA up to infrequent peaks of 85-90 dBA at 50 feet during underground installation. Less than significant project and cumulative effect.
Human Health and Safety	No effect	Potential effects would be minimized by applying committed protection measures. Less than significant project and cumulative effect.
Fire Management	No effect	Committed protection measures would be implemented to minimize potential effects. Less than significant project and cumulative effect. See Construction Fire Plan, Appendix G.
Area of Critical Environmental Concerns (ACECs)	No effect	There are no Area of Critical of Environmental Concerns (ACECs), which are special management areas designated by BLM to protect significant historic, cultural, or scenic values; fish and wildlife resources; natural process or systems; and/or natural hazards, in the project area. The closest ACEC s are west (Susan River) and northeast (Willow Creek) of the project area.
Wilderness/WSA	No effect	Wilderness characteristics do not exist in the project area because the lands do not meet the naturalness criterion due to extensive surface disturbance of roads/highways, OHV network of trails, and do not meet the size criterion of 5,000 acres, or any of the size exceptions.
Biological Resources – T/E, State listed, Candidate Species	No effect	One federal-threatened species, Lahontan cutthroat trout, is known to occur in the Truckee River; federal-endangered Cui-ui is known to occur in the Truckee River downstream of the proposed project area. Since the project would cross the Truckee River in existing conduit located in a bridge; therefore the project will have no effect on Lahontan cutthroat trout or Cui-ui.

Resource Issue	Alternatives	
	No Action	Proposed Action
		<p>Less than significant project and cumulative effect.</p> <p>The federal-endangered Carson wandering skipper occurs around Honey Lake; however, there are no suitable areas of saltgrass habitat for Carson wandering skipper in the proposed project area, and there are no known records in the proposed project area. The project will have no effect on Carson wandering skipper. Less than significant project and cumulative effect.</p> <p>The project will have no effect on federal candidate species that occur in the region, or historically occurred in the region, consisting of Sierra Nevada yellow-legged frog, greater sage grouse, Pacific fisher, wolverine, and Webber's ivesia. There are no known records of these species in the proposed project area. Less than significant project and cumulative effect.</p> <p>California-endangered willow flycatcher and California-threatened Swainson's hawk occur in the project area. The project will have no effect on these two species with the implementation of avoidance measures. Less than significant project and cumulative effect.</p> <p>The project will have no effect on six other California-listed or candidate species that occur in the region, American peregrine falcon (CA-endangered), greater sandhill crane (CA-threatened), bank swallow (CA-threatened), wolverine (CA-threatened), Sierra Nevada red fox (CA-threatened), and Boggs Lake hedge-hyssop (CA-endangered). Less than significant project and cumulative effect.</p>
Biological Resources – T/E, State listed, Special Status, Candidate Species	No effect	<p><u>Vegetation Resources:</u> Surface disturbance from construction could directly affect vegetation and special status plant habitat by increasing soil erosion, mechanically impacting soils, and increasing the potential for establishment and spread of invasive and noxious weed species. Temporary construction activities on 62.12 acres would contribute to short-term effects. Committed protection measures would be implemented to minimize potential impacts to vegetation and to minimize noxious weeds. Less than significant project and cumulative effect.</p>

Resource Issue	Alternatives	
	No Action	Proposed Action
		<p><u>Special Status Species:</u> The proposed project area provides marginal or suitable habitat for 152 other special-status species (38 animals and 114 plant species) as designated by CDFG, NNHP, USFS, BLM, and CNPS. The implementation of the avoidance measures avoids effects to these species.</p> <p>Foraging and nesting habitat occurs in and adjacent to the project area for birds of protected under the Migratory Bird Treaty Act (MBTA). Implementation of the avoidance measures avoids effects to these species.</p> <p>Due to the committed environmental measures to minimize impacts to vegetation, short- and long-term effects would be low and incremental, and no population-level effects would be anticipated for any of the species with marginal habitat. Less than significant project and cumulative effect.</p> <p><u>Habitat Effects:</u> No direct or indirect impacts to aquatic resources would occur from construction or operation. Construction would temporarily disturb approximately 51.63 acres. Long-term impacts would affect 0.034 acres. Environmental committed protection measures would aid in minimizing impacts to native habitats from construction, minimize noxious weed infestations, and support final site reclamation for regional wildlife species. Less than significant project and cumulative effect.</p> <p>The project area does not occur in areas designated as Wilderness Study Areas or Wilderness Areas (BLM 2007, 2001). The small segments of BLM land traversed by the proposed project are generally close to major roadways and do not provide outstanding opportunities for solitude or a primitive nor an unconfined type of recreation. The proposed project occurs within existing utility ROW. Less than significant project and cumulative effect.</p>

Resource Issue	Alternatives	
	No Action	Proposed Action
		<u>Noise:</u> Effect to wildlife from increased noise levels would vary based on location, topography, type of noise source, levels and duration, and species' sensitivity. Protection measures for specific resources, such as nesting birds, would prevent or minimize disturbance during the breeding period. Less than significant project and cumulative effect.
Wetlands	No effect	No direct effects to wetlands as no construction in wetlands area; existing overhead construction avoids areas by spanning so indirect effects minimized to less than significant with mitigation measures. Less than significant project and cumulative effect.
Infrastructure	No effects	Construction in the existing ROWS will utilize committed protection measures to minimize potential effects. Less than significant project and cumulative effect.
Visual Resources	No effect	Construction would result in low short-term visual effects. Operation would not result in disruption of scenic vistas or degrade the overall character or quality of the area. Less than significant project and cumulative effect.
Land Use	No effect	The construction and operation of the Proposed Action would not conflict with any land use plans. No established communities would be divided by the Proposed Action. Less than significant project and cumulative effect.
Recreation	No effect	Construction could result in a temporary and minor increase in traffic, human presence, and noise impacts to recreational users but would be low and short term. Less than significant project and cumulative effect.
Socioeconomics	No effect	Positive and beneficial effects would result from the temporary increase in jobs, income, and spending during the 20-month construction period. Operation would increase the tax revenues received by Plumas, Sierra, Lassen Counties, California. Less than significant project and cumulative effect.

COMMENTS AND RESPONSES

Few comments have been received and are addressed in this Final EA/IS/MND as follows:

NEPA Comments and Responses

The BLM's Carson City, NV, Sierra Front Field Office, through the Nevada State Clearinghouse, (SAI#E2011-147) received comments from the Nevada State Historic Preservation Office (SHPO) and the Department of Wildlife (DOW). These comments are included in Appendix A1, Agency Comments.

Responses are as follows:

- BLM SFFO 1: Edited font size in Executive Summary.
- BLM SFFO 2: Did a global search for NHRP and replaced with NRHP.
- BLM SFFO 3: Per the White House – Indian Affairs Executive Working Group (WH-IAEWG) List of Federal Tribal Consultation Statutes, Orders, Regulations, Rules, Policies Manuals, Protocols and Guidance (January 2009) added NEPA regulation 40 CFR 1500-1508, and Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994).
- BLM SFFO 4: Per NTIA, Monitoring Discovery Plan replaces Programmatic Agreement in Appendix F.
- BLM SFFO 5: Deleted reference to Secretarial Order 3310 in Chapter 3
- BLM SFFO 6: Did a global search for NHRP and replaced with NRHP.
- BLM SFFO 7: Replaced last sentence in 2nd paragraph of Section 4.2 with BLM's recommended wording.
- BLM SFFO 8: Added 4.2.1 Native American Religious Concerns.
- BLM SFFO 9: Per NTIA, Monitoring Discovery Plan replaces Programmatic Agreement in Appendix F.
- BLM SFFO 10: Changed wording to comport with BLM's comment.
- BLM SFFO 11: Changed wording to comport with BLM's comment.
- NV SHPO 1: Map 2-1 is replaced to show the correct proposed areas of underground installation on US395; the typo was corrected.
- NV SHPO 2: The Class III intensive inventory report is nearing completion; edits are being made. Once completed, the Class III and data sheets will be forwarded to SHPO with a request for Section 106 concurrence. The BLM initiated a discussion with the NV SHPO on the determination of the APE.

- NV SHPO 3: The federal lead agency, NTIA, determined a PA is not required. However, the BLM requested an “Inadvertent Discovery Plan (Plan)” which has replaced the PA in Appendix F. This Plan is being circulated to the requisite agencies.
- NV DOW 1: Table 2-4, Committed Mitigation Measures already included a seasonal cessation of construction activities during deer migration; however, for the Nevada portion of the project, the avoidance measure was expanded as noted in Biological-27, PSREC BMP.

CEQA Comments and Responses

The California Lead Agency for CEQA, the California Public Utilities Commission, through the California State Clearinghouse (SCH#2011052083) received comments from California State Lands Commission (CSLC) and the State of California Department of Transportation (Caltrans). These comments are included in Appendix A1, Agency Comments.

- CSLC 1: California State Lands Commission commented that the installation of additional improvements would require an amendment to the existing lease; however, if microwave technology is used to avoid improvements on the existing lease premises it needs to be stated in the EA/MND. Chapter 2, section 2.4.1 has been revised to utilize a wireless communication link on this portion of the project.
- CSLC 2: Ensure that potential impacts to biological resources in the CSLC jurisdiction are given full attention to determine if any species of concern use CLSC lands. PSREC ensures they are in compliance with all federal and state requirements (see Biological Committed Protection Measures 1 through 27 in Appendix B).
- CLSC 3: Recommend that the CSLC lease have specific language detailing the procedures for handling accidental discoveries of cultural resources on state lands under CLSC jurisdiction. PSREC ensures they are in compliance with all federal and state requirements (see Cultural Committed Protection Measures 1 through 4 in Appendix B).
- Caltrans: Concerned about encountering/damaging culverts and drainage facilities in the Caltrans ROW. PSREC to obtain a Caltrans Encroachment Permit for all work and traffic control to be done in the state highway ROW; and provide detailed information for each crossing as to the horizontal and vertical duct placement. Caltrans further recommends that an independent onsite full-time consultant engineering inspector be provided to document and inspect placement of the line. PSREC has committed to and will comply with all terms and conditions with the Caltrans Encroachment Permit.

Chapter 1
Purpose and Need

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1.0 PURPOSE AND NEED

INTRODUCTION

Plumas Sierra Rural Electric Cooperative (PSREC) is a member-owned electric cooperative that is required to provide electric and related services to its member owners in accordance with the reliability standards defined by the Rural Utilities Service (RUS), Federal Energy Regulatory Commission (FERC), North American Electric Reliability Corporation, and Western Electric Coordinating Council. It also must comply with the regulations of the California Independent System Operator (CAISO), under the direction of FERC. PSREC serves 6,500 customers in Lassen, Plumas, and Sierra counties in California, and the western edge of Washoe County in Nevada.

PROPONENT

PSREC, through its wholly owned subsidiary, Plumas Sierra Telecommunications (PST), provides a multitude of telecommunication services to this rural area, and has delivered internet service for more than 14 years.

ENVIRONMENTAL SETTING

The project area is located in northwestern Nevada and northeastern California, within the Diamond Mountains, which form the northeastern edge of the Plumas National Forest just as the Forest transitions into the Honey Lake/Long Valley high desert environment along the US395 north-south corridor. The northeastern edge of the Plumas National Forest is coterminous with the northeastern edge of Plumas County and the western edge of Lassen County. Susanville, California, is located on the northern boundary of the project area; Reno, Nevada forms the southern boundary; Quincy, California is located on the western boundary, and Red Rock Valley, Nevada is located on the eastern boundary of the Proposed Project Area.

Located along the eastern slopes of the Sierra Nevada mountain range, the mountain valleys and peaks located in this portion of California and Nevada are underlain mostly by rocks and soils that are of volcanic origin. (Mayer and Laudenslayer 1988).

The escarpment that shapes the northeast edge of the Plumas National Forest, the steep slopes of which create a vivid contrast in elevation with the Honey Lake Valley floor below, is formed by granitic rocks and soils. North exposures support mixed conifer stands with some Douglas fir, while ponderosa and Jeffrey pine occur in low volumes on south and east exposures. Understory vegetation is sparse in many areas and consists of manzanita, bitterbrush, sagebrush, mountain mahogany, and scattered black oak.

The project area is rural in character and there is little evidence of a built environment in the surrounding area. Farm houses, ranches and small settlements are scattered throughout the Honey Lake Valley, mostly concentrated along US 395. The area north of the Forest land is high desert, and though it includes grazing land, the California Correctional facilities, and the Sierra

Army Depot, in views north and northeast from within the project area it appears mostly undeveloped, arid and flat with large playa.

Photo 1-1: Caltrans Existing Maintenance Facility and Regen Building Site along State Route 70



Photo 1-2: Looking North from Location of Proposed Underground Fiber Installation at Edge of Fence from US 395, Southbound Lane



Map 1-1: Regional Overview Map



Plumas-Sierra Rural Electric Cooperative Fiber Optic Route
 Reno, Nevada to Susanville, CA
 and to Quincy CA
 4 April 2011

Figure 1-1. Regional Overview

- Fiber Overhead (OH)
- - - Fiber Underground (UG)
- PSREC Substation
- Critical Anchor Institution
- ▲ Staging Yards

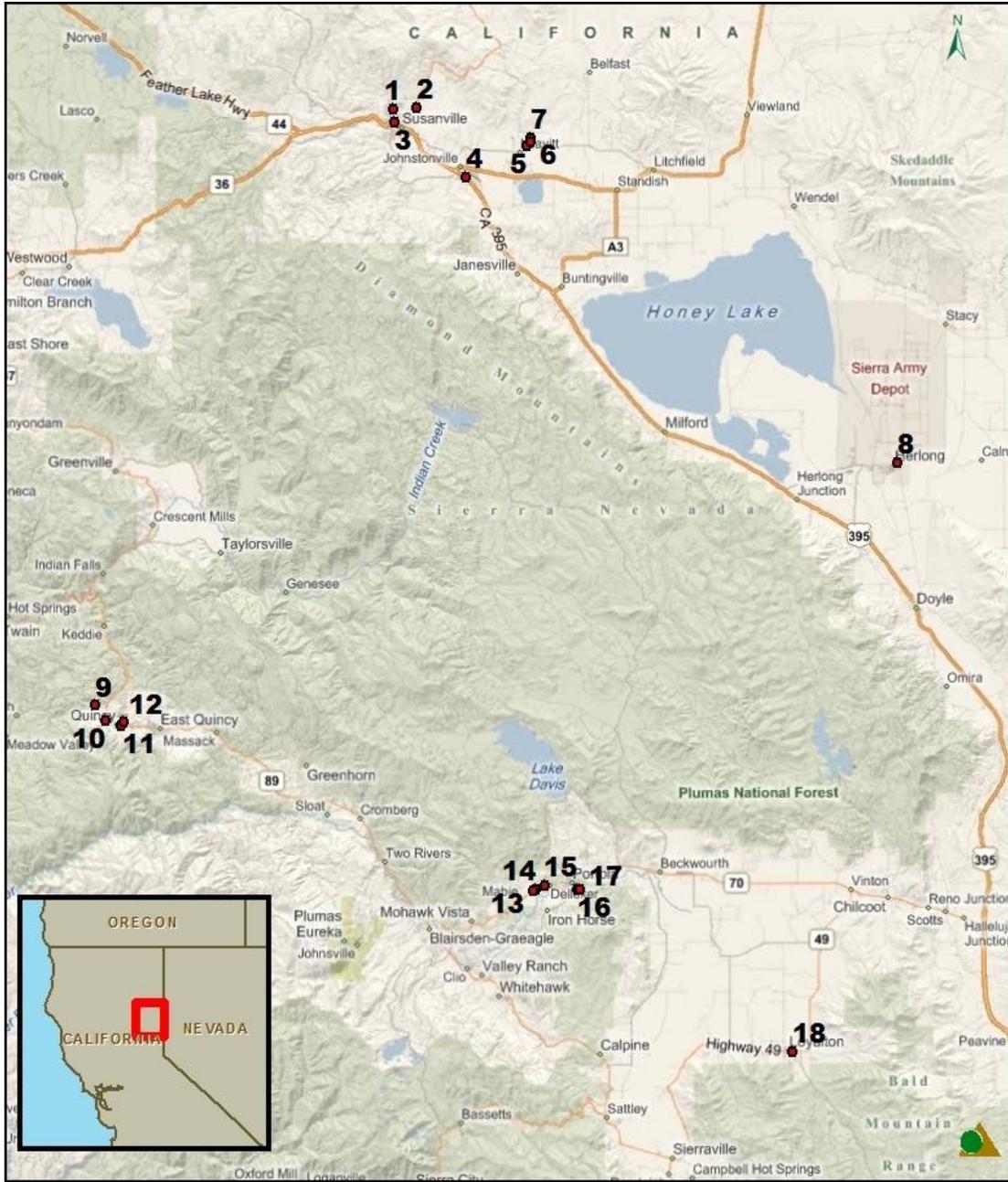


SYCAMORE
 Environmental
 Consultants, Inc.

Fiber Optics Alignment:
 PlumasFiber_040211.shp (2 April 11),
 StagingYards.shp (31 Mar 11), Substations.shp
 (6 Dec 10) By RBranner, GISDepot
 Basemap: World Physical Map
 ESRI ArcGIS Data Resource Center

10070 Fir1-1Regional Overview(Rx10).mxd

Map 1-2: Critical Anchor Institutions



Map Exhibit 1-2 BTOP Anchor Institutions

Susanville, California

- 1. Susanville Indian Rancheria
- 2. Lassen Community College
- 3. Windjammer Cable
- 4. Lassen Cnty Office of Edu.
- 5. California Correctional Cntr
- 6. High-Sierra Cogen Plant
- 7. High Desert Prison

Herlong, California

- 8. Sierra Army Depot

Quincy, California

- 9. Feather River College
- 10. Plumas District Hospital
- 11. Plumas Cnty Office of Edu.
- 12. United States Forest Service

Portola, California

- 13. Plumas Sierra REC
- 14. GotSKY
- 15. New Day Broadband
- 16. City of Portola
- 17. Eastern Plumas Health Care

Loyalton, California

- 18. City of Loyalton

PURPOSE AND NEED

Many of the community Critical Anchor Institutions (CAIs) in this rural area of northeastern California currently lack adequate access to the bandwidth required to support e-healthcare, advanced learning opportunities, economic development opportunities, and communication needs. PSREC plans to meet the broadband needs of these institutions by constructing 183 miles of new fiber for a middle mile network to deliver broadband speeds between 45 Mbps and 10 Gbps to anchor institutions and local internet service providers. In early 2010, PSREC contacted over 200 potential CAIs in CA; 18 institutions committed to participate. Among the 18 CAIs currently committed to connect to the PSREC-PST Mid-Mile Fiber Project's network are seven government facilities, two community colleges, county offices of education, two healthcare providers, an Indian Reservation Corporation, and state correctional facilities. Potential future CAIs in Nevada will be identified. Nevada Department of Transportation (NDOT) would meet its partnering goals and objectives with California Transportation Department (Caltrans) for maintenance and operations on US395 and I80. See Map 1-2.

The PSREC-PST Mid-Mile Fiber Project (Project) also proposes to:

- Facilitate more affordable and accessible broadband service for up to approximately 14,000 households, 2,100 businesses, and an additional 280 anchor institutions by enabling local internet service providers to utilize the project's open access network.
- Create a broadband path to support regional Next Generation 911 and other public safety services, and enable telemedicine at regional correctional facilities, allowing for annual prisoner transport savings of up to \$10,000 per prisoner seeking care.

The Project Proponent, anchor institutions and telecommunications providers found that:

1. Projects have been impeded by lack of affordable middle mile backhaul.
2. Anchor institutions, such as the Feather River Community College and Lassen Community College, suffer from lack of high speed middle mile facilities to connect to the Internet, and California State University facilities and campuses.
3. Telecommunications providers, such as Frontier Telecommunications, New Day Broadband, Windjammer Cable, and Got SKY Unlimited who are trying to expand to rural areas, suffer from lack of access to high speed, affordable middle mile connectivity to the national longhaul network.

After community wide discussions and deliberation, it became clear that this rural area of California needs the following:

1. To provide affordable high-speed backhaul to telecommunications providers and anchor institutions.
2. To make fiber transport available for carriers due to the low availability of rural broadband services.
3. To seek federal funding to build a fiber system since due to the current fiscal crisis neither the State nor the local governmental jurisdictions can provide the requisite funds.

For these reasons, PSREC applied to the federal government through the American Recovery and Reinvestment Act (ARRA) for a grant to build and to operate the Middle Mile Fiber System to construct sufficient fiber to meet foreseeable demand to all carriers and institutions at a standard, cost-based rate on "just, reasonable and not unreasonably discriminatory" terms. The Project involves implementing a regional middle mile network, which would be the foundation for intra- and inter-state connection and cooperation, as well as the core from which to extend broadband access to remote areas and enterprises in California's northeastern rural area. The Project would support the intent of ARRA to protect existing employment and to promote additional job opportunities.

The purpose of the Project is to develop an open access network and to provide reliable affordable, high speed broadband service to residents, businesses, and government facilities in this rural area of northeastern California and northwestern Nevada. Although satellite-based internet access is available in the proposed project area, it does not adequately support telecommuting, commerce, education, and medical technology needs.

REGULATORY PROCESS

FEDERAL

The National Telecommunications and Information Administration (NTIA), under the US Department of Commerce, is the federal lead agency responsible for preparation of the Environmental Assessment (EA). The BLM's Eagle Lake Field Office in Susanville, CA and Sierra Front Field Office in Carson City, NV and the Plumas National Forest, Beckwourth Ranger District in Blairsden, CA and Mt. Hough Ranger District in Quincy, CA are coordinating and reviewing federal agencies.

STATE

The California Public Utilities Commission (CPUC) is the state lead agency under the California Environmental Quality Act (CEQA).

The Proposed Action requires the approvals presented in Table 5- 1.

RELATIONSHIP TO STATUTES, REGULATIONS, AND PLANS

The planning decision for this EA will be compatible with the following existing plans and policies of adjacent local, state, tribal, and federal agencies to the extent practical, and consistent with state and federal law and regulations.

- National Environmental Policy Act (NEPA)
- California Environmental Quality Act (CEQA)
- Federal Endangered Species Act (ESA)
- California Endangered Species Act (CESA)
- Federal Clean Water Act (CWA)
- Federal Clean Air Act (FCAA)

- National Historic Preservation Act (NHPA)
- Federal Land Policy and Management Act of 1976 (FLPMA)
- Eagle Lake Field Office Resource Management Plan, 2008
- Plumas National Forest Land and Resource Management Plan
- California Porter-Cologne Water Quality Control Act

PROCESSES

IDENTIFICATION OF ISSUES

On September 22, 2010, the California Governor's Office convened a meeting of the directors of most California State Agencies and the Round 2 Grant Recipients. At this meeting, the Governor's Chief of Staff formally requested the expedited cooperation of applicable state agencies to ensure a seamless and timely coordination that would allow the ARRA Grant Recipients to complete the requisite Environmental Assessment.

Since the September meeting, PSREC has had on-going meetings and coordination with the BLM, Eagle Lake and Carson City Field Offices, the Plumas National Forest, other federal and state regulatory and trustee agencies.

Scoping packets were distributed to regulatory agencies, city and county jurisdiction, Native American tribes, and interested individuals. The summary of agency comments may be found in Appendix A.

Issues identified during project scoping included the following:

- Cultural and historic resources protection
- Native American Religious Concerns

Other primary issues and concerns addressed:

- Air quality (fugitive dust and greenhouse gas [GHG] emissions during construction)
- Vegetation restoration
- Noxious and/or invasive weeds control
- Direct, indirect, short-term, and long-term impacts to wildlife resources
- Traffic control on federal, state, and local roads during construction

NEPA EA

This document constitutes the EA and contains a description of the Proposed Action, description of the existing environment, identification of environmental consequences or impacts, and mitigation measures.

ADOPTION OF THE EA/PROJECT CONSIDERATION

NTIA will review and consider information contained in the EA. If NTIA finds that the EA is “adequate and complete,” it will “adopt” the EA. The rule of adequacy generally holds that the EA can be adopted if: 1) it shows a good faith effort at full disclosure of environmental information and 2) it provides sufficient analysis to allow decisions to be made regarding the project in contemplation of its environmental consequences.

Upon review and consideration of the EA, NTIA may take action to approve, revise, or reject the Proposed Action. A decision to approve the Proposed Action will be accompanied by written findings in accordance with 40 Code of Federal Regulations (CFR) 1503.4.

The two BLM Field Offices and two U.S. Forest Service (USFS) Ranger Districts would also grant right of way authorizations under the Federal Land Management Policy Act (FLMPA). Both BLM offices must adopt the EA and issue FONSI and execute Decision Records prior to issuing a Notice to Proceed (subject to the terms and conditions of the grant) for granting the ROW. The two USFS Ranger Districts intend to issue a Categorical Exclusion and Decision Memo prior to issuing the ROW grant authorization and Special Use Permit.

FINDING OF NO SIGNIFICANT IMPACT

In accordance with NEPA and the Council on Environmental Quality (CEQ) Guidelines, the primary purpose of conducting an EA is to determine whether a proposed action would have a significant impact on the human environment and, therefore, require the preparation of an Environmental Impact Statement (EIS). As defined in 40 CFR 1508.13, the Finding of No Significant Impact (FONSI) is a document that briefly presents the reasons why an action would not have a significant effect on the human environment. The regulations further define the term “significantly” in 40 CFR 1508.27 and require that the context and intensity of impacts be considered in analyzing significance, as the following describes further:

- **Context.** The significance of an action must be analyzed in several contexts, such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance usually depends upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.
- **Intensity.** This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered while evaluating intensity:
 - Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that the overall effect would be beneficial.
 - The degree to which the Proposed Action affects public health or safety.
 - Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

- The degree to which the effects on the quality of the human environment are likely to be highly controversial.
- The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
- Whether the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
- Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
- The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places (NRHP) or may cause loss or destruction of significant scientific, cultural, or historical resources.
- The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the ESA of 1973.
- Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.” (40 CFR 1508.27)

RELATIONSHIP TO CEQA GUIDELINES

The Proposed Action also is subject to the requirements of CEQA, based on the administration by the CPUC the 10% match of California Advances Services Fund (CASF) for the PSREC-PST Mid-Mile Fiber Project. The CPUC endorses the format for the environmental documents being prepared for the PSREC projects: A NEPA EA with a CEQA attachment. The CEQA attachments will also contain introductory and regulatory framework language that will serve to introduce the documents and describe its function in California. CPUC anticipates that the impacts of each project can be fully mitigated, and that the CEQA attachments will be in the form of a Mitigated Negative Declaration (MND) for each project. The MND would be used by agencies in California acting as Responsible Agencies pursuant to CEQA.

When CEQA documents are ready for public review, the CPUC will publish them for 30 days of comment. Upon closure of the comment period, the CPUC will make any necessary revisions to the CEQA documents and prepare a Resolution for the Commission to adopt the MNDs by a vote. The Final Mitigated Negative Declarations voted on by the Commission will be used by other California agencies responsible for granting permits for this project. (See Appendix A, letter dated January 18, 2011 from CPUC).

The CEQA document was posted on the PSREC webpage at www.psrec.coop/ceqa.php on May 3, 2011 for a 30-day public comment period; a Notice of Availability/Notice of Intent to Adopt a Mitigated Negative Declaration for the Mid-Mile Fiber Project in Plumas, Lassen, and Sierra Counties, California, was sent via Federal Express to 21 local, state and federal agencies. The CEQA Lead Agency, CPUC, mailed CDs to the California State Clearinghouse and the public comment period was extended to June 15, 2011.

The BLM NEPA document, Mid-Mile Fiber Project EA (DOI-BLM-NV-C020-2011-0008-EA) and Draft FONSI were posted on the BLM's Sierra Front Field Office (SFFO), Carson City, NV, website (www.blm.gov/nv/st/en/fo/Carson_City_field/blm_information/nepa/mid-mile_fiber_optic) for a 30-day public comment period ending on June 10, 2011.

1.8 Comments and Responses

Few comments have been received and are addressed in this Final EA/IS/MND as follows:

1.8.1 NEPA Comments and Responses

The BLM's Carson City, NV, Sierra Front Field Office, through the Nevada State Clearinghouse, (SAI#E2011-147) received comments from the Nevada State Historic Preservation Office (SHPO) and the Department of Wildlife (DOW). These comments are included in Appendix A1, Agency Comments.

Responses are as follows:

BLM SFFO 1: Edited font size in Executive Summary.

BLM SFFO 2: Did a global search for NHRP and replaced with NRHP.

BLM SFFO 3: Per the White House – Indian Affairs Executive Working Group (WH-IAEWG) List of Federal Tribal Consultation Statutes, Orders, Regulations, Rules, Policies Manuals, Protocols and Guidance (January 2009) added NEPA regulation 40 CFR 1500-1508, and Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994).

BLM SFFO 4: Per NTIA, Monitoring Discovery Plan replaces Programmatic Agreement in Appendix F.

BLM SFFO 5: Deleted reference to Secretarial Order 3310 in Chapter 3

BLM SFFO 6: Did a global search for NHRP and replaced with NRHP.

BLM SFFO 7: Replaced last sentence in 2nd paragraph of Section 4.2 with BLM's recommended wording.

BLM SFFO 8: Added 4.2.1 Native American Religious Concerns.

BLM SFFO 9: Per NTIA, Monitoring Discovery Plan replaces Programmatic Agreement in Appendix F.

BLM SFFO 10: Changed wording to comport with BLM's comment.

- BLM SFFO 11: Changed wording to comport with BLM's comment.
- NV SHPO 1: Map 2-1 is replaced to show the correct proposed areas of underground installation on US395; the typo was corrected.
- NV SHPO 2: The Class III intensive inventory report is nearing completion; edits are being made. Once completed, the Class III and data sheets will be forwarded to SHPO with a request for Section 106 concurrence. The BLM initiated a discussion with the NV SHPO on the determination of the APE.
- NV SHPO 3: The federal lead agency, NTIA, determined a PA is not required. However, the BLM requested an "Inadvertent Discovery Plan (Plan)" which has replaced the PA in Appendix F. This Plan is being circulated to the requisite agencies.
- NV DOW 1: Table 2-4, Committed Mitigation Measures already included a seasonal cessation of construction activities during deer migration; however, for the Nevada portion of the project, the avoidance measure was expanded as noted in Biological-27, PSREC BMP.

CEQA Comments and Responses

The California Lead Agency for CEQA, the California Public Utilities Commission, through the California State Clearinghouse (SCH#2011052083) received comments from California State Lands Commission (CSLC) and the State of California Department of Transportation (Caltrans). These comments are included in Appendix A1, Agency Comments.

- CSLC 1: California State Lands Commission commented that the installation of additional improvements would require an amendment to the existing lease; however, if microwave technology is used to avoid improvements on the existing lease premises it needs to be stated in the EA/MND. Chapter 2, section 2.4.1 has been revised to utilize a wireless communication link on this portion of the project.
- CSLC 2: Ensure that potential impacts to biological resources in the CSLC jurisdiction are given full attention to determine if any species of concern use CLSC lands. PSREC ensures they are in compliance with all federal and state requirements (see Biological Committed Protection Measures 1 through 27 in Appendix B).
- CLSC 3: Recommend that the CSLC lease have specific language detailing the procedures for handling accidental discoveries of cultural resources on state lands under CLSC jurisdiction. PSREC ensures they are in compliance with all federal and state requirements (see Cultural Committed Protection Measures 1 through 4 in Appendix B).

Caltrans: Concerned about encountering/damaging culverts and drainage facilities in the Caltrans ROW. PSREC to obtain a Caltrans Encroachment Permit for all work and traffic control to be done in the state highway ROW; and provide detailed information for each crossing as to the horizontal and vertical duct placement. Caltrans further recommends that an independent onsite full-time consultant engineering inspector be provided to document and inspect placement of the line. PSREC has committed to and will comply with all terms and conditions with the Caltrans Encroachment Permit.

Chapter 2
Description of the Proposed Action

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Description of the Proposed Action

INTRODUCTION

The Plumas Sierra Rural Electric Cooperative (PSREC) is proposing to build, operate, and maintain a 183-mile fiber optic communications network (the “Proposed Action” for purposes of the National Environmental Policy [NEPA] and the “Proposed Project” for purposes of the California Environmental Quality Act [CEQA], hereinafter referred to as the Proposed Action) in northeastern California and northwestern Nevada. The proposed network would provide access capabilities for the following three California counties: Plumas, Sierra, and Lassen Counties, California. The proposed network would also accommodate future statewide interconnection of major Public Safety Answering Points, a future California statewide and Nevada public safety network.

Of the approximately 183 miles of proposed new fiber cable installation, 162 miles would be placed on existing pole infrastructure, the remaining 21 miles would be installed underground in conduit. Underground construction will occur for eight miles in the CALTRANS US395/SH70 ROW from Bordertown, Nevada to one-quarter mile west of Hallelujah Junction, California; for approximately one mile in existing NDOT US395 ROW on BLM-administered lands (if existing conduit cannot be utilized); and for seven miles in existing city/county/state ROWs within existing developed areas in California. For approximately five miles in the City of Reno, new fiber is proposed to be placed in existing conduits.

NATIONAL ENVIRONMENTAL POLICY ACT AND CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENTS

This document is a joint Environmental Assessment (EA) prepared in accordance with NEPA and an Initial Study/Proposed Mitigated Negative Declaration (IS/Proposed MND) prepared in accordance with CEQA. The NEPA and CEQA requirements and the roles of the federal and state lead agencies are described below.

NATIONAL ENVIRONMENTAL POLICY ACT

The National Telecommunications and Information Administration (NTIA) of the U.S. Commerce Department is proposing to provide partial funding to plan and construct the Proposed Action. Funding would be authorized under the American Recovery and Reinvestment Act (ARRA). Proposed ARRA funding of the Proposed Action by the NTIA would be a discretionary federal action which triggers the requirement to comply with NEPA. NTIA is the federal lead agency under NEPA (40 Code of Federal Regulations [CFR] 1501.5) because NTIA would provide substantial funding for the project.

The two Bureau of Land Management (BLM) Field Offices and two U.S. Forest Service (USFS) Ranger Districts would also grant right of way authorizations under the Federal Land Management Policy Act (FLMPA). Both BLM offices must adopt the EA and issue FONSI and execute Decision Records prior to issuing a Notice to Proceed (subject to the terms and conditions of the grant) for granting the ROW for 11.12 miles of overhead cable to be hung on existing pole structures in CA, 2.75 miles of underground installation in the Caltrans US395

ROW, and 1.3 miles of underground installation in the NDOT US395 ROW. The two USFS Ranger Districts intend to issue a Categorical Exclusion and Decision Memo prior to issuing the ROW grant authorization for 13 miles of fiber cable placed on existing power line structures.

Before approval of the Proposed Action, NTIA, BLM, and USFS must comply with NEPA and the regulations published by the Council on Environmental Quality (CEQ) (40 CFR 1500–1508). This document serves as an EA, prepared in accordance with NEPA and associated NTIA Guidelines. An EA is a concise document, prepared with input from various disciplines and interested parties that provides sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). As required under NEPA, this EA provides information describing the Proposed Action, No-Action Alternative, and related environmental consequences and proposed mitigation measures.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Public Utilities Commission (CPUC) through California Advanced Services Fund (CASF) is administering a 10% matching grant from CASF to PSREC for the deployment of broadband infrastructure in unserved and underserved areas of California. PSREC is providing 10% matching funds, and 80% of funds would be obtained from the NTIA. As a discretionary action, CPUC authorization of the matching funds grant, which is a part of the Proposed Action, triggers the need to comply with CEQA. This document includes an IS/Proposed MND prepared in accordance with CEQA, California Public Resources Code Section 21000 et seq., and the State CEQA Guidelines, as amended Title 14 of the California Code of Regulations (CCR) Section 15000 et seq. The purpose of this Initial Study (IS) is to (1) determine whether project implementation would result in potentially significant or insignificant effects to the physical environment, and (2) incorporate mitigation measures into the project design, as necessary, to avoid or eliminate the proposed project’s potentially significant, or insignificant, project effects, or reduce them to a less-than-significant level. An IS presents an environmental analysis and substantial evidence supporting its conclusions regarding the significance of environmental impacts. Substantial evidence may include expert opinion based on facts, technical studies, or reasonable assumptions based on facts. An IS is not intended nor required to include the level of detail used in an Environmental Impact Report (EIR).

CEQA requires that all State and local government agencies consider the environmental consequences of projects they propose to carry out, or over which they have discretionary authority, before implementing or approving those projects. As specified in State CEQA Guidelines CCR Section 15367, the public agency with the principal responsibility for carrying out or approving a project is the lead agency for CEQA compliance. CPUC is therefore the CEQA lead agency for the Proposed Action because of its overall State role for the matching grant and for authorizing the Proposed Action.

As specified in State CEQA Guidelines CCR Section 15064(a), if substantial evidence exists (such as the results of an IS) that a project, either individually or cumulatively, may have a significant effect on the physical environment, the lead agency must prepare an EIR. The lead agency may instead prepare a Negative Declaration (ND) or Mitigated Negative Declaration (MND) if it is determined that the project would have no potentially significant or insignificant

effect on the physical environment, or that revisions made to the project have been made, or agreed to by the applicant that mitigate the potentially significant and insignificant impacts to a less than significant level.

STATE CEQA GUIDELINES CCR SECTION 15064[F]

CPUC has prepared this IS to evaluate the potential environmental effects of the Proposed Action and has incorporated into the proposed project “Environmental Protection Measures” designed to avoid, eliminate, or reduce potentially significant and insignificant impacts to less-than-significant levels. Therefore, CPUC has prepared a Proposed MND. Although a ND could be prepared because all mitigation measures have been incorporated into the proposed project as Environmental Protection Protocols, CPUC is preparing an MND because revisions to the project have been made and agreed to by the project proponent and a Mitigation Monitoring and Reporting Program will be prepared to ensure that the Environmental Protection Protocols are implemented during project construction.

REGIONAL LOCATION

The Proposed Action would occur mainly in rural, northeastern California and portions of northwestern Nevada, from the City of Reno north along US395 and westerly along SR 70. See Map 2-1. The construction route will follow the corridor of PSREC’s existing electrical powerline infrastructure. This route primarily follows local, state, and federal roads and highways, both urban and rural, connecting the Critical Anchor Institutions (CAIs) (see Section 2.5.1, “Existing Facilities” below for further information), and focusing on educational, institutional, federal, state, local governmental, and tribal facilities in each of the three California counties and Washoe County, Nevada described below.

PROJECT LOCATION

As described above, the fiber route traverses three California counties in northeastern California (Map 2-1) and a portion of northwestern Washoe County, Nevada. The route alignment would cross federal lands, including lands administered by the Bureau of Land Management (BLM) and the Plumas National Forest. The Project Proponent, PSREC, holds existing grant of right of way authorizations from the BLM and the USFS for their electrical power infrastructure. Both federal land agencies intend to issue a new authorization for the fiber cable which they consider a different use or system than the electrical system. Past construction projects have been authorized and approved under both NEPA and CEQA.

PLUMAS, SIERRA, AND LASSEN COUNTIES, CALIFORNIA

Quincy, CA to Bordertown, NV

In California, the westernmost CAIs are located in the town of Quincy. Underground construction through Quincy would occur for 4.58 miles in existing developed areas; at the eastern boundary of Quincy, the fiber cable would transition to PSREC’s existing overhead transmission line in the SR 70 ROW. Continuing along SR 70 ROW, the fiber cable would be hung overhead from existing infrastructure as it traverses the Plumas National Forest until reaching the City of Portola. In Portola, a lateral alignment is proposed to go underground in

existing city/county/state ROWs. Several construction alternatives are being evaluated for the crossing of the Middle Fork of the Feather River, a Wild and Scenic River, including an under deck attachment to the existing Gulling Street bridge, or hang on existing utility poles adjacent to Gulling Street.

Following the alignment and attached to the existing transmission line along SR 70 to Hallelujah Junction, the route would continue eight miles south along US395 to Bordertown, Nevada in the Caltrans US395 ROW corridor as an underground conduit. An authorization from the BLM for a 20-foot wide ROW for underground installation on 2.75 miles of Caltrans US395 ROW is requested.

Northern Route to City of Susanville, CA

Approximately 0.25 miles west of Hallelujah Junction, the proposed fiber alignment would follow and hang from the existing 69kV Long Valley Transmission Line which travels in a northwesterly direction in the US395 corridor. The existing overhead electrical power line and existing access road(s) occupy an authorized 20- to 40-foot ROW in the 11.12 miles of existing ROW for overhead pole structures on BLM lands.

Photo 2-1: Looking East to US395 Toward Sand House (Regeneration Site)



Photo 2-2: Looking South from Inside Construction Yard at Chilcoat (Staging Area)



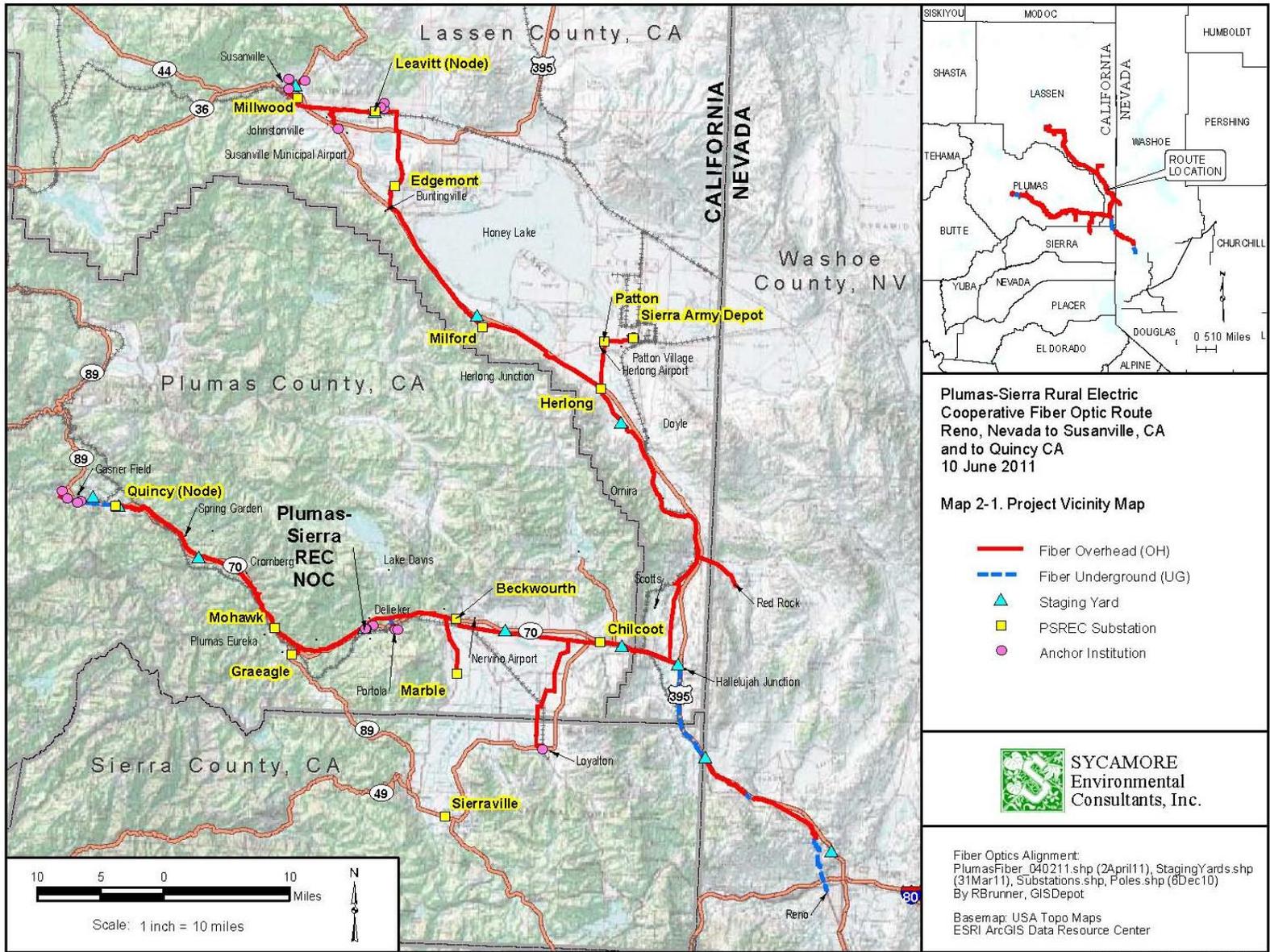
Photo 2-3: Leavitt Substation, Looking West (Node)



Photo 2-4: Quincy Substation #2, Looking Easterly (Node)



Map 2-1: Project Vicinity Map



Plumas-Sierra Rural Electric Cooperative Fiber Optic Route Reno, Nevada to Susanville, CA and to Quincy CA
10 June 2011

Map 2-1. Project Vicinity Map

- Fiber Overhead (OH)
- - - Fiber Underground (UG)
- ▲ Staging Yard
- PSREC Substation
- Anchor Institution



Fiber Optics Alignment:
PlumasFiber_040211.shp (2April11), StagingYards.shp (31Mar11), Substations.shp, Poles.shp (8Dec10)
By RBrunner, GISDept

Basemap: USA Topo Maps
ESRI ArcGIS Data Resource Center

10070 Map 2-1 Index/06/10/11.mxd

Table 2-1. Route Segment Summary

Trunk Line Segments and Laterals to Critical Anchor Institutions ^a	Overhead Length (mi)	Underground Length (mi)	# of Vaults ^c	Route Book Sheet #
US 395 Corridor				395A- 395R
Reno, NV Old 395 Business Loop to CA/ NV Stateline	10.57	0.95	2	395A-395C
Old 395 Business Loop to Peering Point at 200 S Virginia	0.0	4.65	7	395A-395C
CA/ NV Stateline to Hallelujah Junction	0.0	8.09	12	395C-395E
Hallelujah Junction to Herlong Substation	27.0	0.0	0	395E-395K
Red Rock Fire Department Lateral	3.95	0.0	0	395G
Herlong Substation to Patton Substation	4.22	0.0	0	395K
<i>CAI#8 Sierra Army Depot Substation</i>	2.10	0.0	0	395K
Herlong Substation to Milford Substation	10.94	0.0	0	395J-M
Milford Substation to Edgemont Substation	14.09	0.0	0	395M-P
Edgemont Substation to Leavitt Substation	8.23	0.0	0	395P
<i>CAI#6 High Sierra Co-Gen Plant</i>	0.0	0.0	0	395Q
<i>CAI#5 California Correctional Center</i>	0.0	0.0	0	395Q
<i>CAI#7 High Desert Prison</i>	0.0	0.0	0	395Q
Leavitt Substation to Susanville Substation	6.98	0.0	0	395P-395R
<i>CAI#4 Lassen CoE Lateral</i>	1.85	0.0	0	395Q-395R
<i>CAI#3 Windjammer Cable Co. Lateral</i>	1.44	0.0	0	395R
<i>CAI#2 Lassen College Lateral</i>	1.98	0.0	0	395R
<i>CAI#1 Susanville Indian Rancheria Lateral</i>	0.0	0.81	1	395R
SR 70 Corridor				395E and 70A-70L
Hallelujah Junction to Chilcoot Substation	5.91	0.0	0	395E
Chilcoot Substation to Beckwourth Substation	12.21	0.0	0	70A-70F
<i>CAI#18 City of Loyalton Lateral</i>	10.43	0.0	0	70B-70C
Beckwourth Substation to Mohawk Substation	16.05	0.0	0	70E-I
Marble Substation Lateral	4.65	0.0	0	70F
<i>CAI#16 City of Portola Lateral</i>	0.11	1.11	2	70G
<i>CAI#17 Eastern Plumas Health Care Lateral</i>	0.0	0.27	0	70G
<i>CAI#15 New Day Broadband Cable Co. Lateral</i>	0.33	0.0	0	70G
<i>CAI#14 Got SKY (Colocated at CAI#17)</i>	0.0	0.0	0	70G
<i>CAI#13 PSREC NOC ^b Lateral</i>	0.14	0.0	0	70G
Graeagle Substation Lateral	0.99	0.0	0	70H

Trunk Line Segments and Laterals to Critical Anchor Institutions ^a	Overhead Length (mi)	Underground Length (mi)	# of Vaults ^c	Route Book Sheet #
Mohawk Substation to Quincy Substation	17.48	0.0	0	70I-70L
<i>CAI#12 USFS Quincy Lateral</i>	0.0	2.81	4	70L
<i>CAI#11 Plumas CoE Lateral</i>	0.0	0.39	1	70L
<i>CAI#10 Plumas District Hospital Lateral</i>	0.0	0.86	1	70L
<i>CAI#9 Feather River College Lateral</i>	0.38	0.52	1	70L
TOTALS:	162.03	20.46	31	--

^a Critical Anchor Infrastructure (CAI)

^b NOC = Network Operating Center

^c Estimated Number of Underground Vaults (=UG miles x 5,280ft /3,500ft)

At Red Rock Road, approximately nine miles north of Hallelujah Junction, a fiber lateral would follow the existing PSREC overhead distribution line for four miles and would cross the CA/NV border, and into the rural community of Red Rock.

Approximately 17 miles north of Red Rock Road, at the existing Herlong Substation #1, a wireless communication link will occur to the existing Patton Substation, and existing Fiber will be utilized.

The main fiber route continues overhead as it follows the existing 69kV transmission line in the US395 corridor for approximately 23 miles to Janesville. At Janesville, the existing powerline corridor moves approximately five miles east of the US395 corridor and continues in the existing powerline ROW for ten miles to the Leavitt Substation. At Leavitt Substation, there is an existing dark fiber conduit hanging from the 69kV line to the High Sierra Co-Generation plant/California Correctional Facility/High Desert Prison, a distance of one mile. As part of this NTIA project, the dark fiber will be lit.

The main fiber route continues overhead as it follows the existing powerline corridor from Leavitt Substation west along the county road ROW for three miles to where it intersects at Travis Lane with Lassen Municipal Utility District (LMUD) 60kV overhead transmission line. The fiber would remain overhead on LMUD's transmission line, which is partially located along the abandoned railroad ROW, and would cross SH 36 to LMUD's Millwood Substation in the City of Susanville, a distance of approximately four miles.

At the Millwood Substation, the cable would remain overhead along city ROWs and would turn west on SR 36 to follow Main Street to Weatherlow Street. At this location, the route would follow City ROWs past LMUD's Chestnut Substation, to an existing utility corridor near the Lassen Cemetery, where one lateral turns north for approximately one-half mile, and then turns west to the Susanville Indian Rancheria (SIR) Diamond Mountain Casino and Hotel.

The other lateral would continue east until reaching SR 139, then turning north and running overhead on LMUD powerlines for approximately 1.5 miles and terminating on the eastern edge of the Lassen Community College campus.

From the LMUD take off on Travis Lane, a south lateral along county road ROWs would terminate at the Lassen County CoE across the road from the Susanville Municipal Airport, a distance of approximately 2 miles.

Southern Lateral Routes to Graeagle Substation, Marble Substation, and City of Loyaltan, CA

From SR 70 near Blairsden and east of SR 89 intersection, the fiber lateral would follow the existing PSREC overhead 69kV transmission line corridor in county/state roads ROWs for approximately one mile to the Graeagle Substation on the Graeagle-Blairsden Road.

From SR 70 near Beckwourth, a south overhead lateral would follow Plumas County Road A-23 in the existing power line corridor and county road ROW to the Marble Substation, a distance of approximately five miles.

From SR 70 near Chilcoot, a south overhead lateral would follow PSREC's existing distribution line for approximately five miles to Plumas County Road A-24, then along the county road ROW for five miles to north Loyalton. At this juncture, the fiber cable would stay overhead in the A-24 County Road ROW for approximately one mile; thence following city/county/state road ROWs to the City of Loyalton offices.

WASHOE COUNTY, NEVADA

From Bordertown, Nevada south to the Old US395 Business Loop in the City of Reno, the cable would be installed on existing power line poles, except for about one mile of underground installation on BLM-administered lands in the NDOT US395 ROW; there is existing underground conduit in this one-mile reach and currently negotiations are proposed to utilize the existing conduit. The conduit connects to an existing fiber cable backbone in existing city/state ROWs to the peering point on S. Virginia St, a distance of approximately five miles.

DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action would provide new fiber-based infrastructure in 183 route miles (Map 2-1). This route includes approximately eight miles of new underground construction in Caltrans US395 ROW, one mile of new underground construction in NDOT US395 ROW administered by the BLM (if the existing conduit cannot be utilized), seven miles of underground construction in existing city/county/state ROWs in existing developed areas, five miles of new fiber to be placed in existing conduits in the Reno area, and use of 162 miles of existing utility pole infrastructure, thus providing unserved and underserved users in the project service area access to robust, state of the art broadband services.

EXISTING FACILITIES AND CONNECTION TO EXISTING FACILITIES

Existing PSREC overhead electrical powerline pole structures are proposed to be used for 148 miles of the 183 mile proposed route. Of the remaining 35 miles, 14.03 miles of existing poles of other utility companies would be used with 21 miles proposed as new underground conduit. Proposed new underground construction would occur within the Caltrans US395/SH70 ROW for eight miles between Bordertown, Nevada and one-quarter mile west of Hallelujah Junction, California, which is the intersection with SR 70, and for one mile in the NDOT US395 ROW on BLM-administered lands (if existing conduit cannot be utilized). Centralized network management facilities would be located at existing PSREC headquarters or substations and would be capable of jointly or individually managing facilities across the entire PSREC network should any facility become unavailable due to unforeseen circumstances or disasters.

In addition to the use of existing infrastructure, conduits and existing fiber, the project would connect to CAIs and to future cellular towers.

CRITICAL ANCHOR INSTITUTIONS (CAIs)

Interconnection points along the proposed route would be provided, allowing for services to be extended to CAIs including, but not limited to state and federal facilities, Department of Defense reservations, county offices of education, community colleges, libraries, hospitals, public safety

institutions, tribal reservations, and other future customers in CA and NV (see Map 1-2 for list of CAIs).

CELLULAR TRANSMISSION TOWERS

Fixed wireless access would be provided in the future to unserved and underserved rural areas of Plumas, Sierra, and Lassen Counties, California, and would deliver capacity through fiber connection to future cellular towers.

PROPOSED FACILITIES

NEW FIBER CONDUIT

In California, approximately eight miles of new underground fiber conduit would be installed along US395/SH70 Caltrans ROW; in Nevada, on BLM-administered lands within the US395 NDOT ROW for approximately one mile would be installed (if the existing conduit cannot be utilized). An additional five miles of new fiber would be installed in existing conduit and would not generate new ground disturbance. In the areas of new underground construction, three conduits with microducts would be installed approximately 36-42 inches below the existing ground surface. Each of the three conduits would be approximately 1.0-inch diameter standard dimension polyethylene pipe. To access the cable for Operation and Maintenance (O&M) activities, 4'x4'x4' pre-fabricated concrete below-ground vaults located approximately every 2,500-4,500 feet would be constructed.

Dependent upon variations in geology, route accessibility, terrain or environmental issues, the proposed cable construction may include the following construction methods: Cable Plowing (a vibrating blade to split the ground, cut a narrow slit to insert a bundle of conduit); Horizontal Directional Drill (HDD), a type of trenchless boring whose benefits include less traffic disruption, deeper installations, shorter completion times, and safety; trenching (temporarily open trenches and backfill as the conduit is immediately placed). With utilization of any of the aforementioned methods, the maximum trench width would be 2 feet in the existing nine-miles of highway ROW, with a typical depth of 4 feet in existing ROW and in CALTRANS and NDOT ROW, 36-42" of cover would be required. Ground disturbance would be approximately 4.96 acres. HDD would occur in the US395 CALTRANS and NDOT ROW in at least 20 locations, including highway access crossings.

Network Operating Centers and Nodes

One Network Operating Center (NOC), one re-generation site which would boost the fiber light signal, and two secondary/ancillary nodes would be required along the 183 mile proposed route. With the exception of the proposed re-generation site at the Caltrans maintenance facilities at the SR70 and US395 intersection, all of the sites would be located in existing buildings and/or facilities. The PSREC offices in Portola, California would house the NOC which would require round-the-clock monitoring and surveillance. The secondary nodes housing equipment are proposed to be 12'x20' pre-fabricated modular units to be installed at the existing PSREC Quincy #2 Substation located on SR70 and the existing PSREC Leavitt Substation. See Figure 2-1.

Installation on Existing Overhead Structures and New Underground Construction

Temporary Ground Disturbance

Overhead cable would hang on 148 miles of existing PSREC electrical pole structures, and 14.03 miles of neighboring utility poles most of which follow existing roads or access roads; approximately 2,300 poles would have cable hung from the PSREC existing structures, and approximately 250 poles would have cable hung from existing poles of other utilities, all in compliance with wire and ground clearances as mandated by the National Electrical Safety Code. In environmentally-sensitive areas of steep terrain or difficult accessibility, primarily in the Plumas National Forest (PNF), approximately 30% of the approximately 260 poles on PNF lands, or approximately 80 poles would be accessed by an individual pole climbing and no bucket truck would be utilized. Where the project crosses BLM lands, PSREC will utilize the existing roads adjacent to the electrical power line for accessing poles with bucket trucks and pulling and tensioning equipment. The existing overhead electrical power line and existing access road(s) occupy an authorized 20- to 40-foot ROW. In the 11.12 miles of existing ROW for overhead pole structures on BLM lands, it is estimated there would be 0.25 acres of disturbance in the existing ROW for the pulling and tensioning sites. There would be other locations along the route ROW where the pole would be climbed due to the efficiency of installing the conduit and in areas of rocky terrain. At each pole (approximately 2,470 poles) where cable is to be hung with the use of a bucket truck, approximately 200 sf of ground area would be utilized to set the cable, a total of approximately 11.34 acres of temporary ground disturbance within the existing ROWs. In addition, the pulling and tensioning construction activities along the 162.03 miles of existing overhead structures would comprise 1,000 sf per mile or approximately 3.72 acres. Along the 13.69-mile long US395 corridor, HDD in the approximate 20 locations along US395 would disturb a total of 960 sf (personal communication Praxis Associates Inc., William “Barney” Schwedler, January 2011). The footprint of the construction equipment used for trenching would disturb 16.59 acres. Thus, temporary ground disturbance in the existing ROWs would total approximately 51.63 acres.

Table 2-2: Short-Term Soil Disturbance (Temporary Construction)

Surface Disturbance by Construction Activity	Foot Print of Bucket Truck to Attach Cable to Pole (acres)	Cable Pulling & Tensioning (acres)	HDD (acres)	Trenching Cable (acres)	Staging Areas (acres)	Foot Print of Trenching Equipment (acres)	Total (acres)
Short-Term Disturbance	11.34	3.72	0.02	4.96	15.00	16.59	51.63

Table 2-3: Long-Term Soil Disturbance (Permanent Construction)

Surface Disturbance	Underground Vaults (acres)	Modular Buildings (Acres)	Angle Pole Ground Anchors (Acres)	Total Acres

Long-Term Disturbance	0.011	0.017	0.006	0.034
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Direct Connect CAI

A component of the grant application is the direct connection of Critical Community Infrastructure referenced here as CAI (Critical Anchor Institution). The PST Mid Mile Project proposes to directly connect 18 CAIs in California. Potential CAIs in Nevada will be identified in the future. Connection to CAIs would be accomplished by bringing the fiber optic cable to the property line of the CAI. The CAI will be responsible for identifying and providing the access from the property line to their communications room. The CAI is responsible for providing a secure 6'x8'x3/4" thick plywood back board with power for the fiber equipment to reside. Grant funds will provide for Layer 2 hand-off to the CAI.

Future Installations

As the need arises and budget is available, future installations, laterals, and additional fiber would be developed and constructed throughout the PSREC service territory and project area, including the cities and counties.

Future system upgrades would be accomplished by card addition or replacement at cabinets to meet future capacity requirements. Cabinets have been designed to accommodate future addition of card shelves.

DESCRIPTION OF CONSTRUCTION METHODS

UNDERGROUND INSTALLATION

Within urban areas, the conduit would be installed primarily by HDD with drilling access points spaced intermittently. Mid-block locations under existing sidewalks and/or intersections would be the preferred locations for access box placement. Typically, conduits would be installed up to 12 feet under street intersections to avoid concentrations of other existing utilities. Under some specific circumstances or due to the preference of a local jurisdiction, the conduit may be installed by cutting pavement, excavating a narrow trench, and backfilling and repaving the cut pavement.

In areas where existing conduit would be used to install new fiber optic lines, microducts and fiber would be air-jetted or blown into the existing conduit at existing access locations. Installation of fiber into existing conduits using these methods would not require any new ground disturbance, only access to existing buried boxes, and would require two vehicles and an air compressor.

In non-urban areas, the conduits would typically be installed using a plowing technique, where a tine incises the soil to a depth of approximately 48 inches below the existing ground surface and the conduits are placed in the incised slit at the same time. In areas where the soil matrix prohibits the use of plowing, a narrow trench would be excavated and the conduit would be placed at the bottom of the trench and the trench would be back-filled and compacted. In areas of

very narrow right-of-way, in areas where sensitive environmental resources or habitats need to be avoided, or where other circumstances dictate it may be necessary to trench the ground and install the conduits in a narrow trench. In such circumstances, the trench would be backfilled with slurry to ensure proper compaction and pavement integrity. Plowing is the preferred method of construction, where practicable and feasible.

The exact underground conduit installation location within road ROW will be determined based on several factors including: presence and location of sensitive environmental resources such as biological habitat, wetlands, drainages, and cultural resources; locations of existing buried utilities; constructability, and preference of jurisdictional agencies.

Several railroad crossings would also be necessitated by the proposed route alignment. Railroad alignments would be crossed with the use of HDD below the railroad tracks at a minimum of 18 feet below the base of the centerline of railroad tracks, or on existing overhead crossings for the electrical utility powerlines. HDD would originate and terminate in existing ROW outside of the railroad right-of-way. The route alignment also crosses several major State Routes (70, 89, 36, and 139) as well as US395. In each case, the highway would be crossed using aerial crossings, HDD under the highway or attachment to the bridge over the highway depending on the age and condition of the bridge and preferences of Caltrans, NDOT, city or county government.

Stream and river crossings in the underground installation areas may be accomplished with conduit attachment to existing bridges, depending on the age and condition of the bridge and the preferences of the jurisdictional agency. Existing conduit located in the bridge deck would be used where possible.

OVERHEAD INSTALLATION

The existing pole infrastructure would be accessed from the existing associated ROWs or easements. The poles that are located in environmentally sensitive areas, such as in the rugged, mountainous terrain on the Plumas National Forest or in wet meadows, would be individually climbed to install the hardware and associated fiber conduit. It is estimated that at each pole location, irrespective of the use of climbing or use of bucket truck, it will take approximately 2 – 3 hours at each existing pole to install the new fiber conduit. A limited number of angle poles may require additional ground anchors with guy wire to carry the weight of the conduit. Ground disturbance in these areas would be one square foot at each location for a total of 500 square feet.

The Proponent is proposing to utilize state-of-the-art technology and trunion assembly for installation of the fiber conduit or cable. Although this type of technology is evolving at a rapid rate; it is proposed to use the Aerial Dielectric Self Supporting (ADSS) assembly.

Typical installation would include the following methodologies:

Install the trunion assembly on the pole, feed a ½ inch rope (P line) through the bracket; each pole bracket will have its own 70-foot P-line hanging from it. The approximately 28,000-foot long reel of fiber is then attached to a “sockline” (another rope). The reel of conduit would remain on the typical line construction equipment located in the existing ROW. (See Appendix E - Typical Construction Methods.)

The “sockline is tied to the end of the P-line, pulled through, and then attached to the next P-line and pulled through.

The splice box locations to be installed on the fiber wire would be identified prior to the field activities. Since the conduit reels average 28,000-feet (5.3 miles) in length, the splice box would be located at the end of each reel. The exception to these splice locations would be in urban areas where CAIs are located. These interconnection points to the CAIs would be identified prior to field activities.

Prior to mobilizing the conduit/cable reels in the field, and prior to attaching the conduit, the fiber is tested to ensure the fiber glass integrity has not been compromised. Once the conduit is attached and splice boxes installed, the fiber is secure.

CONSTRUCTION SEQUENCING

Construction would occur in separate segments, some of which would be constructed simultaneously. Any individual segment may have two separate construction crews working at any given time, with plowing installation, trenching installation, and HDD installation occurring at the same time in different locations of the same segment. It is possible that 2-3 construction crews could be working simultaneously within the 21 miles of proposed new underground conduit alignment. It is anticipated that the maximum width of ground disturbance within road ROWs would be 10 feet, the maximum width of tracked construction equipment.

All construction activity that would be conducted along roads and highways will employ standard traffic control measures in accordance with the Caltrans *Manual of Traffic Controls for Construction and Maintenance Work Zones*, and NDOT’s use of the *FHWA Manual on Uniform Traffic Control Devices*.

CONSTRUCTION SCHEDULE

If the Proposed Action is funded and approved, it is anticipated that construction would begin third quarter 2011, assuming receipt of all environmental clearances, approvals, permits, and authorizations. Some segments of the route would be constructed concurrently and some segments would be constructed consecutively. It is anticipated that the entire construction project would be completed within approximately 20 months due to the inability to work from November 15 through April 15 as a result of winter conditions. Sections of conduit that are incomplete as of November 15 will be capped.

CONSTRUCTION VEHICLES AND EQUIPMENT

The types of construction vehicles and equipment that would be used during construction vary depending on the type of installation being conducted at any specific location (such as plowing, trenching, and boring). The types of equipment that would be used include pickup/utility trucks, cable plows, trenchers, excavators with a rock saw or rock breaker, dump trucks, backhoes, boring rigs, and bucket trucks for the aerial installation.

CONSTRUCTION STAGING AND EQUIPMENT LAY-DOWN AREAS

The approximate locations of up to 15 construction staging areas and equipment lay-down areas have been preliminarily identified every 18-20 miles along the 183-mile route. Wherever practical, the staging areas will be located in disturbed areas, at existing facilities or on private property. Equipment lay-down areas and equipment storage areas would be located as close to the construction areas as possible. See Map 2-1.

Refueling of equipment and cleaning equipment would occur at PSREC's existing construction yards at Portola and Milford, or at any of PSREC's existing facilities.

PSREC'S COMMITTED ENVIRONMENTAL PROTECTION MEASURES

INTRODUCTION

Measures to protect sensitive environmental resources that have been incorporated into the Proposed Action will be made conditions of approval by the NTIA and CPUC. These measures are intended to result in the avoidance or minimization of the Proposed Action's effects on aesthetics, air quality and greenhouse gas emissions, biological resources, cultural and historic resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, transportation and traffic, and utilities. The project applicant shall implement all of the Committed Environmental Protection Measures listed below as a condition of project approval.

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
<i>Right-of-Way Construction</i>	
ROW-1 PSREC BMP	All design; material; and construction, operation, maintenance, and termination practices would be in accordance with safe and proven engineering practices.
ROW-2 PSREC BMP	PSREC would survey and clearly mark the centerline and/or exterior limits of the ROW, where applicable. On federally administered lands, this may be determined by the respective authorized officer.
ROW-3	Access routes would be flagged with a highly visible marker. The route must be approved by the landowner or authorized officer in advance of use. All construction vehicle movement outside of the ROW would be restricted to pre-designated access routes, contractor-acquired access routes, or public roads.
ROW-4 PSREC BMP	The limits of construction activities would be pre-determined, with activity restricted to those limits. No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate survey or construction activity limits. The access route would be flagged to avoid environmentally sensitive areas.
ROW-5 PSREC BMP	PSREC would limit excavation to the areas of construction. No borrow areas for fill material would be excavated on the ROW. Waste material resulting from construction, operation, or maintenance would be removed from the site.
ROW-6	Waste rock from vault construction would be used onsite.

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
PSREC BMP	
ROW-7 PSREC BMP	PSREC would ensure the safety of the public entering the ROW. This would include, but would not be limited to, barricades for open trenches, and flagmen with communication systems for single-lane roads without visible turnouts.
ROW-8 PSREC BMP	PSREC would protect all survey monuments found within the ROW. Survey monuments include, but are not limited to, General Land Office, USFS, and BLM Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of disturbance or destruction of any of the features summarized above, PSREC would report the incident, in writing, to the federal or state authorized officer and the respective installing authority, if known. If General Land Office, USFS, or BLM ROW monuments or references were damaged during operations, PSREC would secure the services of a registered land surveyor or a federal cadastral surveyor to restore the disturbed monuments and references using surveying procedures from the <i>Manual of Surveying Instructions for the Survey of the Public Lands of the United States</i> , latest edition. PSREC would record such survey in the appropriate county and forward a copy to the USFS or BLM authorized officer, if on USFS or BLM lands. If the USFS or BLM cadastral surveyors or other federal surveyors were used to restore a disturbed survey monument, PSREC would be responsible for the survey cost.
ROW-9	Prior to construction, all construction personnel would be instructed on protection of cultural and ecological resources. To assist in this effort, the construction contract would address (a) federal and state laws on antiquities, fossils, plants, and wildlife, including collection and removal and (b) the importance of these resources and the need to protect them.
ROW-10	Where warranted, modified vault or underground conduit design would be utilized to minimize ground disturbance, operational conflicts, visual contrast, or avian conflicts.
ROW-11	In designated areas, vaults would be placed to avoid sensitive features such as riparian areas, water courses, and cultural sites; placement would minimize the amount of disturbance to sensitive features.
ROW-12	During construction, operation, or maintenance, the ROW would be maintained free of construction-related, non-biodegradable debris generated by PSREC-related activities.
ROW-13	All existing roads would be left in a condition equal to, or better than, their condition before construction.
ROW-14	Fences and gates, if damaged or destroyed by construction activities, would be repaired or replaced to their original pre-disturbed condition, as required by the landowner or land management agency. Temporary gates would be installed only with permission of the landowner or the land management agency.
ROW-15	Existing roads and trails on federal or state lands that would be blocked as a result of construction would be rerouted as directed by the applicable authorizing officer.

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
ROW-16	The agency's authorized officer or the landowner would be consulted from construction through rehabilitation and reclamation.
Reclamation	
Reclamation-1 PSREC BMP	In construction areas where re-contouring is not required and as requested by the landowner, vegetation would be left in place wherever possible to avoid excessive root damage and allow for re-sprouting.
Reclamation-2 PSREC BMP	In construction areas where ground disturbance requires more extensive re-contouring and surface restoration, PSREC would communicate with the landowner or land management agency on the techniques to be used before ground-disturbance activities begin. The method of restoration typically consists of returning disturbed areas to their natural contour (to the extent practical), installing cross drains for erosion control, placing water bars in the road, and filling ditches, as applicable.
Reclamation-3 PSREC BMP	At HDD or vault locations, disturbed areas to be reclaimed would be stabilized by redistribution of topsoil, reseeding, and placement of a chopped, certified weed-free straw, reinforced with paper or synthetic netting to hold the matting in place.
Reclamation-4 PSREC BMP	A silt fence would be installed along the perimeter of temporary topsoil stockpile areas where runoff from a storm would be filtered for sediment prior to its release into a natural drainage. It is anticipated that no material would be spoiled or hauled off site. Excavated materials would be re-graded to maintain the general drainage profile.
Reclamation-5 PSREC BMP	Following construction, PSREC would minimize residual rubble or debris that could provide microhabitats for small and medium-sized mammals. This measure would limit the potential increase in the site's prey base that may attract raptors or other predators.
Reclamation-6 PSREC BMP	PSREC would uniformly spread topsoil over disturbed areas for site reclamation. Spreading would not be done when the ground or topsoil is frozen or wet.
Reclamation-7 PSREC BMP	As part of PSREC's project reclamation plan, local native seed would be used to the extent possible for surface reclamation following construction activities. There would be no primary or secondary noxious weed seed allowed in the seed mixture. Commercial seed would be either certified or registered seed. The seed mixture container would be tagged in accordance with state law(s) and available for inspection by the federal and state authorized officers.
Reclamation-8 PSREC BMP	Seed would be planted in an economic and efficient manner, using techniques such as hydroseeding, broadcasting, or pre-planted seed mats. The seed mixture would be evenly and uniformly distributed over the disturbed area. When broadcasting, the pounds per acre noted below would be doubled. On federal and state lands, the authorized officer would be notified at least 14 days prior to seeding.
Reclamation-9	PSREC would develop a construction environmental monitoring program per communications with the applicable landowner or land management agency that includes: <ul style="list-style-type: none"> • Ensuring compliance with the requirements of the project EA, the mitigation

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
	<p>measures and BMPs proposed by PSREC, and other environmental permits and approvals.</p> <ul style="list-style-type: none"> • Identifying, documenting, and overseeing corrective actions, as necessary, to bring an activity back into compliance. • Verifying that the limits of all authorized construction work areas and locations of access roads are properly marked before clearing. • Verifying the location of signs and highly visible flagging that mark the boundaries of sensitive resource areas, drainages, water bodies, or areas with special requirements along the construction work area. • Identifying erosion/sediment control and soil stabilization needs in all areas. • Ensuring that subsoil and topsoil are tested to measure compaction and determine the need for corrective action. • Advising the construction contractor when conditions (such as wet weather) make it advisable to restrict construction activities to avoid excessive vehicle rutting. • Ensuring restoration of contours, replacement of topsoil, and monitoring of revegetation efforts. • Verifying that any soils or materials imported for use have been certified free of noxious weeds. • Determining the need for erosion control measures and ensuring that these measures are properly installed, as necessary, to prevent sediment flow into drainages, water bodies, and sensitive areas and on to roads. • Inspecting and ensuring the maintenance of temporary erosion control measures at least: <ul style="list-style-type: none"> · on a daily basis in areas of active construction or equipment operation; · on a weekly basis in areas with no construction or equipment operation; and · within 24 hours of each 0.5-inch rainfall. • Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification. • Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase.
Greenhouse Gases	
GHG-1	Limit idling of construction equipment.
GHG-2	Limit the hours of operation to daylight hours, so that diesel generators are not required for operation of lights.
GHG-3	Encourage project workers to car pool to construction site.
GHG-4	Maintain construction equipment to manufacturer's specifications
GHG-5	Utilize biodiesel fuels if available.

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
Air Quality	
Air Quality-1	All requirements of the applicable Counties' Air Pollution Control District and the Washoe County District Health Department, Air Quality Division, in Nevada, as applicable, would be followed and any necessary permits for construction activities would be obtained.
Air Quality-2 PSREC BMP	PSREC would furnish and apply water on construction areas for dust control.
Air Quality-3 PSREC BMP	<p>PSREC would be responsible for controlling dust by reducing travel speed and/or applying dust suppressants (e.g., magnesium chloride or other materials approved by the landowners or land managers). Dust would be considered a nuisance or hazard when a visible dust plume extends more than 300 feet from the source and has an estimated opacity exceeding 20% (objects are partially obscured). Additional methods of dust control that may be used by PSREC include, but are not limited to:</p> <ul style="list-style-type: none"> • Application of water or magnesium chloride to access roads or sections of the ROW. • Application of water to specific activities on the ROW that generate dust plumes (i.e., trenching or blasting). • Curtailing of dust-generating activities during high winds. • Implementation of speed limits on vehicles using access roads or traveling the ROW. • Limitation of number of vehicles allowed on the ROW.
Air Quality-4	Open burning of construction debris (cleared brush, etc.) would not be allowed.
Air Quality-5 LCAPCD & NSAQMD BMP	<p>Reasonable precautions would be taken to prevent particulate matter from becoming airborne including, but not limited to, the following provisions:</p> <ul style="list-style-type: none"> • Covering open-bodied trucks when used for transporting materials likely to cause airborne dust. • Cleanup, sweeping, compacting, enclosing and/or the use of wind screens or snow fences at the construction site. The application of asphalt, oil, water, or suitable chemicals to dirt roads, material stockpiles, land-clearing activities, excavation, grading, or other surfaces that can give rise to airborne dusts. • The prompt removal of earth or other material from paved streets that have been deposited by earth-moving equipment, water, or other means. • For NSAQMD only: Submittal of Dust Control Plan to the Air Pollution Control Officer prior to project start. • For LCAPCD only: Submittal of Fugitive Dust Plan Application
Cultural Resources	
Cultural-1	As appropriate and required by the BLM, an Inadvertent Discovery Plan (Plan) has been developed that identifies the protocol and treatment of inadvertent discoveries of cultural and historic properties. See Appendix F.

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
Cultural-2 PSREC BMP	If an area proposed to be disturbed by construction or other ancillary project activity has not been surveyed for cultural resources, an inventory would be conducted before construction activities begin. PSREC will retain qualified archaeologists that meet Secretary of the Interior standards to conduct the pre-construction inventories. A tribal monitoring program for the area of underground installation in Caltrans US395 ROW would be developed for this project to ensure avoidance of known historic properties (NRHP-eligible cultural resources) and on landscapes with a potential for buried cultural resources.
Cultural-3 PSREC BMP	Any cultural resources inadvertently discovered during construction by PSREC or any person working on PSREC's behalf on private, state, or federal land would be reported immediately to the authorized officer ; the protocol of the Plan would be followed. If human remains are discovered, PSREC would suspend construction, notify the county coroner, notify the applicable landowner or land management agency, and follow the applicable Federal or California/Nevada state law. If Native American remains are suspected, the Native American Heritage Commission and local tribe(s) also would be notified and PSREC would suspend operations in the area until an evaluation is completed. See Appendix F for inadvertent discovery plan.
Cultural-4 PSREC BMP	No surface disturbance or construction activity would be allowed within 100 feet of any NRHP-eligible cultural sites, as specified by the federal or state authorized officer. Any deviation from this requirement would be negotiated with the authorized officer per the terms of the proposed Plan
Soils	
Soils-1 PSREC BMP	As applicable, temporary erosion and sediment control devices, including sediment barriers, would be installed promptly after soil disturbance, in accordance with the NPDES requirements. These devices would be inspected on a daily basis in areas of active construction; on a weekly basis in areas with no active construction; and within 24 hours of each 0.5-inch or greater rainfall. PSREC would install temporary sediment barriers (e.g., staked straw bales) on either side of a water body channel, and around spoil and topsoil stockpiles. Sediment barriers would be maintained, as necessary, to ensure effectiveness during construction. Temporary slope breakers consisting of wattles or compacted soil would be installed across the underground construction site, as necessary.
Soils-2	Following vault placement, PSREC would replace fill using the soil excavated from the vault holes. Most of the soil would be used on site; the remaining amount would be spread in the ROW so as to not destroy any existing vegetation.
Soils-3	In site-specific areas where soils are sensitive to disturbance, no widening or upgrading of existing access roads would occur during project construction or operation, except for repairs necessary to make roads passable.
Soils-4 PSREC BMP	No construction activities would be performed when the soil is too wet to adequately support construction equipment. If equipment creates ruts more than 6 inches deep, the

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
	soil would be deemed too wet and construction would cease in that area.
Soils-5 PSREC BMP	No soil removal is anticipated. If soil removal is deemed necessary, however, before soils are removed, PSREC would ensure soil storage sites are located within the appropriate areas along the ROW to prevent impacts to cultural and biological resources.
<i>Water Resources</i>	
Water-1 PSREC BMP	If damaged or destroyed by construction activities, water sources or facilities (e.g., tanks, developed springs, water lines, wells) would be repaired or replaced to their pre-disturbed condition, as required by the landowner or land management agency.
Water-2 PSREC BMP	All construction and maintenance activities would be conducted to minimize disturbance to vegetation, drainage channels, and intermittent and perennial stream banks.
Water-3 PSREC BMP	Surface water quality would be protected from construction impacts by use of sediment barriers that would be maintained until satisfactory reclamation is established.
Water-4 PSREC BMP	PSREC does not use fuel trucks; they would refuel equipment at their existing construction yards in Milford and Portola.
<i>Noise</i>	
Noise-1 PSREC BMP	Construction activities would occur during daylight hours, or from 7 a.m. to 7 p.m.
Noise-2 PSREC BMP	Residents located along the project ROW would be notified 5 days prior to construction occurring within 500 feet of their residence.
<i>Hazardous Materials and Waste</i>	
Hazardous Materials-1 PSREC BMP	Construction sites would be maintained in a sanitary condition at all times; waste materials at those sites would be disposed of promptly at an appropriate and the nearest county waste disposal site. 'Waste' means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.
Hazardous Materials-2 PSREC BMP	Totally enclosed containment would be provided for all trash and hazardous materials (if needed). All construction waste including trash, litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials would be removed to the nearest county waste disposal site.
Hazardous Materials-3 PSREC BMP	PSREC would comply with all applicable federal, state, and local laws and regulations, existing or hereafter enacted or promulgated, with regard to any hazardous materials, as defined in this paragraph, that would be used, produced, transported or stored on or within the ROW or any of the ROW facilities or used in the construction, operation, maintenance, or termination of the ROW or any of its facilities. "Hazardous material" means any substance, pollutant, or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
	1980, as amended, 42 U.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste," as defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 U.S.C. 6901 et seq. and its regulations. The term "hazardous material" also includes any nuclear material or byproduct as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA Section 101(14), 42 U.S.C. 9601(14), nor does the term include natural gas.
Hazardous Materials-4 PSREC BMP	PSREC, as cited by existing Grant ROW, agrees to indemnify the U.S. against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined by CERCLA or RCRA) on the ROW unless the release or threatened release is wholly unrelated to PSREC's activity on the ROW. This agreement applies without regard to whether a release is caused by PSREC, its agent, or third parties.
Vegetation	
Vegetation-1 PSREC BMP	PSREC would ensure the appropriate biological resource surveys have been conducted before construction begins, per coordination with the federal agencies.
Vegetation-2 PSREC BMP	Where possible, PSREC would trim (rather than cut) brush, and would cut (rather than blade) brush. Blading would be allowed only if terrain and brush present a clear hazard to personnel and equipment.
Vegetation-3 PSREC BMP	To minimize the potential to spread invasive weeds, PSREC would clean off-road equipment (power or high-pressure cleaning) of all mud, dirt, and plant parts at their existing construction yards in Milford and Portola before moving equipment onto the project lands.
Vegetation-4 PSREC BMP	In site-specific areas where vegetation is sensitive to disturbance (and has been identified as such by the landowner or land manager, prior to construction), no widening or upgrading of existing access roads would occur during project construction, except for repairs necessary to make roads passable.
Vegetation-5 PSREC BMP	The BLM's Eagle Lake Field Office pamphlet on noxious weeds (BLM 2000) would be provided to all contractors and PSREC personnel. The terms and conditions of the USFS Special Use Permit also would be met relative to minimizing the potential spread of invasive plant species.
Vegetation-6 PSREC BMP	<p>The project shall implement the following avoidance and minimization efforts for invasive plants/noxious weeds:</p> <ul style="list-style-type: none"> a. Prior to construction, discrete occurrences of noxious weeds shall be mapped (including areas previously surveyed on public lands) during botanical surveys. Vast areas of common noxious weeds, such as cheat grass in big sagebrush scrub, will be noted, but not mapped. b. Weeds rated A, B, or Q by CDFA (2010) for the parts of the project area in CA,

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
	<p>or rated A or B by NDA (2010) for the parts of the project area in Nevada, shall be reported to the appropriate state or County Agricultural officer.</p> <ul style="list-style-type: none"> c. The results of the botanical surveys and weed mapping, shall be reported to USFS and BLM for their lands. d. Construction equipment used in the project area shall be cleaned (power or high-pressure cleaning) of all mud, debris, and plant parts before arriving at the project area. e. Boots and clothing of project personnel shall be cleaned of seed before entering the project area. f. Mapped weed locations will be avoided with equipment and vehicles if possible. If avoidance is not possible, the equipment, vehicles, and any contaminated clothing or footwear will be cleaned immediately adjacent to the existing infestation before leaving the that area of the project area. If avoidance is not possible for mapped weeds on USFS or BLM land, the agency will be contacted prior to work for approval of cleaning methods and locations.
Biological	
Biological-1 PSREC BMP	PSREC would ensure the appropriate biological resource surveys have been conducted prior to the initiation of construction, per coordination with the federal agencies.
Biological-2 PSREC BMP	Construction excavations left open overnight would be covered to prevent injury to wildlife. Covers would be secured in place and would be strong enough to prevent wildlife from falling through the openings.
Biological-3 PSREC BMP	PSREC will conduct Worker Environmental Awareness Training (WEAT) workshop to make construction crews aware of sensitive biological resources, environmentally sensitive areas (ESA), and avoidance measures.
Biological-4 PSREC BMP	PSREC will retain qualified biologists to conduct a pre-construction botanical survey, consistent with DFG (2009b) guidelines, to map the location of special-status plants and noxious weeds wherever drilling or trenching will occur, or wherever vehicles will be driven along the route. Sensitive botanical resources and noxious weed populations will be mapped and identified on construction drawings or project maps prior to construction
Biological-5 PSREC BMP	A focused survey for three-ranked hump moss and broad-nerved hump moss shall be conducted in potential habitat along with the pre-construction botanical survey described in Biological-4. If found, the same ESA conditions described in Biological-20 for plants will be implemented for special-status mosses.
Biological-6 PSREC BMP	A focused survey for cylindrical trichodon shall be conducted in potential habitat along with the pre-construction botanical survey described in Biological-4. If found, the same ESA

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
	<p>conditions described in Biological-20 for plants also apply to special-status mosses.</p>
<p>Biological-7 PSREC BMP</p>	<p>Prior to construction, a botanical survey for Webber’s ivesia shall be conducted in potential habitat in the project area, during the evident and identifiable period, by a qualified botanist. If Webber’s ivesia is found, an ESA will be established, with temporary fencing, around the occurrence prior to construction in that part of the project area. The ESA shall remain in place until the completion of construction in that part of the project area. No vehicles or equipment staging shall be allowed in the ESA. Construction personnel, on foot, may need to cross part of an ESA if a pole is surrounded by Webber’s ivesia. In that instance, the botanist shall be present when the ESA is entered and shall assist construction personnel in gaining pole access without harming Webber’s ivesia. If the ESA is in a segment of the project area where the line will be installed underground, the trench alignment will be moved to avoid the ESA, or the ESA will be avoided with an underground horizontal directional bore.</p>
<p>Biological-8 PSREC BMP</p>	<p>A floristic survey according to DFG (2009b) guidelines shall be conducted as described in Chapter 1. If Boggs Lake hedge hyssop is found, an ESA will be established with temporary fencing around the occurrence, prior to construction in that part of the project area. The ESA shall remain in place until construction is completed in that part of the project area. No vehicles or equipment staging shall be allowed in the ESA. If the ESA is in a segment of the project area where the line will be installed underground, the trench alignment will be moved to avoid the ESA, or the ESA will be avoided with an underground horizontal directional bore.</p>
<p>Biological-9 PSREC BMP</p>	<p>One of the two measures below shall be implemented in order to prevent establishment of swallow nests prior to construction on bridges where new conduit will be attached. Swallows arrive in mid February, increase in numbers until late March, and remain until October. Nesting begins in April, peaks in June, and continues into August.</p> <ol style="list-style-type: none"> a. Beginning 15 February and continuing every week thereafter, remove partially completed nests using either hand tools or high pressure water; or b. Hang netting from the bridge before nesting begins. If this technique is used, netting should be in place from late February until construction within 250 ft is complete.
<p>Biological-10 PSREC BMP</p>	<p>If Project construction activities are scheduled to occur during the bird nesting season (1 Feb – 31 August), PSREC will retain a qualified biologist to conduct a nest clearance survey using the methods described below.</p> <p style="text-align: center;">Birds of Prey and Special-Status Birds</p> <ol style="list-style-type: none"> a. A qualified biologist shall conduct nest clearance surveys for birds of prey and special-status birds within 2 weeks prior to the start of construction. No further mitigation measures are necessary where no active nests of a bird of prey or special-status bird are found. b. If an active nest of a bird of prey or special-status bird (i.e., an actively defended nest, or a nest containing eggs or young) is found, PSREC will

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
	<p>coordinate with the appropriate agency (e.g., BLM wildlife biologist if the nest is on BLM land, USFS wildlife biologist if the nest is on USFS land, or DFG environmental scientist if the nest is on state or private land) to determine if construction activities should be restricted near active nests for a specific distance and/or period of time. The potential ESA and extent of the seasonal restriction would be determined on a case-by-case and species-specific basis. Some bird species are more tolerant of human presence and disturbance than other species and whether a nest is within line-of-sight of the construction activities is integral to determining whether avoidance measures would be warranted.</p> <ul style="list-style-type: none"> c. The Eagle Lake Resource Management Plan (RMP; BLM 2007, 2008) delineates the applicable buffer zone distances and seasonal restriction dates by bird-of-prey species. Where an active nest occurs on BLM land, the RMP will be used as a guideline for construction restrictions. d. The applicable ESA and seasonal restrictions can vary and shall take into account the species affected, topography, habitat suitability, degree of existing disturbance, associated prey base, breeding phenology, and degree or extent of proposed disturbance. Protection of active bird-of-prey and special-status bird nests shall apply during project construction and the breeding season period until the young have fledged or if the nesting attempt fails. <p style="text-align: center;">Non Special-Status MBTA Birds</p> <ul style="list-style-type: none"> e. A qualified biologist shall conduct nest clearance surveys for nesting MBTA birds where drilling or trenching will occur, or wherever vehicles will be driven along the route within 2 weeks prior to the start of construction. No further mitigation measures are necessary where no active MBTA bird nests are found. f. If a nesting MBTA bird is found, then the biologist shall flag a minimum 50-ft ESA around the nest. No construction activity shall be allowed in the ESA until the biologist determines that the nest is no longer active. The ESA may be reduced if the biologist monitors the construction activities and determines in coordination with appropriate resource agency staff (e.g., BLM, USFS, or DFG), that no disturbance to the active nest is occurring.
<p>Biological-11 PSREC BMP</p>	<p>Between 15 February and 15 September, work within 0.25 mi of northern goshawk nests or PACs will be limited to two days. If more than two days are needed to complete the work, PSREC will coordinate with the appropriate agency, e.g., BLM wildlife biologist if the nest is on BLM land, USFS wildlife biologist if the nest is on USFS land, or DFG environmental scientist if the nest is on state or private land, to determine if construction activities should be restricted near active nests for a specific distance and/or period of time.</p>

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
Biological-12 PSREC BMP	Between 1 February and 31 August, project construction within 0.5 mi of golden eagle nests will be limited to two days of work. If more than two days are needed to complete the work, PSREC will coordinate with the appropriate agency, e.g., BLM wildlife biologist if the nest is on BLM land, USFS wildlife biologist if the nest is on USFS land, or DFG environmental scientist if the nest is on state or private land, to determine if construction activities should be restricted near active nests for a specific distance and/or period of time.
Biological-13 PSREC BMP	Between 1 February and 31 August, no work within 0.5 mi of the documented eyrie at Bonta Ridge or any other peregrine falcon eyrie identified during preconstruction surveys will occur. If it becomes necessary to conduct work within 0.5 mi of a peregrine falcon eyrie, PSREC will coordinate with DFG and the appropriate agency (e.g., BLM wildlife biologist if the nest is on BLM land; USFS wildlife biologist if the nest is on USFS land), to determine if construction activities should be restricted for a specific distance and/or period of time.
Biological-14 PSREC BMP	Between 1 March and 15 August, work within 0.25 mi of the California spotted owl PAC will be limited to two days of work. If more than two days are needed to complete the work, PSREC will coordinate with DFG and the USFS wildlife biologist to determine if construction activities should be restricted near the PAC.
Biological-15 PSREC BMP	Willow flycatcher habitat in the project area is included in willow flycatcher avoidance areas shown on Figure 2, sheets 7, 10, 15, 18 (US395) and 20, 22, 23, 26, 28-30 (SR70). In order for construction to occur during the willow flycatcher breeding season (June 1 through August 15; USFS 2004), protocol surveys shall be conducted the same year construction will occur and must conclude absence of nesting/ territorial willow flycatcher. The surveys will be conducted in accordance with A Willow Flycatcher Survey Protocol for California (Bombay et al. 2003). If protocol surveys are not conducted, no work shall occur between 1 June and 15 August in the willow flycatcher avoidance areas mapped on Figure 2, sheets 7, 10, 15, 18 (US395) and 20, 22, 23, 26, 28-30 (SR70).
Biological-16 PSREC BMP	Between 15 February and 31 August, wherever the project area comes within 250 ft or crosses a creek with steep, eroded banks, a survey will be conducted by a qualified biologist for nesting bank swallows no more than two weeks prior to construction. If no nesting bank swallows are found, construction may commence. If active bank swallow nests are found, biologist shall flag a minimum 250-ft Environmentally Sensitive Area (ESA) around the active nests. No work will occur in the ESA until the nests are no longer active and the bank swallows have left the area.
Biological-17 PSREC BMP	PSREC will retain a qualified biologist to conduct a preconstruction survey for roosting bats within 2 weeks prior to the start of construction. The survey can be conducted concurrently with the nesting bird preconstruction survey. The survey will include, but is not limited to, the underside of bridges and culverts and rock crevices and overhangs. If no roosting bats are found, then no further mitigation measures are necessary. If roosting bats are found, PSREC will coordinate with the appropriate agency (e.g., BLM,

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
	USFS, or DFG) to determine if construction activities should be restricted near bat roosts for a specific distance and/or period of time. The potential Environmentally Sensitive Area (ESA) and extent of the seasonal restriction would be determined on a case-by-case and species-specific basis.
Biological-18 PSREC BMP	Between 1 February to 31 July, two weeks prior to work in the forested areas of the project area (from Quincy east to Big Grizzly Creek), the project shall contact DFG staff involved with the fisher reintroduction to ascertain if there are any denning female fishers within 0.5 mi of construction (Richard Callas: 530-340-5977, or Pete Figura: 530-225-3224). Radio or GPS-enabled collars on the released fishers allow their location and movement to be tracked (pers. comm. R. Callas). If there are denning female fishers within 0.5 mi, no construction shall occur within 0.5 mi of the den until the den has been vacated. DFG shall continue to be contacted every two weeks during construction from 1 February to 31 July in the forested areas to check for denning fishers.
Biological-19 PSREC BMP	PSREC will retain a qualified biologist to conduct a preconstruction survey for active burrows of special-status burrowing animals in the project area within 2 weeks prior to the start of construction, wherever drilling or trenching will occur, or wherever vehicles will be driven along the route. If no active burrows are found, then no further mitigation measures are necessary. If active burrows of special-status burrowing animals are found, PSREC will coordinate with the appropriate agency (e.g., BLM, USFS, or DFG) to determine if construction activities should be restricted nearby for a specific distance and/or period of time. The potential ESA and extent of the temporal restriction would be determined on a case-by-case basis.
Biological-20 PSREC BMP	Prior to construction, PSREC will retain a qualified biologist to direct the establishment of environmentally sensitive areas (ESA) around special-status plant populations or other sensitive resources to be avoided. ESAs will be marked both in the field with temporary fencing, and on the construction drawings. Construction-related activities will be prohibited within ESAs, unless construction personnel on foot need to cross part of an ESA to access and climb an existing pole.
Biological-21 PSREC BMP	Perennial and intermittent waters in the project area, including any adjacent willow thickets, riparian corridors, and wetlands, shall be avoided by either hanging new conduit on existing utility poles, installing conduit underneath waters with horizontal directional drills, or blowing new fiber in existing conduit. No vehicles or equipment staging shall be allowed in perennial or intermittent waters, wetlands, willow thickets, or riparian corridors. Construction personnel, on foot, may need to cross narrow portions of wetlands, willow thickets, or riparian corridors, if a pole is surrounded by such a feature.
Biological-22 PSREC BMP	PSREC will retain qualified biologists and resource specialists to monitor construction

Table 2-4: Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
	activities in areas near sensitive resources.
Biological-23 PSREC BMP	Specific fiber optic vault locations are flexible and will be placed to avoid sensitive resources including, but not limited to, riparian areas, water courses, wetlands, special-status plant populations, etc.
Biological-24 PSREC BMP	PSREC will implement the appropriate noxious weed control measures from the following; Partners against Weeds (BLM 1996), The National Invasive Species Management Plan (National Invasive Species Council 2008), and the Weed Prevention and Management Guidelines for Public Lands (BLM 2011).
Biological-25 PSREC BMP	Structures (if needed) will be constructed to conform to RUS (Rural Utilities Service) raptor-safe specifications. Additional resources used in design will be the <i>Avian Power Line Interaction Committee’s Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 and Mitigating Bird Collisions with Power Lines: The State of the Art in 1994</i> .
Biological-26 PSREC BMP	If construction of any associated project infrastructure (e.g. re-generation site, secondary NOCs etc.) requires installation of outdoor lighting the lighting will be designed to minimize bird attraction or nocturnal insect attraction and swarming. At a minimum, lights should be down shielded to minimize attracting birds or insects. This measure will minimize the potential for nocturnal bird foraging (e.g., nighthawks).
Biological-27 PSREC BMP	To the extent practicable, and to mitigate potential disturbance to migrating deer moving east to west, underground construction of the 9 miles (8 miles, if existing conduit is utilized in NV) in the US395 ROW would not occur during November 1 to May 1 in Nevada, and April-May, spring migration, or October-November, fall migration, in California.

ALTERNATIVES TO THE PROPOSED ACTION

NO-ACTION ALTERNATIVE

Under the No Action Alternative, NTIA would not fund the Proposed Action and CPUC would not approve or fund the Proposed Action. The construction of the Proposed Action would be infeasible without federal and state funding: thus, it is likely that the proposed fiber optic network would not be constructed and operated in the near future. The rural areas of Plumas, Sierra, Lassen, and Washoe Counties would continue to be unserved or underserved by a wireless broadband network. Other communities and anchor institutions that would be served by the Proposed Action would likely continue to be unserved or underserved by high-speed broadband. Future California and Nevada interconnection of major Public Safety Answering Points, future statewide public safety networks, and a future California Telehealth Network connection of health facilities in the Proposed Action’s 4-county service area would not be possible.

Under the No Action Alternative, the BLM's Sierra Front Field Office in Carson City, NV, and the Eagle Lake Field Office in Susanville, CA would not amend or issue new right-of-way authorizations under the Federal Land Policy Management Act (FLPMA). The U.S. Forest Service's Plumas National Forest, Beckwourth Ranger District in Blairsden, CA, and Mt. Hough Ranger District in Quincy, CA would not amend or issue new right-of-way authorizations under the Federal Land Policy Management Act (FLPMA).

ALTERNATIVE 1 – COMBINATION OF AERIAL AND UNDERGROUND INSTALLATION OF FIBER CABLE (PREFERRED ALTERNATIVE)

This alternative includes installation of approximately 183 miles of fiber cable, with 162 miles of aerial installation on existing overhead electrical pole structures and 21 miles of underground installation of fiber conduit. The aerial portion of this alternative would follow the existing powerline corridors in existing federal and state/county/city ROWs and easements. The alternative would minimize effects on the environment, cultural and historical resources, biological resources, and disruption of traffic. Constructability of this alternative would be more efficient due to the constraints associated with the seasonal nature of construction activities in this climate and environment, and by utilizing existing power pole infrastructure.

New underground construction will occur for eight miles in the CALTRANS US395 ROW from Bordertown, Nevada to Hallelujah Junction, California; for approximately one mile in existing NDOT US395 ROW on BLM-administered land unless existing conduit can be utilized; and for seven miles in existing city/county/state ROWs within existing developed areas in California. For approximately five miles in the City of Reno, new fiber is proposed to be placed in existing conduits.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

During the planning stages of the Project, PSREC considered using wireless technology to complete the network, or installing new infrastructure as an all-aerial or all underground network. The suitability and reliability of this technology would be compromised because of the rugged and mountainous terrain of a large portion of the service territory and lack of line of sight. Additionally, this wireless technology would reduce the available bandwidths and speeds across the network and would not optimize the availability of the existing electrical infrastructure, existing ROWs, easements, and PSREC's 75 years of experience in operating and maintaining a wire-based network.

An alternative that would include an all aerial fiber installation was considered because the cost would be less than the preferred alternative. A significant number of PSREC's existing pole structures are over 30 years old and are scheduled for replacement in the near future. These distribution poles are typically not tall enough to support an additional conduit and would require immediate replacement which would result in additional ground disturbance and increased time for permitting activities.

An all underground fiber conduit installation would not maximize the use of existing infrastructure and would result in significant cost increases. Additionally, the environmental

disturbance generated by this alternative would be unwarranted, disruptive, and intensely time consuming, which would not allow the Proponent to meet the aggressive time lines of the ARRA Grant.

These aforementioned alternatives would not meet the requirements for a successful and efficient implementation of the Project.

Chapter 3
Affected Environment

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AFFECTED ENVIRONMENT

This chapter describes the existing cultural, natural, and human resources that could be affected by the Proposed Action and alternatives. The level of detail provided in this chapter is commensurate with the anticipated impacts discussed in Chapter 4.

The following critical elements of the human environment are subject to requirements specified in statute, regulation, or executive order and must be considered in this EA. Elements that may be affected are further described in this EA.

3.1 Air Quality

3.1.1 Climate

The climate in the Honey Lake Valley/Long Valley area is arid to semiarid (Wegener et al. 2004). Because of the Modoc Plateau to the northwest, a large amount of precipitation from Pacific storms is intercepted (Wegener et al. 2004) and most of the moisture comes in the form of winter snow (Delacorte et al. 1995). Because of these factors, Honey Lake Valley is a temperate desert with low precipitation (less than 4 inches annually) and large temperature differences between summer and winter (Bailey 1996 *In* Wegener et al. 2004). Summers are warm and dry, with temperatures sometimes exceeding 100°F, while winter temperatures can dip below 0°F (Wegener et al. 2004).

Within the western geographic area of the project, the Plumas National Forest dominates the scenic mountain lands of the Sierra Nevada. Known for its high alpine lakes and miles of the Middle Fork of the Feather River, a Wild and Scenic River, much of Plumas County's 2,618 square miles is national forest land. The Plumas National Forest generally experiences warm, dry summers and cold, wet winters. Weather can change rapidly during all seasons of the year. Elevation plays a major role in temperature and precipitation. This precipitation falls mainly from October through April. At higher elevations, it comes mostly in the form of snow. Clouds can build up during the summer to produce thunderstorm activity (Wildernet.com – Plumas National Forest, California, 2011).

The Project traverses three major ecological regions; the Sierra Nevada Section, Northwestern Basin and Range Section, and Mono Section. The following discussion is from the *Ecological Subregions of California, Section and Subsection Descriptions* (USDA 1997).

Sierra Nevada Section

The Project from Beckwourth Pass east to Quincy is located in the Sierra Nevada Section. The Project traverses three of the subsections; Sierra Valley Subsection; Frenchman Subsection, and Greenville-Graeagle Subsection.

The Sierra Nevada Section includes temperate to very cold parts of the Sierra Nevada. The Sierra Nevada is a tilted block mountain range. Elevation ranges from 1,000 to 14,495 ft. Average annual precipitation ranges from 10 to 90 inches and occurs primarily in the fall, winter,

and spring. Summers are generally dry with low humidity. Average temperatures range from 20° to 60° F and the growing season ranges from 10 to 200 days. Surface waters are characterized by numerous rapid flowing rivers and streams that flow west from the crest in deeply incised canyons with bedrock, to the Great Valley section and Pacific Ocean or to the east terminating in basins in the Mojave Desert, Mono or Northwestern Basin and Range sections. A brief discussion of defining features of each Sierra Nevada subsection traversed by the Project follow.

Sierra Valley Subsection: This subsection includes the Sierra Valley and occurs on nearly level basin floor that was occupied by a shallow Pleistocene lake. The Sierra Valley is at the head of the Middle Fork Feather River watershed. Mean annual precipitation is approximately 10 to 25 inches and predominately falls as snow. Mean annual temperature is approximately 45° to 48° F and the mean freeze-free period is 50 to 100 days. Surface runoff is generally slow and drains to the Middle Fork Feather River.

Frenchman Subsection: This subsection is predominantly composed of Tertiary volcanic terrain north of Sierra Valley. Topography is dominated by steep and moderately steep slopes. Mean annual precipitation is approximately 15 to 30 inches and predominately falls as snow. Mean annual temperature is about 40° to 50° F with a mean freeze-free period of 50 to 100 days. Surface water runoff is predominately rapid and drains to Feather River. Large reservoirs, Lake Davis and Frenchman Lake occur in this subsection.

Greenville-Graeagle Subsection: This subsection extends from the northwestern edge of the Sierra Nevada (adjacent to Lake Almanor) along the Plumas Trough to its southern terminus in Mohawk Valley.

Northwestern Basin and Range Section

The Project from Susanville south approximately to Doyle is located in the Northwestern Basin and Range Section (USDA 1997, USDA 2006). The Project traverses the Honey Lake Subsection of the Northwestern Basin and Range Section.

The Northwestern Basin and Range Section includes the northern, and particularly the northwestern, part of the Great Basin. This section is defined by its isolated mountain ranges (predominately dissected block mountains) separated by aggraded desert plains. Elevation ranges from 4,000 to 8,000 ft. Average annual precipitation ranges from 4 to 20 inches. Average temperatures range from 30° to 52° F and the growing season ranges from 25 to 150 days. Surface waters are characterized by few moderately slow rivers and streams occurring in deeply incised canyons with bedrock controlled channels at higher elevations and alluvial channels at lower elevations. Surface waters drain to basins or lakes within the section, or in basins and lakes in the Bonneville Basin section. A brief discussion of defining features of the Honey Lake Subsection follows.

Honey Lake Subsection: This subsection includes the Honey Lake Valley, just northwest of the Diamond Mountains, which are at the northwest end of the Sierra Nevada Mountain Range. Geologically this subsection is dominated by gently sloping to nearly level alluvial fans,

floodplain, and basin floor that form a large alluvial - lacustrine plain. Honey Lake is a remnant of much larger Pleistocene and older lakes that occupied the valley.

Mono Section

The Project from approximately Doyle south to Reno and from the Beckwourth Pass (SR70) east to US 395 are located in the Mono Section (USDA 1997, USDA 2006). The Project traverses the Fort Sage Mountains - Lemmon Valley Subsection of the Mono Section.

The Mono Section includes is in the western part of the Great Basin, just east of the Sierra Nevada. This section is defined by its isolated mountain ranges (predominately dissected block mountains) separated by aggraded desert plains (alluvial fans and basins). Elevation ranges from 4,400 to 14,200 ft. Average annual precipitation ranges from 5 to 30 inches. Average temperatures range from 30° to 58° F and the growing season ranges from 20 to 200 days. Surface waters are characterized few rapid flowing rivers and streams that occur in deeply incised canyons with bedrock controlled channels at higher elevations and alluvial channels at lower elevations. Surface waters drain to basins or lakes within the section, or in basins and lakes in the Mojave Desert, Bonneville Basin and Northwestern Basin and Range sections. A brief discussion of defining features of the Fort Sage Mountains - Lemmon Valley Subsection follows.

Fort Sage Mountains - Lemmon Valley Subsection: This subsection includes mountains, hills, and valleys between the Sierra Nevada on the west and the Pah Rah Range and Pyramid Lake (in Nevada) on the east. Larger mountain ranges and valleys in the subsection include the Fort Sage Mountains, Virginia Mountains, Dogskin Mountain, Petersen Mountain, Long Valley, Lemmon Valley, and Warm Springs Valley. Tertiary lacustrine deposits are extensive in Long Valley.

3.1.2 Federal, State, and Local Air Quality Standards

The federal Clean Air Act requires the EPA to set ambient air quality standards (AAQS) for the nation. It also permits states to adopt additional or more stringent air quality standards. The California Air Resources Board (CARB) has set standards for certain pollutants, such as particulate matter and ozone (O₃), that are more restrictive than the federal air quality standards. California also has set standards for some pollutants that are not addressed by federal standards such as sulfates, vinyl chloride, and hydrogen sulfide (H₂S).

The federal and state air quality standards for regulated pollutants in the project area are summarized in Table 3 1.

Table 0-1 Federal and State Ambient Air Quality Standards

Pollutant	Unit of Measure (Average)	California	National
Ozone (O ₃)	1-Hour	0.09 ppm	<i>Revoked Standard</i>
	8-Hour	0.07 ppm	0.08 ppm
Carbon Monoxide (CO)	1-Hour	20.0 ppm	35.0 ppm
	8-Hour	9.0 ppm	9.0 ppm
Carbon Monoxide (CO) (Lake Tahoe Basin)	8-Hour	6 ppm	N/A
Nitrogen Dioxide (NO ₂)	1-Hour	0.25 ppm	N/A
	Annual	N/A	0.053 ppm
Sulfur Dioxide (SO ₂)	1-Hour	0.25 ppm	N/A
	24-Hour	0.04 ppm	0.14 ppm
	Annual	N/A	0.030 ppm
Respirable Particulates (PM ₁₀)	24-Hour	50 µg/m ³	150 µg/m ³
	Arithmetic Mean ¹	20 µg/m ³	50 µg/m ³
Fine Particulate Matter (PM _{2.5})	24-Hour	N/A	65 µg/m ³
	Arithmetic Mean ¹	12 µg/m ³	15 µg/m ³
Sulfates	24-Hour	25 µg/m ³	N/A
Lead	30-Day Average	1.5 µg/m ³	N/A
	Calendar Quarter	N/A	1.5 µg/m ³
Hydrogen Sulfide (H ₂ S)	1-Hour	0.03 ppm	N/A
Vinyl Chloride	24-Hour	0.010 ppm	N/A
Visibility-Reducing Particles	One Observation	Visibility >10 Miles (>30 Miles for Lake Tahoe) With/Relative Humidity <70%	N/A

Source: CARB 2009

ppm=parts per million; µg/m³ = micrograms per cubic meter

¹ The state PM₁₀ annual standard is for the geometric mean of all measurements. The national PM₁₀ and PM_{2.5} annual average standards are based upon the arithmetic mean of all measurements. The NAAQS shown serve as both primary (health-related) and secondary (welfare-related) standards. The standards shown for SO₂, however, are the primary NAAQS; there also is a separate secondary NAAQS for SO₂ of 0.5 ppm. Implementation of the NAAQS for fine particulates has been delayed by litigation and is pending further implementation guidance from the federal court and EPA.

All areas throughout the country are assigned to one of three different federal classes of air quality protection. These are called Prevention of Significant Deterioration (PSD) Classes I, II, and III. These classes help ensure that air quality in clean-air areas remains clean and does not deteriorate below the level of the National Ambient Air Quality Standards (NAAQS). The mechanism created by Congress to meet this goal is the establishment of “PSD increments.” These increments define the maximum allowable increases over baseline concentrations that are allowed in a clean-air area for a particular pollutant. The increments are promulgated in the Environmental Protection Agency (EPA) PSD regulations at 40 CFR 52.21(c). The PSD

regulations would apply to projects where the emissions of criteria pollutants exceed the specified thresholds.

In the 1977 Clean Air Act amendments, Congress designated the following sites as mandatory PSD Class I areas:

- All international parks
- National wilderness areas exceeding 5,000 acres
- National memorial parks exceeding 5,000 acres
- National parks exceeding 6,000 acres

Class I areas receive special protection from degradation of air quality, and the most stringent PSD increments apply in these areas. The nearest Class I area is the Caribou Wilderness in the Lassen National Park, about 26 miles west of the project area.

The Proposed Action would be located in Washoe County, Nevada and three counties in California: Plumas, Sierra, and Lassen. Washoe County, NV is in the Truckee Meadows Air Basin. Plumas and Sierra counties are in the Mountain Counties Air Basin; Lassen County is in the Northeast Plateau Air Basin.

In Washoe County, the Washoe County Health District Air Quality Management Division is responsible for controlling sources of air pollution and assuring compliance with federal, state, and local environmental laws governing air quality. HA87 is the hydrogeographic area surrounding the metropolitan Reno-Sparks area. HA87 is designated as non-attainment for carbon monoxide (CO) and particulate matter. As of March 2010, Washoe County's request to redesignate HA87 to attainment/maintenance for the 24-hr PM10 standard had not been acted on by EPA Region IX.

The Lassen County Air Pollution Control District (LCAPCD) is responsible for overseeing implementation of the air quality emissions regulations in Lassen County. The Northern Sierra Air Quality Management District (NSAQMD) has jurisdiction over Nevada, Sierra and Plumas counties. There are no district specific Air Quality Management Plans for the project area.

The current attainment/non-attainment for NAAQS for the four counties traversed by the project is presented in Table 3-2. The current attainment/non-attainment for California air quality standards for Plumas, Sierra, and Lassen counties is presented in Table 3-3. The 2010 California State Area Designations were adopted by CARB on March 25, 2010 (<http://www.arb.ca.gov/desig/adm/adm.htm>).

Table 0-2 Attainment/Non-Attainment for Federal Air Quality Standards

Pollutant	Unit of Measure (Average)	Plumas Co, California	Sierra Co, California	Lassen Co, California	Washoe Co, Nevada*
Ozone (O ₃)	1-Hour	Unclassifiable/Attainment	Unclassifiable/Attainment	Unclassifiable/Attainment	Unclassifiable/Attainment
	8-Hour	Unclassifiable/Attainment	Unclassifiable/Attainment	Unclassifiable/Attainment	Unclassifiable/Attainment
Carbon Monoxide (CO)	1-Hour	Unclassifiable/Attainment	Unclassifiable/Attainment	Unclassifiable/Attainment	Unclassifiable/Attainment
	8-Hour	Unclassifiable/Attainment	Unclassifiable/Attainment	Unclassifiable/Attainment	HA87 only= Attainment/Maintenance*
Nitrogen Dioxide (NO ₂)	Annual	Better than National Standards			
Sulfur Dioxide (SO ₂)	24-hr and Annual	Better than National Standards			
Respirable Particulates (PM ₁₀)	24-hr	Unclassifiable/Attainment	Unclassifiable/Attainment	Unclassifiable/Attainment	HA87 only = "Serious" Nonattainment
Fine Particulate Matter (PM _{2.5})	24-hr and Annual	Deferred	Deferred	Deferred	HA87 = Attainment Unclassifiable/Attainment

*HA87 is a portion of Washoe County defined by the hydrogeographic area surrounding the metropolitan Reno-Sparks area. As of March 2010, Washoe County's request to redesignate HA87 to attainment/maintenance for the 24-hr PM₁₀ standard had not been acted on by EPA Region IX.

Source:
U.S. EPA Air Quality Maps.

Washoe County, NV Air Quality Trends 2000-2009 (April 2010). Prepared by Washoe County Health District, Air Quality Management Division.

Washoe, Plumas, Sierra, and Lassen counties are unclassifiable/attainment for sulfates, lead, hydrogen sulfide (H₂S), vinyl chloride, and visibility reducing particulates.

Table 0-3 Attainment/Non-Attainment for California’s State Air Quality Standards

Pollutant	Unit of Measure (Average)	Plumas Co, California	Sierra Co, California	Lassen Co, California
Ozone (O ₃)	1-hr	Unclassified	Unclassified	Attainment
	8-hr	Unclassified	Unclassified	Unclassified
Carbon Monoxide (CO)	--	Attainment	Unclassified	Unclassified
Nitrogen Dioxide (NO ₂)	Annual	Attainment	Attainment	Attainment
Sulfur Dioxide (SO ₂)	24-hr and Annual	Attainment	Attainment	Attainment
Respirable Particulates (PM ₁₀)	24-hr	Nonattainment	Nonattainment	Nonattainment
Fine Particulate Matter (PM _{2.5})	24-hr And Annual	Unclassified; Portola Valley-Nonattainment	Unclassified	Unclassified
Sulfates	24-Hour	Attainment	Attainment	Attainment
Lead	30-Day Average Calendar Quarter	Attainment	Attainment	Attainment
Hydrogen Sulfide (H ₂ S)	1-Hour	Unclassified	Unclassified	Unclassified
Visibility-Reducing Particles	One Observation	Unclassified	Unclassified	Unclassified

Sources:

California Air Resources Board 2010 State Area Designation Maps (March 25, 2010).

Toxic air contaminants are air pollutants that may cause adverse health effects, particularly cancer or reproductive harm. The Air Toxics “Hot Spots” Information and Assessment Act (Assembly Bill [AB] 2588) was enacted in September 1987. The project would not be considered a stationary source subject to AB 2588 requirements.

In addition to emission limitations, local air districts require permits and notification of use for portable equipment. In lieu of obtaining multiple permits, the state of California allows owners or operators of portable engines and certain other types of equipment to register their units under the Air Resources Board’s Statewide Portable Equipment Registration Program. Registering with *the program* allows owners or operators to operate their equipment throughout the state without having to obtain permits from each local air districts. However, each local air district requires notification of equipment use prior to the start of construction.

The LCAPCD identifies several provisions for reducing or eliminating fugitive dust emissions in Rule 4:18, Fugitive Dust Emissions. There are no listed thresholds for fugitive dust emissions in this rule. NSAQMD outlines dust control guidelines in Rule 226, Dust Control. This rule requires the submittal of a Dust Control Plan for any project where more than one acre of natural surface area is to be disturbed or where the natural ground cover is removed. There are no listed thresholds for fugitive dust emissions in this rule.

Sensitive receptors include children, seniors, sick persons, or persons subject to continuous exposure based on the averaging period for the pollutant. Sensitive receptor locations are facilities such as hospitals, schools, convalescent facilities, or residential areas. With the exception of the Cities of Quincy, Portola, and Susanville, CA and Reno, NV, the project area is rural with relatively unpopulated, low density farming/ranching operations and scattered residences.

3.1.3 Greenhouse Gas Emissions

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change, the efforts devoted to reducing greenhouse gas (GHG) emissions and researching climate change and policy have increased in recent years.

California has been active in regulating GHGs. On June 1, 2005, California Governor Schwarzenegger signed EO S-3-05. The goal of this EO is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by 2020, and 3) 80% below 1990 levels by 2050. In 2006, this goal was reinforced with the passage of AB 32, the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals, while further mandating that CARB create a plan to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." EO S-20-06 further directs state agencies to begin implementing AB 32 and recommendations made by the state's Climate Action Team.

On August 24, 2007, Governor Schwarzenegger signed SB 97, to provide legislative guidance on how potential project-related GHG emissions should be addressed in CEQA documentation. The Resources Agency has completed the formal rulemaking process and the Office of Administrative Law has adopted the amendments to the CEQA guidelines. The amendments became effective on March 18, 2010. On November 17, 2008, EO S-14-08 was signed; this order directs "All retail sellers of electricity shall serve 33% of their load with renewable energy by 2020. State government agencies are hereby directed to take all appropriate actions to implement this target in all regulatory proceedings, including siting, permitting, and procurement for renewable energy power plants and transmission lines."

As required by AB 32 (Subchapter 10, Article 1, sections 95100 to 95133, Title 17, California Code of Regulations), CARB developed mandatory reporting rules for significant sources of GHGs.

A Scoping Plan, initially released in October 2008, was approved by the CARB in December 2008. The Scoping Plan indicates the main strategies that California will use to reduce GHG

emissions. The Scoping Plan identifies regulations to be adopted to achieve maximum technologically feasible and cost-effective GHG emission reductions. The Proposed Scoping Plan has a new statewide goal of 33% renewable energy, rather than 20% as outlined in AB 32, in the State of California's energy portfolio by 2020. The CARB outlined voluntary early actions and reductions. Some of the recommendations to reduce GHG emissions that are relevant to the project include (CARB 2008b):

- **Low Carbon Fuel Standard:** The Low Carbon Fuel Standard would reduce the carbon intensity of transportation used in California by ten percent or more by 2020 (E.O. S-01-07).
- **Medium/Heavy-Duty Vehicle Standards:** These standards could include requiring heavy-duty trucks to be retrofitted to contain devices that reduce aerodynamic drag and rolling resistance, or other measures to reduce GHG emissions. Hybrid trucks would also reduce GHG emissions.
- **Recycling and Waste:** Recycling would reduce GHG emissions by reducing the energy that would be used to acquire raw material for manufacturing of building materials.
- **Sustainable Forests:** The target for the Proposed Scoping Plan is to maintain the current sequestration capacity of forests through sustainable management practices, including the avoidance or mitigation of land-use decisions that would reduce carbon storage capacity.

The GHG analysis conducted for this EA was performed to meet the CEQA and NEPA requirements. Neither the LCAPCD nor the NSAQMD have developed GHG emissions thresholds for CEQA purposes. CARB and CPUC guidance on GHG emission thresholds and impacts were utilized for this project.

3.2 Cultural Resources

3.2.1 Regulatory Framework - Federal

Under federal law, Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of their actions on historic properties and provide the Advisory Council on Historic Preservation an opportunity to comment. Historic properties are defined as any cultural resources (prehistoric or historic district, site, building, structure, or object) included in or determined eligible for inclusion on the National Register of Historic Places (NRHP) (based upon criteria found at 36 CFR Part 60). In order to be considered eligible to the NRHP, a cultural resource must satisfy at least one of four significance criteria as defined by 36 CFR 60.4 (National Park Service 1991). The resource must contain qualities that:

- Are associated with events significant to broad patterns of history (36 CFR 60.4a);
- Are associated with the lives of persons significant in the past (36 CFR 60.4b);

- Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess highly artistic values; or represent a distinguishable entity whose components lack individual distinction (36 CFR 60.4c); or
- Have yielded or may yield information important to history or prehistory (36 CFR 60.4d).

The resource must be significant under at least one of those four significance criteria (a through d) to be eligible for listing on the NRHP (National Park Service 1991). In addition, the resource must retain enough of its integrity to be able to convey its significance. Integrity is measured by the evaluation of the seven aspects of integrity established by the National Register: location, design, setting, materials, workmanship, feeling, and association. The retention of integrity means that property will possess several, and usually most, of the aspects. The process of evaluating a historic resource for eligibility for inclusion on the NRHP necessitates the placement of the property within a relevant historical context. A commonly accepted definition of a context is “a broad pattern of historical development...that may be represented by historic resources” (Derry et al. 1985:14 *in* Hardesty and Little 2000). A context identifies the thematic, geographical, and chronological framework within which the significance evaluation takes place, thus adding specific detail to the four criteria. Prehistoric resources are generally evaluated under criterion d, the potential to provide additional information.

In the event that a proposed federal activity would adversely affect a historic property, the federal agency and the State Historic Preservation Office would sign a memorandum of agreement that details the methods to resolve any adverse effects.

3.2.2 Regulatory Framework – State of California

Under state law, the California Code defines a historical resource as a resource listed in, or determined to be eligible for listing in, the NRHP or the California Register of Historical Resources. The following types of resources also may be considered historical resources (14 CCR §15064.5):

1. A resource included in a local register of historical resources, or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
2. Any object, building, structure, site, area, place, record, or manuscript a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Public Resources Code §5024.1, Title 14 CCR, Section 4852).

The criteria for inclusion in the California Register include:

Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (criterion 1).

Associated with the lives of persons important to local, California, or national history (criterion 2).

Embodies the distinctive characteristics of a type, period, region, or method of construction; or represents the work of a master; or possesses high artistic values (criterion 3).

Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation (criterion 4).

An archaeological site may be considered a historical resource if it meets the criteria for listing on the California Register of Historic Resources. If it is not a historical resource but meets the definition of a “unique archaeological resource,” as defined in Public Resources Code Section 21083.2, then it is treated as a historical resource. The Code specifically defines “unique archaeological resource” as:

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- 1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.*
- 2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.*
- 3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.*

3.2.3 Cultural Surveys – Summary of Effects

A file and literature search of the proposed route of the fiber cable and lands one mile on both sides of the line (file search area) was conducted by Western Cultural Resources Management (WCRM) during October and November of 2010 to identify previous surveys and recorded cultural resources located within the Project APE. The file search included research at and/or through the Northeast Information Center (Chico, CA.), the Beckwourth and Mt. Hough Ranger Stations of the Plumas National Forest (CA), the Sierraville Ranger Station of the Tahoe National Forest (CA), the Bureau of Land Management’s Eagle Lake Field Office (Susanville, CA.) and Sierra Front Field Office (Carson City, NV), and the Nevada State Museum (Carson City, NV).

During the course of the file search Steve Mehls of WCRM reviewed 406 project reports from California and 56 studies from Nevada. The types of projects reported included reconnaissance and intensive level surveys, archaeological testing projects and mitigation (data recovery) studies. The search identified 117 studies that touched, crossed, or paralleled/overlaid the proposed fiber cable route (California n = 104, Nevada n = 13). Eighteen of these studies, covering approximately 17.5 miles, include portions of the line that are planned to be buried. The majority of the projects reported on in both California and Nevada covered lands within the file search area but not crossing or otherwise touching the proposed fiber cable route (California n = 302, Nevada n = 43). In addition the researchers identified nine reports missing from the files at Plumas National Forest and one report missing from the files in Nevada.

Results of the file search found that 262 cultural resources have been previously recorded within 50 meters on either side of the project's proposed center line (California n = 141, Nevada n = 121). The researchers could not find information for 20 sites in the materials reviewed during the file search. Based on the records reviewed, the types of sites are summarized in Tables 3-4 and 3-5. In both states prehistoric lithic scatters dominated the recorded sites (20.6% of population); however, other prehistoric sites were relatively scarce. Historic trash scatters represented the second most prevalent site type (8.7% of population). The recorded historic sites evidenced a wide variety of site types including many related to the growth of towns and cities along the proposed route such as Reno and Susanville. In California there were a large number of multi-component sites that contained both prehistoric and historic elements (n = 18) while there was only a single multi-component site along the Nevada portion of the line. Also of note, in California three ethnographic sites were recorded. Fifteen of the sites identified during the records search have been determined eligible for inclusion in the National Register of Historic Places with three (3) of those being in California and 11 in Nevada (Tables 3-6 and 3-7).

The Northeast Information Center also held information from the Oregon-California Trails Association (OCTA). Additional OCTA maps and files are available at the BLM's Sierra Front Field Office in Carson City, Nevada. OCTA has done extensive research on Western trails including the Nobles' Emigrant Trail and the Beckwourth Emigrant Trail. These trails cross the proposed fiber cable project file search area.

Table 3-4: All California Cultural Resources by Site Type

Period	Site Type	Number
Prehistoric	Lithic Scatter	31
	Habitation Area/Camp Site	5
	Quarry Site	1
	Rock Rings and Intaglios	1
Ethnographic	Campsite	3
Multi-component	Prehistoric Lithic Scatter and Historic Trash Scatter	10
	Prehistoric Lithic Scatter and Historic Building Vestige	2
	Prehistoric Lithic Scatter and Historic Homestead/Ranch	2
	Prehistoric Lithic Scatter and Historic Residence	1
	Prehistoric Camp and Historic Trash Scatter	1
	Prehistoric Camp and Historic Railbed	1
	Prehistoric Bedrock Metate and Historic Privy	1
Historic	Trash Scatter	19
	Railroad Related	11
	Water System Related	9
	Building Vestige	7
	Mining Related	7
	Roads and Trails	5
	Logging Related	5
	Dump	5
	Standing Buildings	3
	Conservation/Federal	3
	Mill Site	1
	Dairy	1
	Agricultural Site	1
	Military	1
Unknown	No Site Record	1

Table 3-5: All Nevada Cultural Resources by Site Type

Period	Site Type	Number
Prehistoric	Lithic Scatter	20
	Isolates	12
	Habitation Area/Camp Site	2
	Lithic Concentration	1
Multi-component	Prehistoric Lithic Scatter and Historic Trash Scatter	1
Historic	Standing Buildings	12
	Dump	11
	Mining Related	10
	Water System Related	5
	Urban Infrastructure	5
	Railroad Related	5
	Roads and Trails	4
	Trash Scatter	4
	Ranch	2
	Fence Line	2
	Building Vestige	1
	River Crossing	1
	Agricultural Site	1
	Historic Isolate	1
Unknown	No Site Record	1

Table 3-6: California NRHP Eligible Sites

Site Type/Description	Eligibility Source	U.S. G. S. Quad
Prehistoric Lithic Scatter	Northeast Information Center (NEIC) Table	McKesick Peak
Southern Pacific Railroad Railbed	Site Form	Johnstonville
Sierra Army Depot Historic District	Site Form	CalNeva Lake

Table 3-7: Nevada NRHP Eligible Sites

Site Type/Description	Eligibility Source	U.S. G. S. Quad
Cochran Ditch	Site Form	Mt. Rose NE
Virginia Street Cistern & Redwood Pipeline	Site Form	Reno, NV
Virginia Street Subway	Site Form	Reno, NV
Prosser Valley Ditch	Site Form	Reno, NV
Buried Utilities and Communication Lines	Site Form	Reno, NV
Center Street Cistern	Site Form	Reno, NV
N-C-O railroad grade (multiple segments and recordings)	Various Site Forms Show both Significant/Eligible and Non-significant/	Reno NW, NV
Branch of Beckwourth Pass Road	Site Form	Reno, NV
Highland Ditch (multiple segments)	Site Form	Verdi, NV; Reno, NV
Prehistoric Lithic Scatter	Site Form	Reno, NV
Historic Irrigation Ditch	Non-contributing Segment of Eligible Linear Ditch	Reno, NV

Between April 13 and May 5, 2011, Western Cultural Resource Management, Inc (WCRM) conducted a Class III Cultural Resources Inventory of approximately nine miles on both private and BLM-administered lands located between Reno, NV and Hallelujah Junction, CA. The Class III project area encompasses only the area where surface disturbance would occur, as identified in the NTIA APE. A file search was performed as a part of the Class I preliminary research along the entire 183-mile long project area.

The inventory resulted in the identification and documentation of six previously unrecorded archaeological sites and 11 isolated finds. Additionally, six previously recorded sites were relocated and updated as necessary. The newly recorded sites consist of three historic debris scatters and three prehistoric lithic scatters. The updated previously recorded sites consist of segments of the old U.S. Highway 395 route, a historic debris scatter, a multicomponent site, and three prehistoric lithic scatters. Of the twelve sites, one is recommended as NRHP eligible (the old U.S. Highway 395 route, site CA-LAS-2232-H); two sites are recommended as “unevaluated” (prehistoric site C04 and previously recorded site 46-720H); and nine sites are recommended as Not Eligible.

3.2.4 Native American Religious Concerns and Tribal Consultation

Various federal laws require government-to-government consultation on projects to allow Native Americans the opportunity to comment on federally funded, sponsored or permitted projects. The pertinent laws include the American Indian Religious Freedom Act (AIRFA) (16 U.S.C. 1996), the Archeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm), the National Historic Preservation Act (16 U.S.C. 470, et seq.), National Environmental Policy Act

regulations (40 CFR 1500 – 1508), National American Graves Protection and Repatriation Act (NAGPRA) regulations (43 CFR 10.5, 10.8, and 10.9), and the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001, et seq.) as well as various Executive Orders such as E.O.13175, Consultation and Coordination with Indian Tribal Governments (2000) and E.O. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994), and the policies of the various federal agencies involved with the project. Pursuant to those laws, Executive Orders and agency policies, in early October 2010, NTIA initiated formal government-to-government consultation with the following five federally recognized Native American tribal entities: the Washoe Tribes of Nevada and California, Enterprise Rancheria of Maidu Indians, Susanville Indian Rancheria, the Greenville Indian Rancheria, and Pit River Tribe of California. These tribes also had been contacted in early March 2010 for comments on the grant application. As a follow-up, telephone calls were placed to the Tribes in January through March 2011. Additionally, the Reno-Sparks Indian Colony and the Pyramid Lake Paiute Tribe were contacted in February and March 2011. Additional meetings with the Tribes, BLM, and representatives of NTIA are being planned prior to commencement of construction activities. See Appendix A3 for Native American Consultation and comment letters.

In March and October 2010, PSREC initiated consultation with the California Native American Heritage Commission to determine which tribes may be included in the project area, and which tribes may have information or concerns about the Proposed Action. Through use of the National Tower Communication System (NTCS), and to ensure California recognized tribes and other tribal entities would be duly consulted, NTIA issued the project description and request for comments. As comments or requests for additional information were received from NTIA, these entities were contacted by telephone or email with additional information provided, as applicable. Pursuant to the response received from the Native American Heritage Commission, in addition to identification of other interested tribes, 38 letters were forwarded to tribal leaders, representing 13 tribes. An example of the letter sent to the tribes and the comments received from the tribes are included in Appendix A3, Native American Consultation.

3.3 Environmental Justice and Demographics

The following discussion provides an overview of federal, state, and regional/local policies and regulations related to environmental justice, followed by demographic information of the region by county.

3.3.1 Federal

The 1994 EO 12898 on environmental justice (59 Federal Register 7629) requires the EPA and all other federal agencies to identify and address disproportionately adverse human health or environmental effects from their programs, policies, and activities in minority and low-income populations in the U.S.

Subsequently, in 1996, the EPA's Office of Environmental Justice released the *Environmental Justice Implementation Plan*, which supplements the EPA's environmental justice strategy and provides a framework for developing specific plans and guidance for implementing EO 12898. In 1998, the EPA developed a framework for assessing environmental justice in NEPA

documents in its *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis*.

3.3.2 California Public Utilities Commission

It does not appear that the California Public Utilities Commission (CPUC) has promulgated any policies, procedures or guidelines to address environmental justice.

Standard verbiage in environmental documents considered by the CPUC is as follows:

“Environmental Justice

Although not required under CEQA, for purposes of the analysis conducted in this Environmental Impact Report (EIR), the Proposed Project would have a significant impact to environmental justice if it would result in any of the following conditions:

- Disproportionate environmental degradation in low-income/minority communities
- Does not result in equity of economic benefits of the proposed project in low income/minority communities.”

3.3.3 Lassen, Plumas and Sierra Counties

Lassen, Plumas and Sierra Counties are members of the Regional Council of Rural Counties (RCRC). In 2004/2005, the RCRC, in association with the California Environmental Protection Agency, developed an Intra-Agency Environmental Justice Strategy and Plan. No other regional or local environmental justice assessments have been conducted within the study area.

3.3.4 Demographic Information

This section summarizes population and Census-related information for each county and provides a breakdown of minority and low-income populations, and characterizes the distribution of such populations in each county.

Lassen County

Based on California Department of Finance (DOF) estimates, the current population of Lassen County is 35,889, of which 17,431 reside in Susanville, the only incorporated city within the county. The 2000 Census indicates a County population of 33,828 and the City of Susanville with 17,465. However, the prison population within the county has a significant effect on these numbers. The County's population has increased by 2,000 persons over the past 10-years, while the City of Susanville's population has remained static.

Lassen County contains four prison facilities including: the California Correctional Center; High Desert State Prison; and Lassen County Jail (Sheriff Detention Facility) located in Susanville; and the Herlong Federal Corrections Institute located in Herlong. The current prison population is estimated to be 10,066, which is 28% of the total County population. (DOF, 2010).

Based on the 2000 Census, Lassen County had a population density of 7 people per square mile. There were 12,000 housing units at an average density of 3 per square mile. The racial makeup of the county was: 80.8% white; 8.8% Black; 3.3% Native American; 0.7% Asian; 0.4% Pacific Islander; 3.2% from other races; and 2.7% from two or more races. A total of 13.8% of the population were Hispanic or Latino. The median age in the county was 35 years. The median income for a household was \$36,310, with a per capita income of \$14,749. Approximately 11% of the families and 14% of the population were below the poverty line, including 16% of those under age 18 and 8% of those who were age 65 or over.

Plumas County

Based on California DOF estimates, the current population of Plumas County is 20,428, of which 1,997 reside in Portola, the only incorporated city within the county. The unincorporated community of Quincy (which is the County Seat) has a current estimated population of 1,900. The 2000 Census indicates a County population of 20,824 and the City of Portola with 2,227. The County's population has remained static over the past 10-years, while the City of Portola has lost population (10.3%).

Based on the 2000 Census, Plumas County had a population density of 8 people per square mile. There were 13,386 housing units at an average density of 5 per square mile. As many as one-third of these housing units are attributed to seasonal or part-time occupancy. The racial makeup of the county was: 91.8% white; 0.6% Black; 2.6% Native American; 0.5% Asian; 0.1% Pacific Islander; 1.8% from other races; and 2.6% from two or more races. A total of 5.7% of the population were Hispanic or Latino. The median age in the county was 44 years. The median income for a household was \$36,351, with a per capita income of \$19,391. Approximately 9% of the families and 13% of the population were below the poverty line, including 17% of those under age 18 and 6% of those who were age 65 or over.

Sierra County

Based on California DOF estimates, the current population of Sierra County is 3,303, of which 825 reside in Loyalton, the only incorporated city within the county. The 2000 Census indicates a County population of 3,555 and the City of Loyalton with 862. The County's population has declined over the past 10-years (8%), while the City of Loyalton's population has declined by 4%.

Based on the 2000 Census, Sierra County had a population density of 4 people per square mile. There were 2,202 housing units at an average density of 2 per square mile. As many as one-third of these housing units are attributed to seasonal or part-time occupancy. The racial makeup of the county was: 94.2% white; 0.2% Black; 1.9% Native American; 0.2% Asian; 0.1% Pacific Islander; 1.0% from other races; and 2.5% from two or more races. A total of 6.0% of the population were Hispanic of Latino. The median age in the county was 44 years. The median income for a household was \$35,827, with a per capita income of \$18,815. Approximately 9% of the families and 11% of the population were below the poverty line, including 14% of those under age 18 and 2% of those who were age 65 or over.

Washoe County

Based on Federal Census estimates, the current population of Washoe County is 414,820, of which 309,100 reside in Reno or Sparks. The County's unincorporated population is 105,720 and is primarily located on the urban fringe north of Reno. The 2000 Census indicates a County population of 339,486, with 246,862 residing in the cities of Reno and Sparks. Over the past ten years, the overall population of Washoe County has increased by 22%, the City of Reno by 22%, and the City of Sparks by 33.5%. Growth in the unincorporated portion of Washoe County grew more slowly at 14%.

Based on the 2000 Census, Washoe County had a population density of 54 people per square mile. There were 143,908 housing units at an average density of 23 per square mile. The racial makeup of the county was: 80.4% white; 2.1% Black; 1.8% Native American; 4.3% Asian; 0.5% Pacific Islander; 7.7% from other races; and 3.3% from two or more races. A total of 16.6% of the population were Hispanic of Latino. The median age in the county was 36 years. The median income for a household was \$45,815, with a per capita income of \$24,277. Approximately 7% of the families and 10% of the population were below the poverty line, including 12% of those under age 18 and 6% of those who were age 65 or over.

The Red Rock community being served by this Proposed Action has an estimated population of 942 (377 dwelling units at 2.5 persons per unit), although there have been a number of foreclosures that have resulted in fewer homes being occupied. The northern portion of the community (Rancho Haven) is approximately 50% built out, while Sierra Ranchos on the south is approximately 30% built out. (Wobbe, pers. comm. 2011) All of the dwelling units in the community are detached single-family homes, and all have individual wells and septic systems. At full build out (approximately 650 residential lots), the expected population would be 1,625. Red Rock is not currently a Census Designated Place (CDP), so more detailed demographic data is not available.

3.4 Prime, Unique Farmland, Farmland of Local Importance, or Farmland of Statewide Importance

The California Department of Conservation's Farmland Mapping and Monitoring Program map of the Sierra Valley region covers parts of Lassen, Plumas, and Sierra counties. The Sierra Valley Important Farmland Map (2008) shows Prime, Statewide Importance, and Unique farmland which the route will cross or abut in Plumas County between Vinton, west of the SR49/SR70 junction, and Rocky Point, west of the County Highway A23/Beckwourth Calpine Road. The same map shows that Prime farmland will be crossed by the route in Sierra County north of Loyalton.

Farmland of Local Importance is defined as land of importance to the local economy, as defined by each county's local advisory committee and adopted by its Board of Supervisors or Commissioners. Farmland of Local Importance is either currently producing, or has the capability of production, but does not meet the criteria of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. Authority to adopt or to recommend changes to the category of Farmland of Local Importance rests with the Board of Supervisors in each county in California and the Board of Commissioners in Nevada.

3.5 Flood Hazards

From Hallelujah Junction north to Susanville the Proposed Action area traverses the following base floodplains as shown on the *100-Year Floodplains Based Upon Best Available Data* maps (DWR 2009).

1. Long Valley Creek (3 crossings, Lassen County)
2. Baxter Creek (1 crossing)
3. Parker Creek (1 crossing)
4. Unnamed tributary to Baxter Creek (adjacent to Byers Pass Road) (1 crossing)
5. Susan River (3 crossings)

From Hallelujah Junction west to Quincy the Proposed Action area traverses the following base floodplains as shown on the *100-Year Floodplains Based Upon Best Available Data* maps (DWR 2009).

1. Long Valley Creek (1 crossing, Lassen County)
2. Unnamed tributary to Last Chance Creek (1 crossing)
3. Last Chance Creek and Little Last Chance (1 crossing each)
4. Unnamed tributary to Middle Fork Feather River (3 crossings)
5. Middle Fork Feather River (2 crossings)
6. Willow Creek (1 crossing)
7. Unnamed tributary to Willow Creek (1 crossing)
8. Bonta Creek (1 crossing)
9. Cogswell Ravine (1 crossing)
10. Long Valley Creek (1 crossing, Plumas County)
11. Estray Creek (1 crossing)
12. Unnamed tributary to Estray Creek (1 crossing)
13. Greenhorn Creek (1 crossing)

14. Thompson Creek (1 crossing)
15. Mill Creek (1 crossing)
16. Spanish Creek (2 crossings)

From Hallelujah Junction south to Reno the Proposed Action area traverses the following floodplain as shown on the *100-Year Floodplains Based Upon Best Available Data* maps (DWR 2009) and the Flood Insurance Rate Maps (FEMA 2011).

1. Truckee River in Reno, Nevada (1 crossing)

3.6 Geology, Minerals and Seismicity

3.6.1 Geology

The eastern Honey Lake Valley/Long Valley area is characterized by sedimentary deposits that are generally lacustrine or alluvial, as most of the Honey Lake Basin was dominated by Lake Lahontan until about 12,000 years ago (Wegener et al. 2004). Soils in the area include sands, silts, and sandy loams, especially in the northeast and eastern parts of the basin. The presence of terraces, deltas, gravel bars, and spits (all above the current valley floor) suggest that Honey Lake basin now only holds a fraction of the water that filled it during the Pleistocene (Wegener et al. 2004; Milliken and Hildebrandt 1997). Along with this sedimentary deposition, alluvial and aeolian deposits also are present in the basin (Milliken and Hildebrandt 1997). The ephemeral Long Valley Creek is responsible for alluvial deposits, and low sand dunes prove testament to aeolian forces in much of the project area. Most of the alluvial and aeolian deposits are superimposed over Lake Lahontan's lacustrine deposits from the earlier era (Milliken and Hildebrandt 2007).

North of Honey Lake Valley, the Modoc Plateau is comprised of volcanic uplands, resulting from basaltic lava flows (Oakeshott 1978 *In* Mackey et al. 2000). Additionally, both the Diamond Mountain uplands to the west and southwest of Honey Lake Valley and the Fort Sage Mountains to the south are the result of uplift during the Mesozoic era and are part of the granitic Sierra Range (Milliken and Hildebrandt 1997). The Fort Sage Mountains located show evidence of rhyolitic ash flows and air-fall tuffs, and have formations of andesite, rhyolite, and dacite (McGuire et al. 1997). These rhyolite formations contain silica-rich deposits of toolstone, which outcrop throughout the region (McGuire et al. 1997).

3.6.2 Mineral Resources

Within the fiber project area, the California State Geologist has identified several locations for aggregate production and mining operations within the three-county region. The following information is provided to access what effects if any, the fiber route will have on these mineral resources.

Lassen County

Of the six mines identified in Lassen County, one is within proximity to the fiber overhead line. The Standish Gravel Pit is an active aggregate operation west of Standish Pit Road, south of

Lake Leavitt Road. The westerly boundary of the quarry is approximately 5,000 feet from the north-south fiber cable along Byers Pass Road.

Plumas County

Of the 89 mines identified in Plumas County, five are in proximity to the SR 70 Corridor, and one is near the Marble lateral south of Beckwourth. The five mines along the SR 70 Corridor are in more mountainous areas and do not come in proximity to the fiber overhead line.

The Marble lateral will traverse adjacent to Beckwourth-Calpine Road (County Road A-23) and will come in proximity to the mine approximately 1.5 miles south of SR 70. The mine, now called Blasted Rock Quarry, is located at 1482 Beckwourth-Calpine Road. The existing electrical distribution line carrying the fiber cable crosses the access road to the quarry. The power line is approximately 800 feet east of the quarry pit, but will not interfere with quarry operations. No undue effects from the quarry are anticipated on the fiber cable, and vice versa.

Sierra County

Of the 146 mines identified in Sierra County, none are within proximity to Loyalton and the Loyalton lateral.

Washoe County

The Nevada State Division of Minerals identified two mines in Washoe County, both to the east and not in proximity to the Red Rock lateral

3.6.3 Seismicity

The project area is located near identified hazardous faults. In December 1950, a series of moderate earthquakes occurred along the Honey Lake and Warm Springs Valley fault zones, including a magnitude 5.6 (M5.6) earthquake, a M5.0 and M4.8 earthquakes, and a M4.9 event all located along the US395 corridor.

On February 22, 1979, a M5.2 earthquake occurred in the southeastern portion of Honey Lake Valley, near the town of Doyle on US395. Damage in the epicenter area was mild (i.e., telephone service was temporarily disrupted, furniture moved, lamps swayed, but no structure damage was reported). The earthquake was strongly felt in Reno, Nevada (37 miles southeast of the epicenter); a few individuals as far away as Sacramento (125 miles southwest of the epicenter) reported feeling the quake. People within the epicentral region reported the earthquake had an audible booming sound.

The most recent earthquake (M4.7) occurred on April 25, 2008. This event was centered in the project area near Reno; however, minimal damage was reported.

3.7 Soils

Soils present in the study area were determined using the U.S. General Soil Map (STATSGO2) dataset (NRCS 2010a). The U.S. General Soil Map is composed of general soil association units and was created by generalizing more detailed soil survey maps. The study area traverses 22

general soil association units (Table 3-8). The soils that compose each general soil association unit are briefly described below (NRCS 2010b).

Table 3-8. General Soil Association Units in the Study Area

General Soil Association Unit Name & ID#	Occurs in County ¹
Ramelli-Massack-Keddie (s520)	P
Woodseye-Waca-Inville (s526)	P
Toem-Cagwin (s527)	P
Voltaire-Vamp-Truckee-Fettic (s5405)	W
Springmeyer-Mellor-Jowec-Godecke-Doten (s5406)	W
Toll-Mottsville-Kayo (s5410)	W
Springmeyer-Orr-Oest-Fleischmann (s5412)	W
Rock outcrop-Graufels-Glenbrook-Acrelane (s5414)	L
Tristan-Duco (s5415)	S, W
Terca-Sumine-Softscrabble-Gabica (s5417)	W
Galeppi-Aquinas (s5421)	W
Kistirn-Hollowtree-Deadwood (s550)	P
Pit-Humboldt-Herjun-Bober (s599)	L
Stiles-Mcdermott (s602)	L
Springmeyer-Mottsville-Leviathan-Haybourne (s604)	L
Cleghorn-Chime (s605)	L
Searles-Petes creek-Fredonyer (s606)	L
Toiyabe-Lasco-Chimney-Bonta (s611)	L
Trojan-Rock outcrop-Lithic Xerorthents (s638)	P, L
Martineck-Lovejoy-Dotta-Calpine (s639)	P, L
Trosi-Galeppi (s640)	S, L, W
Ramelli-Ormsby-Loyalton-Beckwourth (s641)	P

¹ P = Plumas County, CA; L = Lassen County, CA; S = Sierra County, CA; W = Washoe County, NV;

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions. Available online at <http://soils.usda.gov/technical/classification/osd/index.html>. Accessed [January 26, 2011].

3.7.1 Ramelli-Massack-Keddie Soil Association Unit (s520)

The Ramelli series consists of very deep, poorly and very poorly-drained soils formed in mixed alluvium and occurs on flood plains and depressional basins with slopes ranging from 0 to 2

percent. Mean annual precipitation is ± 18 inches and the mean annual temperature is ± 48 °F. Soils are slightly acid (pH 6.1). Typical vegetation includes meadow with sedges and bluegrass (NRCS 2010b).

The Massack series consists of very deep, poorly-drained soils formed in alluvium from mixed rock sources and occurs on floodplains with slopes ranging from 0 to 2 percent. Mean annual precipitation is ± 30 inches and mean annual temperature is ± 50 °F. The soils are slightly acid to neutral. The soils are usually saturated during the late winter and spring due to a seasonal water table at a depth of 12 to 30 in. Typical vegetation includes timothy, fescue, clover, meadow foxtail, and other grasses and forbs (NRCS 2010b).

The Keddie series consists of very deep, poorly-drained soils formed in alluvium weathered from mixed rock sources and occurs on floodplains with slopes range from 0 to 2 percent. Mean annual precipitation is ± 30 inches and mean annual temperature is ± 50 °F. Soils are slightly acid to neutral. Soils are poorly drained with very slow to slow runoff and moderate or moderately slow permeability. These soils are usually saturated during the late winter and spring due to a seasonal water table at a depth of 20 to 40 in. The average texture is loam or gravelly loam. Typical vegetation includes pasture species of timothy, fescue, clover, meadow foxtail and forbs (NRCS 2010b).

3.7.2 Woodseye-Waca-Inville Soil Association Unit (s526)

The Woodseye series consists of shallow, well-drained soils with moderate permeability that formed in material weathered from metamorphic rocks and occurs on gently sloping to very steep slopes. Mean annual precipitation is ± 65 inches and mean annual temperature is ± 40 °F. These soils are usually moderately acid. Typical vegetation includes huckleberry oak, green leaf manzanita, whitehorn, and scattered junipers, Jeffrey pine and lodgepole pine (NRCS 2010b).

The Waca series consists of moderately deep, well-drained soils formed in material weathered from andesitic tuff and occurs on mountain slopes of 5 to 75 percent. Mean annual precipitation is ± 50 inches and mean annual temperature is ± 41 °F. Soils are moderately to slightly acidic. Soils are well-drained with medium to high runoff and moderately rapid permeability above the paralithic contact. Typical vegetation includes red fir, white fir, mountain hemlock, and western white pine (NRCS 2010b).

The Inville series consists of very deep, well-drained soils that formed in mixed alluvium and glacial outwash and occurs on alluvial fans and outwash terraces with slopes ranging from 2 to 30 percent. Mean annual precipitation is ± 25 inches and mean annual temperature is ± 43 °F. Soils are moderately acid to slightly acid. Soils are well-drained with low to rapid runoff and moderate or moderately rapid permeability. Typical vegetation includes Jeffrey pine and white fir with understory of manzanita and ceanothus (NRCS 2010b).

3.7.3 Toem-Cagwin Soil Association Unit (s527)

The Toem series consists of shallow, excessively-drained soils that formed in colluvium and residuum from granitic rocks and occurs on convex, rolling to very steep slopes ranging from 5

to 75 percent. Mean annual precipitation is ± 40 inches and mean annual temperature is ± 40 °F. Soils are slightly or moderately acid throughout. Soils are excessively-drained with high runoff and rapid permeability. Typical vegetation includes open to semi-dense stands of mixed conifers such as Jeffrey pine, white fir, red fir, and western white pine. Pine mat manzanita, greenleaf manzanita, squaw carpet, mountain whitethorn, and huckleberry oak are common as a shrub understory (NRCS 2010b).

The Cagwin series consists of moderately deep, somewhat excessively-drained soils that formed in material weathered from granitic rock and occurs on mountain sideslopes ranging from 5 to 75 percent. The mean annual precipitation is ± 40 in and mean annual temperature is ± 41 °F. Soil surfaces are slightly to strongly acid. Soils are somewhat excessively-drained with low to medium runoff and moderately rapid and rapid permeability. Typical vegetation includes semi-dense to dense stands of mixed conifers such as white fir, Jeffrey pine, and California red fir (NRCS 2010b).

3.7.4 Voltaire-Vamp-Truckee-Fettic (s5405)

The Voltaire series consists of very deep, poorly and very poorly drained soils that formed in alluvium from mixed rocks and occurs on alluvial fans, stream terraces, and floodplains with slopes of 0 to 2 percent. Mean annual precipitation is ± 8 inches and mean annual temperature is ± 48 °F. Soils are moderately to very strongly alkaline and are poorly and very poorly drained with slow or very slow runoff and slow permeability. Typical vegetation includes mainly meadow type grasses and salt tolerant plants (NRCS 2010b).

The Vamp series consists of moderately deep, somewhat poorly drained soils that formed in alluvium derived from mixed rocks and occurs on low terraces with slopes of 0 to 2 percent. Mean annual precipitation is ± 8 inches and mean annual temperature is ± 50 °F. Soils are moderately to very strongly alkaline and are somewhat poorly drained with slow runoff and moderate or moderately rapid permeability. Typical vegetation includes saltgrass, rabbitbrush, black greasewood, pepperweed, and wiregrass (NRCS 2010b).

The Truckee series consist of very deep, poorly drained soils that formed in mixed alluvium and occurs on flood plains and stream terraces with slopes of 0 to 2 percent. Mean annual precipitation is ± 8 inches and mean annual temperature is ± 50 °F. Soils are moderately to strongly alkaline and are poorly drained with very slow or slow runoff moderately slow permeability. Typical vegetation includes big sagebrush, sweet clover, red top, wiregrass, bluegrass, Timothy, willows, and wildrose (NRCS 2010b).

The Fettic series consist of very deep, moderately well drained soils that formed in alluvium derived from mixed sources and occurs on low stream terraces with slopes of 0 to 2 percent. Mean annual precipitation is ± 8 inches and mean annual temperature is ± 50 °F. Soils are moderately to very strongly alkaline and are moderately well drained with very high runoff very slow permeability. Typical vegetation includes saltgrass, greasewood, big sagebrush, rubber rabbitbrush, alkali sacaton, beardless wildrye, and basin wildrye (NRCS 2010b).

3.7.5 Springmeyer-Mellor-Jowec-Godecke-Doten (s5406)

The Springmeyer series consists of very deep, well-drained soils that formed in alluvium derived from mixed igneous rocks and occurs on fan remnants and inset fans with slopes ranging from 0 to 50 percent. Mean annual precipitation is ± 11 inches and mean annual temperature is ± 50 °F. Soils are slightly acid to neutral and are well-drained with medium to high surface runoff, moderately slow permeability and moderately high saturated hydraulic conductivity. Typical vegetation includes Wyoming big sagebrush, mountain big sagebrush, antelope bitterbrush, rabbitbrush, singleleaf pinyon, bottlebrush squirreltail, and Sandberg's bluegrass (NRCS 2010b).

The Springmeyer series consists of very deep, well and moderately well drained soils that formed in alluvium derived from sedimentary rocks and occur on alluvial fans, alluvial flats, lake plains, flood plains and lake terraces with slopes ranging from 0 to 6 percent. Mean annual precipitation is ± 8 inches and mean annual temperature is ± 47 °F. Soils are strongly to very strongly alkaline and are well and moderately well drained with slow to high surface runoff, and slow permeability. Typical vegetation includes greasewood, shadscale, and bottlebrush squirreltail (NRCS 2010b).

The Jowec series consists of deep, well drained soils that formed in mixed alluvium and occur on low lake terraces with slopes ranging from 0 to 4 percent. Mean annual precipitation is ± 8 inches and mean annual temperature is ± 49 °F. Soils are slightly acid to neutral to strongly alkaline and are well drained with slow permeability. Typical vegetation includes big sagebrush, bottlebrush squirreltail, cheatgrass, and wild onion (NRCS 2010b).

The Doten series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rocks and lacustrine sediments and occur on lake plains, alluvial flats and lake terrace with slopes ranging from 0 to 15 percent. Mean annual precipitation is ± 8 inches and mean annual temperature is ± 48 °F. Soils are slightly too strongly alkaline, moderately, with very slow to medium runoff, and very slow permeability. Typical vegetation includes big sagebrush, bottlebrush squirreltail, and greasewood (NRCS 2010b).

3.7.6 Toll-Mottsville-Kayo Soil Association Unit (s5410)

The Toll series consists of deep, somewhat excessively-drained soils that formed in eolian deposits and alluvium from mixed rocks and occurs on alluvial fans and terraces with slopes of 0 to 15 percent. Mean annual precipitation is ± 10 inches and mean annual temperature is ± 49 °F. Soils are slightly acid to neutral and are somewhat excessively-drained with slow or very slow runoff and rapid permeability. Typical vegetation includes desert peach, big sagebrush, rabbitbrush, horsebrush, cheatgrass, Indian ricegrass, needlegrass and squirreltail (NRCS 2010b).

The Mottsville series consists of very deep, excessively-drained soils that formed in alluvium derived from granitic rocks and occurs on alluvial fans, fan remnants, and fan aprons with slopes from 0 to 15 percent. Mean annual precipitation is ± 11 inches and mean annual temperature is ± 48 °F. Soils are moderately acid to neutral and are excessively-drained with negligible or very low surface runoff, and rapid or very rapid permeability. These soils are susceptible to rare

flooding for extremely brief periods throughout the year. Typical vegetation includes big sagebrush, antelope bitterbrush, Anderson's peachbrush, and needlegrass (NRCS 2010b).

The Kayo series consists of very deep, well-drained soils that formed in mixed alluvium and occurs on fan piedmonts with slopes from 2 to 30 percent. Mean annual precipitation is ± 8 inches and mean annual temperature is ± 50 °F. Soils are slightly acid to neutral and are well-drained or somewhat excessively-drained, with moderately rapid permeability, and slow to medium runoff. Typical vegetation includes spiny hopsage, low rabbitbrush, big sagebrush, desert peach, squirreltail, and Indian ricegrass (NRCS 2010b).

3.7.7 Springmeyer-Orr-Oest-Fleischmann Soil Association Unit (s5412)

The Springmeyer series consists of very deep, well-drained soils that formed in alluvium derived from mixed igneous rocks and occurs on fan remnants and inset fans with slopes ranging from 0 to 50 percent. Mean annual precipitation is ± 11 inches and mean annual temperature is ± 50 °F. Soils are slightly acid to neutral and are well-drained with medium to high surface runoff, moderately slow permeability and moderately high saturated hydraulic conductivity. Typical vegetation includes Wyoming big sagebrush, mountain big sagebrush, antelope bitterbrush, rabbitbrush, singleleaf pinyon, bottlebrush squirreltail, and Sandberg's bluegrass (NRCS 2010b).

The Orr series consists of very deep, well-drained soils that formed in alluvium derived from mixed igneous rocks and occurs on fan remnants, stream terraces, inset fans, and hills with slopes ranging from 0 to 15 percent. Mean annual precipitation is ± 9.8 inches and mean annual temperature is ± 50 °F. Soils are well-drained with moderately slow permeability and moderately high saturated hydraulic conductivity. Typical vegetation includes Wyoming big sagebrush, Sandberg's bluegrass, cheatgrass, and bottlebrush squirreltail (NRCS 2010b).

The Oest series consists of very deep, well-drained soils that formed in alluvium derived from mixed igneous rocks and occurs on fan remnants and stream terraces with slopes ranging from 0 to 50 percent. Mean annual precipitation is ± 9.8 inches and mean annual temperature is ± 50 °F. Soils are slightly acid or neutral. Soils are well-drained with low, medium, or high surface runoff, moderate permeability, and moderately high saturated hydraulic conductivity. Typical vegetation includes Wyoming big sagebrush, antelope bitterbrush, bottlebrush squirreltail, and cheatgrass (NRCS 2010).

The Fleischmann series consists of moderately deep, well-drained soils formed in mixed alluvium and occurs on terraces with slopes ranging from 2 to 15 percent. Mean annual precipitation is ± 10 inches and mean annual temperature is ± 48 °F. Soil surfaces are moderately acidic. Soils are well-drained with slow or medium runoff and slow permeability and are used for pasture or occur in urban areas (NRCS 2010b).

3.7.8 Rock Outcrop-Graufels-Glenbrook-Acrelane Soil Association Unit (s5414)

The Graufels series consists of moderately deep, somewhat excessively-drained soils that formed in residuum and colluvium derived from granitic rocks and occur on hills and mountains with slopes of 4 to 60 percent. Mean annual precipitation is ± 11 inches and mean annual temperature

is ± 49 °F. Soils are slightly acid or neutral and somewhat excessively-drained with very low or low surface runoff, rapid permeability, and high or very high saturated hydraulic conductivity. Typical vegetation includes Wyoming big sagebrush, antelope bitterbrush, Anderson's peachbrush, Indian ricegrass, bottlebrush squirreltail, and scattered pine trees (NRCS 2010b).

The Glenbrook series consists of shallow, somewhat excessively-drained soils that formed in residuum and colluvium derived from granitic rock and occur on rock pediments, hills, and mountains from with slopes ranging from 5 to 75 percent. Mean annual precipitation is ± 12 inches and mean annual temperature is ± 48 °F. Soils are slightly acid or neutral, somewhat excessively-drained with low or medium surface runoff, rapid permeability, and high saturated hydraulic conductivity. Typical vegetation includes Wyoming big sagebrush, antelope bitterbrush, green ephedra, Anderson's peachbrush, Indian ricegrass, and bottlebrush squirreltail (NRCS 2010b).

The Acrelane series consists of shallow, well-drained soils that formed in residuum and colluvium derived from granodiorite and similar granitic rocks and occur on hills and mountains with slopes ranging from 4 to 50 percent. Mean annual precipitation is ± 10 inches and mean annual temperature is ± 48 °F. Soils are neutral to moderately acid, well-drained with medium or high surface runoff, moderate permeability, and moderately high saturated hydraulic conductivity. Typical vegetation includes Wyoming big sagebrush, low rabbitbrush, ephedra, Anderson's peachbrush, antelope bitterbrush, desert needlegrass, Indian ricegrass, and bottlebrush squirreltail with Utah juniper common in a few areas (NRCS 2010b). Rock outcrop is not listed in the NRCS database (NRCS 2010b).

3.7.9 Tristan-Duco Soil Association Unit (s5415)

The Tristan series consists of deep, well-drained soils that formed in residuum and colluvium derived from basaltic rocks and occur on mountain slopes from 15 to 50 percent. Mean annual precipitation is ± 11 inches and mean annual temperature is ± 48 °F. Soils are neutral or slightly alkaline, well-drained with moderately slow permeability and moderately high saturated hydraulic conductivity. Typical vegetation includes Wyoming big sagebrush, Douglas rabbitbrush, bottlebrush squirreltail, antelope bitterbrush, and some Utah juniper (NRCS 2010b).

The Duco series consists of shallow, well-drained soils that formed in colluvium and residuum derived chiefly from volcanic rocks and occur on structural benches, hills, and mountains with slopes ranging from 4 to 75 percent. Mean annual precipitation is ± 12 inches and mean annual temperature is ± 48 °F. Soils are slightly acid to slightly alkaline, well-drained with very high surface runoff, moderately slow permeability, and moderately high saturated hydraulic conductivity. Typical vegetation includes a forest canopy of singleleaf pinyon and Utah juniper with an understory of Wyoming big sagebrush, antelope bitterbrush, *Ribes* spp., Thurber's needlegrass, bluebunch wheatgrass, Sandberg's bluegrass, and bottlebrush squirreltail (NRCS 2010b).

3.7.10 Terca-Sumine-Softscrabble-Gabica Soil Association Unit (s5417)

The Terca series consists of shallow, well-drained soils that formed in residuum and colluvium derived from volcanic rocks that occur on hills and mountains with slopes ranging from 15 to 75 percent. Mean annual precipitation is about ± 11 inches and mean annual temperature is ± 46 °F. The soil is neutral or slightly alkaline. Typical vegetation includes mountain big sagebrush, antelope bitterbrush, bluebunch wheatgrass, and Thurber's needlegrass (NRCS 2010b).

The Sumine series consists of moderately deep, well-drained soils that formed in residuum and colluvium derived from mixed rocks and occur on hills, mountains, and plateaus with slopes ranging from 8 to 75 percent. The mean annual precipitation is ± 12 inches and the mean annual temperature is ± 43 °F. Soils are neutral or slightly alkaline, well-drained with high or very high surface runoff, moderate permeability, and moderately high saturated hydraulic conductivity. Typical vegetation includes mountain big sagebrush, low rabbitbrush, bluebunch wheatgrass, cheatgrass, and Sandberg's bluegrass (NRCS 2010b).

The Softscrabble series consists of very deep, well-drained soils that formed in residuum and colluvium derived mainly from volcanic rocks and occur on plateaus, hills, and mountains with slopes ranging from 4 to 75 percent. Mean annual precipitation is ± 16 inches and the mean annual temperature is ± 44 °F. Soils are slightly acid or neutral, well-drained with high or very high surface runoff, slow permeability, and moderately low saturated hydraulic conductivity. Typical vegetation includes mountain big sagebrush, golden currant, mule's ears, and Douglas rabbitbrush (NRCS 2010b).

The Gabica series consists of shallow, well-drained soils that formed in residuum and colluvium derived from volcanic rocks and occur on hills and mountains with slopes ranging from 8 to 30 percent. Mean annual precipitation is ± 16 inches and the mean annual temperature is ± 44 °F. Soils are moderately acid to neutral, well-drained with high or very high surface runoff and moderately slow permeability. Typical vegetation includes low sagebrush, Sandberg bluegrass, and cheatgrass with minor amounts of rabbitbrush, lupine, buckwheat, Idaho fescue, and yarrow (NRCS 2010b).

3.7.11 Galeppi-Aquinas (s5421)

The Galeppi series consists of very deep, well drained soils that formed in alluvium derived from mixed igneous rocks and occur on fan remnants and stream terraces with slopes ranging from 2 to 50 percent. Mean annual precipitation ± 11 inches and mean annual temperature is ± 49 °F. Soils are slightly acid to neutral to slightly alkaline, well-drained with medium to very high runoff and moderately slow permeability. Typical vegetation includes big sagebrush, antelope bitterbrush, Anderson's peachbrush, Thurber's needlegrass, and bottlebrush squirreltail (NRCS 2010b).

The Aquinas series consists of moderately deep, well drained soils that formed in alluvium derived from granodiorite and occur on fan remnants with slopes ranging from 4 to 15 percent. Mean annual precipitation ± 9 inches and mean annual temperature is ± 49 °F. Soils are moderately acid to moderately alkaline, well-drained with slow permeability. Typical vegetation

includes big sagebrush, green ephedra, Anderson's peachbrush, bottlebrush squirreltail, and cheatgrass (NRCS 2010).

3.7.12 Kistirn-Hollowtree-Deadwood Soil Association Unit (s550)

The Kistirn series consists of deep, well-drained soils formed in material weathered from metasedimentary rock and occur on sideslopes with slopes ranging from 30 to 75 percent. Mean annual precipitation \pm 65 inches and mean annual temperature is \pm 50 °F. Soils are moderately acid, well-drained with medium runoff and moderately slow permeability. Typical vegetation includes Douglas-fir, tanoak, and madrone, with some bigleaf maple and ceanothus (NRCS 2010).

The Hollowtree series consists of moderately deep, well-drained soils formed in residuum weathered from sandstone and occur on hills and mountains with slopes ranging from 9 to 75 percent. Mean annual precipitation is \pm 65 inches and the mean annual temperature is \pm 55 °F. Soils are strongly to slightly acid, well-drained with medium to high surface runoff under bare soil conditions and moderately high saturated hydraulic conductivity. Typical vegetation includes tanoak, Pacific madrone, Douglas-fir, California huckleberry, and interior live oak (NRCS 2010).

The Deadwood series consists of shallow, somewhat excessively-drained soils formed in material weathered from hard metasedimentary rocks and occur on mountainous uplands with slopes ranging from 2 to 100 percent. Mean annual precipitation is \pm 55 inches and mean annual temperature is \pm 53 °F. Soils are slightly to strongly acid, somewhat excessively-drained with very low to medium runoff and moderately rapid permeability. Typical vegetation includes open, mixed stands of Ponderosa pine, sugar pine, Douglas-fir, incense-cedar, canyon oak, greenleaf manzanita and pinemat manzanita (NRCS 2010).

3.7.13 Pit-Humboldt-Herjun-Bobert Soil Association Unit (s599)

The Pit series consists of very deep, poorly-drained soils that formed in fine-textured alluvium weathered from extrusive and basic igneous rocks and occur on floodplains and in basins with slopes ranging from 0 to 5 percent. Mean annual precipitation is \pm 12 inches and mean annual temperature is \pm 47 °F. Soils are neutral or slightly alkaline, poorly-drained with ponded to slow runoff and slow permeability. The soils are flooded for brief to long durations from December to May, during which time the water table depth fluctuates between 2- to 3-ft deep. Drained phases have a water table between 5 to 6 ft deep. Typical vegetation includes tufted hairgrass, alpine timothy, Baltic rush, sedges, bluegrass, and scattered silver sagebrush in the drier locations (NRCS 2010b).

The Humboldt series consists of very deep, poorly-drained soils that formed in alluvium derived from mixed rocks with a component of volcanic ash and occur on floodplains with slopes ranging 0 to 2 percent. Mean annual precipitation is \pm 7 inches and mean annual temperature is \pm 50 °F. Soils are slightly alkaline to very strongly alkaline, the higher values being only in sodium affected areas. Soils are poorly-drained, exhibit very slow runoff, moderately slow permeability, and moderately low saturated hydraulic conductivity. The soils are usually subject

to flooding one year out of two if unprotected. Native areas subject to periodic flooding produce native meadows consisting of creeping wildrye, basin wildrye, sedges and saltgrass. On sodium-affected areas, typical vegetation is greasewood, saltgrass, and alkali sacaton (NRCS 2010b).

The Herjun series consists of very deep, moderately well-drained soils formed in alluvium and lacustrine sediments and occur on lake terraces with slopes ranging 0 to 2 percent. Mean annual precipitation is ± 10 inches and mean annual temperature is ± 51 °F. Soils are moderately or strongly alkaline, moderately well-drained with slow runoff and moderate permeability. A seasonal high water table fluctuates between depths of 50 and 60 in from December through May. Some phases are subject to rare flooding. Typical vegetation includes greasewood, bluegrass, and inland saltgrass (NRCS 2010b).

The Bobert series consists of very deep, moderately well-drained or well-drained soils that formed in alluvium derived from mixed rocks and occur on lake terraces and stream terraces with slopes ranging from 0 to 2 percent. Mean annual precipitation is ± 10 inches and mean annual temperature is ± 51 °F. Soils are slightly alkaline or moderately alkaline, moderately well-drained or well-drained with medium surface runoff and slow permeability. Endosaturation is present with an apparent seasonal high water table between 3.5 and 5 ft between December and April. Typical vegetation includes basin big sagebrush, spiny hopsage, black greasewood, and inland saltgrass (NRCS 2010b).

3.7.14 Stiles-McDermott Soil Association Unit Soil Association Unit (s602)

The Stiles series consists of moderately deep, well-drained soils that formed in lacustrine sediments from mixed rock sources and occur on uplifted lake terraces with slopes ranging from 0 to 5 percent. Mean annual precipitation is ± 8 inches and mean annual temperature is ± 51 °F. Soils are moderately or strongly alkaline throughout, well-drained with slow runoff and slow permeability. Typical vegetation includes big sagebrush, greasewood, spiny hopsage and basin wildrye (NRCS 2010b).

The McDermott series consists of very deep, well-drained soils that formed in lacustrine sediments from mixed rock sources and occur on remnant lake terraces with slopes ranging from 0 to 5 percent. Mean annual precipitation is ± 8 inches and mean annual temperature is ± 51 °F. Soils are moderately to strongly alkaline, well-drained with slow runoff and moderately slow permeability. Typical vegetation includes big sagebrush, greasewood, and basin wildrye (NRCS 2010b).

3.7.15 Springmeyer-Mottsville-Leviathan-Haybourne Soil Association Unit (s604)

See Toll-Mottsville-Kayo and Springmeyer-Orr-Oest-Fleischmann descriptions for Mottsville and Springmeyer descriptions.

The Leviathan series consists of very deep, well-drained soils that formed in alluvium derived mainly from granitic rocks and occur on stream terraces and fan remnants with slopes ranging from 0 to 50 percent. Mean annual precipitation is ± 12 inches and mean annual temperature is ± 48 °F. Soils are slightly acid or neutral, well-drained with medium to very high surface runoff,

moderately slow permeability, and moderately high saturated hydraulic conductivity. Typical vegetation includes Wyoming big sagebrush, antelope bitterbrush, bottlebrush squirreltail, desert needlegrass, and cheatgrass (NRCS 2010b).

The Haybourne series consists of very deep, well-drained soils that formed in alluvium derived from granitic rocks or from mixed sources and occur on inset fans, alluvial fans, fan remnants, ballenas, lake terraces, fan skirts, and fan aprons with slopes ranging from 0 to 30 percent. Mean annual precipitation is ± 10 inches and mean annual temperature is ± 50 °F. Soils are neutral or slightly alkaline, well-drained with very low to medium surface runoff, moderately rapid permeability, and high saturated hydraulic conductivity. Typical vegetation includes Wyoming big sagebrush, Douglas rabbitbrush, Nevada ephedra, Anderson's peachbrush, bottlebrush squirreltail, desert needlegrass, and Indian ricegrass (NRCS 2010b).

3.7.16 Cleghorn-Chime Soil Association Unit (s605)

The Cleghorn series consists of very deep, well-drained soils that formed in alluvium derived from volcanic rocks and occur on fan remnants with slopes ranging from 0 to 5 percent. Mean annual precipitation is ± 11 inches and mean annual temperature is ± 47 °F. Soils are neutral or slightly alkaline, well-drained with high surface runoff, and slow permeability. Typical vegetation includes Wyoming big sagebrush, Thurber's needlegrass, bottlebrush squirreltail, and Indian ricegrass (NRCS 2010b).

The Chime series are moderately deep, well-drained soils that formed in residuum derived from tuffaceous sandstone and occur on plateaus and rock pediments with slopes ranging from 0 to 15 percent. Mean annual precipitation is ± 9.1 inches and mean annual temperature is ± 46 °F. Soils are slightly alkaline, well-drained with high surface runoff, moderately slow permeability, and moderately high saturated hydraulic conductivity. Typical vegetation includes Wyoming big sagebrush, bottlebrush squirreltail, Sandberg's bluegrass, Douglas rabbitbrush, and basin wildrye (NRCS 2010b).

3.7.17 Searles-Petes creek-Fredonyer Soil Association Unit (s606)

The Searles series consists of moderately deep, well-drained soils that formed in colluvium and residuum weathered from rhyolite and basalt and occur on uplands, mountains, and lava plains with slopes range from 0 to 80 percent. Mean annual precipitation is ± 11 inches and mean annual temperature is ± 47 °F. Soils are slightly acid to slightly alkaline, well-drained with moderately slow permeability, and moderately high saturated hydraulic conductivity. Typical vegetation includes bluebunch wheatgrass, Idaho fescue, Sandberg's bluegrass, Wyoming big sagebrush, basin big sagebrush, antelope bitterbrush, and western juniper (NRCS 2010b).

The Petes creek series consists of moderately-deep, well-drained soils that formed in material weathered from andesite tuff or basalt and occur on mountains and hills with slopes ranging of 5 to 50 percent. Mean annual precipitation is ± 14 inches and mean annual temperature is ± 42 °F. Soils are slightly acid, well-drained, with medium to rapid runoff, and moderate permeability. Typical vegetation includes mountain big sagebrush, Idaho fescue, bluebunch wheatgrass and bitterbrush (NRCS 2010b).

The Fredonyer series consists of moderately deep, well-drained soils that formed in surface mantles of volcanic ash over residuum and colluvium derived from basalt or andesite and occur on mountains and plateaus with slopes ranging from 2 to 50 percent. Mean annual precipitation is ± 14 inches and mean annual temperature is ± 44 °F. Soils are slightly acid or neutral, well-drained, with high surface runoff, and moderate permeability. Typical vegetation includes curleaf mountain mahogany with an understory of Idaho fescue and mountain big sagebrush (NRCS 2010b).

3.7.18 Toiyabe-Lasco-Chimney-Bonta Soil Association Unit (s611)

The Toiyabe series consists of shallow, excessively-drained soils that formed in colluvium and residuum derived from granitic rock and occur on mountains with slopes ranging from 2 to 75 percent. Mean annual precipitation is ± 25 inches and mean annual temperature is ± 42 °F. Soils are moderately acid to neutral, excessively-drained, with low to high surface runoff, rapid permeability, and high or very high saturated hydraulic conductivity. Typical vegetation includes a forest canopy of Jeffrey pine or Ponderosa pine with an understory of serviceberry, antelope bitterbrush, mountain big sagebrush, snowberry, and grass. Big sagebrush, bitterbrush, and rabbitbrush dominate in burned-over areas, especially on south exposures (NRCS 2010b).

The Lasco series consists of deep, well-drained soils that formed in material weathered from granite and occur on mountain back slopes with slopes ranging from 2 to 50 percent. Mean annual precipitation is ± 35 inches and mean annual temperature is ± 44 °F. Soils are slightly acid, well-drained, with slow to rapid runoff, and moderately rapid permeability. Typical vegetation includes Jeffrey pine, Douglas-fir, white fir, Incense-cedar, sugar pine, whitethorn ceanothus, golden chinquapin and squaw carpet (NRCS 2010b).

The Chimney series consists of very deep, somewhat excessively-drained soils that formed in colluvium derived from granitic rocks and occur on mountains with slopes ranging from 2 to 75 percent. Mean annual precipitation is ± 20 inches and mean annual temperature is ± 50 °F. Soils are slightly acid or neutral, somewhat excessively-drained, with very low or low surface runoff, and rapid permeability. Typical vegetation includes a forest canopy of Jeffrey pine and California black oak with an understory of antelope bitterbrush, mountain big sagebrush, and squaw carpet (NRCS 2010b).

The Bonta series consists of moderately deep, well-drained soils that formed in colluvium and residuum derived from granitic rocks and occur on mountains with slopes ranging from 2 to 75 percent. Mean annual precipitation is ± 18 inches and mean annual temperature is ± 46 °F. Soils are slightly acid or neutral, well-drained, with high surface runoff, and moderately rapid permeability. Typical vegetation includes a forest canopy of Jeffrey pine, black oak, and western juniper with an understory of curleaf mountain mahogany, antelope bitterbrush, mountain big sagebrush, mule's ear wyethia, squaw carpet, and perennial grasses (NRCS 2010b).

3.7.19 Trojan-Rock Outcrop-Lithic Xerorthents Soil Association Unit (s638)

The Trojan series consists of deep and very deep, well-drained soils that formed in colluvium and residuum derived from volcanic rocks or from schist and argillite and occur on hills and mountains with slopes ranging from 2 to 50 percent. Mean annual precipitation is ± 20 inches and mean annual temperature is ± 45 °F. Soils are moderately or slightly acid, well-drained, with medium or high surface runoff, and moderately slow permeability. Typical vegetation includes an open forest canopy of Jeffrey pine and Ponderosa pine with an understory of antelope bitterbrush, curleaf mountain mahogany, mountain big sagebrush, and scattered western juniper (NRCS 2010b). Rock outcrop and Lithic Xerorthents are not listed in the NRCS database (NRCS 2010b).

3.7.20 Martineck-Lovejoy-Dotta-Calpine Soil Association Unit (s639)

The Martineck series formed in cobbly and stony alluvium mostly derived from basic igneous rock sources and are underlain by indurated to consolidated lake sediments and occur on gently sloping to moderately steep undulating to hilly terraces. Mean annual precipitation of ± 12 to 18 inches. The average January temperature is ± 28 °F, and the average July temperature is ± 68 °F. Soils are medium acid, well-drained, with slow to rapid runoff, and very slow permeability. Typical vegetation includes low sagebrush, bitterbrush, and perennial grasses (NRCS 2010b).

The Lovejoy soils formed in alluvium from mixed sources that contain some vitric material, are nearly level to undulating and occur on hummocky terraces. Mean annual precipitation is ± 14 to 20 inches. Average January temperature is ± 28 °F and average July temperature is ± 69 °F. Soils are strongly to medium acid, moderately well-drained, with slow runoff, and very slow permeability. Typical vegetation includes low sagebrush, dryland sedge, and perennial grasses (NRCS 2010b).

The Dotta series consists of very deep, well-drained soils that formed in alluvium weathered from metamorphic and igneous rock sources and occur on alluvial fans and terraces with slopes ranging from 0 to 30 percent. Mean annual precipitation is ± 15 inches and mean annual temperature is ± 50 °F. Soils are slightly acid, well-drained, with rapid to slow runoff, and moderate or moderately slow permeability. Typical vegetation includes Idaho fescue, bluebunch wheatgrass, beardless wheatgrass and big sagebrush (NRCS 2010b).

The Calpine series consists of very deep, well-drained soils that formed in alluvium derived from granitic rocks and occur on alluvial fans, fan remnants, and stream terraces with slopes ranging from 0 to 15 percent. Mean annual precipitation is ± 13 inches and mean annual temperature is ± 50 °F. Soils are moderately acid to neutral, well-drained, with very low or low surface runoff, moderately rapid permeability, and high saturated hydraulic conductivity. Typical vegetation includes mountain big sagebrush, antelope bitterbrush, needle and thread, Thurber's needlegrass, and Indian ricegrass (NRCS 2010b).

3.7.21 Trosi-Galeppi Soil Association Unit (s640)

The Trosi soils formed in gravelly, cobbly, and stony alluvium from mixed rock sources and occur on gently sloping to steep old terraces. Mean annual precipitation is ± 6 to 12 inches. Average January temperature is ± 30 °F.; average July temperature is ± 69 °F. Soils are slightly acid, well-drained, with slow to rapid runoff, and very slow permeability. Typical vegetation includes stunted big sagebrush, cheatgrass, and a few perennial grasses (NRCS 2010b).

The Galeppi series consists of very deep, well-drained soils that formed in alluvium derived from mixed igneous rocks and occur on fan remnants and stream terraces with slopes ranging from 2 to 50 percent. Mean annual precipitation is ± 11 in and mean annual temperature is ± 49 °F. Soils are slightly acid to slightly alkaline, well-drained, with medium to very high surface runoff, and moderately slow permeability. Typical vegetation includes Wyoming big sagebrush, antelope bitterbrush, Anderson's peachbrush, Thurber's needlegrass, and bottlebrush squirreltail (NRCS 2010b).

3.7.22 Ramelli-Ormsby-Loyalton-Beckwourth Soil Association Unit (s641)

See Ramelli-Massack-Keddie discussion for Ramelli description.

The Ormsby series consists of very deep, moderately well-drained soils that formed in alluvium derived dominantly from granite and occur on low stream terraces with slopes ranging from 0 to 2 percent. Mean annual precipitation is ± 9 inches and mean annual temperature is ± 49 °F. Soils are neutral to strongly alkaline, moderately well-drained, with very low surface runoff, and moderately rapid permeability. Endosaturation is present with an apparent seasonal high water table between 3 and 5 ft from December through May. These soils are susceptible to rare flooding for very brief periods year-round. Typical vegetation includes basin big sagebrush, rubber rabbitbrush, Indian ricegrass, and bottlebrush squirreltail (NRCS 2010).

The Loyalton series consists of very deep, moderately well-drained soils that formed in alluvium derived from mixed igneous rocks and occur on alluvial flats and low stream terraces with slopes ranging from 0 to 2 percent. Mean annual precipitation is ± 14 inches and mean annual temperature is ± 48 °F. Soils are strongly alkaline, moderately well-drained, with slow runoff, and very slow permeability. Typical vegetation includes silver sagebrush, rubber rabbitbrush, and inland saltgrass (NRCS 2010b).

The Beckwourth series consists of very deep, somewhat poorly-drained soils that formed in alluvium derived from mixed rocks and occur on flood plains and low stream terraces with slopes ranging from 0 to 2 percent. Mean annual precipitation is ± 13 inches and mean annual temperature is ± 50 °F. Soils are moderately acid to neutral, somewhat poorly-drained, with very low or low surface runoff, and moderate permeability. Endosaturation is present with an apparent seasonal high water table within 3 ft of the soil surface between March and May. These soils are susceptible to rare flooding for very brief periods year-round or occasional flooding for brief periods between January and May. Typical vegetation includes silver sagebrush, dryland sedge, shoestring, and grasses (NRCS 2010b).

3.8 Noise

3.8.1 General Characteristics of Community Noise

Existing noise levels in the vicinity of the Proposed Action are estimated to range from 45 to 85 decibels (dB), A-weighted (dBA), based on general land use patterns in and near the linear project area. To describe environmental noise and assess impacts on noise-sensitive receptors, a measurement scale that simulates human perception is used. The terminology and noise concepts are described in Table 3-9.

Table 0-9: Noise Definitions

Term	Definition
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates with subjective reactions to noise.
Community Noise Equivalent Level (CNEL)	Because people are generally more sensitive to noise during the evening and nighttime, the CNEL represents a time-weighted 24-hour average noise level based on the A-weighted sound level (dBA). Roughly equivalent to the Day-Night Average Sound Level (Ldn), as described below, CNEL is calculated by adding 5 dB to sound levels in the evening (7 p.m. to 10 p.m.) and adding 10 dB to sound levels in the night (10 p.m. to 7 a.m.).
Day-night Equivalent Noise Levels (Ldn)	The day night equivalent noise levels of a community can be expressed as a logarithmic equation: L_d = day-equivalent noise levels dBA (6 a.m. to 9 p.m.) L_n = night equivalent noise levels dBA (9 p.m. to 6 a.m.) The day hours with respect to assessment of noise levels is fixed from 6 a.m. to 9 p.m. (15 hrs) and night hours from 9 p.m. to 6 a.m. (9 hrs). A sound level of 10 dB is added to L_n due to the low ambient sound levels during night for assessing the Ldn values.

Table 3-10 depicts sound levels for common noise sources. Community noise levels are measured in dBA and are usually closely related to the intensity of nearby human activity. Generally, ambient noise level are rated as low below 30 dBA, moderate (45 to 60 dBA), and high (above 60 dBA).

Table 0-10: Typical Sound Levels of Common Noise Sources

Sound Pressure Level (dBA)	Noise Source
0	Lowest Level Audible to Human Ear
30	Quiet Library, Soft Whisper ¹
40	Quiet Office, Living Room
40-50	Corona Noise Levels
50	Light Traffic, Refrigerator
60	Air Conditioner, Conversation
70	Busy Traffic, Noisy Restaurant (Critical Level Begins)
80	Subway, Heavy City Traffic
90	Truck Traffic, Shop Tools, Lawn Mower
100	Chain Saw, Pneumatic Drill
110	Jet Flyover at 1,000 Feet
120	Rock Concert, Thunderclap (Danger Level)
180	Rocket Pad During Launch (Hearing Loss)

Source: American Academy of Otolaryngology 2007

3.8.2 Regulatory Thresholds

Plumas, Sierra, and Lassen Counties, California and Washoe County, Nevada have established noise regulations and use CNEL thresholds, using the Day-Night Average Sound Level (Ldn) described above in Table 3-9.

The Lassen County Noise Element (Lassen County Planning Department 1989) states:

“The overall goals of the Lassen County Noise Element are to protect the citizens of Lassen County from the harmful and annoying effects of exposure to excessive noise, and to protect the economic base of Lassen County by preventing the encroachment of incompatible lands uses within areas affected by existing noise-producing uses. [N]oise produced by industrial uses shall not exceed 70dB Ldn/CNEL at the nearest property line”.

The established noise contours in the linear project corridor vary from industrial at a maximum of 70 Ldn in Lassen County and Plumas County (e.g., in Susanville Industrial areas, Susanville Municipal Airport, Sierra Army Depot, UPRR facilities in Portola, Sierra Pacific Industries Quincy Division) to residential zones at 60 Ldn in the rural subdivisions. Therefore, noise thresholds applicable to the project area range from 60 to 70 Ldn along the existing powerline ROW with increased noise levels near the railroad corridor along SR 70, and the traffic levels evident in the US395 corridor (Lassen County Planning Department 1989).

The Washoe County Development Code, Article 414.05 (Washoe County Department of Community Development 2010) stipulates:

“Noise cannot exceed 75 Ldn at the property line.”

3.8.3 Existing Conditions

With the exception of the Cities of Quincy, Portola, and Susanville, the project area is rural with relatively unpopulated, low density farming/ranching operations and scattered residences along the existing ROWs. In the Plumas National Forest, there are few campgrounds but numerous trees and foliage that help to attenuate the railroad and highway noise. Noise sensitive receptors are limited to sparse single-family residences located along the existing powerline ROW alignment.

Lassen, Plumas and Sierra County, CA all abide by the adopted recommended noise level range from 65-70 Ldn and the Washoe County, NV area is 75Ldn, respectively, measured as day-night average levels (24 hour average). Construction noise levels are anticipated to range from 68 dBA to 85 dBA. Therefore, noise levels would not exceed the Lassen County, Plumas County, Sierra County or Washoe County noise requirements.

Caltrans has revised and adopted its Noise Analysis Protocol, in August 14, 2006, and this policy stands today within all of the counties. This 57 page report (23CFR772) governs all noise criteria regulations including Construction. (level 1) (level 2).

(http://www.dot.ca.gov/hq/env/noise/pub/2006_protocol.pdf,
http://www.citydata.com/county/lassencounty_ca.html,
http://www.citydata.com/county/plumascounty_ca.html,
http://www.citydata.com/county/sierracounty_ca.html)

3.9 Human Health and Safety

3.9.1 Hazardous Materials

According to information obtained from the Department of Environmental Health in Lassen County; Lassen County Hazardous Material data; and the Certified Unified Program Agency, Underground Storage Tank (UST), Leaking Underground Storage Tank (LUST), and Spill files, and the California/USEPA State Water Regional Control Board (SWRCB), Geotracker website, there are 8 facilities in Susanville and the project area that are being monitored for LUST or other hazardous material issues in the project area. There are four solid waste landfills or transfer stations in Lassen County. The Sierra Army Depot has registered USTs at their DOD facility.

The Plumas County Department of Environmental Health, Jim Perez, was contacted for identification of USTs in their jurisdiction. Per Mr. Perez, the California/USEPA State Water Regional Control Board (SWRCB), Geotracker website identified four facilities in the project area in Plumas County that are being monitored as LUST or other hazardous materials. There are two landfills or transfer stations in the project area.

The California/USEPA State Water Regional Control Board (SWRCB), Geotracker website identified two facilities in the project area in Sierra County that are being monitored as a LUST. There is one landfill in the project area.

Information on USTs and LUSTs from the Nevada Department of Conservation and Natural Resources, Division of Environmental Protection, and Washoe County, Environmental Health Division, indicates that there is a UST facility in Nevada at Bordertown, located in the Project Area.

Materials that could be considered hazardous, which are expected to be used during installation of the fiber cable and ancillary facilities, would include fuels, motor oil, grease, various lubricants, solvents, soldering equipment, and glues.

3.9.2 Fire Management

The eastern portion of the Project, situated in the Honey Lake Valley/Long Valley area, is located with Susanville, CA on the north to Reno, NV in the south and includes portions of Plumas, Sierra, and Lassen Counties, CA and Washoe County, NV. Because these communities are considered at risk from wildfire, the public agencies have developed a Fire Safe Plan. Due to the proximity of the wildland urban interface and key wildlife habitat in the project area, all fire management priorities are ranked as high.

Fires are an intricate component of the development and maintenance of natural plant communities in the western U.S. (Brown 2000). Since the early 1900s, fires have been suppressed on public lands. A consequence of fire suppression is the accumulation of fuels, resulting in more severe fires that burn hotter and has a greater impact on soil stability and structure, hydrological function, biotic integrity, and overall community dynamics and functionality (Peters and Bunting 1992). This movement away from natural fire regimes has created a need for increased fire management. The National Wildland Fire Plan defines and designates agencies nationally to work together using a cohesive strategy for establishing past conditions, identifying current departure, and recommending future strategies for achieving desired outcomes. Information from the National Fire Management Plan has been used to formulate and define construction methods directly related to the Project.

A Construction Fire Management Plan has been developed for the Fiber Project and is included in Appendix G.

3.9.3 Fire History

Fire plays an essential ecological role in the regeneration and maintenance of a diverse mosaic of healthy cover types across ecosystems. More than 100 years of fire suppression has changed the landscape. Dense thickets of small trees and shrubs have replaced the groves and parks within forested areas. In recent years, the federal land management agencies have used controlled burning to help reduce these fuels. Controlled burns generally occur in the spring and fall with higher humidity levels and lower temperatures.

3.9.4 Fire Suppression

In Lassen County, both the BLM and U.S. Forest Service (USFS) manage the federal lands where the suppression prescription is “Control.” There are no areas of modified suppression of

“Confine,” “Contain,” or “Let Burn.” All fires receive rapid aggressive initial attack within the limits and capabilities of resources. Available resources are allocated according to risks to public safety, residential developments, growth potential, and suppression difficulty. The primary objective is public and firefighter safety first.

Fire plays an essential ecological role in the regeneration and maintenance of a diverse mosaic of healthy cover types across ecosystems. In the 1800's, the country was growing and expanding into the West. The need for natural resources, such as timber and grazing was increasing, as was the threat of fire. Railroads, settlers clearing land and campfires sparked fires that threatened and destroyed these natural resources. Therefore in 1908, the newly formed Forest Service began a mission to suppress fires (Arno and Fiedler 2005).

3.9.5 Fire Ecology

The Plumas National Forest (PNF) provides wildfire protection responsibility for much of Plumas County and averages about 170 ignitions per year, with 60% caused by lightning and 40% from humans. Of the human caused fires, smoking and escaped campfires constitute 8%, escaped debris burns 5%, equipment 4%, children 3%, Arson 3%, railroad activities 1% and on 16%, the cause was unable to be accurately determined. The PNF has averaged about 23,000 acres per year burned over the last 5 years. The majority of fires, 97%, are caught on initial attack and suppressed at less than 10 acres. The 3% that escape initial attack are responsible for 99% of the acres burned. The majority of fires, 87%, occur from May through September. Amongst the National Forest in California, the PNF usually ranks from between third to fifth for number of fires and acres burned.

The BLM develops plans for managing hazardous fuels and wildland fire within California. Part of the BLM's responsibility when planning fuels reduction projects is to work with other interagency fire organizations to meet all required National Environmental Policy Act analysis, Threatened and Endangered Species consultations, archaeological and historical resource surveys, and the necessary air-quality protection planning needs. Additionally, BLM California works with counties and communities to develop local plans for managing wildland fires.

3.9.6 Fire Mitigation Considerations

Emphasis should be focused on prevention, detection, and rapid suppression response and techniques that would reduce unwanted ignitions and threats to life, property, and natural and cultural resources.

3.9.7 Fuel Treatment Considerations

Non-fire treatments are employed. Prescribed fire is allowed everywhere except when conditions (moisture, winds) prohibit burning.

3.9.8 Emergency Stabilization and Rehabilitation (ESR)

Projects may be undertaken where wildfires result in a high potential for erosion. ESR projects are generally undertaken within the first year after a wildfire and continue for up to two growing seasons after initiation. Projects aim to establish vegetative cover within the burned area to discourage runoff, weed colonization, and reduce erosion potential. The application of seed to a burned area may expedite the return of desirable vegetative cover within burned areas. Seed may be applied aerially (e.g. helicopter), mechanically (e.g., rangeland drill, chaining, or disking), or by hand.

3.9.9 Fire Hazard Severity Zones

The Counties together with the California Department of Forestry and Fire Protection, continue to work on identifying Fire Hazard Severity Zones.

3.10 Biological Resources

An evaluation of biological resources was conducted to determine whether any special-status plant or wildlife species, or their habitat, or sensitive habitats occurs in the Biological Study Area (proposed project area). Data on special-status species and habitats known in the area was obtained from state and federal agencies. Maps and aerial photographs of the proposed project area and surrounding areas were reviewed. A reconnaissance field survey was conducted to determine the types of habitats present. Several agency biologists were contacted to discuss the overall project and/or specific resources. The reconnaissance field survey, map review, agency contacts, and a review of the biology of evaluated species and habitats were used to determine the special-status species and sensitive habitats that could occur in the proposed project area. A Biological and Aquatic Habitat Assessment (BAHA) in Appendix D documents the full results of the biological evaluation. All references in this section are included in the BAHA.

One federal-threatened species, Lahontan cutthroat trout, is known to occur in the proposed project area. Lahontan cutthroat trout occurs in the Truckee River. The proposed project area traverses the Truckee River via the South Virginia Street bridge in Reno, Nevada. The federal-endangered Cui-ui (a fish) is known to occur in the Truckee River downstream of the proposed project area. The project would cross the Truckee River in existing conduit located in a bridge.

The federal-endangered Carson wandering skipper occurs around Honey Lake. There are no suitable areas of saltgrass habitat for Carson wandering skipper in the proposed project area, and there are no known records of Carson wandering skipper in the proposed project area.

California-endangered willow flycatcher and California-threatened Swainson's hawk occur in the proposed project area. The project will have no effect on these two species with the implementation of avoidance measures.

The proposed project area provides marginal or suitable habitat for 152 other special-status species (38 animals and 114 plant species) as designated by CDFG, NNHP, USFS, BLM, and CNPS. The implementation of the avoidance measures avoids effects to these species.

Foraging and nesting habitat occurs in and adjacent to the project area for birds of prey and other birds protected under the Migratory Bird Treaty Act. Implementation of the avoidance measures avoids effects to these species.

The proposed project area provides marginal or suitable habitat for eight federal listed threatened, endangered, or candidate species (seven animal species and one plant). Only one of these species (Lahontan cutthroat trout) is known to occur in the proposed project area. Lahontan cutthroat trout occurs in the Truckee River. The proposed project area traverses the Truckee River via the South Virginia Street bridge in Reno, Nevada. Marginal or suitable habitat for eight California threatened or endangered species (seven animal species and one plant) occur in the proposed project area. Suitable habitat for one plant species designated as critically endangered by the State of Nevada occurs in the proposed project area. Only two of these species (willow flycatcher, California Endangered and Swainson's hawk, California Threatened) are known to occur in the proposed project area. There are no known records of the six remaining California threatened or endangered or one Nevada critically endangered species in the proposed project area. The proposed project area provides marginal or suitable habitat for 152 other special-status species (38 animals and 114 plant species) as designated by CDFG, NNHP, USFS, BLM, and CNPS.

3.10.1 Setting

Climate and Geology

The proposed project area traverses rural and urban areas. Land use adjacent to the proposed project area includes agriculture, residential, industrial, transportation, and open space. The proposed project area traverses three major ecological regions; the Sierra Nevada Section, Northwestern Basin and Range Section, and Mono Section. The following discussion is from the *Ecological Subregions of California, Section and Subsection Descriptions* (USDA 1997).

The portion of the proposed project area from Beckwourth Pass east to Quincy is located in the Sierra Nevada Section. The Sierra Nevada Section is divided into 21 subsections. The proposed project area traverses three of the subsections; Sierra Valley Subsection; Frenchman Subsection, and Greenville-Graeagle Subsection.

Sierra Valley Subsection: This subsection includes the Sierra Valley and occurs on nearly level basin floor that was occupied by a shallow Pleistocene lake. The Sierra Valley is at the head of the Middle Fork Feather River watershed. Mean annual precipitation is approximately 10 to 25 inches and predominately falls as snow. Mean annual temperature is approximately 45° to 48° F and the mean freeze-free period is 50 to 100 days. Surface runoff is generally slow and drains to the Middle Fork Feather River.

Frenchman Subsection: This subsection is predominantly composed of Tertiary volcanic terrain north of Sierra Valley. Topography is dominated by steep and moderately steep slopes. Mean annual precipitation is approximately 15 to 30 inches and predominately falls as snow. Mean annual temperature is about 40° to 50° F with a mean freeze-free period of 50 to 100 days.

Surface water runoff is predominately rapid and drains to Feather River. Large reservoirs, Lake Davis and Frenchman Lake occur in this subsection.

Greenville-Graeagle Subsection: This subsection extends from the northwestern edge of the Sierra Nevada (adjacent to Lake Almanor) along the Plumas Trough to its southern terminus in Mohawk Valley. Geologically this subsection is dominated by strongly folded basement rocks including Triassic marine sedimentary and Paleozoic marine sedimentary and metavolcanic rocks. A large intrusion of Mesozoic ultramafic rock occurs in the Red Hill area.

The portion of the proposed project area from Susanville south approximately to Doyle is located in the Northwestern Basin and Range Section (USDA 1997, USDA 2006). The Northwestern Basin and Range Section is divided into five subsections. The proposed project area traverses only the Honey Lake Subsection.

Honey Lake Subsection: This subsection includes the Honey Lake Valley, just northwest of the Diamond Mountains, which are at the northwest end of the Sierra Nevada Mountain Range. Geologically this subsection is dominated by gently sloping to nearly level alluvial fans, floodplain, and basin floor that form a large alluvial - lacustrine plain. Honey Lake is a remnant of much larger Pleistocene and older lakes that occupied the valley.

The portions of the proposed project area from approximately Doyle south to Reno and from the Beckwourth Pass (SR70) east to US 395 are located in the Mono Section (USDA 1997, USDA 2006). The Mono Section is divided into 13 subsections. The proposed project area traverses one of the 13 subsections, the Fort Sage Mountains - Lemmon Valley Subsection.

Fort Sage Mountains - Lemmon Valley Subsection: This subsection includes mountains, hills, and valleys between the Sierra Nevada on the west and the Pah Rah Range and Pyramid Lake (in Nevada) on the east. Larger mountain ranges and valleys in the subsection include the Fort Sage Mountains, Virginia Mountains, Dogskin Mountain, Petersen Mountain, Long Valley, Lemmon Valley, and Warm Springs Valley. Tertiary lacustrine deposits are extensive in Long Valley.

Biological communities are defined by species composition and relative abundance. Natural biological communities in the proposed project area correlate with Sawyer et al. (2009) and the most current DFG Natural Communities List (September 2010) and are mapped on Figure 2, Appendix D. Wildlife and plant species observed in the proposed project area are in Appendix D.

Biological Communities

Urban Areas: This area consists mostly of portions of the route in the developed areas of towns and cities, primarily Quincy, Portola, Loyalton, Susanville, and Reno. The landscape is characterized by structures, paved and unpaved surfaces used for transportation, landscaping, and high levels of human use and management. Native vegetation is sometimes present, but is typically confined to relatively small areas, and is likely to experience frequent disturbance by human activities. Wildlife tolerant of human disturbance is also present.

Mixed Conifer Forest (*Pinus ponderosa*-*Calocedrus decurrens* Forest): This community is characterized by an open to closed canopy of conifers, primarily ponderosa pine (*Pinus ponderosa*), incense cedar (*Calocedrus decurrens*), and white fir (*Abies concolor*). California black oak (*Quercus kelloggii*) and Douglas fir (*Pseudotsuga menziesii*) are also present at lesser abundance. The shrub layer is generally open. Common shrubs include manzanita (*Arctostaphylos* spp.) and California lilac (*Ceanothus* spp.).

The herb layer is generally very sparse, but smaller, denser areas occur where trees and shrubs are more widely spaced. In the proposed project area, this community occurs primarily along the Highway 70 corridor west of the town of Beckwourth, at the northwestern corner of the Sierra Valley. The mixed conifer forest in the proposed project area is mostly disturbed relative to the adjacent forest because PSREC maintains the vegetation so that it does not interfere with the poles and overhead lines. Trees and shrubs are routinely cut and removed, so that the largest under the lines are no more than approximately 15 ft tall in most areas.

Big sagebrush scrub (*Artemisia tridentata* Shrubland): This community is characterized by an open canopy of shrubs composed primarily of big sagebrush (*Artemisia tridentata*) and bitterbrush (*Purshia tridentata*). Other common shrubs include rabbitbrush (*Chrysothamnus* spp.) and Mormon tea (*Ephedra* sp.). Occasional patches of willow (*Salix* spp.) occur in small depressions, channels, or roadside ditches. Trees are almost completely absent. The herb layer is mostly sparse between the shrubs. In the proposed project area, this community occurs between Reno and Susanville and along the Highway 70 corridor from the town of Beckwourth east to Hallelujah Junction.

Utah Juniper Woodland (*Juniperus osteosperma* Woodland): This community is characterized by a sparse canopy of Utah juniper (*Juniperus osteosperma*). Other trees are mostly absent. The shrub and herb layers are similar to big sagebrush scrub. In the proposed project area, this community occurs along the US 395 corridor between Hallelujah Junction and the Red Rock Fire Department Lateral Branch.

Willow thicket (*Salix* spp. Shrubland): This community is characterized by an open to nearly closed canopy of shrubby willows (*Salix* spp.). It occurs mostly along intermittent or perennial channels. In wetter areas there are also aquatic emergent perennials present including cattail (*Typha* sp.) and *Scirpus* spp.

Meadow: This community is characterized by the near complete cover of herbaceous vegetation and the general absence of trees and shrubs. East of Beckwourth, most meadow areas in the proposed project area were once big sagebrush scrub, but are now fenced and grazed by livestock.

Wet Meadow: This herbaceous community experiences saturated soil conditions well into, and in some cases, throughout the summer. Trees and shrubs are generally lacking, although small patches of willows are present in some areas. Most of the wet meadows in the proposed project area are grazed by livestock. The wet meadows are in low-lying areas and usually associated with a creek or river.

Agriculture: This community consists of fields that are in agricultural production and primarily include grass or alfalfa hay production, and irrigated and non-irrigated land. The agricultural community does not include areas that are simply grazed by livestock. In the proposed project area, most agricultural fields are in the Sierra Valley and Honey Lake Valley. The locations of the existing poles in this community are generally along the edge of agricultural fields.

Table 3-11. Biological Communities and Other Areas

Biological Communities	Underground (mi)	Overhead (mi)	Total (mi)
Big Sagebrush Scrub	11.24	87.33	98.57
Mixed Conifer Forest	--	26.64	26.64
Meadow	--	11.61	11.61
Agriculture	--	10.98	10.98
Wet Meadow	--	5.05	5.05
Willow Thicket	--	3.77	3.77
Utah Juniper Woodland	0.33	1.98	2.31
Perennial Water	0.03*	0.63	0.66
Other Areas			
Urban	8.86	14.04	22.90
Total:	20.46	162.03	182.49

Note: Acreages were calculated with AutoCAD® functions.

* The project does not include trenching through perennial waters or willow thickets. In some places the proposed project area includes bridge attachments that are classified as “underground” in the project description, or horizontal direction drills under features.

Existing Level of Disturbance: The proposed project area is located in existing utility and transportation corridors. Trees and other vegetation have been removed in various segments of the proposed project area. Portions of the proposed project area occur in urban areas of Susanville, Quincy, and Reno. Other portions of the proposed project area traverse agricultural land that is actively farmed and/or grazed by livestock. Much of the proposed project area is located in or immediately adjacent to transportation corridors including US 395, SR70, various county roads, and the Union Pacific Railroad. The proposed project area is subject to ongoing disturbance due to maintenance of the line and its location within transportation corridors, agricultural lands, and urban areas.

3.10.2 Introduction

Federal agencies, in consultation with the USFWS, are required to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a federally listed or proposed species under the federal Endangered Species Act (ESA). NTIA is required to review all activities that receive NTIA funding. The BLM and Plumas National Forest are

required to review all activities on their respective lands to evaluate the potential effects of these activities to federally listed, proposed, and applicable Sensitive Species. California special status species were examined, as detailed in Appendix D.

3.10.3 Process

- A letter was obtained from the U.S. Fish and Wildlife Service (USFWS), Sacramento Field Office, which identifies federal-listed species that could potentially occur in or could be affected by projects in Lassen, Plumas and Sierra counties, California. A copy of Nevada's Endangered, Threatened, Proposed and Candidate Species listed by county was obtained.
- The California Natural Diversity Database (CNDDDB) was queried for the 23 project USGS topographic quad and the 38 surrounding quads, in California, to determine known occurrences of special-status species in or near the proposed project area.
- On 24 November 2010 the Nevada Natural Heritage Program (NNHP) was contacted to obtain occurrence information for special-status species in or near the proposed project area. The NNHP provided occurrence information for the 6 project quads located in Nevada.
- Current DFG lists reviewed include: 1) *Special animals*; 2) *State and federally listed endangered and threatened animals of California*; 3) *Special vascular plants, bryophytes, and lichens list*; and 4) *State and federally listed endangered, threatened, and rare plants of California*.
- Lists of BLM sensitive plant and wildlife species were obtained from the Eagle Lake Field Office (ELFO) and the Carson City Field Office (CCFO).
- Lists of U.S.F.S sensitive plant and wildlife species were obtained from the Plumas National Forest (Region 5) and the Humboldt-Toiyabe National Forest (Region 4).

Data received from USFWS, BLM, USFS, NNHP, and CNDDDB records were used to compile a table of regional species and habitats of concern. Reconnaissance level biological surveys consisted of walking or driving through accessible portions of the proposed project area to determine if any special-status species or their habitat were present. Biological communities were mapped based on the reconnaissance field visit and aerial photographs.

3.10.4 Species Information

The following species' discussions summarize key points for special status wildlife species identified in the project area. The BAHA in Appendix D provides a greater level of detail.

3.10.5 Aquatic Habitats and Wetlands

Rivers and Associated Riparian Areas and Wetlands

There are eight river crossings in the proposed project area: three crossings of the Middle Fork Feather River; four crossings of the Susan River; and one crossing of the Truckee River. The Middle Fork Feather River is ultimately tributary to the Sacramento River. The Truckee River is tributary to Pyramid Lake, a closed depression in the Great Basin. The Susan River is tributary to Honey Lake, a closed depression in the Great Basin.

Middle Fork Feather River, Marble Crossing: Existing utility lines along the Marble lateral branch cross the Middle Fork Feather River near the intersection of Highway 70 and County Highway A23 (Beckwourth Calpine Road). There is a narrow band of scrub wetland on the south side of the River at the crossing point. The project will hang new conduit on the existing utility poles. The Middle Fork Feather River is a designated Wild and Scenic River at this crossing.

Middle Fork Feather River, Portola Crossing: An existing bridge crosses the Middle Fork Feather River at Gulling Street in Portola. There is willow thicket along the River near the bridge. The project will attach conduit to the existing Gulling Street Bridge to cross the River. The Middle Fork Feather River is a designated Wild and Scenic River at this crossing.

Middle Fork Feather River, Graeagle Crossing: Existing utility lines along the Graeagle lateral branch cross the Middle Fork Feather River next to the Blairsden-Graeagle Bridge. There is a willow thicket along the River at this crossing. The project will hang new conduit on the existing utility poles. The Middle Fork Feather River is a designated Wild and Scenic River at this crossing.

Susan River, Leavitt Crossing: Existing utility lines cross the Susan River in the vicinity of Leavitt, southeast of the California Correctional Center. There are a few willow trees/shrubs along the Susan River. A wetland and meandering channel complex occur north of the Susan River. The channel complex continues \pm 3,850 ft north to County Highway A27 (Center Road). For the first \pm 2,500 ft north of the Susan River, the existing poles are on the boundary of a wetland complex bordering an agricultural field. In this area, the poles can be accessed from the unpaved agricultural roads. For the next \pm 1,350 ft, the wetland complex is on both sides of the existing poles and there are no access roads. The project will hang new conduit on the existing utility poles. The poles will be accessed by truck in the segment of the proposed project area next to the agricultural field. The poles will be accessed by crews on foot in the segment of the proposed project area with wetland complex on both sides.

Susan River, Johnstonville Crossing: Existing utility lines cross the Susan River along Johnstonville Road, near Johnstonville. There are a few willows immediately along the Susan River. The project will hang new conduit on the existing utility poles.

Susan River, East Susanville Crossing: Existing utility lines cross the Susan River along an old railroad grade west of Commercial Road east of Susanville. There is a willow thicket along the Susan River at the crossing. The project will hang new conduit on the existing utility poles.

Susan River, Susanville Substation Crossing: Existing utility lines cross the Susan River southeast of the existing Susanville Substation. There are willow thickets and wetlands along the Susan River at this crossing. The project will hang new conduit on the existing utility poles.

Truckee River: The proposed project area crosses the Truckee River at Virginia Street in downtown Reno. There is no riparian vegetation or wetland habitat adjacent to the proposed project area where it crosses the Truckee River. The river is bordered by vertical concrete block and stone walls at the Virginia Street Bridge. The project will either attach conduit to the existing Virginia Street Bridge, or use existing conduit attached to the bridge, to cross the Truckee River.

Perennial Creeks and Canals, and Associated Riparian Areas and Wetlands

Long Valley Creek and Baxter Creek drain to Honey Lake, a closed depression in the Great Basin. The Main Canal and Lake Leavitt Inlet Canal are irrigation canals in the Honey Lake basin. The other creeks discussed below are in the watersheds of either the Middle Fork or North Fork Feather River, which are ultimately tributary to the Sacramento River.

Long Valley Creek, Hwy. 70 Crossing: Existing utility lines cross Long Valley Creek immediately north of Hwy. 70. There is a willow thicket along Long Valley Creek at the crossing. The project will hang new conduit on existing utility poles.

Long Valley Creek, Scott Road Crossing: Existing utility lines cross Long Valley Creek near the north end of Upper Long Valley. The site may be accessed by an unpaved public road (Scott Road) or by a private road that serves a nearby mine. There is a willow thicket along Long Valley Creek at the crossing. The project will hang new conduit on the existing utility poles.

Long Valley Creek, Redrock Lateral Branch Crossing: Existing utility lines along the Redrock lateral branch cross Long Valley Creek immediately west of US 395. There is a willow thicket along Long Valley Creek at the crossing. The project will hang new conduit on the existing utility poles.

Rhodes Creek, Willow Ranch Creek, and nearby creeks on Constantia Road: Existing utility lines along Constantia Road cross Rhodes Creek, Willow Ranch Creek, and several other unnamed creeks, northwest of Constantia. These relatively small creeks drain small watersheds on the steep east slope of the nearby Sierra Nevada, and they begin to dissipate in the area of the proposed project area, in the relatively flat areas of Long Valley. There are scattered patches of willows along some of the creeks, but no well-developed riparian corridors.

Long Valley Creek, Garnier Road Crossing: Existing utility lines along the Sierra Army Depot lateral branch cross Long Valley Creek along Garnier Road. Long Valley Creek is normally dry at this crossing location and only flows during large flow events. Long Valley Creek was dry at

this crossing during the reconnaissance survey in December 2010 although the three other upstream crossings of Long Valley Creek were all flowing. There is a willow thicket along Long Valley Creek at the crossing. The project will hang new conduit on the existing utility poles.

Baxter Creek: Existing utility lines cross Baxter Creek near Sunnyside Road, in the vicinity of Buntingville. There is a willow thicket along Baxter Creek at the crossing. The project will hang new conduit on the existing utility poles.

Main Canal: The Main Canal is an irrigation canal that begins at Lake Leavitt and serves agricultural fields to the east, between Lake Leavitt and Honey Lake, in the vicinity of the Susan River. There is no significant riparian corridor along the Main Canal. The project will hang new conduit on the existing utility poles across the Main Canal.

Brockman Slough: Existing utility lines cross Brockman Slough, near the junction with the Johnstonville Lateral. There is a willow thicket along Brockman Slough near the crossing point.

Lake Leavitt Inlet Canal: The Lake Leavitt Inlet Canal (also known as the A-B Canal) is an irrigation canal that diverts water from the Susan River into Lake Leavitt. The proposed project area crosses the Lake Leavitt Inlet Canal on Johnstonville Road. There is no significant riparian habitat along the Lake Leavitt Inlet Canal. The project will hang new conduit on the existing utility poles across the Lake Leavitt Inlet Canal.

Little Last Chance Creek, Union Pacific Railroad Tracks Crossing: Existing utility lines cross Little Last Chance Creek in the Sierra Valley along the Union Pacific railroad tracks. There is a willow thicket along Little Last Chance Creek at the crossing. The project will hang new conduit on the existing utility poles.

Little Last Chance Creek, Loyalton Lateral Crossing: Existing utility lines on the Loyalton Lateral cross Little Last Chance Creek along Cow Camp Road. There is a willow thicket along Little Last Chance Creek at the crossing. The project will hang new conduit on the existing utility poles.

Unnamed Creek near Loyalton: Existing utility lines cross an unnamed creek along Sierra Valley Road, near the intersection with Bar One Ranch Road. The project will hang new conduit on the existing utility poles.

North Channel Little Last Chance Creek: Existing utility lines cross North Channel Little Last Chance Creek in the Sierra Valley along the Union Pacific railroad tracks. North Channel Little Last Chance Creek has been artificially straightened at the crossing point. There is a willow thicket along North Channel Little Last Chance Creek at the crossing. The project will hang new conduit on the existing utility poles.

Big Grizzly Creek: Existing utility lines cross Big Grizzly Creek immediately north of Hwy. 70. There is a willow thicket along Big Grizzly Creek at the crossing. The project will hang new conduit on the existing utility poles.

Humbug Creek: Existing utility lines cross Humbug Creek immediately west of Delleker Drive in Delleker. There is a narrow wetland along Humbug Creek at the crossing. There is a small reservoir along Humbug Creek immediately downstream from the crossing point. The project will hang new conduit on the existing utility poles.

Bonta Creek: Existing utility lines cross Bonta Creek near the Feather River Inn. The project will hang new conduit on the existing utility poles.

Long Valley Creek, Middle Fork Feather River Watershed: This crossing is different than the Long Valley Creek in the eastern part of the proposed project area that drains to Honey Lake. This Long Valley Creek (Middle Fork Feather River Watershed), drains to the Middle Fork Feather River. The crossing point is at the confluence of nearby Little Long Valley Creek and Long Valley Creek. Both creeks in the vicinity of the proposed project area crossing have been impounded into a series of small, artificial ponds. There are areas of wet meadow along both creeks at and near the crossing point. The project will hang new conduit on the existing utility poles.

Estray Creek: Existing utility lines cross Estray Creek immediately east of Greenhorn Ranch Road. There is a riparian corridor of willows and alders along Estray Creek at the crossing point. The project will hang new conduit on the existing utility poles.

Greenhorn Creek, Williams Loop Crossing: Existing utility lines cross Greenhorn Creek immediately east of Squirrel Creek Road. The crossing point is across Hwy. 70 from the Williams Loop of the Union Pacific Railroad. There is a narrow riparian corridor along Greenhorn Creek at the crossing point. The project will hang new conduit on the existing utility poles.

Greenhorn Creek, American Valley Crossing: Existing utility lines cross Greenhorn Creek just south of Hwy. 70, at the far eastern end of American Valley. There is a riparian corridor along Greenhorn Creek at the crossing point. The project will hang new conduit on the existing utility poles.

Thompson Creek: Existing utility lines cross Thompson Creek just south of Hwy. 70, in the Thompson Valley. There is a narrow line of willows along Thompson Creek at the crossing point. The project will hang new conduit on the existing utility poles.

Mill Creek: The proposed project area crosses Mill Creek at Hwy. 70/89 in East Quincy. Mill Creek is in a double concrete box culvert underneath the highway at the crossing point. The project will install new conduit underground at this location with a horizontal directional drill.

Gansner Creek: The proposed project area crosses Gansner Creek at Bucks Lake Road on the west side of Quincy. The project will install new conduit underground at this location with a horizontal directional drill.

Spanish Creek: Existing utility lines cross Spanish Creek between Bucks Lake Road and Feather River College, near the western end of the American Valley. There is a willow thicket along

Spanish Creek at the crossing point. The project will hang new conduit on the existing utility poles.

Intermittent and Ephemeral Creeks, and Associated Riparian Areas and Wetlands

Ephemeral creeks between Hallelujah Junction and Reno: The ephemeral creeks in this segment of the proposed project area are above the water table year-round and are generally too dry to support riparian vegetation. There are a few patches of willow thicket, generally where the freeway has disrupted the drainage and created wetter soil conditions. In the California portion of this segment, the creeks drain to Long Valley Creek. In the Nevada portion of this segment, the creeks drain to either closed depression lakes, including White Lake and Silver Lake, or the Truckee River. Ephemeral creeks in this segment of the proposed project area will either be avoided with a horizontal directional drill or trenched. If trenched, the process will be consistent with U.S. Army Corps of Engineers Nationwide Permit 12.

Intermittent and ephemeral creeks between Hallelujah Junction and Susanville: The creeks in this segment of the proposed project area all drain to Honey Lake. This segment includes creeks east of Beckwourth Pass. Most of the creeks in this segment originate in and drain the east slope of the Northern Sierra Nevada/Diamond Mountains. Some of the creeks contain intermittent flows and are large enough to support narrow riparian corridors and/or adjacent wetlands. The project will hang new conduit on existing utility poles over these creeks and any adjacent riparian corridors or wetlands.

Intermittent and ephemeral creeks between Hallelujah Junction and Quincy: The creeks in this segment of the proposed project area all drain ultimately to the North Fork or Middle Fork Feather River. This segment includes creeks west of Beckwourth Pass. Some of the creeks contain intermittent flows and are large enough to support narrow riparian corridors and/or adjacent wetlands. The project will hang new conduit on existing utility poles over these creeks and any adjacent riparian corridors or wetlands.

Wetlands

The wet meadow and willow thicket communities in the proposed project area likely meet the U.S. Army Corps of Engineers 3-parameter test for wetlands. Wet meadows and willow thickets are mapped on Figure 2 in the BAHA in Appendix D. They mostly occur in association with a river or creek and are also mentioned above in the discussion of rivers and creeks.

3.10.6 Invertebrates

California Floater

A freshwater mussel that occurs in slow-moving rivers, lakes, and sometimes reservoirs, usually with mud or sand substrates.

Range: Historically widespread in the Pacific Drainage from Canada to Mexico, including Plumas, Tahoe, and Eldorado National Forests, and the Lake Tahoe Basin. Extant occurrences are known from the Columbia River and Snake River systems; upper reaches of Eel River,

California; Fall and Pit Rivers (Shasta Co., California); Humboldt River drainage, Lahontan Basin in northern Nevada; Bonneville Basin; Great Salt Lake, North Fork Humboldt and Carson Desert basins Nevada; and Donner Lake, Nevada Co., California (NatureServe 2011).

Known Records: There are records since 1985 in the Honey Lake Basin, and records of unknown date in the Truckee River drainage. Searches for freshwater mussels since 1985 in the Feather River drainage have not resulted in new records of California floater (Jepsen et al. 2010).

Survey Results: Some rivers and larger creeks crossed by the proposed project area may provide habitat for California floater, including the Susan River and Long Valley Creek (Honey Lake Basin). The Truckee River in the proposed project area is fast-flowing and has a mostly cobble/boulder substrate. The crossing of the Middle Fork Feather River at the Marble Lateral provides potential habitat, but California floater is not currently known from the watershed.

Carson Wandering Skipper

Carson wandering skipper (CWS) is a small butterfly that inhabits lowland grasslands on alkaline substrates, generally below 5,000 ft. CWS occurrences are often associated with open areas near springs or water. Geothermal activity may also characterize potential habitat. Females lay their eggs in June and July on saltgrass (*Distichlis spicata*), the larval host plant. Adult nectar sources must be present for food during the flight season. Adults likely live 1-2 weeks, possibly longer if abundant nectar sources exist. The larvae most likely hibernate during the winter and emerge as adult butterflies in the late spring/early summer. Larval development may rely on the presence of quality saltgrass cover and more permanent water sources. Dispersal patterns are unknown, but CWS generally do not fly very far (USFWS 2007).

CWS habitat is defined by the overall cover of saltgrass located near a nectar source. Saltgrass is common in the saltbush-greasewood (*Atriplex-Sarcobatus*) vegetation communities of the intermountain west, and is widely distributed in lowland areas of dry pluvial lakes on highly alkaline soils. Available nectar sources that grow in the saltbush-greasewood community include thelypodium (*Thelypodium crispum*), tumble mustard (*Sisymbrium altissimum*), racemose golden-weed (*Pyrrcoma racemosus*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), bird's foot trefoil (*Lotus corniculatus*), slender cleomella (*Cleomella parviflora*), small-flowered cleomella (*Cleomella plocasperma*), heliotrope (*Heliotropium curassavicum*), cinquefoil (*Potentilla* sp.), western sea purslane (*Sesuvium verrucosum*), and alkali weed (*Cressa truxillensis*). A nearby freshwater source that supports alkaline-intolerant nectar sources may be used if no alkaline-tolerant plant species are present (USFWS 2007).

Adult CWS can be distinguished from other *Pseudocopaeodes eunus* subspecies by its browner, less intense orange color on the dorsal surface; and thicker black coloring along the veins, outer margin, and both basal surfaces. CWS has an overall duller appearance with a bright yellow and orange ground color, especially on the ventral surface, with broadly darkened veins. In general, larvae (caterpillars) of all *P. eunus* are usually green or tan with dark heads and black collars (USFWS 2007).

Range: CWS is currently known from four extant populations, two in Washoe Co., Nevada, one in Lassen Co., California, and one along the Carson River south of Carson City, Nevada. A sighting of single skipper was observed in 2004 near Flannigan in Washoe Co., and may or may not indicate a local population. The population once known in Carson City is considered extirpated as of 1998 and can no longer support CWS due to development and habitat changes. There is no designated critical habitat for CWS. The Lassen Co. population occurs around Honey Lake (USFWS 2007).

Known Records: There are no NNHP records for CWS on the Reno, Reno NW, Reno NE, Granite Peak, Seven Lakes Mountain, or Verdi quads in Washoe Co. The two Washoe Co. populations are in Warm Springs Valley and Spanish Springs Valley (USFWS 2007).

The Honey Lake Valley occurrence is the largest of the four known extant populations of CWS in terms of numbers and amount of habitat. CWS was observed at 25 sites near Honey Lake from 1998 to 2005. Of those 25 sites, 17 were found in 2004 and 2005, primarily within the Honey Lake shoreline. Observations in 2004/ 2005 can be combined into seven general areas: North Shore (Honey Lake Ranch), North Shore (Darkin Unit), East Shore (Wendel Hot Springs), East Shore (Amedee Hot Springs), Northern Shore Island, Western Shore Island, and Southern Shore Island (USFWS 2007).

There are 15 records for CWS in CNDDDB, all from the Honey Lake population, which occur within the Recovery Plan general areas described above (pers. comm., R. Bittman). All records occur along the margin of Honey Lake. For each of the 15 records, the proposed project area is at least 1.6 mi away from the closest CWS record. The nearest record of CWS to the proposed project area is at the Patton substation and near Buntingville.

Habitat described in the CNDDDB records around Honey Lake consists of varied mixtures of saltgrass, saltbush, greasewood, heliotrope, alkali weed, slender cleomella (sparse), tumble mustard, western sea purslane, big sagebrush, milkvetch (*Astragalus douglasii*), bird's foot trefoil, cheat grass (*Bromus tectorum*), chenopod (*Chenopodium* sp. or *Kochia* sp.), barley (*Hordeum jubatum*), poverty sumpweed (*Iva axillaris*), *Puccinellia* sp., locoweed, Russian thistle (*Salsola tragus*), sage (*Salvia* sp.), *Scirpus* sp., and seepweed (*Suaeda* sp.), some with sporadic large patches of salt accumulation. Several occurrences were threatened by tall whitetop (*Lepidium latifolium*) infestation.

Survey Results: The proposed project area is composed predominantly of big sagebrush scrub in the vicinity of Honey Lake. It also contains meadow and agricultural areas. Small developed areas including rural residences and associated infrastructure are common. The proposed project area does not cross the margin of Honey Lake or any area dominated by alkaline vegetation. Saltgrass occurs sporadically in the proposed project area in the Honey Lake area, generally along disturbed roadsides, but not with high cover or in the context of shorelines or other substantial water source. Substantial patches of saltgrass occur along the margin of White Lake, on the east side of US 395 near the California-Nevada border. The proposed project area at this location is on the west side of US 395. CWS is not known from White Lake (pers. comm., M. Haworth). The project area is not located in areas identified as potential CWS habitat on Map:

WL-1 of the Eagle Lake Field Office, Proposed Resource Management Plan / Final EIS (BLM 2007).

3.10.7 Fish

Cui-ui

Cui-ui is a long-living, lake sucker endemic to Pyramid Lake and the lower Truckee River in Nevada. Preferred habitat in Pyramid Lake includes the lake bottom in near shore areas at depths less than 75 ft. Cui-ui migrates up the lower Truckee River to spawn between March and June. Spawning occurs over gravel substrates where eggs are broadcast over a large area. Larvae hatch in 1-2 weeks and drift downstream toward Pyramid Lake, though some may enter backwaters and remain for several weeks. In Pyramid Lake, larvae occupy the shallow lake shore and disperse into deeper waters in the summer. Maturity is reached in 6 to 12 years, with females tending to grow faster and live longer than males (USFWS 19 January 2011, USFWS 15 March 2010, USFWS 1992). Critical habitat has not been designated for Cui-ui (USFWS 1992).

The following criteria must be met for successful Cui-ui reproduction in the Truckee River: sufficient water volume to attract potential spawners in the delta and initiate a run; and adequate flow to maintain spawning, incubation and rearing habitat in the river and allow adult and larvae out-migration (USFWS 1992).

Currently, migration only occurs 6 to 12.5 mi upstream from Pyramid Lake, with most spawning occurring between Marble Bluff and Numana dams. Migrating adults require deep pools and cover, which are generally absent in the lower Truckee River below Marble Bluff Dam and can promote stress during spawning runs (USFWS 15 March 2010, USFWS 1992). Most spawners spend only a few days upstream, but some may remain for up to 16 days. Spawning runs may occur for 4 to 8 weeks, with the majority migrating during a 1 to 2 week period. Fish must pass through the Marble Bluff Fish Facility and above Marble Bluff Dam to reach spawning habitat. Cui-ui can migrate upstream to spawn using one of two routes: the traditional fish spawning route through the delta at the mouth of the Truckee River; and a fishway that provides passage from Pyramid Lake to the Marble Bluff Fish Facility.

Range: By the beginning of the 20th century, Cui-ui only inhabited Pyramid and Winnemucca lakes. In spring, they would congregate at the mouth of the Truckee River and were thought to migrate as far as 25 mi upstream to spawn. Recent information suggests historical spawning runs extended 62 mi upstream to Reno. The Winnemucca Lake population was eliminated when the lake dried up in the 1930s (USFWS 1992, USFWS 19 January 2011, USFWS 15 March 2010).

Cui-ui is endemic to Pyramid Lake and the lower Truckee River in Nevada. Currently, migration only occurs 6 to 12.5 mi upstream in the lower Truckee River between March and June, with most spawning occurring between Marble Bluff and Numana dams.

Known Records: There are no CNDDDB records for Cui ui. There are no NNHP records for Cui ui in the six quads encompassing the proposed project area.

Survey Results: Cui-ui are not known to currently migrate up Truckee River as far as Reno, Nevada. Essential Cui-ui spawning habitat is identified in the Truckee River from Hunter Creek in western Reno to and including Pyramid Lake and its tributaries (USFWS 1992). Essential spawning habitat for Cui-ui occurs where the proposed project area crosses the Truckee River at Virginia Street in Reno.

Hardhead

Hardhead are large freshwater cyprinid fishes that prefer clear, deep (>32 inches) pools and runs with sand-gravel-boulder substrates and slow velocities. Hardhead are always found in association with Sacramento pikeminnow and usually with Sacramento sucker. They tend to be absent from streams where introduced species predominate and from streams that have been severely altered by human activity (Moyle 2002). Hardhead mature in their third year. In large rivers or reservoirs, they may migrate 19-47 mi or more upstream into tributary streams in April and May to spawn. Hardhead typically spawn in April and May.

Range: Hardhead are widely distributed in low-to mid-elevation streams in the Sacramento-San Joaquin drainage and the Russian River of California, from the Pit River in Modoc Co. south to Kern River, in Kern Co. In the San Joaquin drainage, the species is scattered in tributary streams and absent from Valley reaches of the San Joaquin River. In the Sacramento drainage, hardhead is present in most large tributary streams as well as in the Sacramento River.

Known Records: There are 3 CNDDDB records of hardhead in the North Fork Feather River in Plumas Co. One record occurs near the junction with Opapee Creek in Plumas National Forest; 3 adults were observed at this location in 2007. Another record occurs in Rock Creek Reservoir, at the junction with Chips Creek and the North Fork Feather River; 3 adults were observed at this location in 2007. The third record occurs about 0.8 mi southwest of the Rock Creek Powerhouse, between Plumas and Lassen National Forests; 4 adults were observed at this location in 2007.

Survey Results: The portion of the proposed project area along the Highway 70 corridor west of Beckwourth Pass is in the Feather River drainage, which provides potential habitat for hardhead.

Lahontan Cutthroat Trout (LCT)

Lahontan cutthroat trout (LCT) is a non-anadromous salmonid that occurs in lake and stream habitats of the Lahontan Basin (Moyle 2002). LCT require clear, cold water, but can tolerate higher alkalinity and total dissolved solid levels than other salmonids in lake environments (USFWS 30 March 2009), and are more tolerant of prolonged exposure to elevated water temperatures up to 25°C (Moyle 2002). LCT is an obligatory stream spawner, known to travel long distance to find adequate spawning habitat. They prefer streams with a variety of habitats, such as slow, deep water, abundant stream cover (large woody debris, boulders, undercut banks, vegetation, etc.), relatively stable streamflow, and stable temperature regimes (USFWS 30 March 2009).

Spawning occurs April through July and is dependent on stream flow, elevation, and water temperature. Eggs are deposited on gravel in well oxygenated and relatively silt free riffles, pocket water, or pool crests (USFWS 30 March 2009). Recently hatched fry emerge from the gravel and remain in shallow shoreline areas and use small gravel/cobble for cover. Fish may exhibit three different life strategies: out-migration as fry, out-migration as juveniles, or river residency (Moyle 2002). Stream-inhabiting LCT feed primarily on terrestrial and aquatic insects

and zooplankton. Lake-inhabiting LCT generally prey upon zooplankton and other fish species (USFWS 30 January 1995).

LCT were down-listed from federally endangered to federally threatened on 16 July 1975 (USFWS 9 September 2008). In 1995, USFWS released its recovery plan for LCT (USFWS 30 January 1995). The Recovery Plan divided LCT into three distinct population segments (DPS): (1) Western Lahontan basin comprised of Truckee, Carson, and Walker river basins; (2) Northwestern Lahontan basin comprised of Quinn River, Black Rock Desert, and Coyote Lake basins; and 3) Eastern Lahontan Basin comprised of the Humboldt River and tributaries. No LCT DPSs, were listed under the Endangered Species Act. Since it is inappropriate to discuss DPSs that are not listed, populations are often organized and discussed based on watersheds within the three major basins described above.

In 2009, the Truckee River basin had over 40 partial or complete barriers to fish, impeding migration to historic spawning and rearing habitats. Approximately 72.2% of LCT populations are isolated in stream reaches less than 5 mi long. In 2002, a fish passage was installed at Derby Dam to allow fish migration. The Derby Dam was a barrier that most likely contributed to the original extirpation of LCT from Pyramid Lake. Populations that currently reside in Pyramid Lake were transplanted from Independence Lake (USFWS 30 March 2009).

Recreation harvesting of LCT is allowed in some waters, including the Truckee River. Regulations pertaining to the harvest of LCT vary by regulatory agency and include trout number limits, fishing gear restrictions, or catch and release policies. Heavily fished areas are restocked with fish from hatcheries (USFWS 30 March 2009).

Range: Historically, LCT occurred throughout in the Lahontan basin, from northern Nevada, to eastern California, and to southern Oregon. Most of the watersheds that supported LCT were connected through rivers, streams, and lakes, allowing individual movement between populations. This increased genetic diversity and allowed extirpated populations to become reestablished. Populations in Pyramid Lake historically migrated up to 100 mi up the Truckee River into Lake Tahoe and its tributaries (USFWS 30 March 2009).

Currently LCT is only found in five lakes within its historic range: Pyramid, Walker, Fallen Leaf, Independence, and Summit lakes, with only Summit and Independence Lake having self-sustaining populations. Independence Lake has the only remaining native population in the Truckee River watershed. Populations that currently reside in the Truckee River were transplanted from fish in Independence Lake (USFWS 30 March 2009). The remaining lake populations are maintained by hatchery stocking programs. LCT is also found within many other lakes and streams outside their historic range, such as Heenan and Red lakes in the Carson River watershed. Current populations in the Truckee River, Sagehen Creek, Hunter Creek, and Dog Creek were established and are maintained by hatchery stocking programs.

Known Records: There are no CNDDDB records for LCT in within 10 mi of the proposed project area. There are no NNHP records for LCT in the six-quad area encompassing the proposed project area in Nevada. This subspecies currently occupies the Truckee River (from the CA-NV line east to Wadsworth, Nevada), Hunter Creek, Dog Creek, South Branch Dog Creek, Sagehen

Creek, Pole Creek, Upper Independence Creek, and Independence Lake in the Truckee River Watershed (HUC 16050102; USFWS 2009-5YR). Of these waterbodies, only the Truckee River crosses the proposed project area. Historically LCT likely occurred in the Honey/ Eagle Lake Basin (HUC 18080003). Currently, there are no LCT populations in the Honey/ Eagle Lake Basin and suitable transplant habitat is not available (USFWS 30 January 1995). There is no current or historical distribution within the East Branch North Fork Feather Watershed (HUC 18020122) or the Middle Fork Feather Watershed (18020123).

Survey Results: Habitat for LCT in the proposed project area is restricted to the Truckee River where it crosses the proposed project area at Virginia Street in Reno.

3.10.8 Amphibians

Foothill Yellow-Legged Frog (FYLF)

FYLF is a stream dweller that requires shallow, flowing water, preferably in a small to moderate sized stream with some cobble sized substrates (Jennings and Hayes 1994). Stream occur in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types. Adults often bask on exposed rock surfaces near streams, diving into the water under submerged rock or sediments when disturbed (CWHR 2011). Oviposition occurs between March and June following a period of high water flow from winter rainfall and snowmelt. Egg masses are deposited on the downstream side of cobbles and boulders. Tadpoles occur in rocky pools and riffles, and are adapted to a flowing stream environment. Metamorphosis occurs after 15 weeks, between July and September, and reaches adult size in approximately two years. This species is infrequent or absent from habitats that contain introduced aquatic predators, such as various fish and bullfrogs (Jennings and Hayes 1994). During cold weather inactivity, FYLF seeks cover under rocks in the stream or near the shore. FYLF is rarely found far from water (CWHR 2011).

Range: FYLF was historically distributed in most Pacific drainages from Oregon to Baja California. In California, this species was historically known from most foothill drainages from sea level to 6,365 ft. In California, this species occurs at many locations along the coast, but has scattered records in northern California on the western slope of the Sierra Nevada and extreme southern Cascades (Jennings and Hayes 1994). Isolated populations occur in the Central Valley in San Joaquin Co. (CHWR 2011).

Known Records: There are no NNHP records for FYLF in the six-quad area encompassing the proposed project area in Nevada. There are three CNDDDB records of FYLF within 10 mi of the proposed project area. All three are south or west of Quincy and are 5.3 to 6.3 mi away. Two records from 1998 and 2008 are in Spanish Creek, upstream of the proposed project area and upstream of Meadow Valley.

Survey Results: Perennial creeks in the Feather River watershed in the proposed project area provide potential habitat for FYLF. The proposed project area crosses Spanish Creek in Quincy.

Sierra Nevada Yellow-Legged Frog (SNYLF)

In 2003, USFWS listed the Sierra Nevada distinct population segment (DPS) of mountain yellow-legged frog (*Rana muscosa*) as a candidate species. The listing applies to populations in the Sierra Nevada north of the Tehachapi Mountains (USFWS 2003). After it was listed in 2003, Vredenburg et al. (2007) described the populations of mountain yellow-legged frog in the northern Sierra Nevada as a distinct species from the populations of mountain yellow-legged frog in the southern Sierra Nevada. The northern populations were described by Vredenburg et al. as *R. sierrae* (Sierra Nevada yellow-legged frog, SNYLF). As of 14 April 2010, USFWS has not recognized *R. sierrae* as taxonomically distinct from the Sierra Nevada DPS of *R. muscosa*.

The candidate listing applies to the Sierra Nevada DPS of mountain yellow-legged frog, including those described as *R. sierra* in Vrendenburg et al. (USFWS 2010).

SNYLF is associated with perennial streams, lakes, and ponds in montane riparian, lodgepole pine, subalpine conifer, and wet meadow habitats and are rarely found more than 3.3 ft from water (Zeiner et al. 1988; USFWS 2003). SNYLF is absent from the smallest creeks probably because of insufficient water depth for adequate refuge and overwintering. Although SNYLF occur in low numbers along a variety of shorelines, it appears to prefer gently sloping open stream and lake margins that border relatively shallow water edges (typically 2-3 inches in depth). Such shorelines are probably essential for oviposition and important for thermoregulation of larvae and post-metamorphs and for refuge from fish predation (Jennings and Hayes 1994).

Reproduction occurs when lakes and streams are free of ice. At higher elevations, breeding and egg-laying usually occur from June to August, depending on local conditions. Eggs are usually laid in shallow water attached to submerged gravel or rocks. Tadpoles may require up to two over-wintering periods to complete metamorphosis. During winter, adults are thought to hibernate beneath ice-covered streams, lakes, and ponds (Zeiner et al. 1988).

Adults and tadpoles are commonly preyed upon by garter snakes and introduced trout (Zeiner et al. 1988). SNYLF rarely co-occur with introduced predatory fish and tend to be more successful where predatory fishes are absent (Jennings and Hayes 1994).

Range: USFWS (2003) indicates that the Sierra Nevada DPS of the mountain yellow-legged frog, ranges in elevation from approximately 4,500 ft near Dorrington in Calaveras Co., to over 12,000 ft at Desolation Lake in Fresno Co., though populations are typically encountered in the upper half of the elevation range. A single CNDDDB record for SNYLF was found in the vicinity of Quincy at \pm 3,700 ft. Typical home ranges are probably less than 33 ft in the longest dimension. Occasional movements up to 165 ft may be associated with habitat deterioration, especially drying (Zeiner et al. 1988).

SNYLF once ranged from the Diamond Mountains in the southern Cascades in Plumas Co., California, south through the Sierra Nevada to Inyo Co. In the northwest region of the Sierra Nevada, several populations occur just north of the Feather River. West of the Sierra Nevada crest, the southern part of the SNYLF range is bordered by ridges that divide the Middle and South Fork of the Kings River, ranging from Mather Pass to the Monarch Divide. East of the Sierra Nevada crest, SNYLF occur in the Glass Mountains just south of Mono Lake and along the east slope of the Sierra Nevada south to the type locality at Matlock Lake (Vrendenburg et al. 2007). SNYLF is confined to California except for historic populations on Mt. Rose near Lake Tahoe (possibly Edgewood Creek) in western Nevada.

Known Records: There are 17 CNDDDB records of SNYLF within 10 mi of the proposed project area. Southwest of Janesville, California, records occur in meadows and tributaries upstream of Antelope Lake. South of Blairsden, California, one record occurs from a large pond; southwest of Blairsden, several records occur around Goose and Haven Lake. West of Quincy, California several records occur in Bean Creek. The closest CNDDDB record for SNYLF is located approximately 4.5 mi west of the PSA on the Meadow Valley quad, west of Quincy. Three

adults, 14 juveniles, and 1 larva were observed on 29 September 2005 in willow riparian habitat in Spanish Creek at an elevation of \pm 3,700. In Nevada, there are no NNHP records of SNYLF on the Reno NW, Reno NE, Verdi, Reno, Seven Lakes Mountain, and Granite Peaks quads.

Survey Results: SNYLF was not observed during general biological surveys in the proposed project area. There are no known records of SNYLF in the proposed project area. SNYLF does not occur in sagebrush scrub habitats. The portion of the proposed project area between Reno and Susanville, and along Highway 70 west to approximately Big Grizzly Creek (northwest Sierra Valley), crosses sagebrush scrub and does not provide habitat for SNYLF.

Northern Leopard Frog (NLF)

NLF is a highly aquatic species that occurs in or near quiet, permanent, and semi-permanent water in a variety of habitats (CWHR 2010), including freshwater and brackish marshes (NDOW 2003). This species requires a mosaic of habitats for overwintering, breeding, and upland post-breeding sites, as well as habitat linkages to these sites. Dense, relatively tall, grass- or forb-dominated habitat with a moist substrate for foraging during the active season must occur in the vicinity of the aquatic habitat. Overwintering occurs in small excavated mud bottomed pits of deeper waters that are well oxygenated and do not freeze to the bottom (Jennings and Hayes 1994). Tadpoles are generalist herbivores, occasionally feeding on animal matter. Adults and subadults are generalists who feed on insects, spiders, mollusks, and crustaceans (USFWS 1 July 2009).

Breeding occurs in slow moving or still waters of streams and rivers, wetlands, permanent or temporary pools, beaver ponds, and human constructed habitats. Emergent vegetation, such as sedges and rushes, and lack of predators are important for breeding and tadpole habitats. Approximately two to three days after the onset of male chorusing, females lay eggs in shallow breeding ponds. Eggs are usually attached to vegetation just below the water surface, and can contain several hundred to several thousand eggs (USFWS 1 July 2009). In California, breeding and egg-laying occur from December to June, depending on local conditions; eggs normally hatch in three weeks, and tadpoles metamorphose in two to four months (CWHR 2011).

Frogs can move significant distances from natal ponds, but show a high degree of site fidelity as adults (Jennings and Hayes 1994). Recently metamorphosed frogs will move up and down drainages to disperse from breeding areas, and sub adults usually migrate to feeding sites along larger and more permanent bodies of water (USFWS 1 July 2009).

Range: NLF is widely distributed in North America from sea level to 7,000 ft (Jennings and Hayes 1994; CWHR 2011). NLF is possibly extirpated from almost 100 percent of its range in California (USFWS 10 November 2010). Occurrences in California were uncommon and localized, with many origins uncertain and possibly introduced (CWHR 2011). Native occurrences in northern California include Modoc and Lassen counties (Jennings and Hayes 1994; CWHR 2011). Frogs in the vicinity of Lake Tahoe have been treated as native, but historical evidence indicates that at least some of these are introduced populations. Sightings from the 1990s found NLF in Siskiyou and Inyo counties (Jennings and Hayes 1994). DFG is concerned only about native populations of this species (DFG 2009a).

In Nevada, NLF is known only from isolated populations in the eastern and extreme western part of the state (NDOW 2003), and is considered to be declining, rare, or locally extinct from historical locations (USFWS 10 November 2010).

Known Records: There are no CNDDDB records for NLF within 10 mi of the proposed project area. There is one NNHP record for NLF in the six-quad area encompassing the proposed project area in Nevada. This record is from 1936 and is located approximately 7.6 mi southwest of the proposed project area at the nearest point. The record is on the west side of the Truckee River approximately 0.5 mi west of Verdi, Nevada.

Survey Results: Habitat for NLF occurs wherever the proposed project area crosses permanent or semi-permanent water.

3.10.9 Reptiles

Western Pond Turtle (WPT)

WPT is associated with permanent or nearly permanent water in a wide variety of habitats, such as permanent ponds, reservoirs, lakes, rivers, streams, irrigation ditches, permanent and ephemeral shallow wetlands, permanent pools along intermittent streams, abandoned gravel pits, stock ponds, and sewage treatment lagoons (BLM 2006; CWHR 2011). Pools are the preferred habitat when found in streams. The presence of adequate emergent basking sites, emergent vegetation, and suitable refugia is preferred (BLM 2006). Basking sites include partially submerged logs, rocks, mats of floating vegetation, or open mud banks. In colder areas, hibernation occurs underwater in bottom mud (CWHR 2011). WPT are omnivorous and are known to feed on aquatic plant material, small insects, aquatic invertebrates, fish, frogs, snakes, and carrion (BLM 2006; CWHR 2011). Home range varies from 2.42 ac in males and 0.62 ac in females, with daily movements ranging from 92 to 286 ft (BLM 2006).

Courtship and mating of WPT have been observed most of the year except December through January. Nesting occurs from late April through August (BLM 2006). Two distinct habitats may be used for oviposition: along large slow-moving streams, nests are constructed in sandy banks; and along foothill streams, females may climb hillsides to find a suitable nest site (CWHR 2011). Typically, nests have been observed in open, grassy areas with a southern exposure (BLM 2006). Females may travel up to 1.2 mi to find suitable nesting habitat. WWPT nests are usually 4 in deep, and have been observed in soil types from sandy to very hard. Three to 13 eggs are laid from March to August, depending on local conditions and female body size (CWHR 2011, BLM 2006). Egg incubation varies with latitude, and can range from 80 to 126 days. In southern California, western pond turtles are known to produce up to two clutches per year. In northern California, hatchlings remain in the nest through the winter (BLM 2006). Sexual maturity is attained at six or seven (BLM 2006) to about eight years (CWHR 2011) of age.

Two subspecies of WPT have been recognized (northwestern pond turtle, *Actinemys m. marmorata* and southwestern pond turtle, *A. m. pallida*), but the validity of these distinctions have been questioned. A study in 2005 found four geographically distinct clades. The northern

clade was congruent with the distribution of northwestern pond turtle, but no clade was congruent for distribution of southwestern pond turtle. The 2005 study concluded that the current subspecies split is not warranted (NatureServe 2011). For the purposes of this document, WPT and northwestern pond turtle are considered the same species.

Range: WPT ranges from southern Washington south to Baja California west of the Sierra-Cascade crest, with an isolated population in the Carson River near Carson City, Nevada. WPT occurrences have also been found in the Truckee and Humboldt rivers, and may represent introductions (CWHR 2011; NatureServe 2011). Elevation ranges from sea level to 6,717 ft, though the species is uncommon above 5,015 ft (BLM 2006; CWHR 2011). WPT is absent from desert regions except along the Mojave River in its tributaries in the Mojave Desert (CWHR 2011). Currently, extensive populations of WPT are only found in northern California and southern OR (BLM 2006).

Known Records: There are no CNDDDB records for WPT within 10 mi of the proposed project area. There are three NNHP records for WPT in the six-quad area encompassing the proposed project area in Nevada. All three records are in the Truckee River between Reno and Sparks, and are considered historical records (1940 and 1941).

Survey Results: Habitat for WPT occurs where the proposed project area crosses any permanent or nearly permanent water.

Northern Sagebrush Lizard

Sagebrush lizard (*Sceloporus graciosus*) is common in most habitats where it occurs and is widely distributed in montane chaparral, hardwood and conifer habitats, eastside pine and juniper habitats, and Great Basin shrub habitats (CWHR 2011). It mainly occurs in sagebrush, but also manzanita and ceanothus shrubland, pinyon-juniper woodland, pine and fir forests, and along river bottoms in coastal redwood forests. Sagebrush lizard can be found near bushes, brush heaps, logs or rocks (Stebbins 2003).

Sagebrush lizard feeds on a wide variety of insects and other arthropods. When disturbed, they take cover in dense, low growing bushes or shrubs, or hide in mammal burrows, rock crevices, and under surface objects. Mammal burrows and rock crevices may also be used as hibernation sites during cold weather. Warm season activity occurs between March and October, depending on annual variability. Basking occurs on the ground, on low branches of bushes, or on low boulders (CWHR 2011).

Reproduction occurs from May through July, with egg laying occurring in June or July. Females lay between two and seven eggs, depending on the size of the female. Females dig a nest in loose soil, laying eggs a few centimeters deep. Nests are often found near the base of shrubs. Eggs hatch from August through September (CWHR 2011).

Range: Sagebrush lizard (*S. graciosus*) is widely distributed in the western U.S. from 3,000 to 10,400 ft, including California and Nevada (CWHR 2011, Stebbins 2003). There are three subspecies, all occurring in California. *S. g. graciosus* has the largest range, occurring in all

states within the species distribution; *S. g. graciosus* occurs east of the Sierra-Cascade range in the Great Basin deserts and the northeastern corner of California, and throughout the entire state of Nevada except the southernmost tip (Stebbins 2003).

Known Records: There are no NNHP records for sagebrush lizard in the six-quad area encompassing the proposed project area in Nevada. There are no CNDDDB records for sagebrush lizard within 10 mi of the proposed project area.

Survey Results: The proposed project area east of Beckwourth provides potential habitat for the subspecies *S. g. graciosus*.

3.10.10 Birds

Migratory Birds and Birds of Prey

Fish and Game Code 3503.5 protects all birds in the orders Falconiformes and Strigiformes (collectively known as birds of prey). Birds of prey include raptors, falcons, and owls. Many birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any bird listed in 50 CFR Part 10 including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The MBTA applies to construction activities and construction-related disturbance.

Survey Results: Birds of prey and other birds protected under the MBTA were observed during the reconnaissance level field surveys in December 2010. Foraging and nesting habitat occurs in and adjacent to the proposed project area for birds of prey and migratory birds. Nesting habitat for swallows occurs under various bridges in the proposed project area.

Northern Goshawk

Northern goshawks prefer middle and higher elevations, and mature, dense conifer forests and deciduous habitats. This species usually nests on north slopes, near water, in the densest parts of stands, but close to openings. Northern goshawks use old nests and maintain alternate sites (CWHR 2011). In Nevada, a majority of the nests are found in aspen and nearly all are found near water (NDOW 2010). Typically, northern goshawks nest in mature or old-growth forests and generally select large tracts of forest over small tracts. Western birds also nest in deciduous forests dominated by aspen, paper birch, or willow. Nests are generally constructed in the largest trees of dense, old, or mature stands with high canopy closure and sparse groundcover, near the bottom of moderate slopes, and near water or dry openings (NatureServe 2011). Breeding begins in April in southern California and by mid-June in the north (CWHR 2011).

Northern goshawks hunt in wooded areas, using snags and dead-topped trees for observation and prey-plucking perches. After the breeding season, some northern goshawks move down-slope, as far as valley foothill hardwood habitat in the Sierra Nevada, likely due to food availability. Migration into lowlands occurs irregularly (CWHR 2011).

Range: Northern goshawks breed in the North Coast Ranges through the Sierra Nevada, Klamath, Cascade, and Warner Mts., on Mt. Pinos, and in the San Jacinto, San Bernardino, and White Mts. Some northern goshawks remain yearlong in breeding areas as an uncommon resident. This species is casual in winter along the north coast, throughout foothills, and northern deserts, where they may be found in pinyon-juniper and low elevation riparian habitats (CWHR 2011). Northern goshawks are a year-round resident in Nevada (NDOW 2010).

Known Records: There are 21 CNDDDB records for northern goshawks within 10 mi of the proposed project area. There are no NNHP records for northern goshawks in the six-quad area encompassing the proposed project area in Nevada. The closest CNDDDB record to the southern proposed project area segment is located approximately 0.6 mi north of the proposed project area, approximately 4.2 mi east of East Quincy at Massack Creek. An active nest was observed at this site in 1981; this site was inactive in 1982. The closest CNDDDB record to the northern proposed project area segment is located approximately 3.6 mi north of the proposed project area, north of Susanville.

As part of the Sierra Nevada Forest Plan Amendment (SNFPA), protected activity centers (PACs) for northern goshawks are designated with the intent of directing management to specifically sustain viable populations (USFS January 2004). The proposed project area is not located in a northern goshawk PAC. There are seven PACs located within one mile of the proposed project area. The closest PAC is located approximately 0.2 mi west of the proposed project area, approximately 3.5 mi northwest of Blairsden. Hwy 70 is located between the PAC and the proposed project area. The CNDDDB record located east of East Quincy, referenced above, occurs within a PAC.

Survey Results: Field surveys for northern goshawks were not conducted in the proposed project area. No northern goshawks were observed in the proposed project area during the reconnaissance surveys conducted in December 2010. Habitat for northern goshawks occurs in the mixed conifer forest in and adjacent to the proposed project area, west of Beckwourth along the southern proposed project area segment.

Tricolored Blackbird

Tricolored blackbirds form the largest breeding colonies in North America (Shuford and Gardali 2008), supporting a minimum of 50 pairs (CWHR 2011). This species requires open access to water, a protected nesting substrate (such as water or thorny vegetation), and suitable insect foraging areas nearby. Historically, most breeding colonies occurred in freshwater marshes dominated by cattails or tules, occasionally nettles, thistles and willows. Nests were built in cattails, sometimes in willows and other riparian trees. In the 1970s, an increasing number of colonies were found in Himalayan blackberries and thistles in silage and grain fields, often near dairies, due to a loss of natural habitat (Shuford and Gardali 2008).

Winter foraging occurs in large flocks with other blackbirds in grasslands, vernal pools, and other seasonal wetlands, riparian scrub, open marsh borders, and artificial habitats, such as agricultural fields with low growing vegetation, and at dairies and cattle feeding lots. Pure tricolored blackbird flocks separate out in February to search for suitable nesting habitat.

Breeding occurs March through August (Shuford and Gardali 2008). Two to six eggs are incubated for about 11 days and the young leave the nest in approximately 13 days. Sexual maturity probably occurs within the first year (CWHR 2011). Individuals may move north after their first nesting efforts in March and April (Shuford and Gardali 2008). In winter, tricolored blackbirds move south, becoming more widespread throughout their range (CWHR 2011). Nesting colonies are of concern to DFG (2009a).

Range: The main portion of their breeding range occurs in the Central Valley of California. Distribution within California includes the Sacramento and San Joaquin valleys, foothills of the Sierra Nevada south to Kern Co., coastal slopes from Sonoma Co. south to Mexico, and sporadically in the Modoc Plateau (Shuford and Gardali 2008). Nevada has one consistent migrating breeding colony in a privately-owned marsh in Douglas Co. Periodically, tricolored blackbird colonies are reported in other nearby marshes in Carson Valley (GGBO 2010).

Known Records: There is a geographically imprecise record from 1972 for tricolored blackbird in Reno. CNDDDB Occurrence 272 is in a wetland between the Susan River and Center Road (see Chapter 4.1), crossed by the proposed project area. Tricolored blackbirds were observed at the site in the 1980's, including nesting in 1983. Nests were observed in 2001, but could have been red-winged blackbird nests. There are three other CNDDDB records of tricolored blackbirds in cattail marshes near Susan River between Susanville and Honey Lake.

Survey Results: Some larger marshes and willow thickets in the proposed project area could provide nesting habitat for tricolored blackbird, particularly the wetland complex between the Susan River and Center Road.

Golden Eagle

Golden eagles are generally found in open country of prairies, arctic and alpine tundra, open wooded country, and barren areas, especially in hilly or mountainous regions (NatureServe 2011). Golden eagles need open terrain for hunting such as grasslands, deserts, savannahs, and early successional stages of forest and shrub habitats. Golden eagles use secluded cliffs with overhanging ledges and large trees for cover. Golden eagles nest on cliffs of all heights and in large trees in rugged, open areas with canyons and escarpments. Alternative nest sites are maintained and old nests are reused. Golden eagles breed from late January through August with a peak from March through July (CWHR 2011). Nesting and nonbreeding/wintering sites are of concern to DFG (2009a).

Range: Golden eagles are an uncommon permanent resident and migrant throughout California, except the center of the Central Valley. This species is perhaps more common in southern California than in the north. Golden eagles range from sea level to 11,500 ft (CWHR 2011). Golden eagles are a permanent resident in Nevada (NatureServe 2011).

Known Records: There are 3 CNDDDB records for golden eagles within 10 mi of the proposed project area. There are no NNHP records for golden eagles in the six-quad area encompassing the proposed project area in Nevada. The closest CNDDDB record is located approximately 4.9

mi northeast of the proposed project area, approximately 5.9 mi northeast of Leavitt. An active nest was observed on a cliff at this site in 1979.

The Plumas National Forest (PNF) maintains records of golden eagle eyries (nests). There is a golden eagle eyrie on Bonta Ridge. The eyrie is approximately 0.4 mi northeast of the proposed project area, and approximately 3.1 mi north of Blairsden. A pair of golden eagles was observed at this location in and around the eyrie on 30 April 1979. The proposed project area, in the vicinity of the eyrie, is about 0.1 mi away from Highway 70.

Survey Results: Habitat for golden eagles occurs primarily in the big sagebrush scrub and Utah juniper woodland in and adjacent to the proposed project area, between Reno and Susanville and along the Highway 70 corridor between the town of Beckwourth and Hallelujah Junction. Additional habitat is present in the coniferous forests adjacent to the proposed project area, where there are canyons and escarpments. During reconnaissance surveys conducted by Sycamore Environmental biologists in December 2010, several golden eagles were observed foraging in big sagebrush scrub habitat in and adjacent to the proposed project area in California.

Short-Eared Owl

Usually found in open areas with few trees. Suitable habitats include salt and freshwater marshes, irrigated alfalfa or grain fields, ungrazed grasslands, prairies, dunes, meadows (Shuford and Gardali 2008). This species requires dense vegetation, such as tall grasses, brush, ditches, and wetlands for resting and roosting cover (Zeiner et al. 1990a). Habitat components generally include large areas with low vegetation, dry upland areas for nesting, and sufficient suitable prey base. Often approximately 99% of the diet of short-eared owl is composed of small mammals (Shuford and Gardali 2008). Nearby water is a requirement for nesting habitat (NatureServe 2011). Nesting sites are of concern to DFG (2009a).

Range: Short-eared owls breed across much of northern North America. Many North American populations are migratory and winter in northern Mexico and Florida. In California this species is a year round resident in certain parts of the State, namely the Great Basin and locally in the Sacramento-San Joaquin River Delta (Shuford and Gardali 2008). In California the breeding range of this species retracts dramatically during years with drought conditions and during prey reductions. Short-eared owl is a nonbreeding resident throughout much of Nevada and a permanent resident in northwestern Nevada (NatureServe 2011).

Known Records: There are no CNDDDB records for short-eared owl within 10 mi of the proposed project area. There are no NNHP records for short-eared owl on the six-quad area encompassing the proposed project area in Nevada. The closest CNDDDB record is located approximately 107 mi north of the proposed project area, north of Susanville. Two nests were observed on open ground near the Peninsula Highlands, approximately 2 mi northeast of the Lava Beds National Monument.

Survey Results: Habitat for short-eared owl occurs in the in the meadow, wet meadow, and agricultural habitat in the proposed project area.

Long-Eared Owl

Long-eared owls require riparian habitat, but also use live oak thickets or dense stands of trees. Riparian or other thickets with small, densely canopied trees are required for roosting and nesting. Long-eared owls use old crow, magpie, hawk, heron, and squirrel nests in a variety of trees with dense canopies. Nests are usually located 10 to 50 ft above the ground, and rarely on the ground or in a tree or snag cavity. This species breeds from valley foothill hardwood up to ponderosa pine habitats (CWHR 2011). Long-eared owls commonly nest in the same sites in successive years (NatureServe 2011). This species breeds from February through July in conifer, oak, riparian, pinyon-juniper, and desert woodlands that are either open or are adjacent to grasslands, meadows, or shrublands. Key habitat components are some dense cover for nesting and roosting, suitable nest platforms, and open foraging areas (Shuford and Gardali 2008). Long-eared owls are nocturnal, usually hunting in open areas and occasionally in woodlands and forests (CWHR 2011). Nesting sites are of concern to DFG (January 2009a).

Range: In North America, long-eared owls breed across central Canada and south interruptedly through northern Baja California in the west and Virginia in the east (Shuford and Gardali 2008). Long eared owls are an uncommon yearlong resident throughout the state except the Central Valley and southern California deserts where it is an uncommon winter visitor (CWHR 2011). Elevation range of long-eared owls is from sea level to 7,000 ft, but a record has been noted at 10,500 ft in the White Mountains in Mono Co. Northeastern California is perhaps the center of abundance for this species in California, including nesting sites in the Honey Lake Valley (Shuford and Gardali 2008). Long-eared owls are a permanent resident in Nevada (NatureServe 2011).

Known Records: There are four CNDDDB records for long-eared owls within 10 mi of the proposed project area. There are no NNHP records for long-eared owls in the six-quad area encompassing the proposed project area in Nevada. The closest CNDDDB record is located in Herlong at the Sierra Army Depot and encompasses the proposed project area. A second CNDDDB record occurs at the Sierra Army Depot approximately 0.25 mi east of the proposed project area. Both records are from May 1979. A long-eared owl was observed in an abandoned magpie nest in a clump of willows and an adult female with two young were observed nesting in the rafters of a sheet-metal shed. An additional CNDDDB record occurs 0.4 mi northwest of the proposed project area approximately 1.7 mi south of the junction with the Red Rock Lateral. One adult and one juvenile were observed on 6 June 1998 in an apparent old magpie nest in a juniper.

Survey Results: No long-eared owls were observed in the proposed project area during the reconnaissance surveys conducted in December 2010. Habitat for long-eared owls occurs in the in the Utah juniper woodland and the dense willow thickets and riparian habitats with trees large enough to support a nest.

Burrowing Owl

Burrowing owls are a yearlong resident of open, dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats. They usually nest in

old burrows of ground squirrels or other small mammals. They may dig their own burrows in soft soil. Pipes, culverts, and nest boxes may be used where burrows are scarce (CWHR 2011). Suitable burrowing owl habitat can also include areas with trees and shrubs if the canopy cover is less than 30 percent (DFG 1995). Burrowing owls feed on insects, small mammals, reptiles, birds, and carrion. They hunt day or night, often from a perch. Burrowing owls breed from March through May, with the peak from April through May (CWHR 2011). DFG is concerned about occupied burrow sites and winter observations with or without a burrow in San Francisco, Ventura, Sonoma, Marin, Napa, and Santa Cruz counties (DFG January 2011).

Range: Burrowing owls occur in the Central Valley, desert, and coastal ranges. This species was formerly common in appropriate habitats throughout the state, excluding the humid northwest coastal forests and high mountains. Their numbers have markedly reduced in recent decades. They are present on the larger offshore islands and are found up to 5,300 ft in Lassen Co. (Zeiner et al. 1990a).

Known Records: During surveys conducted in 2007 and 2010 active nest, inactive burrows, and individual burrowing owls were observed in the vicinity of Turtle Mountain approximately 4 mi east of the project area (USDA 2010). There are no CNDDDB records for burrowing owls within 10 mi of the proposed project area. There are no NNHP records for burrowing owls in the six-quad area encompassing the proposed project area in Nevada. The closest CNDDDB record is located approximately 13.5 mi east of the proposed project area, east of Susanville. Two adults were observed at a burrow on 16 April 1998 at the east edge of Honey Lake Valley. Habitat at this location consists of mixed scrub surrounded by very rocky areas.

Survey Results: Habitat for burrowing owls occurs in big sagebrush scrub, Utah juniper woodland, and meadows between Reno and Susanville along Hwy 395 and along Hwy 70 between Hallelujah Junction and Beckwourth. Potential habitat could also occur along these segments in agricultural and urban areas where burrows and suitable foraging habitat are present.

Ferruginous Hawk

Ferruginous hawks are migratory, generally arriving in California in September and departing by mid-April. Ferruginous hawks do not breed in California. They are a nonbreeding resident in southwestern Nevada (NatureServe 2011). Ferruginous hawks frequent open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. This species roosts in open areas, usually in a lone tree or utility pole (CWHR 2011). Ferruginous hawks generally avoid areas of intensive agriculture or human activity. Nonbreeding/ wintering sites are of concern to DFG (2009a).

Ferruginous hawks nest in foothills or prairies on low cliffs, buttes, cut banks, shrubs, or trees. Nest trees are often isolated or in a transition zone to adjacent communities (CWHR 2011).

Range: Ferruginous hawks are an uncommon winter resident and migrant at lower elevations and open grasslands in the Modoc Plateau, Central Valley, and Coast Ranges. This species is a fairly common winter resident in grasslands and agricultural areas of southwestern California.

Ferruginous hawks are casual in northeast California during summer. This species breeds from OR into Canada (CWHR 2011).

Known Records: There are no CNDDDB records for ferruginous hawks within 10 mi of the proposed project area. There are no NNHP records for ferruginous hawks in the six-quad area encompassing the proposed project area in Nevada. The closest CNDDDB record is located approximately 95 mi southwest of the proposed project area in Sacramento Co. No other records occur farther north.

Survey Results: Ferruginous hawks were not observed during the reconnaissance surveys conducted in December 2010. Habitat for ferruginous hawks occurs in big sagebrush scrub and Utah juniper woodland in and adjacent to the proposed project area between Reno and Susanville and along the Highway 70 corridor from the town of Beckwourth east to Hallelujah Junction.

Swainson's Hawk

Throughout their range, Swainson's hawks nest almost exclusively in trees. They often return to nests used the previous year. In the Great Basin, Swainson's hawks usually nest in junipers not near riparian zones. There are a few nest records on cliffs, coulees, structures, and the ground, but these sites are rarely used (BLM 2006). Swainson's hawks breed from late March to late August, with peak activity late May through July (CWHR 2011). Nesting sites are of concern to DFG (2009a).

Swainson's hawk forage in grasslands or suitable grain or alfalfa fields, or livestock pastures adjacent to nesting areas. They feed on mice, gophers, ground squirrels, rabbits, large arthropods, amphibians, reptiles, birds, and rarely, fish. Swainson's hawk may be preyed upon by golden eagles (CWHR 2011).

Range: Swainson's hawks breed regularly from southwestern Canada to northern Mexico (BLM 2006). In California, Swainson's hawk is an uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen Co., and Mojave Desert (CWHR 2011). Swainson's hawk is a breeding resident in Nevada (NatureServe 2011). Nearly all Swainson's hawks spend the winter in South America (BLM 2006).

Known Records: There are 6 CNDDDB records for Swainson's hawk within 10 mi the proposed project area. There are no NNHP records for Swainson's hawk in the six-quad area encompassing the proposed project area in Nevada. Two records intersect the proposed project area. One record intersects the proposed project area along the spur on the Herlong Quad. This record is of a failed nest from 1977, 1978, and 1980. One record intersects the proposed project area on the McKesick Peak Quad, just northwest of the junction for the Herlong Spur. This record is of an active nest from 1977-1981 and 1983. The nest was inactive in 1982 and a pair nested in 1985 with unknown results. The nest tree is a cottonwood located approximately 100 yards off the west side of Hwy 395 in Honey Lake Valley. The third closest CNDDDB record for Swainson's hawk occurs 0.5 mi east of the proposed project area on the Beckwourth Pass Quad, approximately 0.7 mi SSE of Hallelujah Junction. Two adults were observed nesting in May 1998 in habitat consisting of sage scrub, perennial grassland, and juniper woodland.

Survey Results: Habitat for Swainson's hawk occurs in the trees in the juniper woodland, sagebrush scrub, agriculture, and riparian areas of the proposed project area. There is no habitat for Swainson's hawk along the Highway 70 corridor of the proposed project area west of Beckwourth.

Greater Sage-Grouse (GSG)

GSG is a large, ground-dwelling bird endemic to sagebrush (*Artemisia* spp.) ecosystems of western North America. It occurs from 4,000 to over 9,000 ft and is only found where there are relatively large expanses, e.g., over 385 mi² of sagebrush-dominated shrub steppe habitat. Sagebrush is important for food and cover during both winter and summer seasons. The annual diet of GSG is composed of sagebrush, grasses, forbs, and insects. Common predators of sage-grouse include corvids (e.g., common ravens, crows, black-billed magpies, and western scrub jays), raptors, and red foxes. Nine of eleven states with GSG (including CA and NV) have GSG hunting seasons (Knick and Connelly 2011, USFWS 5 March 2010).

GSG breed in open areas in sagebrush habitat known as leks. Leks occur where there is a high cover of sagebrush both locally (within 2 mi) and regionally (within 7 mi). Leks vary in size from approximately 1 ac to more than 100 ac, and are typically re-used annually (Becker et al. 2009). Very few leks are located within 3.1 mi of developed land or in vegetation with greater than 8% exotic plant cover (Knick and Connelly 2011).

GSG begin breeding in ± mid-March, when the males start to congregate on the leks. Breeding may last up to 3 months (until early June). After mating, females nest in the general vicinity of the leks. Almost all nesting occurs within 4 mi of leks, but nests have been reported up to 12 mi away. Females generally lay 7 to 10 eggs and rear only one brood per season, though they may re-nest through early July if a nest is destroyed. Incubation lasts 3-4 weeks and chicks typically leave the nest soon after hatching (McAdoo and Back 2001, Becker et al. 2009).

Throughout their range, GSG populations can be either migratory or non-migratory, depending on site-specific conditions. In areas where elevation varies, the non-migratory or "resident" birds typically move up in elevation from spring through fall in response to snow melt and subsequent vegetation growth (McAdoo and Back 2001).

The entire proposed project area is located in the Northern Great Basin Sage-Grouse Management Zone (Zone V), with the possible exception of the far western portion of the proposed project area near Quincy, California (Connelly et al. 2004, Stiver et al. 2006).

Range: GSG historically occurred in parts of 12 states in the U.S. and three Canadian provinces. GSG have been extirpated in Nebraska and British Columbia and have declined throughout much of their former range. GSG currently occupy approximately 258,700 mi² or 56% of their historical distribution. In California, GSG occur in the northeast portion of the state and in and around the Mono Basin. In the vicinity of the project area GSG are known from eastern Lassen County north of Honey Lake and east on Eagle Lake (Shuford and Gardali 2008). The Greater Sage-Grouse Conservation Plan for Nevada and Eastern California (BLM 2004) states that in

California, the highest concentrations of sage-grouse inhabit the Buffalo/Skedaddle population management unit (PMU) area in Lassen County (extending into Washoe County NV.) and the Bodie Hills (in Alpine County) and South Mono PMU's (in Mono County). The Buffalo/Skedaddle PMU is located north and east of the project area. The Honey Lake Valley area south to Hallelujah Junction was historically occupied by GSG but has not been occupied since 1995 (Shuford and Gardali 2008). Map WLD-1 of the Carson City Filed Office Consolidated Resource Management Plan (BLM 2001) does not identify critical GSG areas in the project area. In Nevada, GSG occur in the central and northern portions of the state (Knick and Connelly 2011).

The home range of GSG is typically about 232 mi², to as much as 1,040 mi². Migrations up to 50 mi between separate seasonal ranges have been documented (Knick and Connelly 2011).

Known Records: A map of the Buffalo/ Skedaddle PMU indicates that the closet active lek is approximately 9 mi north of the project area (NDOW 2011a). A map of the Virginia/Pah Rah PMU indicates that a historic lek site is located approximately 4.5 mi southeast of the southern terminus of the Red Rock Fire Department Lateral (NDOW 2011b). There are no CNDDDB records for GSG in Lassen, Plumas, and Sierra counties. The closest CNDDDB record for GSG is approximately 57.7 mi north of the Leavitt portion of the proposed project area at Little Juniper Reservoir in Modoc Co. An unknown number of greater sage-grouse were observed at a potential leking site in 1994. There are no NNHP records for greater sage grouse in the six-quad area encompassing the proposed project area in Nevada.

Survey Results: No GSG were observed during reconnaissance level biological surveys in the proposed project area. Although the proposed project area occurs in Management Zone V (Knick and Connelly 2011), recent distribution maps (Doherty et al. 2010) show that within the proposed project area, only three project areas potentially occur in or adjacent to the current range of GSG: 1) the Red Rock Fire Department Lateral; 2) an area along US 395 just north of Reno; and 3) areas in the vicinity of Susanville, California.

Red Rock Fire Department Lateral Branch: The Red Rock Fire Department Lateral originates in California, south of the intersection of Red Rock Road and US-395, and terminates approximately 4 mi to the southeast in Nevada at the Red Rock Fire Department (Figures 1 and 2). The Red Rock Lateral follows an existing PSREC utility line over a ridge at the northern end of Peterson Mountain and descends into Red Rock Valley, Nevada, where it traverses Red Rock Road (a paved road) and terminates at the Red Rock Volunteer Fire Department Station. Much of the lateral is adjacent to dirt roads used to access the exiting PSREC utility line. Habitat along the exiting PSREC utility line consists of big sagebrush scrub. The highest elevation along the lateral is approximately 5,000 ft. There are residences and grazed lands in Red Rock Valley along the eastern portion of the Red Rock Lateral.

The Red Rock Fire Department Lateral does not provide suitable leking habitat for GSG. In a study of 310 leking sites in GSG Management Zone V, leking sites did not occur near developed, or disturbed areas (e.g., roads, highways, power lines) (Knick and Connelly 2011). The Red Rock Fire Department Lateral Branch follows existing utility poles, is consistently adjacent or

within 200 ft of a dirt road, and is consistently within approximately 0.5 mi of paved roads or residential and agricultural land uses.

The Red Rock Fire Department Lateral contains marginal foraging and nesting habitat for GSG only along the segment between US 395 and residential development in Red Rock Valley, Nevada (approximately 1.5 mi of the lateral). Along this section, existing utility poles provide perch sites for avian predators of greater sage-grouse such as corvids. Existing dirt and paved roads in and adjacent to the proposed project area likely deter foraging and nesting GSG from using potential habitat in the proposed project area. GSG are known to avoid transmission lines both during the breeding season and in general (Braun 1998; Knick and Connelly 2011). The Honey Lake Valley area south to Hallelujah Junction was historically occupied by GSG but has not been occupied since 1995 (Shuford and Gardali 2008).

US 395 ROW from Hallelujah Junction to the California/ NV Border: The segment of the proposed project area in the US 395 ROW (the west side) between Hallelujah Junction and the California/ Nevada border may pass through the far western edge of the mapped distribution of greater sage-grouse as mapped by Doherty et al. (2010). Vegetation in this portion of the proposed project area consists primarily of disturbed sagebrush scrub and ruderal species in the US 395 ROW. US 395 is a high-volume, 4-lane freeway with wide shoulders. The elevation of this stretch of highway ranges from 4,950 to 5,150 ft. Given the existing level of disturbance and close proximity to US 395, this segment of the proposed project area does not provide suitable leking, foraging, or nesting habitat for GSG.

Susanville: The proposed project area approaches Susanville from the east along County Hwy 27A and an abandoned railroad at an elevation of 4,100 ft. Although the proposed project area is not within the known range of GSG around Susanville, the proposed project area is located fairly close to the known range (Doherty et al. 2011). Habitat in this section of the proposed project area consists mostly of highly-disturbed ruderal vegetation with high proportions of exotic plant cover and relatively little sagebrush. There are large buildings, numerous roads, agricultural land uses, and other factors present which preclude the use of habitat in the proposed project area near Susanville by GSG.

Black Tern

Black terns are migrants and summer residents in California and Nevada from April through October (Shuford and Gardali 2008; GGBO 2010). Spring migration begins in April and May, and fall migration to wintering grounds occurs by September or October. Stragglers may be found year-round. Though black terns are restricted to freshwater wetlands during the breeding season, they are common on bays, salt ponds, river mouths, and pelagic waters during migration (CWHR 2011).

Semi-colonial nesting occurs in protected areas of marshes (Shuford and Gardali 2008), as well as lakes, ponds, moist grasslands, and agricultural fields from May through August (CWHR 2011). Marshes typically consist of spikerush (*Eleocharis* spp.) or *Juncus* ssp. In the Central Valley, nesting also occurs in rice fields and flooded agricultural fields. Nests are built on floating substrates anchored to emergent vegetation or beds of submerged rooted aquatic

vegetation (Shuford and Gardali 2008). Abandoned muskrat houses, coot and grebe nests, or dikes in rice fields may also be used (CWHR 2011). Two to four eggs are incubated for 20 to 22 days. Young stay in the nest for two weeks, begin flying at three weeks, and leave the nest at four weeks (CWHR 2011). Nesting colonies are of concern to DFG (2009a).

Range: A black tern breeding colony in Nevada was located at the Ruby Lake NWR in eastern Nevada, though no breeding has occurred there since 2006. Other records in Nevada, which have low or variable numbers, include the Lahontan Valley, Humboldt Sink, Mason Valley WMA, Body Humboldt Valley IBA, Quinn River, and Pahranaagat NWR. Migration stopover sites in Nevada include Kirch WMA and Key Pittman WMA in the southern part of the state (GGBO 2010).

Black tern is a common breeder in the Modoc Plateau region and mountain valleys of northeastern California up to 6,560 ft, including Tule Lake and Alturas Meadow in Modoc Co. and Grasshopper Meadows/ Lake and Eagle Lake in Lassen. The southern range in northeastern California historically extended to Lake Tahoe in El Dorado Co., but this species is currently extirpated from the area. The current southernmost range includes the Sierra Nevada at Sierra Valley in Plumas and Sierra counties, and Kyburz Flat in Sierra Co. (Shuford and Gardali 2008).

The range of the black tern has been greatly reduced in the Central Valley of California despite the availability of breeding habitat in rice fields. Breeding areas are currently extirpated from the Sacramento-San Joaquin River Delta. Black tern is almost extirpated from the San Joaquin Valley, where regular breeding only occurs in two small areas of rice fields in Merced and Fresno counties; and in the Tulare Basin, where it nests irregularly during very wet years in ephemeral habitats (Shuford and Gardali 2008).

Black tern widen their distribution in California during migration, with large numbers found at Tule Lake NWR in Siskiyou and Modoc counties; and outside their breeding range in the Salton Sea in Riverside and Imperial counties (Shuford and Gardali 2008). This species winters in South America (CWHR 2011). The current known breeding range extends to eastern Sierra Co., the southeast and northeast corner of Plumas Co., and most of Lassen Co.

Known Records: There are no NNHP records for black tern in the six-quad area encompassing the proposed project area in Nevada. There are no CNDDDB records for black tern within 10 mi of the proposed project area.

Survey Results: Some larger marshes in the proposed project area could provide potential nesting habitat for black tern, particularly the wetland complex between the Susan River and Center Road.

Northern Harrier

Northern harriers breed and forage in a variety of open (treeless) habitats that provide adequate vegetative cover, an abundance of suitable prey, and scattered hunting, plucking, and lookout perches such as shrubs and fence posts. In California, such habitats include freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams,

annual and perennial grasslands, vernal pool complexes, weed fields, ungrazed or lightly grazed pastures, low-growing crop fields, sagebrush flats, and desert sinks (Shuford and Gardali 2008). Northern harriers feed mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, insects, and rarely on fish.

Northern harriers nest on the ground, mostly in emergent wetland or along rivers or lakes (CWHR 2011), and generally within patches of dense vegetation in undisturbed areas (Shuford and Gardali 2008). Nests are large mounds of sticks on wet areas or a smaller cup of grasses on dry sites. Breeding occurs from April to September with peak activity June through July. Single clutches are produced annually. The nestling period lasts about 53 days (CWHR 2011).

Range: Northern harrier occurs from annual grassland up to lodgepole pine and alpine meadow habitats, as high as 10,000 ft. It breeds from sea level to 5,700 ft in the Central Valley and Sierra Nevada, and up to 3,600 ft in northeast California. Northern harrier is a permanent resident of the northeastern plateau and coastal areas and a less common resident of the Central Valley (CWHR 2011).

Known Records: There are no CNDDDB or NNHP records for northern harrier within 10 mi of the proposed project area. There are no CNDDDB records for northern harrier in Sierra, Plumas, or Lassen counties.

Survey Results: Northern harriers were observed in Sierra, Plumas, and Lassen counties during the December 2010 reconnaissance surveys. They were observed either foraging in or perched near open, wet meadow habitat in the proposed project area. The proposed project area provides foraging habitat for northern harrier except in developed areas and in areas dominated by conifer forest. Potential nesting habitat for northern harrier occurs in low growing vegetation adjacent to wetlands and waters in the proposed project area. Willow thickets in the proposed project area are too dense to provide suitable nesting habitat.

Yellow Warbler

Yellow warblers breed in riparian woodlands, montane chaparral, and in open ponderosa pine and mixed conifer habitats with substantial amounts of brush. In summer, yellow warblers are usually found in deciduous, open-canopy, riparian habitats dominated by cottonwoods, willows, alders, and/or other small trees and shrubs (CWHR 2011). In northern California, the extent of willow (*Salix* spp.) and Oregon ash (*Fraxinus latifolia*) cover are important predictors of yellow warbler abundance (Shuford and Gardali 2008). On the west slope of the Sierra Nevada, yellow warblers breed from foothill woodlands up to the mixed-conifer zone. At some sites in the north, they may be as abundant in montane chaparral as in riparian habitat. Yellow warbler territory often includes tall trees for singing and foraging. They generally feed on insects and spiders in the canopy of deciduous trees and shrubs (CWHR 2011).

Yellow warblers are migratory and usually arrive in California in April and leave by October. Small numbers are known to overwinter in southern California lowlands. Breeding occurs from mid-April into early August with peak activity in June. Eggs are incubated by the female for 11 days and young require 9-12 days to fledge. Yellow warblers build open cup nests placed 2-16 ft

above ground in a deciduous sapling or shrub. Predators include small mammals, accipiters, corvids, and snakes. Brood parasitism by brown-headed cowbirds is common (CWHR 2011).

Range: Yellow warblers are an uncommon to common summer resident in northern California and locally common in southern California. Upper elevation limits of breeding on the western and eastern flanks of the Sierra Nevada are 7,000 and 8,500 ft, respectively (Shuford & Gardali 2008).

Known Records: There are no CNDDDB or NNHP records for yellow warbler within 10 mi of the proposed project area. There are no CNDDDB records for yellow warbler in Sierra, Plumas, or Lassen counties. One singing male was recorded in Long Valley Creek approximately 150 ft northwest of Garnier Road Bridge during surveys for another project in 2007 (USDA November 2010). Yellow warblers are known from along the Susan River in Lassen Co. (Shuford & Gardali 2008).

Survey Results: Potential foraging habitat for yellow warbler occurs in most of the proposed project area, but generally not in open areas dominated by low-growing shrubs, grasses or forbs (such as agricultural fields and sagebrush scrub). Suitable nesting habitat occurs sporadically throughout the proposed project area around perennial or near-perennial waters that support large stands of deciduous riparian species (including all areas mapped as willow thicket). This species is also known to occasionally nest in deciduous mountain shrubs away from water (Shuford and Gardali 2008).

Willow Flycatcher

Five subspecies of willow flycatcher are currently recognized. The proposed project area occurs within the range of the California endangered *Empidonax t. brewsteri* and California endangered *E. t. adastaus*. The proposed project area does not occur within the range of the federal-endangered *E. t. extimus* (USGS 2011).

Willow flycatchers are a rare to locally uncommon, summer resident in wet meadow and montane riparian habitats from 2,000 to 8,200 ft in the Sierra Nevada and Cascade Range. They are a common spring (mid-May to early June) and fall (mid-August to early September) migrant at lower elevations, primarily in riparian habitats throughout California, exclusive of the North Coast. Willow flycatchers most often occur in broad, open river valleys or large mountain meadows with a lush growth of shrubby willows. The species is most numerous where extensive thickets of low, dense willows occur on the edge of wet meadows, ponds, or backwaters. Dense willow thickets are required for nesting and roosting. Low, exposed branches are used for singing posts and hunting perches. Nests are placed in an upright fork of willow or other shrub, usually near a slow moving stream, standing water, or seep (Zeiner et al. 1990a).

Range: *Empidonax t. brewsteri* breeds in California from Tulare Co. north along the western side of the Sierra Nevada and Cascades, extending to the coast in northern California. Populations at high elevations just east of the Sierra Nevada crest, but south of Modoc Co. are also assumed to be *E. t. brewsteri*. *Empidonax t. adastaus* breeds in California east of the Sierra/Cascade axis from the Oregon border into Modoc Co. and possibly into northern Inyo Co.

(Craig and Williams 1998). The breeding range of *E. t. adastus* extends to Colorado, west of the plains, and through the intermountain and Great Basin states (USGS 2011).

Known Records: There are ten CNDDDB records for willow flycatcher in the 26-quad area encompassing the proposed project area in California. There are no NNHP records for willow flycatcher in the six-quad area encompassing the proposed project area in Nevada. The two closest CNDDDB records of willow flycatcher are located 0.2 mi south of the proposed project area on the Portola Quad. One of these records is of an unknown number of individuals detected in 1982, 1986, and 1988 at Rocky Point, near the Middle Fork Feather River. None were detected at this location in 1990. The riverbed at this location is characterized as broad with steep cliffs. The other record is of one territorial male heard in August 1990 along the Middle Fork Feather River in Humbug Valley. Habitat consisted of abundant willow cover with a dense string of willows about 100 ft wide, near a horse pasture. A meadow occurred on upland near the river.

The Plumas National Forest (PNF) maintains records of willow flycatcher occurrences and habitat. The proposed project area crosses through one willow flycatcher site considered occupied, at the Gulling Street Bridge in downtown Portola. The proposed project area crosses through eight habitat areas considered emphasis areas by the PNF and two areas considered small pockets of habitat. The PNF has records of willow flycatcher occurrences at seven other locations in the vicinity of the proposed project area. These occurrences are located along the Middle Fork Feather River, an unnamed drainage canal, Smith Creek, and Williams Lake. These occurrences are located between 0.08 and 1.0 mile from the proposed project area.

Survey Results: Field surveys for willow flycatcher were not conducted in the proposed project area. Habitat for willow flycatcher in the proposed project area west of Beckwourth was mapped by PNF. Habitat for willow flycatcher in the remainder of the proposed project area was assessed and mapped during the reconnaissance surveys in December 2010.

American Peregrine Falcon

Peregrine falcons breed mostly in woodland, forest, and coastal habitats near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes, and mounds. Peregrine falcons will nest on human-made structures and occasionally use tree or snag cavities or old nests of other raptors. Peregrine falcons require protected cliffs and ledges for cover. Riparian areas and coastal and inland wetlands are important habitats yearlong, especially in nonbreeding seasons (Zeiner et al. 1990a). Peregrine falcons live mostly along mountain ranges, river valleys and coastlines. Eggs are laid in a hollow or depression on a cliff.

Range: Peregrine falcons are found in all continents of the world except Antarctica (NDOW 2010). In California, peregrine falcons are very uncommon breeding residents and uncommon migrants. Active nesting sites are known along the coast north of Santa Barbara, in the Sierra Nevada, and in other mountains of northern California. In winter, peregrine falcons are found inland throughout the Central Valley, and occasionally on the Channel Islands. Migrants occur along the coast and in the western Sierra Nevada in spring and fall (Zeiner et al. 1990a). There are currently estimated to be 20 nesting pairs in Nevada (NDOW 2010).

Known Records: There are no CNDDDB records for peregrine falcon within 10 mi of the proposed project area. There are no NNHP records for peregrine falcon in the six-quad area encompassing the proposed project area in Nevada. The Plumas National Forest (PNF) maintains records of peregrine falcon occurrences. One peregrine falcon eyrie occurs approximately 0.4 mi northeast of the proposed project area on Bonta Ridge, approximately 3 mi north of Blairsden. A nest and adult were observed at this location in 2002. The proposed project area at this location occurs approximately 0.1 mi east of and parallel to Hwy 70.

Survey Results: Field surveys for peregrine falcons were not conducted in the proposed project area. No peregrine falcons were observed in the proposed project area during the reconnaissance surveys conducted in December 2010. Bonta Ridge provides nesting habitat for peregrine falcon. The nest at Bonta Ridge could be active in the future.

Greater Sandhill Crane

In summer, greater sandhill cranes occur in and near wet meadow, shallow lacustrine, and fresh emergent wetland habitats. In winter, it is found primarily in grassland, moist croplands with rice or corn stubble, and open emergent wetlands of the Sacramento and San Joaquin valleys from Tehama Co. south to Kings Co., California. It prefers relatively treeless plains where predators can be seen. Sandhill cranes roost at night in flocks standing in moist fields or shallow water, and sometimes in expansive dry grasslands, island sites, and wide sandbars (CWHR 2011).

Greater sandhill cranes are solitary nesters that nest in remote portions of extensive wetlands, or sometimes in shortgrass prairies. On dry sites, nests are scooped-out depressions lined with grasses. More commonly, nests are large mounds of wetland plants, in shallow water. Natural hummocks or muskrat houses are often used. Ideal sites are on small islands screened by tall tules, cattails, or shrubs. Sandhill cranes avoid saline waters (CWHR 2011). In Nevada, preferred breeding and roosting habitats are large river valley floodplains and interior basins (NDOW 2010). Courtship begins in April with elaborate dancing behaviors that often include 50-80 individuals. Peak breeding occurs from May until July, and nesting is completed by late August (CWHR 2011).

Range: The greater sandhill crane is found in North America, Cuba, and eastern Siberia (NDOW 2010). In California, it was historically a fairly common breeder on the northeastern plateau. In California, it is now greatly reduced in numbers and breeds only in Siskiyou, Modoc, and Lassen counties, and the Sierra Valley in Plumas and Sierra counties (CWHR 2011). The Nevada population breeds in Elko Co., migrates south through eastern Nevada, and spends the winter in AZ and California along the lower Colorado River (NDOW 2010).

Known Records: There are 46 CNDDDB records for greater sandhill crane within 10 mi of the proposed project area. There are no NNHP records for greater sandhill crane in the six-quad area encompassing the proposed project area in Nevada. There are nine CNDDDB records adjacent to the proposed project area.

Three of the records near the proposed project area are in the vicinity of Quincy. Occurrence 46 is foraging adults in an irrigated meadow/pasture northeast of the high school from April and May 1994. When cattle grazing increased and the field dried for cutting, the cranes disappeared. The proposed project area is on the south side of the high school. Occurrence 47 is two foraging adults observed in 1994 and one pair observed many times over three years at Ramelli Pond and a non-irrigated pasture near the intersection of Highway 70 and La Porte Road. Occurrence 380 is one pair observed in 2000 on the opposite side of a hill from the proposed project area, approximately 2,000 ft away.

Four of the records near the proposed project area occur in the Sierra Valley south of Beckwourth. They are approximately 0.2 mi from the proposed project area, at the nearest point along the Marble Lateral. These four records and others in the Sierra Valley are clustered around the Sierra Valley Channels of the Middle Fork Feather River. Ten pairs were seen in the Sierra Valley Channels between April and May 2000 and 11 pairs were seen in 1988. In 1988, three of the pairs were known to be nesting. The habitat is mostly open meadow with interspersions of cattail and some water in the deeper channels.

Two of the records near the proposed project area are northwest of Honey Lake. Occurrence 403 is approximately 1,000 ft from the proposed project area in the vicinity of Buntingville. The record is of one pair observed twice in 2000. Occurrence 347 is of one pair reported to be nesting approximately 0.25 mi north of the proposed project area, just east of Susanville.

Survey Results: Habitat for greater sandhill crane occurs in the wet meadow habitats and irrigated agricultural fields in the proposed project area.

Yellow-Breasted Chat

Yellow-breasted chat occurs as a migrant and summer resident in California, from March through September. This species occupies early successional riparian habitats with a well-developed shrub layer and an open canopy. Breeding occurs from April through August. Nests are built in the narrow border of streams, creeks, sloughs, and rivers within blackberry, wild grape, willow, and other native or non-native plants that form dense thickets. Taller trees, such as cottonwoods and alder, are used for song perches (Shuford and Gardali 2008). Three to six young hatch after 11 to 15 days, and fledge in eight to eleven days (CWHR 2011). Territories are often defended, but loose colonies also form with mating pairs (Shuford and Gardali 2008). Nesting sites are of concern to DFG (2009a).

Range: Two subspecies occur in North America: *Icteria virens auricollis* nests in the west, and *I. v. virens* nests in the east. *Icteria v. auricollis* breeds from Canada to Baja California, and winters from Baja California and Texas south into Mexico and Guatemala. The largest populations are found in the Klamath region of California and Oregon, southern Nevada, and elsewhere. Their range is broader during migration, though also more secretive. This species has been extirpated from much of the Central Valley, especially the San Joaquin Valley, and from parts of the central and south coast. Regular nesting occurs along low and mid-elevation streams in the Sierra Nevada, including Spanish Creek in Quincy and Indian Creek in Indian

Valley, Plumas Co., and in the Lassen area of the Cascades on Battle, Dye, Deer and Mill Creeks and tributaries (Shuford and Gardali 2008).

Known Records: There are no CNDDDB records for yellow-breasted chat within 10 mi of the proposed project area. There are no NNHP records for yellow-breasted chat in the six-quad area encompassing the proposed project area in Nevada.

Survey Results: Willow thickets and riparian areas in the proposed project area provide potential habitat for yellow-breasted chat.

Loggerhead Shrike

Loggerhead shrike is present year-round in most of its range in California. Habitats consists of sagebrush steppe in northeastern California; shrub steppe along the east side of the Cascades and Sierra Nevada, and less frequently in western juniper woodlands; chaparral, oak woodland, or oak savannah in coastal slope and Coast Ranges; riparian edges and desert scrub in the Central Valley; desert scrub and sparse riparian woodland in the southeastern deserts; and occasionally in rural and agricultural hedgerows. Tall shrubs and trees are required for perches. Fences and power lines are also used. Sharp, thorny, or multi-stemmed plants or barbed wire fences are used for impaling prey for manipulation or storage (Shuford and Gardali 2008).

Loggerhead shrike breeds mainly in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground (Shuford and Gardali 2008). Nests are placed on a stable branch in a densely foliated shrub or tree. Eggs are laid from March through May, with young independent in July or August (CWHR 2011). Nesting sites are of concern to DFG (2009a).

Range: Loggerhead shrikes breed and winter in Canada, U.S., and Mexico. The current range includes most of California from below sea level to 7,500 ft, except for the forested coastal slope, Klamath and Siskiyou mountains, Sierra Nevada and southern Cascades, and high elevations of the Transverse Ranges. Breeding populations are largest in the Central Valley and southeastern deserts. Wintering populations are highest in the San Joaquin Valley, south-central and south coasts, and southeastern deserts. Loggerhead shrike is abundant in the Honey Lake Basin of Lassen Co., but rare in the Sierra Valley of Plumas and Sierra counties (Shuford and Gardali 2008).

Known Records: There are no CNDDDB records for loggerhead shrike within 10 mi of the proposed project area. There are no NNHP records for loggerhead shrike in the six-quad area encompassing the proposed project area in Nevada.

Survey Results: A loggerhead shrike was observed in Sierra Co. along US 395 in big sagebrush scrub during the reconnaissance survey. Habitat for loggerhead shrike in and adjacent to the proposed project area occurs in sagebrush steppe, juniper woodland, riparian vegetation, and rural and agricultural hedgerows.

Mountain Quail

Mountain quail is typically a year-round resident found on steep slopes in a variety of mountainous habitats. Habitats include open and brushy stands of conifer and deciduous forests and woodlands, chaparral (CWHR 2011); desert scrub and dense riparian stands (NDOW 25 Jan 2011); and high elevation grasslands, brush and open country (NDOW 2010). Brushy vegetation interspersed with grasses and forbs is needed for cover and foraging (CWHR 2011). Nests consist of a shallow depression on the ground (NDOW 2010) in vegetation at the base of a tree, in rocks, or near a shrub, log or stump (CWHR 2011). Seasonal migrations may occur up or downslope. To avoid snowfall, mountain quail migrates downslope in the winter and upslope in the summer. Breeding occurs from March through August, with an average of 10 eggs incubated for 25 days. Young are able to leave the nest and forage with the parents soon after hatching (CWHR 2011).

Range: Mountain quail is found in montane habitats of western North America, including northern California, Coast Ranges, Sierra Nevada, Transverse Range, and Peninsular Ranges of California (NDOW 25 Jan 2011) up to 10,000 ft (NDOW 2010). Desert populations are also found the mountains of eastern California. This species is also found in northern and western Nevada, from the Carson, Toiyabe, Desatoya, Clan, Alpine, Stillwater, and Santa Rosa ranges east to Elko Co. and south to Goldfield in Esmeralda Co. (NDOW Jan 2011).

Known Records: There are no CNDDDB records for mountain quail within 10 mi of the proposed project area. There are no NNHP records for mountain quail in the six-quad area encompassing the proposed project area in Nevada.

Survey Results: Mountain quail were not observed during reconnaissance surveys in December 2010. The proposed project area provides potential habitat for mountain quail.

Vesper Sparrow

Vesper sparrow is mainly found in grasslands in California, including stubble fields, meadows, semidesert scrub, open brushlands, croplands, weedy agricultural fields, and alfalfa. Open ground with little vegetation or grown to short grass and low annuals is preferred, with scattered shrub and patches of tall herbs for cover. Population reductions may be due to loss of grassland in California. This species is also a common summer resident east of the Cascade-Sierra Nevada crest and into Nevada, and is often found in sparse or open stands of sagebrush, low sagebrush and similar open shrub habitats (Shuford and Gardali 2008; CWHR 2011).

Vesper sparrow is a solitary breeder that nests from April through August, depending on latitude and elevation. Nests are built on the ground in a small depression, concealed under a shrub or at the base of grasses or forbs; or at the base of a shrub or in the center of a tuft of perennial grass. Three to six eggs are incubated for 11 to 13 days. The young leave the nest in 9 to 13 days, but are unable to fly until 20 to 22 days (CWHR 2011; NDOW 26 Jan 2011).

Range: Vesper sparrow breeding range extends from Canada south to northern and central California and east to Tennessee and North Carolina. This species winter range extends from central California south to Mexico and Florida, and east to Pennsylvania and Connecticut. The subspecies Oregon vesper sparrow (*P. g. affinis*) is mainly restricted to California in the winter,

but overlaps with the range of the subspecies Great Basin sparrow (*P. g. confinis*) in the deserts and coastal areas north to Santa Barbara Co. and occasionally in the San Joaquin Valley and coastal valleys north to Fresno and San Benito Co. Oregon vesper sparrow is found in the lower valleys and plains west of the Sierra Nevada from San Francisco Bay area through the San Joaquin Valley to coastal southern California (Shuford and Gardali 2008). DFG is concerned with Oregon vesper sparrow (DFG 2009a).

Vesper sparrow is a breeding resident throughout central (NatureServe 2011) and northern Nevada. This species nests from 5,000 to 9,000 ft (NDOW 26 Jan 2011).

Known Records: There are no CNDDDB records for vesper sparrow within 10 mi of the proposed project area. There are no NNHP records for vesper sparrow in the six-quad area encompassing the proposed project area in Nevada.

Survey Results: Habitat for vesper sparrow in and adjacent to the proposed project area occurs in meadow and sagebrush habitats.

Bank Swallow

Bank swallows arrive in California from South America in early March and peak in numbers by early May. Colonies are vacant by late July or early August as colonies are abandoned and migration begins. Migrants are observed usually through early or mid-September (CWHR 2011).

In summer, bank swallows are restricted to riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine-textured or sandy soil, into which they dig nesting holes. Bank swallows dig horizontal nesting tunnels and burrows, with a small chamber at the end with the nest. Bank swallows are colonial breeders with 10 to 1,500 nesting pairs in CA, although most colonies have 100-200 nesting pairs. This species almost always nests near water. Bank swallows feed primarily over grassland, shrubland, savannah, and open riparian areas during the breeding season (CWHR 2011). Nesting sites are of concern to DFG (2009a).

Range: The range of bank swallows extends across North America, Europe, and Asia. The breeding range of bank swallows includes central California and western Nevada (BLM 2006). Bank swallows occur as a breeding resident in northern Nevada and as a migrant in southern Nevada (NatureServe 2011). Approximately 75% of the breeding population in California occurs along the banks of the Sacramento and Feather rivers in the northern Central Valley. Other colonies are known from the central coast from Monterey to San Mateo counties, and in northeastern California in Shasta, Siskiyou, Lassen, Plumas, and Modoc counties. In California, bank swallows occur as a migrant during the spring and fall period in suitable habitats west of deserts in the interior and are less common on the coast. Bank swallows occur only casually in southern California in winter (CWHR 2011).

Known Records: There are 5 CNDDDB records for bank swallows within 10 mi of the proposed project area. There are no NNHP records for bank swallow in the six-quad area encompassing the proposed project area in Nevada. The closest CNDDDB record of bank swallow is located

approximately 0.2 mi east of the proposed project area on Long Valley Creek. Approximately 100 burrows and 50 birds were observed during an aerial survey in the summer of 1987, with approximately 50% active. Approximately 300 adults were observed at this location during a site visit on 22 June 2000.

The next closest CNDDDB record is located approximately 0.6 mi northwest of the proposed project area on Baxter Creek. Approximately 163 burrows were observed along the right bank during an aerial survey in the summer of 1987. Approximately 15 birds were observed, but there was low occupancy. There is another occurrence farther upstream of the proposed project area along Baxter Creek.

There is a CNDDDB occurrence of bank swallow approximately 1.8 mi upstream of the proposed project area at the Susan River, Leavitt crossing.

Survey Results: Habitat for bank swallow in and adjacent to the proposed project area occurs wherever there are steep, eroded banks along creeks and rivers that retain water through August. In the proposed project area, habitat for bank swallow occurs primarily at or near the crossings of the Susan River, Baxter Creek, and Long Valley Creek (Honey Lake watershed).

California Spotted Owl

California spotted owls breed and roost in forests and woodlands with large old trees and snags, dense canopies ($\geq 70\%$ canopy closure), multiple canopy layers, and downed woody debris. Large, old trees are the key component; they provide nest sites and cover from inclement weather and add structure to the forest canopy and woody debris to the forest floor. Spotted owls do not build their own nests, but instead depend on finding suitable, naturally occurring sites in trees. In Sierra Nevada conifer forests, nests are often in tree cavities or on broken-topped trees or snags. Less often, they are on abandoned raptor or common raven nests, squirrel nests, dwarf mistletoe brooms, or debris accumulations in trees. Nest trees in conifer forests are typically large, with a mean dbh of 46.7 in (Shuford and Gardali 2008). The California spotted owl breeding season is considered to be 1 March through 31 August (USFS January 2004). This owl exhibits a high level of nest site fidelity (NatureServe 2011).

In the Sierra Nevada, California spotted owl predominantly uses Sierran mixed-conifer forest, white fir, montane hardwood-conifer, and montane hardwood forests at mid-elevations. To a lesser extent, it inhabits California red fir forests at high elevations and ponderosa pine forest, blue oak – gray pine woodlands, and valley foothill riparian forests at low elevations. A study in the Lassen National Forest found that site occupancy was positively associated with the amount of nest area (500-ac circle around the nest) dominated by large trees (greater than 24 in dbh) and high canopy cover, and negatively associated with an area dominated by medium-sized trees (12-24 in dbh) with high canopy cover (Shuford and Gardali 2008).

Foraging habitats are similar to breeding and roosting habitats, but also include more open stands with canopy closures typically less than 40%. Downed woody debris in higher-elevation forests of the Sierra Nevada is strongly associated with under-ground fungi, which are an important food for spotted owl prey species (Shuford and Gardali 2008).

Range: The California spotted owl is a year-round resident in most of its range. California spotted owl occurs from the southern Cascade Range of northern California south along the west slope of the Sierra Nevada and in mountains of central and southern California nearly to the Mexican border. As a breeder in the Sierra Nevada, this species occurs at elevations ranging from about 1,000 ft in Fresno Co. to 7,923 ft in Tulare Co. (Shuford and Gardali 2008). There are a few documented cases of California spotted owl on the east side of the Sierra Nevada and in the Carson Range in Nevada (GBBO 2010).

Known Records: There are 133 CNDDDB records for California spotted owl within 10 mi of the proposed project area. The closest CNDDDB record is located 0.35 mi northeast of the proposed project area approximately 3.5 mi northwest of Blairsden. California spotted owl was observed at this location in August 1987 and confirmed breeding in 1991. There is one NNHP record for California spotted owl in the six-quad area encompassing the proposed project area in Nevada. The record is located approximately 1.8 mi northeast of the proposed project area. A California spotted owl was collected from atop the Nancy Gomes School in Cold Springs Valley near Bordertown, Nevada in December 1983.

As part of the Sierra Nevada Forest Plan Amendment (SNFPA), protected activity centers (PACs) for California spotted owls are designated with the intent of directing management to specifically sustain viable populations. Home range core areas are delineated around each territorial spotted owl activity center detected after 1986 (USFS January 2004). There are 6 PACs within one mile of the proposed project area. The proposed project area crosses through the western edge of a PAC located approximately 3.5 mi northwest of Blairsden. The CNDDDB record referenced above corresponds to this PAC. The proposed project area occurs approximately 0.05 to 0.08 mi northeast of and parallel to Hwy 70 at this location. The PAC is mapped to the edge of Hwy 70. A home range core area is delineated around this PAC and includes the southwestern side of Hwy 70. There are no other PACs within 0.25 mi of the proposed project area. The proposed project area crosses through the outer boundaries of two other mapped home range core areas.

Survey Results: No California spotted owls were observed in the proposed project area during the reconnaissance surveys conducted in December 2010. Habitat for California spotted owl occurs in the mixed conifer forest in and adjacent to the proposed project area, west of Beckwourth along the Highway 70 corridor.

Yellow-Headed Blackbird

Yellow-headed blackbirds breed almost exclusively in marshes with tall emergent vegetation, such as tules (*Scirpus* spp.) or cattails (*Typha* spp.), and sometimes willow (*Salix* spp.) and tamarix (*Tamarix gallica*), generally in open areas and edges over relatively deep water. They nest in low vegetation such as spikerush (*Eleocharis* spp.) in the Sierra Valley (Shuford and Gardali 2008). Nests are always located over water (CWHR 2011). Preferred water depths are from 2 to 4 ft. Yellow-headed blackbirds will often abandon an unfinished nest if water recedes and the nest becomes located over dry land. Because of the need for deeper water, breeding

marshes often are on the edges of water bodies such as lakes, reservoirs, or larger ponds (Shuford and Gardali 2008).

Yellow-headed blackbirds forage in emergent wetland and moist, open areas, especially cropland and muddy shores of lacustrine habitats (CWHR 2011). Non-breeding habitat in migration and winter is in open cultivated lands, pastures and fields (NatureServe 2011).

Range: Yellow-headed blackbirds breed widely and abundantly across western Canada and the US, but are patchily distributed in the southwestern portion of their breeding range. The greatest breeding densities are found in regions with large and productive marshes, particularly in the eastern Prairies and Great Plains. In California, yellow-headed blackbirds occur primarily as migrant and summer residents from April to early October, with breeding from mid-April to late July (Shuford and Gardali 2008). This species breeds up to 6,600 ft in the San Bernardino Mountains (CWHR 2010). Small numbers of yellow-headed blackbirds winter in California, mainly in the southern Central Valley and the Imperial and Colorado River valleys. In the range of the proposed project area, breeding adults are known from Susanville and Honey Lake in Lassen Co. and Sierra Valley in Sierra and Plumas counties. In the range of the proposed project area, this species also historically occurred at Red Rock P.O., Lassen Co., and Portola, Plumas Co. (Shuford and Gardali 2008).

Known Records: There are no CNDDDB records for yellow-headed blackbirds within 10 mi of the proposed project area. There are no NNHP records for yellow-headed blackbird in the six-quad area encompassing the proposed project area in Nevada. The closest CNDDDB record of yellow-headed blackbird is located approximately 11 mi northwest of the proposed project area at Eagle Lake. Collections of yellow-headed blackbird were taken from Eagle Lake and from Eagle Lake near Troxel in May 1923.

Survey Results: Habitat for yellow-headed blackbird in and adjacent to the proposed project area occurs in the dense willow thickets and emergent marshes along segments of the creeks and rivers which remain inundated through July.

3.10.11 Mammals

Pallid Bat

Pallid bat is a large, light-colored bat with prominent ears that inhabits rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and higher elevation coniferous forests, often in xeric ecosystems. Foraging occurs over open shrub-steppe grasslands, oak savannah grasslands, open ponderosa pine forests, talus slopes, gravel roads, lava flows, fruit orchards, vineyards (WBWG 2005), springs and edge habitats (Bradley et al. 2006).

Agricultural areas in Nevada have been observed to contain concentrated foraging activity by a variety of bats, including pallid bat (Bradley et al. 2006). Winter habitats are poorly known, but pallid bats do not migrate long distances between summer and winter sites. Overwintering sites in coastal California are located in protected structures that have a relatively cool, stable

temperature. Elsewhere, pallid bats have been found hibernating alone or in small groups wedged deeply into narrow fissures in mines, caves, and buildings (WBWG 2005).

Pallid bat may roost alone, in small groups, or gregariously. Day and night roosts are similar, consisting of crevices in rocky outcrops and cliffs, caves, mines, trees (basal hollows of coast redwoods and giant sequoias, bole cavities of oaks, exfoliating ponderosa pine and Valley oak bark, deciduous trees in riparian areas, and fruit trees in orchards), and various human structures such as bridges (especially wooden and concrete girder designs), barns, porches, bat boxes, and occupied as well as vacant buildings (WBWG 2005). In Nevada, pallid bats are known to roost in pinyon-juniper forests (Bradley et al. 2006). Roosts are warm and high above the ground where they are inaccessible to terrestrial predators. Generally, roosts have unobstructed entrances/exits, though the species has been found roosting on or near the ground under burlap sacks, stone piles, rags, and baseboards. Roosting sites are often reused, but are switched on a daily and seasonal basis (WBWG 2005). Pallid bat is very sensitive to roosting site disturbance (CWHR 2011), which has caused a decline in pallid bat populations in California (Bradley et al. 2006). Few roost sites have been identified in Nevada (Bradley et al. 2006).

Female and young pallid bats roost in maternity colonies separate from adult and yearling males. Mating occurs from October to February, with one to two (sometimes three) pups born from late April to July. Young are weaned in August, and maternity colonies disperse between August and October. Exact dates vary across latitudes and between years. Typically, bats found at higher latitudes in cooler climates give birth later in the season. Sexual maturity can be reached in one year for both males and females (WBWG 2005).

Passive acoustic cues, occasionally echolocation, are usually used to locate prey. This species has an extensive collection of social communication calls, some of which can be heard by humans. Pallid bats are opportunistic generalists that eat a variety of insects captured on the ground and on the wing. Rarely, they will capture geckos, lizards, skinks, and small rodents. Diet and foraging style tend to vary within and between populations (WBWG 2005). Pallid bat is known to roost with other bats, typically *Myotis* spp. and Brazilian free-tailed bat (*Tadarida brasiliensis*; CWHR 2011).

Range: Pallid bat is found throughout western North America from sea level to 7,000 ft, including all of California and Nevada (CWHR 2011, WBWG 2005). This species is commonly found in xeric ecosystems, including the Great Basin, Mojave, and Sonoran Deserts (WBWG 2005). Pallid bat is considered a yearlong resident in most of its range (CWHR 2011), and widely distributed throughout Nevada (Bradley et al. 2006). The elevation range for this species, based on known records in Nevada, is from 1,378 to 8,465 ft, although it has been found up to 10,171 ft. The largest maternity roost for this species in Nevada occurs in Pershing Co. (Bradley et al. 2006). Populations and habitat of this species have been assessed as moderate risk in the Nevada Bat Conservation Plan (Bradley et al. 2006).

Known Records: There are no NNHP records for pallid bat in the six-quad area encompassing the proposed project area in Nevada. There are six CNDDDB records for pallid bat within 10 mi of the proposed project area. One geographically imprecise 1920 record is from the “Feather River Experiment Station” approximately 3.85 mi northwest of Blairsden. Another CNDDDB

record is from 2007 of eight adult males and four adult females (two lactating, two post-lactating), and is approximately 0.44 mi north of the proposed project area at the Highway 70/89 bridge over Spanish Creek in Quincy. Three records are from 1999: one approximately 1.4 mi southeast of the proposed project area Graeagle Substation Lateral; one approximately 3.2 mi southwest of the proposed project area City of Loyaltan Lateral; and one approximately 5.2 mi southwest of the proposed project area Marble Substation Lateral. The remaining record is from 2002 west of Susanville, approximately 6.3 mi west of the proposed project area.

Survey Results: Vegetation in the mixed coniferous forest of the proposed project area is managed and kept clear of large trees that could interfere with the utility lines. Some large trees in the mixed coniferous forest along the edge of the proposed project area provide potential roosting habitat for pallid bat. Bridges or large culverts in or near the proposed project area could also provide potential roosting habitat for pallid bat.

Sierra Nevada Mountain Beaver (SNMB)

SNMB are found in dense riparian-deciduous and open, brushy stages of most forest types. In the Sierra Nevada, this species is typically found in montane riparian habitat or nearby open and intermediate-canopy coverage with dense understory where they inhabit a cool, moist microenvironment (CWHR 2011). This species creates extensive, shallow burrows and tunnel systems (NDOW 2011) in deep, friable soil (CWHR 2011). They are active throughout the year, usually at night. They feed on herbaceous plants, trees, and shrubs (NDOW 2011), including thimbleberry, salmonberry, blackberry, dogwood, salal, ferns, lupines, willows, deciduous trees and conifers, grasses and forbs (CWHR 2011). Vegetation is stored near the burrow entrance or in an underground chamber (CWHR 2011).

SNMB is solitary except during breeding season and while females are raising young (NDOW 2011). Breeding occurs from December through March, with two to three young born in February to June (CWHR 2011). Young are weaned in six to eight weeks, and females can become sexually mature in two years (NDOW 2011). SNMB burrows are approximately 6 inches in diameter, with several openings occurring in a small area. Often, clipped vegetation is seen near the burrow system. There may also be "haystacks" of drying vegetation near the burrows (Zeiner et al 1990b).

Range: SNMB occur in west central Nevada, northern California, Oregon, Washington, and British Columbia (NDOW 2011). In California, this species occurs through the Cascade, Klamath, and Sierra Nevada Ranges in California, though distribution is often scattered (CWHR 2011).

Known Records: There are no NNHP records for SNMB in the 6-quad area encompassing the proposed project area in Nevada. There are no CNDDDB records for SNMB within 10 mi of the proposed project area. This closest CNDDDB record is from 1985 and is located 12.9 mi southwest of proposed project area in Nevada Co. Two populations were found at 6,000 ft in a creek tributary to the Truckee River.

Survey Results: Habitat for SNMB may occur in forested habitats where the proposed project area crosses permanent or semi-permanent water with deep, friable soil.

Pygmy Rabbit

Pygmy rabbit is typically found in sagebrush, bitterbrush, and pinyon-juniper habitats (CWHR 2011). Sagebrush is an important source of food and cover (NDOW 2010; USFWS 19 January 2011). Pygmy rabbit digs burrows in relatively deep, loose soils located on gentle slopes or on flats containing mounds (USFWS 19 January 2011). During winter, pygmy rabbit makes a network of trails under snow at the bases of shrubs. Mating occurs from late February to early May. After a 27- to 30-day gestation period, the young are born from March to early August (in up to 3 litters per year). Predators include weasels, coyotes, foxes, owls, and hawks (CWHR 2011).

The California Department of Fish and Game allows hunting of pygmy rabbits. The bag limit on pygmy rabbits is five per day, or ten in possession.

Range: They occur throughout most of the Great Basin and some of the adjacent intermountain areas of the western US. In California, the pygmy rabbit is an uncommon and local resident in Great Basin habitats of Modoc, Lassen, and Mono counties (CWHR 2011).

Known Records: There are no CNDDDB records for pygmy rabbit within 10 mi of the proposed project area. There are no NNHP records for pygmy rabbit in the 6-quadrant area encompassing the proposed project area in Nevada. There are 2 CNDDDB records of pygmy rabbit in Lassen, Plumas, and Sierra counties. Both records occur near Ravendale, California, in Lassen Co. The first record is based on a specimen collected in July of 1928 approximately 3 mi south of Ravendale, centered on the Ravendale quad. The second record is based on two specimens collected in January 1926 approximately 7 mi east of Ravendale, centered on the Observation Peak quad. These records are over 25 mi northeast of the nearest portion of the proposed project area (near Susanville).

Survey Results: The portion of the proposed project area in the Great Basin (generally east or north of Beckwourth Pass), contains potential habitat for pygmy rabbit.

Townsend's Big-Eared Bat, including Western Big-Eared Bat

There are five subspecies of *Corynorhinus townsendii*. Based on morphological variation described by Handley in 1959, California contains the subspecies *C. t. pallescens*, which occurs in the eastern portion of California and *C. t. townsendii*, which occurs in the western portion of California. More recent DNA analysis published by Piaggio and Perkins in 2005 suggested a different range for these subspecies, with only *C. t. townsendii* occurring in California and *C. t. pallescens* occurring further east (WBWG 2005).

Townsend's big-eared bat has large "rabbit-like" ears and is found in a wide variety of habitats including coniferous forests, mixed mesic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitats (WBWG 2005). This species prefers mesic areas

(CWHR 2011) and forages along habitat edges of streams, as well as adjacent to and within a variety of wooded habitats (WBWG 2005). In Nevada, big-eared bats forage extensively in pinyon juniper habitat (Bradley et al. 2006). Big-eared bat populations are centered in areas dominated by exposed, cavity or cave forming rocks and/or historic mining districts. These bats have been reported to use buildings, bridges, rock crevices, and hollow trees as roost sites. Roost site use varies within seasons and among years; however, there is high roost fidelity in areas where roost availability is low, such as the California coast (WBWG 2005). Townsend's big-eared bat is sensitive to human disturbance of roosting sites (Bradley et al. 2006).

Mating occurs from November through February. Females are inseminated before hibernation begins with ovulation occurring in the spring. Maternity colonies form in March and June depending on local climate and contain a few to several hundred individuals. Maternity roosts are located in the warm areas of caves, tunnels, mines, and buildings. Males tend to remain solitary during the maternity period. A single pup is born between May and July, is weaned in six weeks, and is able to fly two and a half to three weeks after birth. Males tend to disperse from natal ranges while females remain philopatric. Maternity groups begin to break up in August. Females reach sexual maturity in their first autumn and males in their first or second autumn (WBWG 2005; CWHR 2011).

Townsend big-eared bats can have large home ranges, and can foraging up to 0.93 mi in a single evening. Little is known about seasonal movements, although local migration might occur along a longitudinal gradient. Winter hibernating colonies consist of both males and females, and can range from one to several hundred bats, occasionally several thousand (WBWG 2005). Hibernation occurs from October to April at sites that are cold, but not below freezing. The primary source of food for big-eared bats is small moths; they also feed on beetles and a variety of soft-bodied insects. Prey is taken by echolocation or by gleaning from foliage. Big-eared bat is known to forage with other species. This species is extremely sensitive to disturbance of roosting sites (Bradley et al. 2006; CWHR 2011).

Range: Townsend's big eared bat occurs in the western U.S., British Columbia, and Mexico with isolated populations in the central and eastern U.S., from sea level to 10,827 ft. Distribution is strongly correlated with availability of caves and cave-like roosting habitat, including abandoned mines (WBWG 2005; Bradley et al. 2006). In California, they are found in all but subalpine and alpine habitats (CWHR 2011).

In Nevada, Townsend's big-eared bat is a year-round resident widely distributed throughout the state (Bradley et al. 2006; NDOW 2010). Their elevation range, based on records in Nevada, is from 690 to 11,483 ft. The largest bat hibernation roost for this species in Nevada occurs in White Pine Co. Populations and habitat of this species have been assessed as high risk in the Nevada Bat Conservation Plan (Bradley et al. 2006).

Known Records: There are NNHP records for Townsend's big-eared bat in the six-quad area encompassing the proposed project area in Nevada, but the locations are suppressed. There are three CNDDDB records for Townsend's big-eared bat in the 26-quad area encompassing the proposed project area in California. The closest CNDDDB record is from 2007 of one lactating

adult female approximately 0.44 mi north of the proposed project area at the Highway 70/89 bridge over Spanish Creek in Quincy.

Survey Results: Vegetation in the mixed coniferous forest of the proposed project area is managed and kept cleared of large trees that could interfere with utility lines. Some large trees in the mixed coniferous forest along the edge of the proposed project area provide potential roosting habitat. Bridges or large culverts in or near the proposed project area could also provide potential roosting habitat.

Big Brown Bat

Big brown bat is a colonial species that occurs in a wide range of habitats from desert scrub and moist coastal forests to high elevation conifer forests (WBWG 2005), including pinyon-juniper, blackbrush, creosote, sagebrush and agricultural areas (Bradley et al. 2006). This species is also quite common in urban environments and has a tendency to roost in buildings, mines, and bridges (WBWG 2005). Big brown bat is uncommon in hot desert habitats and is absent from the alpine meadows (CWHR 2011). Natural roosts include caves, crevices in cliff faces, trees (particularly large diameter snags), and holes in giant saguaro cactus. Foraging occurs nearby in tree canopies, over meadows, or along water courses. This species is primarily a beetle specialist. Big brown bat is an important predator of agricultural pests, such as the spotted cucumber beetle (*Diabrotica* sp.; WBWG 2005).

Females roost separately in maternity colonies in the spring and summer, and join the males to hibernate during the winter. Maternity colonies can contain from twelve to several hundred individuals. Hibernation colonies in the west have relatively small numbers. Mating occurs in the autumn with one pup (occasionally two in the east) born in early summer. Young are able to fly in three to four weeks. Winter hibernation occurs in the northern portion of the range in caves, mines and buildings. Migration may occur along an elevational gradient, but generally this species is sedentary and does not migrate long distances (WBWG 2005).

Range: Big brown bat has a broad distribution from Alaska to northern South America, occurring in all western States and Provinces (WBWG 2005). This species is found throughout California (CWHR 2011). It is a year round resident from 985 to 9,850 ft in Nevada (Bradley et al. 2006).

Known Records: There are no CNDDDB records for big brown bat in the 26-quad area encompassing the proposed project area in California. There are no NNHP records for big brown bat in the six-quad area encompassing the proposed project area in Nevada.

Survey Results: Big brown bat is not a special-status species in California. It is considered a sensitive species by the BLM in Nevada. Bridges or large culverts in or near the proposed project area could provide potential roosting habitat for big brown bat.

Spotted Bat

Spotted bat has large ears, and is so named because of three white spots on its back (WBWG 2005). This species forages in a variety of vegetation types including desert-scrub, pinyon-juniper woodland, ponderosa pine, mixed conifer forest, subalpine meadows, canyon bottoms, rims of cliffs, riparian areas, fields, grasslands, and open pasture (WBWG 2005; CWHR 2011). Agricultural areas in Nevada have been observed to contain concentrated foraging activity by several species of bats, including spotted bats (Bradley et al. 2006). Spotted bat is usually found near a permanent water source (NDOW 2010), including mesquite bosque habitat along wash systems in the southern Nevada, cottonwood riparian, sycamore riparian, and cottonwood-willow riparian forests (Bradley et al. 2006). Both males and females are capable of long distance and rapid flight, which allows for a large foraging range. Spotted bats forage alone and prey primarily on moths (WBWG 2005). Echolocation is used to find prey in flight (CWHR 2011).

Spotted bats always occur near substantial cliff features such as granite, basalt, limestone, sandstone, and other sedimentary rock, predominately in small crevices in suitable cliff faces (Pierson and Rainey 1998; CWHR 2011). Roosting sites include caves (WBWG 2005) and occasionally mines and buildings (NDOW 2010). Spotted bats showed high roost fidelity in British Columbia and Arizona. This species is usually solitary, but occasionally roosts or hibernates in small groups. Spotted bats also may migrate in parts of their range, moving from higher to lower elevations in winter. This species is considered locally rare or uncommon, though its solitary lifestyle and remote habitat makes them difficult to detect (WBWG 2005; CWHR 2011). Spotted bats breed in late summer or autumn, and females give birth to a single pup in May or June (WBWG 2005, CWHR 2011), sometimes July (NDOW 2010). Rock crevices are probably used for reproduction (CWHR 2011).

Range: Spotted bat occurs throughout western North America from sea level to 8,858 ft (WBWG 2005). In California, spotted bats are known from the western portion of the state from below sea level to 10,000 ft (CWHR 2011).

Spotted bats occur in all counties in Nevada (NNHP 2004; NDOW 2010) and is correlated with the availability of cliff roosting habitat near or adjacent to riparian areas (NDOW 2010). This species is a year-round resident of Nevada at elevations from 1,772 to 6,988 ft. Populations and habitat of this species have been assessed as moderate risk in the Nevada Bat Conservation Plan (Bradley et al. 2006).

Known Records: There are three NNHP records for spotted bat in the six-quad area encompassing the proposed project area in Nevada. All three records occur between 0.1 to 1.5 mi from the proposed project area in the City of Reno.

There are two CNDDDB records for spotted bat in the 26-quad area encompassing the proposed project area in California. The closest CNDDDB record is from 1997 near Loyalton, approximately 3.1 mi southwest of the proposed project area. Two foraging bats were detected in July along a small stream in the Antelope Valley Fish and Wildlife Area. The surrounding habitat was a riparian corridor through ponderosa pine woodland. The other record is from 1999 and is about 5.2 mi southwest of the Marble Substation. Two foraging bats were detected in July and one was detected in September at Knuthson Meadow in Carman Valley, Tahoe National

Forest. The surrounding habitat consisted of a meadow with willows through a ponderosa pine forest.

Survey Results: Bridges or large culverts in or near the proposed project area could provide potential roosting habitat for spotted bat.

California Wolverine

Wolverine is a scarce resident of the North Coast mountains and Sierra Nevada, from Del Norte and Trinity counties, east through Siskiyou and Shasta counties, and south through Tulare Co. A few possible sightings have been recorded in the North Coast mountains as far south as Lake Co. In the northern Sierra Nevada, wolverine have been found in mixed conifer, red fir, and lodgepole pine habitats, and likely use subalpine conifer, alpine dwarf-shrub, wet meadow, and montane riparian habitats from 4,300 to 7,300 ft (CWHR 2011). Wolverines require deep persistent snow more than specific vegetation or geological aspects (USFWS 14 December 2010). Wolverines occur in areas of low human disturbance and use caves, hollows in cliffs, logs, rock outcrops, and burrows for cover, preferably in denser forest stages (CWHR 2011).

Mating occurs in late spring/ early fall. Females undergo delayed implantation until the following winter/spring. Young are born from mid-February through March. Birthing (natal) dens are excavated in the snow by female wolverines. Persistent stable snow greater than five feet deep is a requirement for natal birthing to provide security from predators and a buffer against cold winter temperatures. Females may move young to a secondary (maternal) den in May, a decision possibly made based on accumulation of water in dens (snow melt), maturation of offspring, surrounding disturbances, and geographic location (USFWS 14 December 2010). Young are weaned in approximately seven to nine weeks and sexually mature in their second or third year.

Wolverines have large home ranges and frequently travel long distances (CWHR 2011). Wolverines tend to occur in low densities of about one individual per 25 to 130 mi², suggesting that historical populations densities were also low. Studies conducted in Glacier National Park, Idaho and the Greater Yellowstone Ecosystem show the yearly range of wolverines vary from 193 to 588 mi² for males, and 55 to 329 mi² for females. Home ranges in Alaska ranged from 38.5 to 348 mi² (USFWS 14 December 2010). Studies in Montana show that wolverines can have daily movements of up to 19.4 mi (CWHR 2011).

Wolverines are opportunistic feeders and consume a wide variety of foods based on availability, including carrion, small animal and bird prey, fruits, berries, and insects (USFWS 14 December 2010). Hunting occurs in more open areas, while dense cover is used for resting and reproduction (CWHR 2011).

Range: Wolverines have a holartic distribution in Europe, Asia, and North America under a single species, *Gulo gulo*. Old and new world wolverines are divided into separate subspecies. The North American wolverine (*G. g. luscus*) that occurs in the contiguous U.S. was determined to be a DPS in 2010 by USFWS, and is currently listed as a federal candidate species. The current range of this DPS includes portions of WA, ID, MT, WY, CO, UT, OR and California.

There is no census of the wolverine population in the contiguous U.S., so current population trends are unknown. The best predictor of wolverines is deep, persistent, and reliable spring snow cover. Reasonable estimates of the wolverine population in the contiguous U.S. are approximately 250 to 300 individuals, a large number of which occur in the northern Rocky Mountains, some from the North Cascades, and one each in the Sierra Nevada and southern Rocky Mountains (USFWS 14 December 2010).

Habitat distribution in California is poorly known for the North Coast and northern Sierra Nevada. In the northern Sierra Nevada, the elevation range of California wolverine is from 4,300 to 7,300 ft. Due to its low population densities even in preferred habitat, wolverine was probably never common in California (CWHR 2011). Wolverines were most likely extirpated from the Sierra Nevada in the first half of the 1900s during widespread systematic predator control programs (USFWS 14 December 2010).

In 2008, a male wolverine was discovered in the Sierra Nevada range of California, the first verified record since 1922. Genetic analysis determined that this individual likely dispersed from the northern Rocky Mountains, and was not a descendent of the Sierra Nevada population. There is no evidence that females have also migrated to the Sierra Nevada. Based on this evidence, USFWS concluded that the Sierra Nevada is within the current range of this species, but reestablishment of a population in the Sierra Nevada has not yet occurred (USFWS 14 December 2010).

Known Records: There no NNHP records for wolverine in the six-quadrant area encompassing the proposed project area in Nevada. There are two CNDDDB records for wolverine within 10 mi of the proposed project area. The closest CNDDDB record is from 1974, and is approximately 4.6 mi west of the proposed route in Quincy. One individual was observed in Plumas National Forest at Schneider Creek in Meadow Valley. This sighting has not been verified. Another CNDDDB record is from 1989, and is approximately 8.7 mi southwest of the proposed route in Graeagle. This record is an unconfirmed sighting of a wolverine crossing Route 09, a road in the Tahoe National Forest, 2.5 mi north of Yuba Sutter Camp.

The first confirmed wolverine sighting in California since 1922 was inadvertently photographed during a marten study in the Tahoe National Forest in February 2008 (DFG 2008). The wolverine was detected in Blatchley Canyon vicinity, about 2.2 mi south-southeast of Treasure Mountain, in a mid to upper elevation mixed conifer forest with an overstory of Jeffrey pines (*Pinus jeffreyi*), lodgepole pine (*P. contorta*), white fir (*Abies concolor*), and red fir (*A. magnifica*). Genetic samples were used to determine that the individual was a male with a probable origin in the western Rocky Mountains. This sighting is approximately 11.6 mi south of the proposed route in Loyaltan.

Survey Results: The areas anticipated to be affected by the project have been disturbed by past construction and ROW maintenance activities. USFWS (14 December 2010) concluded that though the Sierra Nevada is within the wolverine's current range, females have yet to migrate to this area and the reestablishment of a Sierra Nevada population has not yet occurred. It is unlikely that wolverines would den in the proposed project area.

Sierra Nevada Snowshoe Hare

Sierra Nevada snowshoe hare habitat includes early-seral stages of mixed conifer, subalpine conifer, red fir, Jeffrey pine, lodgepole pine, and aspen stands/ forests, primarily along edges, and especially near meadows. In California, Sierra Nevada snowshoe hare is primarily found in montane riparian habitats with thickets of alders and willows, and in stands of young conifers interspersed with chaparral. Dense cover is preferred, either in understory thickets of montane riparian habitats, or in shrubby understories of young conifer habitats (CWHR 2011). Snowshoe hare is active year-round. They generally avoid open spaces and mature closed canopy conifer forests. They feed on green succulent plants, grasses, sedges, ferns, and forbs in summer, and on bark and twigs of conifers, evergreen shrubs, and deciduous trees such as aspen, alder and willow in winter (Bolster 1998). Snowshoe hares nest in shallow bowl-like depressions under shrubs, logs, or in slash. Snowshoe hares breed from mid-February to June or July. The gestation period is 35-37 days. Snowshoe hares are polyestrous, with 2-3 litters per year. Predators include bobcats, minks, weasels, foxes, coyotes, great horned owls, and domestic dogs and cats (CWHR 2011).

The California Department of Fish and Game issues hunting permits for Sierra Nevada snowshoe hares. The bag limit is five per day, or ten in possession (DFG 26 January 2011).

Range: Snowshoe hares are found in the northern and central Sierra Nevada from approximately Mt. Lassen in southeastern Shasta Co., south through Yosemite National Park to Mono and Mariposa counties, from 4,800 to 8,000 ft. In Nevada, known from near Lake Tahoe (Bolster 1998) and elsewhere in Douglas and Washoe counties (NatureServe 2011).

Known Records: There are three CNDDDB records for Sierra Nevada snowshoe hare in Plumas, Sierra, and Lassen counties. One record is at Sagehen Creek Field Station; specimens were collected from this location in 1954 and 1969. Another record is located on the east side of Yuba Pass; one female specimen was collected from this location in 1929. The third record is located about 1.8 mi northeast of Badenaugh Canyon Rd at Smithneck Rd, and about 1.6 mi west-southwest of Babbitt Peak Outlook, in the Tahoe National Forest; one individual was observed at this location in August 2009 during small mammal trapping. The Sardine Peak quad occurrence is located approximately 7.5 mi southeast of the proposed project area in Loyalton, California, and approximately 8.5 mi southwest of the proposed project area near along Hwy 395 near Silver Lake in Nevada.

Survey Results: The proposed project area provides suitable habitat for this species only west of Beckwourth along the Highway 70 corridor. That portion of the proposed project area is mostly below 4,800 ft. Much of the proposed project area above 4,800 ft is near development or rural residences near Portola.

Western White-Tailed Jackrabbit

In California, western white-tailed jackrabbit is an uncommon to rare resident generally found at or above the timberline. Habitat includes sagebrush, subalpine conifer forest, juniper woodland, alpine dwarf shrubland, perennial grassland, wet meadow, and early successional stages of

various conifer forests (Bolster 1998; CWHR 2011). In the Sierra Nevada, this subspecies migrates to higher areas in the summer and to lower regions in the winter, particularly sagebrush-covered eastern slopes. Open areas with scattered shrubs are preferred. Breeding occurs from February to July. The gestation period is 30-42 days. Females may only produce 1 litter per year in California. Young forage independently at 3-4 weeks or sooner (CWHR 2011). Predators include coyotes, bobcats, and raptors.

The California Department of Fish and Game issues hunting permits for western white-tailed jackrabbit. The bag limit on western white-tailed jackrabbit is five per day, or ten in possession (DFG 26 January 2011).

Range: Western white-tailed jackrabbits are an uncommon to rare year-round resident of the crest and upper eastern slope of the Sierra Nevada, primarily from the Oregon border south to Tulare and Inyo counties. Western white-tailed jackrabbit may be absent from previous portions of its range, such as Lassen Co., where records are over 20 years old (CWHR 2011).

Known Records: There no NNHP records for white tailed jackrabbit in the six-quad area encompassing the proposed project area in Nevada. There is one CNDDDB record for western white-tailed jackrabbit in Plumas, Lassen, and Sierra counties. This record is from 1914 and is mapped by CNDDDB along the route near the intersection of US 395 and Red Rock Road. Three male specimens were collected from this location in February 1914.

Survey Results: The proposed project area east of Beckwourth provides potential habitat for this species.

American Marten

Martens are found in mature coniferous and mixed species forest with dense overstory and sufficient understory for hiding and denning (Snyder 1991). Important habitats include red fir, lodgepole pine, subalpine conifer, mixed conifer, Jeffrey pine, and eastside pine. Habitat with limited human use is important (CWHR 2011). Cover requirements for American martens include forests with 40 to 60 percent canopy closure. They will avoid areas that are so dense that herbaceous cover is suppressed. Martens usually den in rotten logs, but also rock slides and slash piles (Snyder 1991). Martens use cavities in large trees, snags, stumps, logs, burrows, caves, and crevices in rocky areas for denning cover. Young are born in March and April, some as late as June, and stay with the female until autumn (CWHR 2011).

Martens tend to travel along ridgetops and rarely move across large areas devoid of canopy cover. Martens have large home ranges. The home range of martens in a Montana study ranged from an average of 589 ac for males and an average of 173 ac for females. Home ranges often coincide with topographical features or vegetation features, such as timber stands, ridges, streams, meadows, or burns (CWHR 2011).

Small clearings, meadows, and riparian areas provide foraging habitats, particularly during snow-free periods (CWHR 2011). Mesic sites that have dense, succulent understory vegetation are ideal because they support larger populations of prey species. Martens may hunt for prey in

bordering open meadows if hiding cover is present (Snyder 1991). Martens are primarily nocturnal and crepuscular. They remain active year-long (CWHR 2011).

Range: There are five recognized subspecies of martens; the Sierra marten (*Martes americana sierrae*) occurs from Trinity and Siskiyou counties east to Mt. Shasta and south through the Sierra Nevada to Tulare Co. (Kucera et al. 1996).

Known Records: There no NNHP records for American marten in the six-quad area encompassing the proposed project area in Nevada. There are 30 CNDDDB records for American marten in Plumas, Sierra, and Lassen counties. Five of these records occur within 10 mi of the proposed project area. Four of these CNDDDB records are located close to each other, approximately 5.5 mi south of the Graeagle Substation lateral portion of the proposed project area. One record is a male collected in 1941 in the vicinity of Gold Lake, 15 miles west of Sierra Valley. The other records are from the Tahoe National Forest Sightings Database and consist of an individual observed in July 1990, 2 adults observed in August of 1988, and numerous sightings from 1982 to 1990 at a location described as encompassing Church Meadow, Freeman Meadow, and Howard Creek Meadow in Plumas and Tahoe National forests. The fifth CNDDDB record is located approximately 9.7 mi southwest of Loyalton.

Survey Results: The proposed project area provides marginal foraging habitat for American marten in areas of coniferous forest west of Beckwourth. East of Beckwourth, the proposed project area does not contain conifer forests and the proposed project area is dominated by sagebrush vegetation alliances. Areas in the proposed project area east of Beckwourth (including all areas from Susanville, CA, to Reno, NV) do not provide suitable habitat for American marten.

Areas of the proposed project area where the line will be hung from existing poles do not provide potential marten denning sites (i.e. , there is no canopy cover along existing utility lines). The proposed project area does not provide suitable marten denning habitat.

Pacific Fisher

The west coast distinct population segment (DPS) of fisher was listed as a candidate species in 2004 (USFWS 2004). Some researchers have recognized three subspecies of fishers, including *Martes pennanti pacifica* in the western region of North America. The USFWS does not recognize this distinction (USFWS 7 November 2007).

Pacific fishers occur in large areas of contiguous intermediate to large-tree stages of interior coniferous forests and deciduous-riparian habitats. Fishers use cavities in large trees, snags, logs, rock areas, or shelters provided by slash or brush piles for cover. Dense mature stands of trees also provide cover, especially in winter (Zeiner et al. 1990b). Snags and coarse woody debris located in riparian areas provide important areas for rest. Fishers typically avoid areas with little forest cover or significant human disturbance (USFWS 2004).

Fishers den in a variety of protected cavities including brush piles, hollow logs, trees, snags, and under upturned trees (Zeiner et al. 1990b). Most dens are found in live trees and are typically not

re-used. Den trees must be large enough for cavities that can be used for natal and maternal dens. Natal dens are typically found in tree cavities 20 ft above the ground (Lewis and Stinson 1998), while maternal dens are generally in cavities closer to the ground so that kits avoid injury in the event of a fall (USFWS 2004). Young are born February through May and stay with the female until late autumn (Zeiner et al. 1990b). During the denning season, fishers generally move their kits between dens; they may remain at a den from a few days to a few weeks (pers. comm., Callas 2011).

Fishers are omnivorous and prey on rabbits, hares, rodents, and birds, but will also feed on fruits, fungus, and carrion (Zeiner et al. 1990b). Fishers hunt exclusively in forested habitats and generally avoid openings (USFWS 2004).

Range: Uncommon permanent resident of the Sierra Nevada, Cascades, and Klamath Mountains; also found in a few areas in the North Coast ranges (Zeiner et al. 1990b). In eastern California, the fisher historically ranged throughout the Sierra Nevada, from Greenhorn Mountain in northern Kern Co. northward to the southern Cascades at Mount Shasta. In western California, it ranged from the Klamath Mountains and north Coast Range near the Oregon border southward to Lake and Marin counties (USFWS 2004). In recent decades, the scarcity of detections in WA, OR, and the northern Sierra Nevada indicates that fisher may be extirpated or reduced to very low numbers in much of this area (USFWS 2004).

Surveys conducted between 1989 and 1994 did not detect fishers in their former range in central and northern Sierra Nevada, between northeastern Shasta Co. south to Yosemite National Park. The remaining fisher populations are divided into two remnant populations separated by approximately 260 mi, almost four times the species' maximum dispersal distance (Zielinski et al. 1995; USFWS 2004). One population is located in northwestern California and the other in the southern Sierra Nevada (Zielinski et al. 1995). Since 1990, there have been no detections outside these areas except for one in 1995 in Mendocino Co. and one in 1995 in Plumas Co. (USFWS 2004).

DFG, in cooperation with USFWS and Sierra Pacific Industries (SPI), prepared a translocation plan for the reintroduction of fishers in the northern Sierra Nevada (Callas & Figura 2008). In the winter of 2009 and 2010, the first 15 fishers were released in SPI's Stirling Management Unit. DFG intends to introduce 25 fishers into the Stirling Management Area during the next two years (DFG 2011). Geographic information on the dispersal of the released fishers in the Stirling Management Area was reviewed (DFG 2011) and R. Callas (pers. comm., 2011) was contacted to discuss the distance of the released fishers to the proposed project area and potential for impact due to Project construction. The release area in Stirling is approximately 29.5 mi west of Quincy. Some of the fishers have moved substantially to the northeast, towards Lake Almanor, and the nearest recorded occurrence is approximately 9.8 mi northwest of Quincy.

Known Records: Although there have been occasional, unverified sightings of fishers between Mt. Shasta and Yosemite, a considerable number of surveys in this region, using methods that readily detect fisher when they are present, have failed to detect them (Zielinski et al. 1995). Sighting data needs to be treated cautiously because it is impossible to verify; fishers can be

easily mistaken for a number of other carnivores, especially American martens, even by experienced observers (Zielinski et al. 1995).

There are no NNHP records for Pacific fisher in the six-quad area encompassing the proposed project area in Nevada. There are four CNDDDB records for Pacific fisher within 10 mi of the proposed project area. The closest record is approximately 3.4 mi southwest of the proposed project area on the Johnsville quad. One fisher was observed in June 1983 near the headwaters of Squirrel Creek in the vicinity of the Squirrel Creek Mine, approximately 4.8 mi south of the town of Sloat. The next closest record is approximately 6.5 mi southwest of the proposed project area on the Diamond Mountain quad. One fisher was observed running through an old-growth mixed coniferous forest in September 1986 near Gold Run Creek, approximately 7.2 mi SSW of Susanville.

Survey Results: The proposed project area west of Beckwourth provides potential habitat for fisher but is not currently occupied.

Myotis Bats

Western small-footed myotis is found in deserts, chaparral, riparian zones, and western coniferous forest, and is especially common above pinyon-juniper forest. This species roosts in cliff and rock crevices, buildings, concrete overpasses, caves, and mines (WBWG 2005).

Long-eared myotis is usually associated with coniferous forests, but also occurs in semiarid shrublands, sage, chaparral, and agricultural areas. This species roosts under exfoliating tree bark and in hollow trees, caves, mines, cliff crevices, sinkholes, rocky outcrops on the ground, and occasionally in buildings and under bridges (WBWG 2005).

Fringed myotis is found in a wide variety of habitats including desert scrub, mesic coniferous forests, grasslands, sage-grass steppe, oak woodlands and forests such as oak, pinyon-juniper, and ponderosa pine. Roosting occurs in crevices in buildings, underground mines, rocks, cliff faces, and bridges, as well as large decaying trees and snags. Structural characteristics of trees, such as height and decay stage, may play a greater role in tree selection than tree species. Maternity roosts occur in caves, mines, buildings (WBWG 2005).

Yuma myotis is usually associated with permanent sources of water, especially rivers and streams, but also occurs around small pools in the arid West. This species uses a variety of other habitats, such as riparian, arid scrublands, deserts, and forests. Roosting occurs in bridges, buildings, cliff crevices, caves, mines and trees (WBWG 2005).

Range: These four species are distributed across western North America. Fringed myotis distribution has a more patchy distribution (WBWG 2005).

Known Records: There are no NNHP records for western small-footed myotis in the six-quad area encompassing the proposed project area in Nevada. There are no CNDDDB records for western small-footed myotis within 10 mi of the proposed project area.

There are no NNHP records for long-eared myotis in the six-quad area encompassing the proposed project area in Nevada. There are four CNDDDB records for long-eared myotis within 10 mi of the proposed project area. The closest CNDDDB record is from 2002, approximately 3.4 mi southwest of the proposed project area in the Plumas Eureka State Park.

There are no NNHP records for fringed myotis in the six-quad area encompassing the proposed project area in Nevada. There are four CNDDDB records for fringed myotis within 10 mi of the proposed project area. The closest CNDDDB record is from 2007 approximately 0.44 mi north of the proposed project area at the Highway 70/89 bridge over Spanish Creek in Quincy.

There are NNHP records for Yuma myotis in the six-quad area encompassing the proposed project area in Nevada, but the locations are suppressed. There are six CNDDDB records for Yuma myotis in the 26-quad area encompassing the proposed project area in California. The closest record is an unconfirmed species, with unclear location information, from 1996 near the proposed project area between Beckwourth and Portola. The surrounding habitat was a riparian meadow with willows in a ponderosa forest. The closest confirmed record is from 2002, approximately 8.5 mi northwest of Susanville. Two individuals were mist netted in June in the Papoose Meadows of the Lassen National Forest.

Survey Results: Vegetation in the mixed coniferous forest of the proposed project area is managed and kept clear of large trees that could interfere with the utility lines. Some large trees in the mixed coniferous forest along the edge of the proposed project area provide potential roosting habitat for myotis bats. Bridges or large culverts in or near the proposed project area could provide potential roosting habitat.

Western Pipistrelle Bat

Western pipistrelle is the smallest North American bat. It mainly occurs in arid, desert landscapes, and is highly associated with significant rock features, such as rocky canyons and outcrops (WBWG 2005), and granite boulders (Bradley et al. 2006). It is abundant in deserts containing blackbrush, creosote, sagebrush; and arid grasslands and woodlands (Bradley et al. 2006; CWHR 2011); common in arid brushlands, grasslands and woodlands; and uncommon in lower elevation mixed conifer forests (WBWG 2005; CWHR 2011). Pipistrelle bats forage over water, in riparian and agricultural areas, rocky canyons, and along cliff faces (Bradley et al. 2006; CWHR 2011). This species feeds on a variety of prey, mainly consisting of small swarming insects (WBWG 2005) and soft-bodied insects (CWHR 2011). Females may roost alone or in small groups of less than 20 individuals. Twins are born in May through June, and young are able to fly within a month (WBWG 2005).

Pipistrelle bat most commonly roosts and hibernates in small rock crevices, in mines and caves, and occasionally on buildings, bridges and vegetation (WBWG 2005; Bradley et al. 2006; CWHR 2011). This species is sensitive to roost site disturbance (CWHR 2011). Destruction of rocky areas is their primary threat (WBWG 2005).

Range: Pipistrelle bat is distributed in the lowlands of the southwestern U.S. from southern Washington south into Mexico, usually below 6,562 ft (WBWG 2005). In California, pipistrelle

bat is a year-long resident found in the Central Valley, foothills, and Coast Ranges from Tehama Co. to Mexico; in the deserts from Alpine Co. to Mexico; and in extreme eastern Modoc Co. Scattered populations are also known from Siskiyou, Lassen, and Trinity counties (CWHR 2011). This species is found throughout most of Nevada, primarily in the southern and western portions of the state, from 690 to 5,900 ft, and occasionally up to 8,370 ft (Bradley et al. 2006).

Known Records: There are no CNDDDB records for pipistrelle bats within 10 mi of the proposed project area. Based on the distribution map for pipistrelle bats in California (CWHR 2011), this species is not found in Sierra or Plumas counties, and is known only from two small areas in Lassen Co. Lassen Co. locations occur in the northeast portion of the county, on the northeast side of Honey Lake and surrounding Eagle Lake. These three locations are outside the proposed project area in California.

There are no NNHP records for pipistrelle bats in the six-quad area encompassing the proposed project area in Nevada. Based on the records map for the pipistrelle bat in Nevada (Bradley et al. 2006), a sighting occurred in southern Washoe Co. near the border of Storey Co., west of the proposed project area in Reno.

Survey Results: Rocky landscapes in the mixed coniferous forest along the edge of the proposed project area provide potential roosting habitat. This species is uncommon in mixed conifer forests and in Lassen Co. and occurrence near the proposed project area in California is unlikely. Bridges in or near the proposed project area could also provide potential roosting habitat.

American Badger

American badgers are carnivorous mammals that occur in remote or rural areas (NDOW 2011). Badgers inhabit drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Burrows are dug in areas with dry, often sandy, soils with sparse overstory cover. The burrows are often reused, though a new den may be dug each night. American badgers feed mostly on small rodents, but also reptiles, insects, earthworms, eggs, birds, and carrion depending on availability of prey (CWHR 2011).

Mating occurs in summer and early fall, with delayed implantation. Two to five young are born in burrows in March and April. Some females are able to breed in their first year, but males do not sexually mature until their second year. Home ranges documented outside California and Nevada varied between 338 ac and 1549 ac. Family members may share the same territory as females, but males are generally solitary except during the breeding season. This species is tolerant of human activities, but is threatened by indiscriminate predator trapping and poisoning (CWHR 2011).

Range: American badger is found throughout North America (NDOW 2011). This species is found throughout California except in the northern North Coast area (CWHR 2011).

Known Records: There are no NNHP records for American badger in the 6-quad area encompassing the proposed project area in Nevada. There are sixteen CNDDDB records for American badger in the 26-quad area encompassing the proposed project area in California,

eleven of which are within 10 mi of the proposed project area. One record is located in the proposed project area in Quincy; five are located south of the proposed project area within or between the Marble Substation Lateral and the City of Loyalton Lateral; one is located east of the Sierra Nevada Army Depot Lateral; and four are located within and surrounding the proposed project area in Susanville. The Marble and Loyalton records are from between 1976 and 1996, with badger sightings crossing roads; with young near burrow; and in pasture and agricultural land, grazed sagebrush, pine, and mixed conifer habitat. One Susanville record is from 1997 near a meadow in Lassen National Forest.

Survey Results: Burrowing habitat for American badgers occurs in areas of the proposed project area with deep, friable soil.

Sierra Nevada Red Fox

Two species of red fox occur in California: the non-native lowland or valley foxes, which occur in the Central Valley and coastal regions, and the native SNRF restricted to the Sierra Nevada and Cascade mountain ranges. SNRF occurs at high elevations and subalpine habitats near treeline above 5,000 ft, more often above 7,000 ft, and occasionally to 4,000 ft. Habitat consists of red fir and lodgepole pine forests, and alpine fell-fields of the subalpine zone. SNRF are opportunistic predators and scavengers that eat a variety of food depending on seasonally availability, mainly small and medium mammals, but also birds, insects, fruit, carrion, and garbage. Information on distribution, population size or demographic trends are largely unknown (Perrine et al. 2006).

Matting generally occurs in the winter in mid-February. Usually two to three, and up to nine young are born in early April after a 52-54 day gestation period. Reproductive output is strongly correlated with food availability. Denning occurs in natural cavities in boulder piles and talus slopes, usually located in whitebark pine and mountain hemlock subalpine forests below the treeline. Though other species of red foxes typically use earthen dens, currently no accounts of SNRF-used earthen burrows are known in California (Perrine et al. 2010). Pups are weaned at eight to ten weeks, and emerge from the den by the twelfth week. Dispersal of the pups is in early fall when fully grown. SNRF are sexually mature in their first winter, though their success rate is typically lower than more mature foxes.

Prior to sightings in 2010, the only known native extant population of SNRF was in the vicinity of Lassen Peak. Between 1940 and 1959, only 135 SNRF pelts were taken throughout the state, suggesting that population numbers were never high.

SNRF sightings were confirmed in 2010 approximately 150-200 mi south of the known population near Lassen Peak. A female was photographed in 2010 in the Humboldt-Toiyabe National Forest. Two red foxes were photographed in the Stanislaus National Forest, approximately 2-4 mi from the first sighting (USFS December 2010). Genetic analysis of the individuals were compared to historic pelts and museum specimens collected from the area. The analysis determined that the individuals were related to historic populations in the area and distinct from the Lassen Peak population (USFS September 2010). This implies that a

genetically unique population of SNRF has persisted in the southern Sierra Nevada, rather than a single individual (USFS December 2010).

Range: The historical distribution of SNRF was in high elevations of the Sierra Nevada from Tulare Co. to Sierra Co., and around Mt. Lassen and Mt. Shasta. Studies on the Lassen Peak population have shown that SNRF distribution changes seasonally, with summer movements to higher elevations usually over 6,000 ft. The largest currently known population occurs around Lassen Peak. Sightings have also confirmed populations exist in the southern Sierra Nevada in the vicinity of Stanislaus, Toiyabe, Sequoia, and Inyo National Forests, and Yosemite and Sequoia National Parks.

Known Records: There are 6 CNDDDB records of Sierra Nevada red fox within 10 mi of the proposed project area. The closest CNDDDB record is from 1990 and is approximately 3.5 mi west of the proposed project area in the foothills of the Diamond Mountains. One adult was observed at 4,260 ft in June. The habitat consisted of montane meadow surrounded by conifer forest. There are no NNHP records for SNRF in the 6-quadrant area encompassing the proposed project area in Nevada.

Survey Results: There are no subalpine or alpine habitats in the proposed project area. Suitable subalpine habitat for SNRF is not present in the proposed project area. Most areas of the proposed project area are substantially below 5,000 ft. The proposed project area does not include suitable talus or boulder field denning habitat. Known populations occur in the vicinity of Lassen Peak and in the southern Sierra Nevada, both well outside the proposed project area. No work will be occurring in the proposed project area between 15 November and 15 April per the Lahontan RWQCB construction general permit.

3.10.12 Lichens, Mosses, and Vascular Plants

One federal-candidate plant, one California state-endangered plant, and 10 other (i.e., not Federal- or State-listed) special-status lichens, mosses and vascular plants were identified as having the potential to occur in the proposed project area. The BAHA in Appendix D contains a table of the evident and identifiable period of the special-status plants with the potential to occur. The table in Appendix D also notes known reported occurrences of special-status plants in or very near the proposed project area. A reconnaissance level biological survey was completed, but was outside the evident and identifiable period for most species.

Veined Water Lichen

This species is a foliose water lichen found from 1,150 to 7,000 ft in clear, cold water. In California it occurs in streams that are fed by cold water springs. The water is clear, and peak flows are not of the intensity that would lead to scouring. The streams have a rich aquatic bryophyte flora, and are rarely more than 8 inches in depth. It is thought that increased sedimentation would significantly impact occurrences (USFS 2006, 4 September 2008).

Known Records: There are no CNDDDB records within 10 mi of the proposed project area.

Survey Results: Some of the smaller perennial creeks in the proposed project area may provide potential habitat for veined water lichen.

Three-ranked Hump Moss and Broad-Nerved Hump Moss

Both of these mosses are found on wet soil in bogs, fens, meadows, and seeps in subalpine coniferous forest and upper montane coniferous forest from 4,200 to above 9,000 ft. The sporophyte of broad-nerved hump moss is evident in October (CNPS 2010). Three-ranked hump moss grows in saturated conditions and is usually associated with *Sphagnum* spp., a moss restricted to perennially saturated sites in CA. Broad-nerved hump moss is mostly found in lodgepole pine forests (Malcolm et al. 2009).

Range: Both mosses are known from the Sierra Nevada and elsewhere in CA, OR, and NV. Three-ranked hump moss is also known from WA.

Known Records: The nearest CNDDDB record of three-ranked hump moss is approximately 9 mi west of the proposed project area, west of Quincy, in a fen. The nearest CNDDDB record of Broad-nerved hump moss is approximately 6.7 north of the proposed project area, north of Portola, in a marshy meadow.

Survey Results: Perennially wet meadows in some areas of the proposed project area west of Beckwourth provide potential habitat for three-ranked hump moss and broad-nerved hump moss. The wet meadows in the proposed project area are used for livestock grazing, which may reduce the suitability of potential habitat for these mosses (CNPS 2010).

Cylindrical Trichodon

Moss found on sandy, exposed soil and road or trail banks in broadleaved upland forest, meadows and seeps, and upper montane coniferous forest from 100 to 6,600 ft. In CA, known from Humboldt, Lake, Mendocino, Plumas, Shasta, Sierra, Siskiyou, and Tulare counties (Norris and Shevock 2004b; CNPS 2010).

Range: In CA, known from Humboldt, Lake, Mendocino, Plumas, Shasta, Sierra, Siskiyou, and Tulare counties. Known also from OR and ID.

Known Records: There are five records of cylindrical trichodon within 10 mi of the proposed project area.

Survey Results: Areas of relatively bare or disturbed soil in the proposed project area west of Beckwourth along the Highway 70 corridor may provide potential habitat for cylindrical trichodon.

Webber's Ivesia

Webber's ivesia is a perennial, taprooted, low-growing herb that generally grows in pinyon and juniper woodland, lower montane coniferous forest, and substrates derived from volcanic ash in Great Basin scrub, from 3,200 to 6,900 ft (CNPS 2010). A report prepared by Witham (2000) for the NNHP and USFWS describes Webber's ivesia as occurring in areas of unique soils and hydrology with relatively open plant associations. Witham further describes suitable Webber's ivesia microhabitat as being restricted to shallow, clayey soils with a rocky pavement-like surface of weathered andesitic rock between elevations of 4,480 and 5,950 ft. Soils of sites that support Webber's ivesia are slightly wetter than surrounding areas due to clay content, shallow perched water tables, and level to slightly concave/convex topography. The species does not occur in areas of extended saturation or inundation (Witham 2000). A recent treatment of the genus for the second edition The Jepson Manual briefly describes the habitat as "rocky clay in sagebrush flats" from 4,920 to 6,232 ft (Ertter In press). The blooming period is May through July (CNPS 2010).

Range: Webber's ivesia is known from the Upper Long Valley, the southern boundary of Long Valley, the western boundary of the Reno-Sparks Valley, Dog Valley, the eastern boundary of the Sierra Valley, and the Pine Nut Mountains (Witham 2000).

Known Records: There are two CNNDDB occurrences (#2 and #10) of Webber's ivesia located near the proposed project area. Occurrence #2 is a geographically imprecise record based on an 1886 collection described generally as occurring in the American Valley, near Quincy. Notes for the occurrence state that the site could not be found during a search in 1990, and the most suitable habitat in the area was disturbed or eliminated. Occurrence #10 is a geographically precise record from 1996 located about 1,150 - 1,300 ft east of US 395, about 1 mi north of the Sierra Co. line. The proposed project area near occurrence #10 is on the west side of the US 395 ROW. Occurrence #10 is located approximately 1,500 ft east of and outside the proposed project area. There are five other CNNDDB records within approximately 3 mi of the proposed project area, mostly in the Upper Long Valley.

There are six NNHP records in the vicinity of the Nevada segments of the proposed project area. The six records are located approximately 0.9 to 1.8 mi southwest of US 395 between the California/ Nevada Stateline and Reno. None of the six NNHP records occur in the proposed project area. These records are discussed in more detail in the Witham (2000) report. The Witham report also describes several sites that were searched for Webber's ivesia immediately adjacent to the proposed project area along US 395. Webber's ivesia was not found at these sites and they were designated Unoccupied Sites 7, 9, and 10. Witham also noted one area of potentially suitable habitat adjacent to US 395, that could not be accessed, that was designated Potential Site 1.

Survey Results: The December 2010 survey was a reconnaissance-level survey conducted at a time when Webber's ivesia may not have been evident and identifiable. Big sagebrush scrub and juniper woodland in the proposed project area along Highway 395 between Reno and Constantia, along Highway 70 between Hallelujah Junction and Cow Camp Road, along the Red Rock Fire Department Lateral, and along the City of Loyalton Lateral provide potential habitat for

Webber's ivesia. Within this area there may exist smaller areas that provide the necessary soil and hydrology microhabitat requirements for Webber's ivesia. CNDDDB occurrence #10 occurs on Galeppi series soil that typically contains sandy clay loam below 10 inches. There are substantial amounts of Galeppi soils, as well other soils with a clay loam or clay subsoil that could provide potential habitat for Webber's ivesia.

Boggs Lake Hedge-Hyssop

Boggs Lake hedge hyssop is State-endangered in California. Boggs Lake hedge hyssop is an annual herb found along lake margins and in vernal pools, usually on clay substrates, from 30 to 7,800 ft. It blooms April through August (CNPS 2010, USFWS 15 December 2005). Seeds likely germinate in response to autumn/winter precipitation and are at or near flower by the time water recedes. The highest elevation record may be a misidentification and USFWS (15 December 2005) reports the highest confirmed elevation record as approximately 5,340 ft. Boggs Lake hedge hyssop may occur in artificial habitats such as borrow pits and stockponds (USFWS 15 December 2005).

Range: Boggs Lake hedge hyssop is known from the Lake-Napa, Modoc Plateau, southeastern Sacramento Valley, northeastern Sacramento Valley, northwestern Sacramento Valley, Solano-Colusa, and southern Sierra Foothills vernal pool regions in California, and from one occurrence in Lake Co., Oregon. It is not known from Nevada.

Known Records: There are no records of Boggs Lake hedge hyssop in the vicinity of the proposed project area. The occurrences in northeastern California are concentrated on the Modoc Plateau (USFWS 15 December 2005). The single known record from Lassen Co. is on the Modoc Plateau at Snowstorm Reservoir, approximately 17.9 mi north of the nearest part of the proposed project area. The plants were last recorded growing in wet mud at the edge of the reservoir in 2000. There are no known records in Plumas, Sierra, or Washoe counties (CNPS 2010, USFWS 15 December 2005, CCH 2010, SEINet 2010). Boggs Lake hedge hyssop has not been reported from the Honey Lake Valley, Long Valley, or Sierra Valley.

Survey Results: The December 2010 survey was a reconnaissance-level survey, and was not conducted at a time when Boggs Lake hedge hyssop would be evident and identifiable. Based on the reconnaissance-level survey and a review of topographic maps and aerial photos, the proposed project area provides only marginal habitat for Boggs Lake hedge hyssop. There are no vernal pools in the proposed project area. A few areas of seasonal inundation in the proposed project area, primarily roadside detention ponds or stockponds, may provide marginal habitat for Boggs Lake hedge hyssop.

Other Special-Status Plants

The BAHA in Appendix D identifies special-status plants without listing status under the federal or California ESA, with potential to occur in the proposed project area. The BAHA includes descriptions of these species' habitat and range.

Survey Results: The December 2010 survey was a reconnaissance-level survey conducted outside the evident and identifiable period for many plants. No special-status plants were identified during the reconnaissance-level survey.

Plumas National Forest provided botanical survey results from 2004 for a section of the route located between Quincy and Portola, California (USFS 2010). The botanical survey results showed many records of Quincy lupine (*Lupinus dalesiae*), approximately 8 of which are located

in the proposed project area. Records for Constance's rock cress (*Boechea constancei*) also occur approximately 800 ft from the proposed project area (USFS 2010).

The BAHA in Appendix D indicates known records of special-status plants within 200 ft of the proposed project area and the months in which the plants are most likely to be evident and identifiable. Twenty of the special-status plants have known records within 200 ft. Some of these records are old and/or geographically imprecise and may not necessarily indicate the presence of special-status plants along the route.

3.10.13 Invasive Species

Executive Order (EO) 13112 was signed into law in 1999. The EO calls on Executive Branch agencies to work to prevent and control the introduction and spread of invasive species. Under the EO, Federal agencies cannot authorize, fund, or carry out actions that are likely to cause or promote the introduction or spread of known invasive species in the United States or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered. Known invasive plants are defined as those listed on the official noxious weed list of the State in which the activity occurs (FHWA 1999). The analysis below addresses known invasive plants as defined in EO 13112 as well as ecologically harmful invasive plants according to the California Invasive Plant Council (Cal-IPC 2006). Lists of noxious weeds and/or invasive plants for California (CDFA 2010), Nevada (NDA 2010), BLM (March 2008), USFS (pers. comm., Lynee Crawford), and Lassen, Plumas, and Sierra counties (Cal-IPC 2008; Lassen WMA 2011) are in the BAHA in Appendix D.

Survey Results

Four species of invasive plants, as defined in EO 13112 (species that occur on State noxious weed lists), were observed in the proposed project area during reconnaissance level biological surveys. The four species were yellow star-thistle (*Centaurea solstitialis*; CDFA rank C; NDA rank A), perennial pepperweed (*Lepidium latifolium*; CDFA rank B; NDA rank C), *Salsola paulsenii* (CDFA rank C; NDA no rank), and medusa head (*Taeniatherum caput-medusae*; CDFA rank C; NDA rank B).

The BLM is concerned about noxious weed species on the State noxious weed lists (NDA 2010; CDFA 2010). In California, the BLM Eagle Lake Field Office (ELFO) maintains a list of 25 of the CDFA (2010) noxious weeds that are known to occur on lands managed by the ELFO (BLM March 2008). Nevada BLM is especially concerned about invasive annual grasses (such as cheat grass, red brome, and *Schismus* spp.) that may transform sage brush and other low-desert vegetation communities through altered fire regimes (BLM 2009).

The USFS expressed concerns about invasive weed spread and introduction and the potential effect of invasive weeds on rare plants (pers. comm., Lynee Crawford; Mt. Hough Ranger District 2010). Botanical surveys conducted along a portion of the proposed route in 2004 in the Mt. Hough Ranger District documented medusahead (*Taeniatherum caput-medusae*) and yellow star-thistle (*Centaurea solstitialis*) in proximity to two special-status plants, Quincy lupine and Constance's rock cress. Additional weeds known from along the route include tall whitetop

(*Lepidium latifolium*), spotted knapweed (*Centaurea maculosa*), scotch broom (*Cytisus scoparius*), musk thistle (*Carduus nutans*), and Canada thistle (*Cirsium arvense*) (pers. comm., Lynee Crawford).

Cal-IPC is widely recognized as the authority for invasive plants in California wildlands. In 2006, Cal-IPC completed an invasive plant inventory that categorized plants as “High,” “Moderate,” or “Limited,” according to the extent of each species' ecological impact, invasive potential, and ecological distribution in California. Species rated as “High” by Cal-IPC (2006) that were observed in the proposed project area are cheat grass (*Bromus tectorum*), yellow star-thistle (*Centaurea solstitialis*), perennial pepperweed (*Lepidium latifolium*), Himalayan blackberry (*Rubus discolor*), and medusa head (*Taeniatherum caput-medusae*). Species rated as “Moderate” by Cal-IPC (2006) that were observed in the proposed project area are Mediterranean hoary mustard (*Hirschfeldia incana*) and sheep sorrel (*Rumex acetosella*). Species rated as “Limited” by Cal-IPC that were observed in the proposed project area are *Salsola paulsenii*, filaree (*Erodium cicutarium*), horehound (*Marrubium vulgare*), English plantain (*Plantago lanceolata*), curly dock (*Rumex crispus*), and woolly mullein (*Verbascum thapsus*). The noxious weeds and invasive plants that were observed in the proposed project area during reconnaissance surveys in 2010 are in the BAHA in Appendix D.

3.11 Infrastructure

3.11.1 Traffic and Circulation

The majority of the existing pole infrastructure project would parallel existing federal, state, and local highways and roadways. SR 70 is the major east-west highway running from the westernmost project area in Quincy, CA, to the Hallelujah Junction, CA, intersection with US395, a distance of approximately 60 miles.

At this intersection, the project would follow the existing pole infrastructure and US395 ROW corridor for a distance of roughly 75 miles to the City of Susanville.

Quincy, CA to Hallelujah Junction, CA along State Route (SR) 70

This portion of SR 70 generally follows the meandering corridor of the Middle Fork of the Feather River, through the small cities/towns of Cromberg, Mohawk, Portola, Beckwourth, and Chilcoot. The width of the SR70 ROW ranges from between 66 feet in the Plumas National Forest to 400 feet at the US395 intersection. The roadway is a narrow and winding two-lane road, a portion of which traverses the Plumas National Forest. There are few areas available for passing lanes so traffic moves considerably slower at an average of 55-60 mph. This area is used heavily by wildlife and logging trucks so caution must be exercised.

Susanville, CA to Reno, NV along US395

This portion of US395 (SR 36, US 395) includes the city of Susanville. Through Susanville, SR 36 is a four-lane conventional highway with multiple signalized intersections. Periods of congestion occur in Susanville, related primarily to local schools and higher recreational volumes during the summer. Once past Susanville, the remainder of the US395 corridor passes

through high desert interspersed with a few small communities. This portion is a 2-lane conventional highway with limited passing lanes, which transitions into a 4-lane freeway at the Hallelujah Junction interchange. The width of US395 ranges from 100 feet at Susanville to 600 feet in the area of Washoe County and Reno where the old US395 is used as a frontage road.

- Regional circulation in the Project Area consists of US Highway 395 N, State Highways 70, 89, 49, 36, 139.
- Plumas County Road: A-23, A-24, Blairsden-Graeagle Rd., 126, 508, 508A, 401, 402
- Lassen County Roads: Constantia Road, Omira Road, Red Rock Road, Herlong Access Road, Johnstonville Road, A-25, A-26, A-27
- Forest Roads 25N41, 23N12, 23N11, 23N48, 23N49, 23N33, 23N22Y, 23N21, 23N17Y, 24N12, and 22N02Y.

Level of Service Definition

Level of Service (LOS) is a qualitative evaluation of traffic flow conditions. Conditions are divided into six levels ranging from "ideal" to breakdown. LOS designations are defined as follows:

- Level A – Free flow, low volumes and densities, high speeds; drivers can maintain their desired speeds with little or no delay and are unaffected by other vehicles.
- Level B – Reasonably free flow, operating speeds beginning to be restricted somewhat by traffic conditions; drivers still have reasonable freedom to select their speeds.
- Level C – Speeds remain near free flow speed, but freedom to maneuver is noticeably restricted.
- Level D – Speed begins to decline with increasing volume; freedom to maneuver is extremely limited and level of comfort afforded the driver is poor.
- Level E – Unstable flow, with volume at or near capacity; freedom to maneuver is extremely limited and level of comfort afforded the driver is poor.
- Level F – Breakdown in flow. Both speeds and volume can drop to zero (<http://www.dot.ca.gov>).

Level of Service along Project Corridor

The LOS on SR70 to US395, Average Annual Daily Traffic (AADT) is approx, 11,000, in central Quincy and drops to 4,000 on the outskirts of the community. The LOS generally operates at (B) with possible (C) during Period Peak Traffic (PPT) at a 20 year projection (<http://www.dot.ca.gov/dist2/planning/pdf/segfacts/pdf>).

Level Of Service on US395 Hallelujah Junction, north to Susanville, Lassen County, CA. US395 in Lassen County the (AADT) ranges near 5500 to 7900 with a current LOS-C operating level with a 20 year projection of D (<http://www.dot.ca.gov/dist2/planning/pdf/segfacts/pdf>).

Level Of Service on US395, Hallelujah Junction to (CA/NV) Bordertown, operates at (C). Average Annual Daily Traffic (AADT) is approx. 3888 which is 87% of the total traffic. (<http://www.dot.ca.gov/dist2/planning/pdf/segfacts>;
http://www.nevadadot.com/reports_pubs/segments).

LOS, according to (NDOT), Office of System Planning and Traffic Census, for the segment of US 395 that runs from Reno north to Bordertown, the California/Nevada state line in Washoe County is currently operating at a Level of Service (LOS) B to C (http://www.nevadadot.com/reports_pubs/segments).

Road Use and Permits Required

California

Pursuant to the California Code for Streets and Highways, Caltrans requires the following two permits: Standard encroachment permit requesting ingress to the State Highway System ROW and transport of oversized equipment.

The California Department of Transportation (Caltrans) has jurisdiction over State highways and maintenance and operations of U.S. highways, including US 395, SR 70 and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on highways.

Plumas County, CA.

The Plumas County Department of Public Works has previously stated that the areas along several Plumas County Roads have “no formal right-of-way, and the County has prescriptive rights for maintenance through privately-owned and State-owned parcels” as well as cooperative agreements with the USFS for segments abutting federal lands (<http://www.caltrans.com/roadpermits/sect2/plumas>).

Lassen County, CA

A road encroachment permit would also be necessary for any improvements to roads under the jurisdiction of Lassen County and a transportation permit for transport of oversized equipment on county roads. Lassen County is currently working the District 2 of Caltrans to develop and implement a transportation plan. No hazardous materials permit is required (<http://www.caltrans.com/roadpermits/sec2/lassen>).

Sierra County, CA.

A road encroachment permit would also be necessary for any improvements to roads under the jurisdiction of Sierra County and a transportation permit for transport of oversized equipment on county roads. Sierra County is currently working to develop and implement a transportation plan. No hazardous materials permit is required (<http://www.caltrans.com/roadpermits/sect2/sierra>).

Road Use and Permits Required

Nevada

Washoe County, NV

A road encroachment permit would also be necessary for any improvements to roads under the jurisdiction of Washoe County and a transportation permit for transport of oversized equipment

on county roads. Washoe County is currently working to develop and implement a transportation plan. No hazardous materials permit is required (<http://www.Ndot/roadpermits/us395.htm>, http://www.nevadadot.com/reports_pubs/class_maps).

3.11.2 Public Services

This section addresses the relationship of the Proposed Action to Utilities and Infrastructure along the fiber cable route.

Fiber Cable Placed Underground in Conduit

The following segments will utilize underground conduit placed within existing rights-of-way:

1. Peering point at 200 S. Virginia Street, Downtown Reno (4.65 miles) to Old US Highway 395 Business Loop .

Wherever practicable, existing ‘black fiber’ conduit will be utilized for this segment and should not interfere with existing utilities including water, sewer, storm drainage, electrical power, natural gas and telecommunications. Traffic control will be essential.

2. Old US Highway 395 Business Loop to Bordertown, NV

Underground construction for about one mile on BLM-administered lands in NDOT US395 ROW. Traffic control will be essential.

3. Bordertown, NV to Hallelujah Junction within the westerly ROW of US Highway 395.

New trenching and horizontal boring will be necessary to install conduit for 8 miles within the Caltrans ROW. Clearance will be required through Underground Service Alert (USA) or similar testing to insure that the fiber optic conduit has a clear and unobstructed path. Traffic control will be essential.

4. City of Portola Lateral and Eastern Plumas Health Care Lateral

Underground construction for 1.38 miles in the City of Portola is proposed. Crossing the Middle Fork of the Feather River and the Union Pacific Railroad will require attaching the conduit to the sub-structure of the existing bridges; or re-routing the cable to utilize an existing power line to cross the river and the tracks. Underground testing to establish existing utility locations will also be necessary. Traffic control will be essential in this normally congested area.

5. Community of Quincy

Underground installation for 4.6 miles will be necessary to serve the four CAI’s in Quincy. It is anticipated that existing conduit will be able to be utilized, as appropriate. In areas where new conduit is required, underground testing to establish existing utility locations will be necessary. Traffic control will be essential.

6. City of Susanville

The proposed Susanville Indian Rancheria underground lateral is less than one mile (0.81 miles). Where new conduit is required, underground testing to establish existing utility locations will be necessary. Traffic control will be essential.

Fiber Cable Strung on Existing Power Poles

The following segments will utilize overhead installation of fiber cable utilizing existing power poles:

1. Old US395 Business Loop, NV to Bordertown, NV

Use of existing electrical power poles on the west side of US395 is proposed for 10.57 miles. Traffic control will be essential.

2. Hallelujah Junction to Chilcoot Substation

This overhead route will require crossing SR 70 at Beckwourth Pass and the Union Pacific Railroad line at Summit. Care will need to be taken for these crossings, along with traffic control for the SR 70 crossing.

2. Chilcoot Substation to Beckwourth Substation

This segment follows the railroad line and crosses SR 49 at the tracks, and crosses SR 70 near the Beckwourth Substation. Care will need to be taken along the rail line, along with traffic control for the SR 49 and SR 70 crossings.

3. City of Loyalton Lateral

This segment proposed on existing overhead power poles crosses fenced agricultural land and rural county/city roads. All gates will need to be secured and traffic control provided at each road crossing.

4. Beckwourth Substation to Mohawk Substation

This segment follows and crosses SR 70, and passes through rural residential development. Traffic control will be necessary in numerous locations.

5. Marble Substation Lateral

The Marble Lateral traverses agricultural land and crosses Beckwouth-Calpine Road in two locations, one of which is also a railroad crossing. Traffic control will be necessary at these locations.

6. PSREC and Got SKY Lateral

This short segment should not require any special precautions as it is proposed to occur at the PSREC main offices on SR 70.

7. Graeagle Substation Lateral

Stringing this lateral to Graeagle will require crossing SR 70, the railroad (double tracks) and the Middle Fork of the Feather River. Traffic control for these crossings will be essential.

8. Mohawk Substation to Quincy No. 2 Substation

This segment requires three crossings of SR 70, one crossing of the railroad, and stringing cable through scenic areas near Cromberg and through Long Valley, American Valley and Thompson Valley. Traffic control for these crossings will be essential.

9. Feather River College Lateral

A portion of this segment requires overhead crossing of a sensitive meadow. Extra precautions will be necessary to avoid any degradation to the meadow.

10. Hallelujah Junction to Herlong Substation

This segment traverses over relatively flat and open ground, some which is on BLM-administered lands for which an existing power line ROW authorization is approved. It does require the spanning of Long Valley Creek on existing power line poles up to six times.

11. Red Rock Lateral

The Red Rock Lateral will require the crossing of US Highway 395 and spanning of Long Valley Creek, as well as placing cable in a residential area in NV. Traffic control will be necessary.

12. Patton Substation and Sierra Army Depot Lateral

The lateral to Patton from the Herlong Substation will require the crossing of US Highway 395 on existing power line poles; the extension to Sierra Army Depot along Lassen County A-26 (Garnier) Road on existing power line poles should be straight forward.

13. Herlong Substation to Milford Substation

This segment on existing power line poles parallels US395 for most of its length. No unusual situations are evident along this route.

14. Milford Substation to Edgemont Substation

This segment will require one crossing of the highway, and will follow local roads in a rural residential area. Traffic control will need to be in effect.

15. Edgemont Substation to Leavitt Substation

This segment on existing power line poles traverses a rural residential area, the Bass Hill Wildlife Area and one crossing of US Highway 395. Traffic control and mobilization will be required.

16. Lateral to Correctional Center, Co-gen Plant and High Desert Prison

This lateral will utilize existing dark fiber hung on existing power line poles. No effects are anticipated.

17. Leavitt Substation to Millwood Substation

This seven mile long segment crosses Johnstonville Road and SR 36, and spans the Susan River on existing power line poles. Traffic control and mobilization will be required.

18. Lassen County Office of Education Lateral

This segment on existing power line poles will follow county roads with one span across the Susan River and into a rural residential area.

19. Lassen College Lateral

This segment will utilize an existing utility corridor to deliver the cable to the east side of campus.

3.12 Visual Resources

The detailed Visual Analysis Summary is presented in Appendix C. The following characterizes the visual nature of the project area surrounding the Proposed Action.

3.12.1 Project Background

Sections of the Proposed Action would traverse the Beckwourth and Mt. Hough Ranger Districts within the Plumas National Forest (PNF). This area of the Plumas National Forest is characterized by steep and rugged mountainous terrain; portions of the existing transmission line are difficult to access. State Highway 70 is the primary travel corridor through these Ranger Districts. State Highway 70 also travels along the Wild and Scenic Feather River providing access to forest roads and recreation facilities and has been designated the Feather River Scenic Byway. The visual analysis addresses the degree of impact the proposed fiber optic project

might have on visual resources seen from the State Highway 70 travel corridor between the towns Portola and Quincy, California.

Other sections of the Proposed Action would traverse the BLM's Eagle Lake Field Office (ELFO), Susanville, CA and Sierra Front Field Office (SFFO), Carson City, NV. This area of the BLM is characterized by mostly flat desert terrain with low sagebrush -scrub vegetation and alkali areas. The location of the existing transmission line in the BLM desert environment is vastly different from the steep mountainous terrain in the Plumas National Forest along the Feather River Scenic Byway.

On BLM-administered lands, the Proposed Action to hang fiber cable from existing electrical power line structures located in a designated utility corridor (*West-wide Energy Corridor FEIS* (DOE/BLM 2008) would traverse approximately one mile of Class II Visual Resource Management (VRM) designated area and about 1.74 miles of Class III VRM designated area (BLM Eagle Lake Field Office, *Proposed Resource Management Plan and Final Environmental Impact Statement*, May 2007).

The VRM objectives along this portion of US395 are as follows:

- **Class II Objective:** To retain the existing character of the landscape. The level of change to the characteristic landscape should be low
- **Class III Objective:** To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.

3.12.2 Visual Characteristics of the Proposed Fiber Cable

The fiber cable would be blown into a conduit approximately one inch in diameter or less. The conduit would be black in color. Black is typically preferred because it prevents surface reflectivity coming from the utility and because it is neutral and more easily absorbed into the textures and colors of the surrounding landscape. The size and color of the cable that houses the fiber cable would appear similar to a phone line cable.

3.12.3 Overhead Installation Methodology for the Proposed Fiber Cable Line

The fiber cable would be strung onto existing power line poles within the existing 69kV power line corridor that traverses Beckwourth and Mt. Hough Ranger District lands and the existing transmission line that traverses 11.12 miles of the BLM's ELFO and SFFO. Three power line conductors are currently strung on support poles down the main corridor with intermittent distribution lines coming off the main line. The fiber optic cable would be hung at a distance below the conductors that would meet National Electrical Safety Code (NESC).

In the PNF, the existing ROW easement is 40 feet wide and the conduit is proposed to be strung along 13 miles crossing national forest lands. Within national forest lands, a combination of truck travel and foot travel would be used to access power poles for hanging the cable. Installation trucks would travel to power poles within the corridor using existing and maintained

forest service system roads and power line maintenance access roads. Power line access roads were installed under permit with the Plumas National Forest and are currently used for maintaining and repairing the 69kV line where and as needed. Roads are accessed primarily for keeping trees and vegetation clear of the line for unobstructed power access and for fire prevention and safety.

Approximately 80 existing poles on the PNF would be accessed on foot. Most of these remote poles stand in heavily forested, mountainous terrain on Plumas National Forest lands. The fiber optic cable would be strung by hand by installation crews walking the corridor and climbing individual poles to attach the conduit. Where hand crews are to be used for segments in particularly mountainous terrain, trucks would be positioned at distant ends of these mountainous segments to mechanically assist in feeding the cable to crews who would be stringing the line out on foot. Segments of fiber optic cable would be hung by hand crews walking the existing power line corridor with no impact to the access roads or damage to vegetation beyond clearing permitted by the Forest Service under power line maintenance plans.

The power line and proposed route for the fiber optic cable follow State Highway 70 ROW corridor; they run roughly parallel to the highway but are located to the north and out of view from the scenic travel route. The power line corridor to be used was originally cut through the forest and is mostly tucked into dense stands of coniferous pine and fir trees with intermittent high meadow openings. From Portola to Quincy, the line criss-crosses the Feather River Scenic Byway at four points. The four crossings are locations within national forest lands where the proposed fiber cable could be seen from the scenic byway once it is strung onto existing poles.

On the BLM-administered lands in California, the existing transmission line ROW easement is 40-feet wide on existing overhead pole structures that are approximately 60 to 65-feet high. The existing power line generally parallels US395 from Hallelujah Junction to Susanville, CA; there is a small segment, approximately 900 feet (0.17 miles) in length, that is within a 40-foot ROW near Quincy, CA along SH 70. On BLM-administered lands in Nevada within the NDOT US395 ROW, 1.3 miles of underground installation would occur.

The majority of these poles would be accessed using a bucket truck; some poles may be climbed due to rocky terrain and for efficiency purposes; however, the typical construction methods as identified in Appendix E would be utilized.

3.12.4 Project Background Summary

Because of the small diameter and black color of the proposed cable, it will appear subordinate to the existing three power cables when crossing the scenic byway at four locations and might not be readily visible to the unaided eye when traveling at highway speeds. Additionally, because the existing power line corridor and power poles will be used to support the proposed fiber cable, the cable will not be recognized as constituting new infrastructure. More importantly, because of available and permitted maintenance access roads, no new access roads or utility corridors or trench lines are proposed to be cut through mountainous terrain, forested slopes or open meadows along the entire distance of the planned route. And because difficult terrain will be accessed on foot and the remaining route will be accessed using standard trucks

typical of maintenance operations, no temporary scarring of terrain or vegetation is anticipated. The appearance of the fiber optic cable should be easily absorbed into the landscape as a subordinate element even at high viewer sensitivity levels at highway crossings along the Feather River Scenic Byway and US395. The methods for installing the cable will not create any new landscape cuts or scarring and thus will retain the qualities of the existing landscape as it is currently seen from the Feather River Scenic Byway and US395.

3.12.5 Other Federal, State and Private Rights of Way

The project will involve construction and installation of overhead fiber conduit on existing pole infrastructure within a number of different surroundings including existing rural ROWs adjacent to agricultural fields and natural areas, areas adjacent to rural residential areas, and in existing developed areas. The existing US395 ROW traverses rural developed and undeveloped lands in California and Nevada. Some sections are located adjacent to BLM-administered lands.

3.13 Land Use and Planning

3.13.1 City of Reno

The Proposed Action will be initiated at the intersection of US Highway 395 and N. McCarran Boulevard in North Central Reno. The fiber optic cable will connect to existing fiber optic backbone near the northwest corner of Highway 395 and N. McCarran utilizing an underground vault. A southerly lateral will commence from this point to connect with existing backbone fiber optic cable located at the Wells Fargo Bank building at 200 S. Virginia Street. The lateral will utilize existing underground conduit (dark fiber) to traverse the approximate 3.6 miles from N McCarran to S. Virginia Street. The existing land uses along this entire route can be characterized as ‘urban development’ although some parcels are vacant or awaiting redevelopment. All infrastructure is in place.

Existing underground conduit will be utilized within the rights-of-way of existing City streets including S. Virginia Street, E. Second Street, N. Lake Street, E. Sixth Street, Sutro Street, and N. McCarran Boulevard. South Virginia Street, S. Second Street, N. Lake Street, and E. Sixth Street to N. Wells Avenue are within areas with a base zone of Mixed Use (MU) and an overlay zone of Downtown Regional Center (DRRC). East Sixth Street between N. Wells Avenue and Sutro Street, and Sutro Street between E. Sixth Street and Interstate 80 are within areas with a base zone of MU and an overlay zone of East Fourth Street Transit Corridor. Sutro Street north of I-80 to N. McCarran Boulevard is designated for a variety of urban uses including MU, Public Facility (PF) (Hug High School), Industrial (I), Multi-family Residential (MF), Community Commercial (CC), Large Lot Residential (LLR), and Single-family Residential (SF). North McCarran Boulevard between Sutro Street and US Highway 395 is designated for Arterial Commercial (AC), PF, MF, and I. (Refer to Map No. 395A.)

Fiber optic cable will be placed underground and within the US Highway 395 ROW for the full segment between Old US395 Business Loop and the California-Nevada State Line. This segment traverses both City of Reno and Washoe County territory. The portion within the City of Reno (N. McCarran Boulevard to Red Rock Road; a distance of 8.8 miles) is in an area

designated for a variety of urban uses including Commercial (AC and CC), Residential (SF and MF), Mixed Use (MU), Planned Unit Development (PUD), and Unincorporated Transition (UT). However, the actual Highway 395 ROW is not designated for specific land uses, as the zoning districts do not include State Highway land. (Refer to Maps No. 395A and 395B.)

The City of Reno Community Development Department indicates that a Site Plan Permit may be required for the fiber optic connections at McCarran and 395, and at the Wells Fargo Bank building. Department records do not indicate previous Site Plan approvals for telecommunications uses at these locations. (Bowden, pers. comm. 2011).

The City of Reno Public Works Department indicates that all work within City street ROW's will require an Encroachment and Excavation Permit. Consideration of a Franchise Agreement with the City would also need to be addressed (Truhill, pers. comm. 2010).

3.13.2 Washoe County, Nevada

Two segments of the Proposed Action are located within Washoe County: the US Highway 395 corridor between the City of Reno northern limits and the California-Nevada State Line; (approximately 5.9 miles); and the Red Rock rural community, accessible from US Highway 395 approximately 9 miles north of Hallelujah Junction.

In the US Highway 395 corridor, fiber optic cable is proposed to be placed overhead on existing power poles and will be located along the westerly boundary of the ROW. No broadband services will be provided along this route from the Reno connection point to Hallelujah Junction. This area has a number of designated land uses including Tourist Commercial (TC), Neighborhood Commercial (NC), High Density Rural (HDR), Low Density Suburban (LDS), Medium Density Suburban (MDS), High Density Suburban (HDS), General Rural Residential (GRR), and Open Space (OS). However, the actual Highway 395 ROW is not designated for specific land uses, as the zoning districts do not include State Highway land. (Refer to Maps No. 395B and 395C.)

Washoe County Development Code Section 110.438.20(e) exempts excavation for the purpose of installing utilities from the requirements of a grading permit. Therefore, no special permit would be required by the County (Freund, pers. comm.).

Red Rock Lateral (3.9 miles)

The Red Rock rural community will be served by a fiber optic lateral from the main Long Valley Transmission line along an existing PSREC overhead distribution line into the Red Rock community. The California portion of the lateral (approximately 1.1 miles) is on land designated by Lassen County as Extensive Agriculture (EA), while the Nevada portion (2.8 miles) is designated by Washoe County as Open Space (OS) and Low Density Residential (LDR). (Refer to Map No. 395G.)

Red Rock is a low density rural residential area (LDR) which allows single-family dwellings with a minimum lot size of 8-acres. There are approximately 650 residential parcels within the

community, which is approximately 58% built out. The community is served by the Red Rock Volunteer Fire Department, at whose station the fiber optic lateral will terminate.

3.13.3 Sierra County, California

Two segments of the Proposed Action are located within Sierra County: the US Highway 395 corridor between the California-Nevada State Line at Border Town and the Sierra County-Lassen County Line; and the southerly portion of the lateral line traversing south from the SR 70 Corridor to Loyalton.

The relatively short segment within the US Highway 395 corridor (3.2 miles) will have fiber optic cable buried within the westerly portion of the Highway 395 ROW. Land uses adjacent to this area includes Agriculture (A-1; 160-acre minimum parcel size) on the south side adjacent to the State Line, and General Forest (GF; 640-acre minimum) on the north side adjacent to Lassen County.

As a Critical Anchor Institution (CAI), the City of Loyalton will be served by a fiber optic lateral from the main SR 70 Corridor line in Plumas County along an existing PSREC overhead distribution line that traverses the Sierra Valley from the SR 70 corridor to the City (total of 9.2 miles). A 7.7 mile portion of this lateral line in Plumas County is designated as Agricultural Preserve (AP), while the 1.5 mile segment in Sierra County (to the Loyalton City Limits) is designated as Agriculture (A-1;160-acre parcel size). (Refer to Maps No. 70B and 70C.)

3.13.4 City of Loyalton

From the intersection of Beckwith Road (County Road A-24) and Poole Lane, the fiber optic cable will be strung on existing distribution poles within existing City streets for approximately 1.2 miles to the City Hall and Fire Station at 210 Front Street. Local land use along this route includes: Recreation (R) (City Park) and Single-family Residential (R-1) on Beckwith Road from Poole Lane to Fourth Street; Multiple-Family Residential (R-3) and Community Commercial (CC) on Fourth Street between Beckwith Road and Main Street (SR 49); Community Commercial (CC) along Main Street from Fourth Street to First Street; CC, R-3, and R-1 on First Street between Main Street and Front Street; and R-3 and R-1 on Front Street between First Street and City Hall. (Refer to Map No. 70C.)

It is not anticipated that the City would need to issue an Encroachment Permit. (John Cussins, Maintenance Foreman, personal communication, November 6, 2010)

3.13.5 Lassen County, California

The primary northerly fiber optic cable traverses a large portion of Southeastern Lassen County, from south of Hallelujah Junction to the City of Susanville, with lateral cable to the Sierra Army Depot and the Lassen County Office of Education Offices. A total of 80-miles of fiber optic cable will be installed within Lassen County through a variety of land uses as described below.

Sierra County-Lassen County Line to Hallelujah Junction (US 395/SR 70 Intersection)

This 4.9 mile segment consists of underground cable along the westerly ROW of US Highway 395, ending on state property at the existing Caltrans sand storage building on the north side of SR 70. The area around the intersection (including the sand storage building) is designated as Commercial (C), while the fiber route south to the County line is Extensive Agriculture (A-3) or Upland Conservation (U-C). (Refer to Maps No. 395D and 395E.)

Overhead placement of fiber optic cable on existing PSREC power lines will begin at Hallelujah Junction. One fiber cable will proceed west on the SR 70 Corridor, while the other will head north along the US 395 Corridor. This area will also be the location for the system re-generation facility, which will be housed in a 20-foot by 20-foot modular building adjacent to the Caltrans sand storage building.

Hallelujah Junction to Herlong Substation (27 miles)

The existing Long Valley 69kV Transmission Line and distribution line, which are westerly and parallel to US 395 will carry the fiber cable for this segment to the existing PSREC Herlong Substation adjacent to US 395. The Substation parcel is zoned General Agriculture (A-1). The line route will pass to the west of the community of Doyle, which is designated as Town Service (T-C) which allows a variety of commercial and single-family residential uses. Adjacent and south of Doyle is the Long Valley Intensive Agricultural area designated Exclusive Agriculture (E-A). The remainder of this segment is designated as General Agriculture (A-1) or Upland Conservation (U-C). (Refer to Maps No. 395E, 395F, 395H, 395I, and 395J.)

The Red Rock lateral is within this segment and was described in the Washoe County section. (Refer to Map No. 395G.)

Herlong Substation to Sierra Army Depot Lateral (6 miles)

At the existing Herlong Substation, the fiber cable will continue northwesterly on existing power line poles along the US 395 Corridor toward Milton, while an overhead lateral on existing PSREC power poles will proceed north along Garnier Road (County Road A-26) to the existing Patton Substation (4.2 miles), then east to one of the Critical Anchor Institutions (CAI) at the Sierra Army Depot (2.1 miles). The Patton Substation is leased from the Federal government and is zoned Institutional Use (I-1). The non-military property along this lateral is designated as General Agriculture (A-1) and also includes portions of the Doyle State Wildlife Area. (Refer to section on Biological resources.) (Refer to Map No. 395K.)

Herlong Substation to Milford Substation (11 miles)

This overhead segment on existing power line poles is parallel and adjacent to US 395 and traverses a portion of the Honey Lake Valley area. An area northeast of US 395 between County Road A-25 (Herlong Access Road) and County Road A-26 (Garnier Road) is designated for Intensive Agriculture (A-3). The existing Milford Substation is zoned General Agriculture (A-1). (Refer to Maps No. 395K, 395L and 395M.)

Milford Substation to Edgemont Substation (14 miles)

This overhead segment on existing power line poles continues parallel to US 395, passing through the community of Milford and along the Honey Lake Valley and Honey Lake. Milford is designated as Town Service (T-C) which allows a variety of commercial and single-family

residential uses. Between Milford and Honey Lake is an area designated as Intensive Agriculture (A-3). At Buntingville, the power line turns north to the existing Edgemont Substation and away from US 395. This area is a portion of the Janesville Planning Area, with Intensive Agriculture (A-3) interspersed with Agricultural Residential (A-2). The existing Edgemont Substation is zoned A-2-B-4 (Agricultural Residential; 4-acre minimum lot size). (Refer to Maps No. 395 M, 395N and 395O.)

Edgemont Substation to Leavitt Substation (8 miles)

From the Edgemont Substation, the fiber cable proceeds north on existing PSREC power lines, passing through the Bass Hill Wildlife Area (refer to section on Biological resources), along River Pass Road, crossing US 395 and the upper reaches of the Susan River to Center Road (County Road A-27). From there, the route turns left and proceeds westerly to the Leavitt Substation which is adjacent to three Critical Anchor Institutions (CAI): the California Correctional Center; the High Desert State Prison; and the High Sierra Cogeneration Power Plant, which is owned by PSREC. These CAI's will be served by an existing dark fiber conduit attached to an existing overhead 69kV line.

This area is within the Standish–Litchfield Planning Area and is designated for Extensive Agriculture (A-3), Rural Residential (A-2-B-D), Urban Residential (R-1), and Institutional (I-1) uses. The Leavitt Substation will also serve as a centralized network management facility (node), which will be located in a 12-foot by 20-foot modular unit adjacent to the fenced substation on PSREC property currently used for parking. The Substation is zoned Agricultural Residential; 5-acre minimum parcel size (A-2-B-5-A). (Refer to Maps No. 395P and 395Q.)

Leavitt Substation to the Millwood Substation (7 miles)

From the Leavitt Substation, fiber cable will be placed on existing power line poles along Center Road for three miles where it intersects a Lassen Municipal Utility district (LMUD) 60 kV overhead transmission line at Travis Lane. This transmission line follows the abandoned Union Pacific railroad line, crosses SR 36 and terminates at the LMUD Millwood Substation at the Susanville City Limit. From there, the fiber cable would continue overhead on existing power line poles on City streets. This segment is within the Johnstonville Planning Area and the Susanville Vicinity Area Plan and consists of land designated for Intensive Agriculture (A-3), Rural Residential (A-2-B-D), Town Service (T-S), Intensive Agriculture (A-1), and Industrial (M-1). (Refer to Maps No. 395Q and 395R.)

Travis Lane to Lassen County Office of Education Lateral (2 miles)

A southerly lateral utilizes LMUD distribution power poles along Johnstonville Road to the Critical Anchor Institution (CAI) at the Lassen County Office of Education at 472-013 Johnstonville Road North. This lateral is also within the Johnstonville Planning Area with land use designations for town Service (T-S), Rural Residential (A-2-B-D), and Industrial (M-1). (Refer to Map No. 395R)

Scenic Corridor

The Lassen County General Plan designates US Highway 395 from just north of Hallelujah Junction to mid-point along Honey Lake (approximately 40 miles in length) as Scenic Corridor. 'Scenic Corridor' is described as “the area along and outside of a highway right-of-way that is

generally visible to persons traveling the highway. (Lassen County General Plan Glossary, page G-18) The existing PSREC 69 kV Long Valley Transmission Line is visible from this segment of US Highway 395. However, the fiber cable will not be readily discernible from the existing power lines as the cable is black and less than one-inch in diameter.

3.13.6 City of Susanville

From the LMUD Millwood Substation, fiber cable is anticipated to be placed on existing overhead power poles for a total of 5.27 miles to serve the following Critical Anchor Institutions (CAI): Lassen CoE, Windjammer Digital Cable, and Lassen Community College. The route and the respective land uses are as follows:

- From the Millwood Substation north along Grove Street and entering the City at Riverside Drive.
- Northerly on S. Laurel Street to Main Street (SR 39). South Laurel Street is designated as Single-family Residential (R-1) and General Commercial (C-2).
- West on Main Street to N. Weatherlow Street. This segment of Main Street comprises the commercial center of the community and is designated C-2 and Public Facilities (PF) (Lassen Union High School).
- North on N. Weatherlow Street, serving the CAI Windjammer Cable at 253 N. Weatherlow, to Chestnut Street. This area is designated Uptown Business District (UBD), R-1, Duplex/Triplex Residential (R-3), C-2, and Open Space (O-S) (Memorial Park).
- East on Chestnut Street to Ash Street (SR 139). This mixed use street includes R-1, R-3, PF, Commercial-Light Industrial (C-M), C-2, and Multiple-family Residential (R-4).
- Northeast on Ash Street to just north of the Sleepy Hollow Mobile Home Park (which is in the County). This section of Ash Street is R-1, R-4 and C-M.
- East and north along an existing LMUD power line terminating at the CAI Lassen Community College eastern boundary. This area is designated Public Facilities (PF). (Refer to Map No. 395R.)

Diamond Mountain Casino and Hotel Lateral (0.8 miles)

From Chestnut Street just east of Paul Bunyan Road, the CAI Diamond Mountain Casino and Hotel lateral will proceed north along an existing utility corridor to Skyline Road, then westerly on Skyline to the Casino. This alignment is designated R-3, R-4, C-2, R-1, and PF (Lassen Cemetery). (Refer to Map No. 395R.)

3.13.7 Plumas County, California

The primary westerly fiber cable traverses a large portion of Southeastern Plumas County, from west of Hallelujah Junction to Quincy, with lateral cable to the City of Loyalton, Marble Substation, The City of Portola; Eastern Plumas Health Care, PSREC Headquarters, New Day Broadband, Graeagle, Plumas National Forest Service Offices, Plumas County Office of Education Offices, Plumas District Hospital, and Feather River College. A total of 68-miles of fiber cable will be installed within Plumas County through a variety of land uses as described below.

Lassen County-Plumas County Line to Chilcoot Substation (2 miles)

This segment traverses overhead along SR 70 on existing PSREC distribution lines on the south side of the highway to the existing Chilcoot Substation. Land uses along this segment include Agricultural Preserve (AP), Secondary Suburban (S-3), Rural Residential; 20-acre minimum parcel size (R-20), Suburban Residential (S-1); plus Convenience Commercial (C-3), S-3, S-1, and Light Industrial (I-2) in and around the community of Chilcoot. The Chilcoot Substation is zoned Light Industrial (I-2). (Refer to Map No. 70A)

Chilcoot Substation to Beckwourth Substation (12 miles)

At Chilcoot, the existing overhead power lines turn south, and then parallel to the Union Pacific Railroad line to Beckwourth. Land uses along this segment include significant concentrations of Agricultural Preserve (AP), along with Rural Residential, 10-acre minimum parcel size (R-10), Suburban Residential (S-1), and Convenience Commercial (C-3) near Beckwourth. The Beckwourth Substation is zoned Periphery Commercial (C-2). (Refer to Maps No. 70A, 70D and 70E.)

The Loylton lateral is within this segment and was described in the Sierra County section. (Refer to Maps No. 70B and 70C.)

Beckwourth Substation to Portola (5 miles)

This segment on overhead PSREC power line poles traverses along SR 70 from Beckwourth to the City of Portola lateral takeoff. Land uses include AP, S-1, R-10, C-3 in the Grizzley road area and Plumas National Forest land.

Marble Substation Lateral (5 miles)

Just west of Beckwourth, the Marble lateral traverses on both sides of Beckwourth Calpine Road (County Road A-23) on existing PSREC power poles to the existing Marble Substation. This area is part of the Sierra Valley and is designated Agricultural Preserve (AP). The Marble Substation is zoned AP. (Refer to Map No. 70F.)

Portola to Mohawk Substation (11 miles)

This segment traverses north and parallel to SR 70 through Plumas National Forest land and the communities of Delleker, Mohawk Vista and Blairsden. Typical land uses in this area are Single-family Residential; 2-acre minimum lot size (2-R), Suburban Residential (S-1), Rural Residential, 10-acre minimum parcel size (R-10), Secondary Suburban (S-3), and General Forest (GF). The Mohawk Substation is zoned GF. (Refer to Maps No. 70G, 70H, and 70I.)

New Day Broadband Lateral (0.3 miles)

West of Portola at Delleker Road, an overhead lateral will traverse from the main fiber cable to a CAI, New Day Broadband of Portola, LLC at 65 Delleker Road. Land uses along Delleker road include Single-family Residential; 0.5 acre minimum lot size (R-2); and Periphery Commercial (C-2).

PSREC-Got SKY Lateral (0.14 miles)

Located just west of Delleker and adjacent to PSREC electrical power lines, two CAI's will be co-located at 73233 State Route 70, the Plumas Sierra Rural Electric Cooperative headquarters: PSREC and Got SKY internet access and support. This location will also house the fiber Network Operating Center (NOC) with its round-the-clock monitoring and surveillance. Land uses in the area are S-1, R-10 and Periphery Commercial (C-2).

Graeagle Lateral (1 mile)

Just east of Blairsden, the Graeagle lateral will extend south to serve the Graeagle community from an existing PSREC substation. This is a mixed use area consisting of Single-family Residential, 7-units per acre (7-R), 3-units per acre (3-R), and 2-units per acre (2-R); Multi-family Residential (M-R), Convenience Commercial (C-3), Periphery Commercial (C-2), Recreation Commercial (R-C), Recreation Open Space (Rec-OS) and Light Industrial (I-2). The Graeagle Substation is zoned I-2. (Refer to Map No. 70H.)

Mohawk Substation to Quincy No. 2 Substation (17.5 miles)

This segment continues to traverses north and parallel to what is now SR 70/89 through Plumas National Forest land then to the south side of SR 70/89 past the community of Cromberg and through Long Valley, then back to the north side of SR 70/89 through Spring Garden and across to the south side of SR 70/89 at Thompson Valley and into East Quincy. Typical land uses in this area are Secondary Suburban Residential (S-3), Rural Residential, 10-acre minimum parcel size (R-10), Agricultural Preserve (AP), General Forest (GF) and Timberland Production (TPZ). The Quincy No. 2 Substation is zoned R-10. (Refer to Maps No. 70I, 70J, 70K, and 70L.)

The Quincy No. 2 Substation will also serve as a centralized network management facility (node), which will be located in a 12-foot by 20-foot modular unit within the fenced substation on PSREC property.

Quincy Extension (4.6 miles)

From the Quincy Substation No. 2, overhead cable on existing power line poles will traverse from east to west through Quincy, an unincorporated community and the County Seat of Plumas County; approximately 4.58 miles of underground installation is proposed within Quincy. Along the way, four CAI's will be served. After traversing 2.8 miles on E. Main Street (SR 70-89) and on to Lawrence Street, the first will be the Plumas National Forest Service headquarters at 159 Lawrence Street (SR 70-89 Westbound). The conduit will continue westerly on Lawrence Street to Church Street, then south for one block where it will serve Plumas County Office of Education at 50 S. Church Street. From there, the route continues westerly on Main Street (SR 70-89 Eastbound) and onto Bucks Lake Road for service to Plumas District Hospital at 1065 Bucks Lake Road. The final CAI to be served will be Feather River Community College from Bucks Lake Road, then north on an existing overhead PSREC distribution line to the college property. (Refer to Map No. 70L.)

Land uses in this segment include 2-R, 3-R, 7-R, C-2, Core Commercial (C-1), I-2, Mobile Home Combining (MH), and General Forest (GF). The overhead line from Bucks Lake Road to the college will traverse the Spanish Creek flood plain (FP) area.

3.13.8 City of Portola

A lateral from the main SR 70 Corridor fiber cable will serve two CAI's in Portola: the City of Portola and Eastern Plumas Health Care. The fiber optic lateral will begin at the north City Limits from the existing PSREC overhead electrical power line just north of Joy Way, and will be placed in underground conduit southerly along Gulling Street for 0.75 miles. Two proposals are being considered to cross the Middle Fork of Feather River and the railroad tracks: 1) under deck attachment to the existing Gulling Street bridge; or 2) utilize existing power poles on the downstream side of Gulling Street Bridge. On the south side of the bridge, underground conduit will continue to City Hall at 35 Third Avenue, a total distance of 0.36 miles. From Gulling Street and First Avenue, a sub-lateral will traverse easterly in underground conduit for 0.3 miles to the Eastern Plumas Health Care Hospital at 500 First Avenue. (Refer to Map No. 70G.)

Land uses along these routes include:

- Low Density Residential (LDR) and Medium Density Residential (MDR) north of SR 70.
- Core Commercial (CC) along E. Sierra Street (SR 70).
- Open Space (OS) along the north side of the river.
- Public/Quasi-Public (P/QP), Parks (PR), Commercial Mixed Use (CMU), and CC along Gulling Street and First Avenue south of the river.

Feather River Scenic Byway

SR 70 is a Forest Service scenic byway that parallels the former Western Pacific (now Union Pacific) Railroad Feather River Route. The portion of SR 70-89 between Blairsden and Quincy is also eligible for the California Scenic Highway System.

3.13.9 Recreation

The region is recognized for its outstanding outdoor recreation opportunities which attract visitors and contribute significantly to the regional economy. Following is a list of recreational attractions that are within or immediately adjacent to the fiber optic cable route. The list is broken down by county.

Lassen County, California

Billing itself as an outdoor person's paradise, Lassen County touts its clear water and clean air along with a wide variety of landscapes and seasons. The following recreational opportunities are available along the 395 Fiber Optic Route:

Annual "Doyle Days" – lizard races, street dancing, vendors, fun, games, contests, prizes, parade, competition and food; in Doyle, end of July.

Bass Hill Wildlife Area – 5,553 acres of rolling hills, mostly sagebrush and grasslands; acquired by Cal Fish & Game to preserve winter range for the Bass Hill sub-herd of the Doyle deer herd; six miles southeast of Susanville.

Bizz Johnson National Recreation Trail – enjoy the scenic beauty of the Susan River by way of the rail line converted to a trail; 26-miles, Susanville to Westwood.

Campgrounds – Honey Lake at Milford; Laufman south of Milford; Meadowview west of Doyle.

Coppervale Ski Hill – fifteen miles west of Susanville on SR 36; owned by Lassen College and designed for beginners and families alike. 530-257-9965.

Diamond Mountain Golf Club – 18-hole, par 72, 6,454 yards; located off Richmond Road, 5-miles south of Susanville.

Fishing – on the Bizz Johnson Trail along the Susan River; adjacent to Susanville.

Fort Sage Special Recreation Management Area – 22,000 acres of high desert land managed by the Bureau of Land Management for off-highway vehicle use (motorcycle, ATV and 4WD) on 90-miles of trails, and winter deer range; located east of US 395 between Doyle and Herlong.

Fredonyer Snowmobile Park – ten miles west of Susanville on SR 36; 80-miles of groomed trails with spectacular views and technically challenging trails.

Historic Uptown Susanville Mural Tour – murals of historic events in Lassen County; start at S. Roop and Cottage Streets, Susanville.

Historic Uptown Susanville Stroll – original buildings and homes of the second oldest town in the western Great Basin. Copy of the tour guide at the Museum.

Honey Lake Motocross “World Off Road Championship Event” – Honey Lake Motocross Park, Milford, Mid-May. 539-827-2639.

Honey Lake Valley Riders “Horse Show” – Janesville, Mid-May.

Honey Lake Wildlife Area – 7,667 acres of sagebrush surrounding a shallow lake; migratory birds, nesting waterfowl, birds of prey; operated by Cal Fish & Game.

Lassen County Air Fair – Experimental Aircraft Association Chapter No. 794; Susanville Municipal Airport, Mid-August.

Lassen County Fair – Four day run in Susanville, end of July (www.lassencountyfair.org).

Lassen Historical Museum – different artifacts from the area’s past; operated by the Lassen Historical Society and located at 75 N. Weatherlow Street, Susanville.

Native American Pow-Wow – Susanville Indian Rancheria, Susanville Mid-May.

Lassen National Forest – hiking trails and wilderness areas; Forest Service Headquarters, 2550 Riverside Drive, Susanville.

Pioneer Cemetery – established in 1860; located at Pine and Court Streets, Susanville.

“Rails to Trails Festival” – Lassen Land and Trails Trust, at the Historic Railroad Depot, Susanville, Early October. Chili cook-off, handcar races, caboos tours.

In coordination with the Bizz Johnson Marathon (www.coastaltrailruns.com).

Roop’s Fort – trading post and oldest building in the county. Located at the corner of Main Street and Weatherlow Street by Memorial Park in Susanville.

Susanville Balloon Races – hot air balloons over Labor Day weekend; launch site at Richmond School, Susanville.

Susanville Bluegrass Festival – Lassen County Fairgrounds, Susanville, Late June.

Susanville Railroad Depot – placed on the National Register of Historic Places; serves as a visitor’s center, museum and trailhead for the Bizz Johnson Trail.

Susanville Ranch Park – 1,100 acre day-use park with hiking and biking trails, sports fields, cross-country skiing; 1.2 miles from Main Street, Susanville 530-257-3252.

Susanville Symphony Society – a unique community organization that promotes classical music, supports music education, and creates a passionate experience for musicians and audiences. www.susanvillesymphony.com

Plumas County

Touting its rugged canyons, crystal clear lakes, grassy meadows, trout-filled streams, fresh pine forests, and brilliant star-filled skies – this is the setting for Plumas County recreation. The following recreational opportunities are available along the 70 Fiber Optic Route:

Biking – Summer Solstice Century Ride, End of June, Quincy. 800-326-2247.

Camping – Plumas-Sierra County Fairgrounds, Quincy; Spanish Creek – Forest Service, SR 70 Keddie; Plumas-Eureka State Park, Johnsville.

County Picnic and Graffiti Night – car, home and garden show, Early June, Quincy

Cowboy Poetry Show – Mid-March and September, Vinton.

Dixieland Jazz Concerts – Sundays, Late May to Early September, Graeagle.

Fall Fest – Early October, Quincy.

“Farmers Market” – Thursday evenings June 24 through September 9, live music as well, Downtown Quincy

Feather River Inn Golf Course – 9-hole, par 27; located on SR 70-89 one mile west of Blairsden.

Feather River Natural Scenic Byway – parallels the Western Pacific Railroad line Feather River Canyon; fall colors, Highway 70 between Quincy and SR 395.

Feather River Park Resort – 9-holes, par 35; located SR 89 and A-14, Graeagle.

Fishing – Spanish Creek, Rainbow trout; Middle Fork-Feather River, Rainbow and Brown trout.

Graeagle Meadows Golf Course – 18-holes, par 72, located on SR 89, Graeagle.

High Sierra Music Festival – with international flavors of music on multiple stages, Early July, Quincy. www.highsierramusic.com.

Hiking – Madora Lake Trail within Plumas-Eureka State Park; moderate hike.

Holiday Tree Lighting – Portola; Main Street Sparkle and Light Parade – Quincy; Graeagle Holiday Festival and Tree Lighting – Graeagle; Santa Train – Portola; all in Early-December.

Horseback Riding – Graeagle Stables (www.reidhorse.com); Greenhorn Creek Guest Ranch (www.greenhornranch.com); New England Ranch (www.newenglandranch.com).

Kids Fishing Day – Graeagle Mill Pond, Mid-May

“Mountain Harvest Festival” – blends an arts and crafts show with a micro-brew pub tasting and music; Early-October, Quincy.

Plumas County Courthouse – imposing four-story building constructed in 1921 with huge marble posts and staircases; Courthouse Square, Quincy

Plumas County Museum – and the start of a self-guided walking tour of historic Downtown Quincy; located behind the Courthouse at 500 Jackson Street, Quincy

Plumas-Eureka State Park – with the historic Gold Rush town of Johnsville, an early mining town, five miles west of Graeagle on Johnsville Road.

Plumas National Forest – campgrounds, hiking trails and wilderness areas; Forest Service Headquarters, 159 Lawrence Street, Quincy.

Plumas Pines Golf Course – 18-hole, par 72; located at 402 Poplar Valley Road, Graeagle.

Plumas-Sierra County Fair – Four day run in Mid-August, Fairgrounds, Quincy.

“Portola City Lights” – Friday evening concerts in the Portola City Park, July and August, Portola

Portola City Park – features a swimming pool, playground, bandstand, skate park, tennis courts, volley ball court; on Gulling Street, Portola.

Quincy Turkey Trot – Thanksgiving, Quincy.

Railroad Days – Mid-August, Portola.

River Rafting – Middle Fork of the Feather River, Clio to Mohawk Bridge.

Western Pacific Railroad Museum – world renowned with a large collection of train cars and locomotives, train rides; First and Main Streets, Portola.

Williams House Museum – 1931 log home on the California Historical Register; 424 E. Sierra Avenue (SR 70), Portola

Sierra County

“Sierra County is located in the heart of the Northern Section of the Sierra Nevada Mountains. It remains today much as it was over 100 years ago. The rivers run free and the forests and meadows wrap their beauty around mountains that defy contemporary development. It is simply beautiful.”

Sierra Gold Visitor Brochure

The following recreational opportunities are available in Loyalton near the Fiber Optic Route:

Fourth of July Parade and Deep Pit Barbeque – sponsored by the Rotary Club

“Show and Shine Classic Car Show” – craft fair, music, fireman’s barbeque, horse shoe tournament; benefits the Fire Department, End of August

The Sierra Buttes Trail Stewardship has designated Loyalton for a portion of the “Sierra Valley Rim Trail. In addition, the level roads of the Sierra Valley are popular with bicycle enthusiasts and long distance riders.

The City of Loyalton has incorporated recreational opportunities into the High School-Elementary School-City Park complex between Beckwith Road and Third Street on the north side of town. Facilities include: a baseball diamond; four softball diamonds; a quarter-mile running track; two sports courts; two tennis courts; and a skateboard park.

Washoe County

The Red Rock Community is part of the North Valleys Area Plan (Washoe County Community Development Department, September 2010). The Recreational Opportunities Plan does not indicate any recreation areas, trails or trailheads in the Red Rock area.

The community has been set up to accommodate equestrian trails, and in fact many of the residents own horses and are involved in horsemanship and riding. Fenced corridors within the community allow for recreational horse riding.

3.14 Socioeconomic Resources

3.14.1 Lassen County, California

According to county data (City-Data.com 2010a), Lassen County comprises 4,557 square miles and is classified as a rural county. Major employers in Lassen County include Federal (Sierra Army Depot, Herlong Federal Corrections Institute, Bureau of Land Management, Lassen National Forest), state (California Correctional Center; High Desert State Prison, Caltrans, CalFire, California Highway Patrol), local agencies (Lassen County, City of Susanville, Lassen Union High School District, Susanville Elementary School District, Fort Sage Unified School District, Lassen Community College) and private (Northeastern Rural Health, Banner Lassen Medical Center, Diamond Mountain Casino and Hotel, Walmart). There are 359 private, non-farm businesses, mostly in service industries. The workforce is categorized as 47% private, 43% government, and 10% self-employed.

Residential building permits issued went from 59 in 2007 to 18 in 2009. Renters comprised 32% of the housing market (State average is 43%). The workforce is 10,461, up 906 from 2000. The unemployment rate went from 7.1% in 2000 to 15.3% in 2010. The cost of living index in Lassen County is 85.8 (National average is 100).

3.14.2 Plumas County, California

According to county data (City-Data.com 2010b), Plumas County comprises 2,554 square miles and is classified as a rural county. Major employers in Plumas County include Federal (Plumas National Forest), state (Caltrans, CalFire, California Highway Patrol), local agencies (Plumas County, City of Portola, Plumas Unified School District, Feather River College) and private (Collins Pine Company, Sierra Pacific Industries, Eastern Plumas Health Care, Plumas District Hospital). There are 534 private, non-farm businesses, mostly in the service industries. The workforce is categorized as 62% private, 24% government, and 13% self-employed.

Residential building permits issued went from 337 in 2005 to 36 in 2009. Renters comprised 30% of the housing market (State average is 43%). The workforce is 6,184, down 847 from 2000. The unemployment rate went from 7.1% in 2000 to 19.9% in 2010. The cost of living index in Sierra County is 87.1 (National average is 100).

3.14.3 Sierra County, California

According to county data (City-Data.com 2010c), Sierra County comprises 953 square miles and is classified as a rural county. Major employers in Sierra County include Federal (Tahoe National Forest), state (Caltrans), local agencies (Sierra County, City of Loyalton, Loyalton School District), and private (Eastern Plumas Health Care, Western Sierra Medical Clinic). There are 60 private, non-farm businesses, mostly in service industries. The workforce is categorized as 59% private, 32% government, and 9% self-employed.

Residential building permits issued between 2004 and 2009 averaged 12.5 permits per year. Renters comprised 29% of the housing market (State average is 43%). The workforce went from

1,209 in 2000 to 614 in 2009, a 49.2% reduction. The unemployment rate went from 6% in 2000 to 16.1% in 2009. The cost of living index in Sierra County is 86.9 (National average is 100).

3.14.4 Washoe County, Nevada

According to county data (City-Data.com 2010d), Washoe County comprises 6,342 square miles, and includes the cities of Sparks and Reno, which constitute 75% of the county's population. Of the total county population of 414,820, 93% is classified as urban and 7% as rural. Major employers in Washoe County include Federal (Veterans Administration Hospital), state (Nevada DOT), local agencies (Washoe County School District, University of Nevada, Reno, Washoe County, City of Reno) and private (8 Casino Hotels, International Game Technology, Renown Regional Medical Center, St. Mary's Hospital, Hire Dynamics, LLC, United Parcel Service). There are 8,546 private, non-farm businesses in all sectors of the economy, with emphasis on casino hotels and the entertainment sector. The workforce is categorized as 81% private, 13% government, and 6% self-employed.

Residential building permits issued averaged 3,483 per year between 2000 and 2008, with a sharp decline to 492 in 2009. Renters comprised 41% of the housing market (State average is 39%). The workforce is 190,088, down from the peak of 218,136 in 2007. The unemployment rate went from 3.8% in 2000 to 13.3% in 2010. The cost of living index in Washoe County is 88.5 (National average is 100).

3.15 *Population and Housing*

The majority of the project is located in rural areas with scattered residences and several relatively small communities. The construction of the proposed project is intended to provide fiber cable services to these communities. The project route would be almost entirely within existing roadway rights-of-way and would not contain any housing structures.

3.16 *Areas of Critical Environmental Concern (ACECs) and Wilderness Character*

The project area does not contain any Areas of Critical Environmental Concern (ACECs) which are special management areas designated by BLM to protect significant historic, cultural, or scenic values; fish and wildlife resources; natural process or systems; and/or natural hazards, in the project area. The closest ACEC s are west (Susan River) and northeast (Willow Creek) of the project area.

The BLM has developed three manuals to implement this order: 6300-1 provides direction on the wilderness characteristics inventory process, 6300-2 outlines the process for considering lands with wilderness characteristics in the land use planning process, and 6300-3 outlines the process for considering lands with wilderness characteristics in project level decisions when they have not yet been analyzed in a land use plan. The Proposed Action is in conformance with the Secretarial Order and associated manuals. All public lands within the Eagle Lake Field Office and Sierra Front Field Office were inventoried and summarized in the 1979 Wilderness Inventory pursuant to the Federal Land Policy Management Act. The 6300-3 Manual, Section .21 A. [r1] states that: "If the project is in conformance with the existing land use plan, the BLM

manager shall make an initial determination as to whether or not wilderness characteristics, as defined by BLM Manual 6300-1, are clearly lacking in the area affected by the project. If wilderness characteristics are clearly lacking and documented as such, the project can be considered without conducting a wilderness inventory. Lands that clearly lack wilderness characteristics are those that do not meet the naturalness criterion because they have extensive surface disturbance, and do not meet the size criterion of 5,000 acres, or any of the size exceptions."

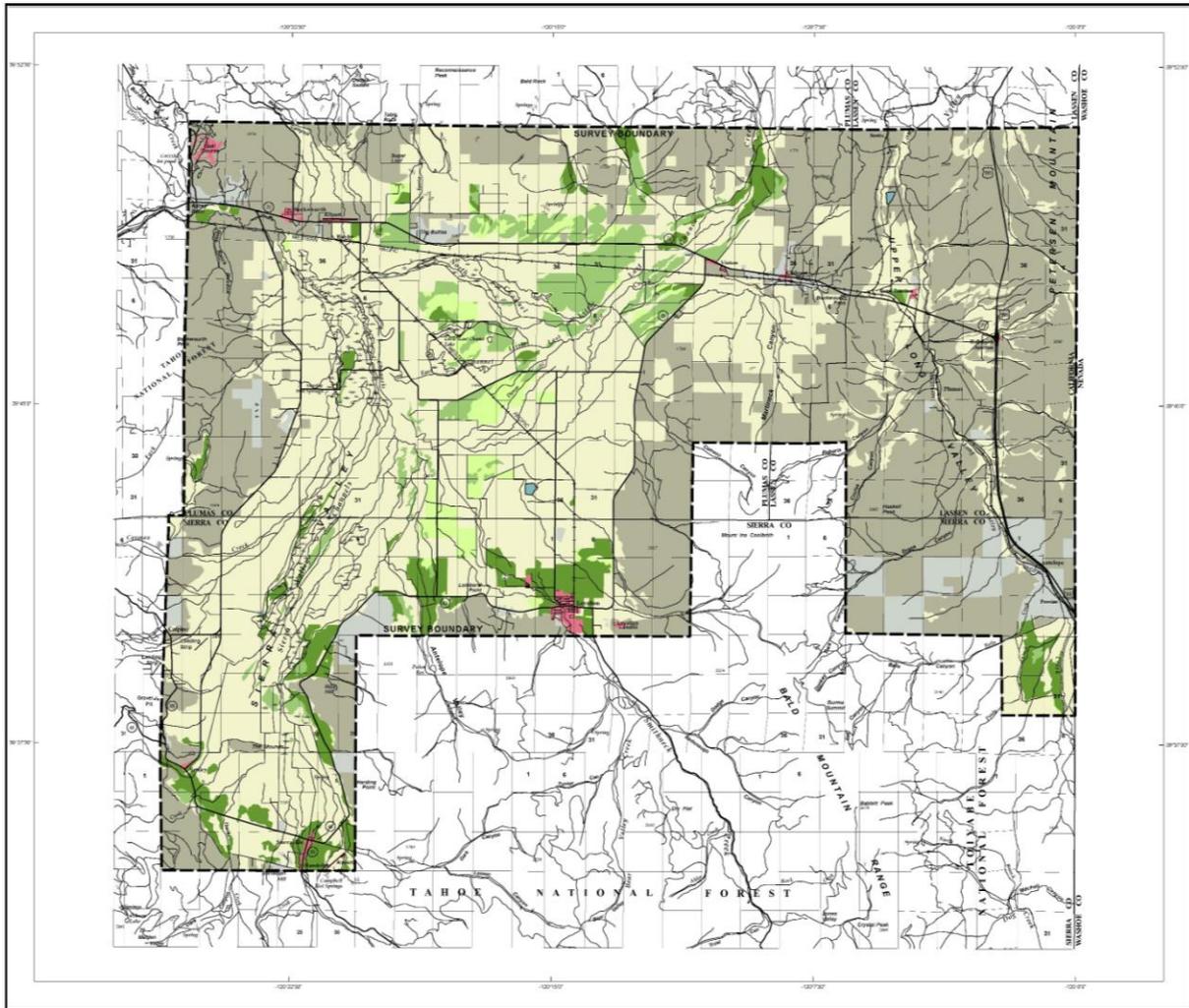
Wilderness characteristics are clearly lacking in the area affected by the Proposed Action due to the deeply cut roads and extensive yearly mechanical maintenance performed on the roads and vehicle routes in the area as identified in the proposed action maps. The annual road and vehicle route maintenance is in conformance with the BLM Eagle Lake Field Office Resource Management Plan (RMP). The Proposed Action is not within an area with 5000 or more roadless acres. Also, the extensive road and OHV route network results in the project area clearly not meeting naturalness criteria. In summary, neither wilderness characteristics nor ACECs exist on the lands affected by the project so they will not be further inventoried for or analyzed in this document.



STATE OF CALIFORNIA
 Arnold Schwarzenegger, Governor
 THE NATURAL RESOURCES AGENCY
 Lester A. Rice, Secretary
 DEPARTMENT OF CONSERVATION
 Bridgett Luehr, Director

SIERRA VALLEY IMPORTANT FARMLAND 2008

CALIFORNIA DEPARTMENT OF CONSERVATION
 DIVISION OF LAND RESOURCE PROTECTION
 FARMLAND MAPPING AND MONITORING PROGRAM



PRIME FARMLAND - 8,723 acres

PRIME FARMLAND HAS THE BEST COMBINATION OF PHYSICAL AND CHEMICAL FEATURES ABLE TO SUSTAIN LONG TERM AGRICULTURAL PRODUCTION. THIS LAND HAS THE SOIL QUALITY, GROWING SEASON, AND MOISTURE SUPPLY NEEDED TO PRODUCE SUSTAINED HIGH YIELDS. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF STATEWIDE IMPORTANCE - 7,474 acres

FARMLAND OF STATEWIDE IMPORTANCE IS SIMILAR TO PRIME FARMLAND BUT WITH MINOR SHORTCOMINGS, SUCH AS GREATER SLOPES OR LESS ABILITY TO STORE SOIL MOISTURE. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

UNIQUE FARMLAND - 3,793 acres

UNIQUE FARMLAND CONSISTS OF LESSER QUALITY SOILS USED FOR THE PRODUCTION OF THE STATE'S LEADING AGRICULTURAL CROPS. THIS LAND IS USUALLY IRRIGATED, BUT MAY INCLUDE NONIRRIGATED ORCHARDS OR VINEYARDS AS FOUND IN SOME CLIMATIC ZONES IN CALIFORNIA. LAND MUST HAVE BEEN CROPPED AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF LOCAL IMPORTANCE - 89,302 acres

PLUMAS COUNTY: LANDS DESIGNATED AS "AGRICULTURAL PRESERVE" IN THE 1984 PLUMAS COUNTY GENERAL PLAN AND RANGELANDS WITH A CARRYING CAPACITY OF 8 ACRES/ANIMAL MONTH, AS WELL AS IRRIGABLE LANDS.

LASSEN AND SIERRA COUNTIES: FARMLANDS THAT INCLUDE AREAS OF SOILS THAT MEET ALL THE CHARACTERISTICS OF PRIME OR STATEWIDE AND WHICH ARE NOT IRRIGATED. ALSO, ALL DRY LAND WHEAT, BARLEY, OATS, HAYLAND, AND PASTURE.

GRAZING LAND - 79,502 acres

GRAZING LAND IS LAND ON WHICH THE EXISTING VEGETATION IS SUITED TO THE GRAZING OF LIVESTOCK.

URBAN AND BUILT-UP LAND - 999 acres

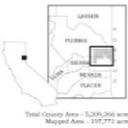
URBAN AND BUILT-UP LAND IS OCCUPIED BY STRUCTURES WITH A BUILDING DENSITY OF AT LEAST 1 UNIT TO 1.5 ACRES, OR APPROXIMATELY 6 STRUCTURES TO A 30-ACRE PARCEL. COMMON EXAMPLES INCLUDE RESIDENTIAL, INDUSTRIAL, COMMERCIAL, INSTITUTIONAL FACILITIES, CEMETERIES, AIRPORTS, GOLF COURSES, SANITARY LANDFILLS, SEWAGE TREATMENT, AND WATER CONTROL STRUCTURES.

OTHER LAND - 7,903 acres

OTHER LAND IS LAND NOT INCLUDED IN ANY OTHER MAPPING CATEGORY. COMMON EXAMPLES INCLUDE LOW DENSITY RURAL DEVELOPMENTS, BRUSH, TIMBER, WETLAND, AND RIPARIAN AREAS NOT SUITABLE FOR LIVESTOCK GRAZING, CONFINED LIVESTOCK, POULTRY, OR AQUACULTURE FACILITIES, STRIP MINES, BORROW PITS, AND WATER BODIES SMALLER THAN 40 ACRES. VACANT AND NONAGRICULTURAL LAND IS BROCKED ON ALL SIDES BY URBAN DEVELOPMENT AND GREATER THAN 40 ACRES IS MAPPED AS OTHER LAND.

WATER - 75 acres

PERENNIAL WATER BODIES WITH AN EXTENT OF AT LEAST 40 ACRES.



Important Farmland Maps are compiled by the Farmland Mapping and Monitoring Program (FMMP) pursuant to Section 65070 of the California Government Code. To create the maps, FMMP combines current land use information with U.S. Department of Agriculture-Natural Resources Conservation Service (NRCS) soil survey data. Soil units qualifying for Prime Farmland and Farmland of Statewide Importance are determined by the NRCS. Changes to soil profiles subsequent to publication of NRCS soil surveys are not reflected on this map. This map was developed using NRCS digital soil data (SSURGO) and may contain individual soil units as small as one acre.

Land use status is determined using current and historic aerial imagery, supplemental GIS data, and field verification imagery sources may include public domain datasets, web-based information, and commercially purchased data, depending on data availability. Supplemental data on land management status is obtained from federal, state, and local governments. Map reviewers at the local level contribute valuable information with their comments and suggest. Please refer to FMMP field analyst reports for each county to obtain specific situations.

Cultural base information for the Important Farmland Maps was derived from public domain data sets, based upon design of the U.S. Geological Survey, with updates generated by digitizing over current imagery.

This map should be used within the limits of its purpose as a current inventory of agricultural land uses. This map does not necessarily reflect general plan or zoning designations, city limit lines, changing economic or market conditions, or other factors which may be taken into consideration when land use policies are determined. This map not designed for parcel-specific planning purposes due to its scale and the one-acre minimum land use mapping unit. Classification of important farmland and urban areas on this map is based on best available data. The information is been delineated as accurately as possible at 1:24,000-scale, but no claim to meet 1:24,000 National Map Accuracy Standards is made due to variations in the quality of source data.

The Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.

Additional data is available at www.conservation.ca.gov/dlry/fmmp, including detail on the program, full size PDF maps, map categories, statistics, field summaries, and GIS data for download. Contact Us:

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Map published March 2010.

Chapter 4
Environmental Consequences

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4.0 ENVIRONMENTAL CONSEQUENCES

This chapter describes the environmental consequences, or potential effects, on the natural, cultural, and human environment for the Proposed Action and the No Action Alternative considered in this EA. For each topic, the impact analysis follows the same general approach. Impact indicators for intensity of effects were developed based on individual resources. A study area, or area of impact, analysis was specified for each resource and impact duration definitions (i.e., short-term, long-term) were assessed, where applicable. Effects were then identified and assessed based on a review of relevant scientific literature, previously prepared environmental documents, project-specific field studies, information and data supplied by the USFS, Beckwourth Ranger District, Mohawk, California and BLM's Eagle Lake Field Office in Susanville, California, and professional judgment of the respective resource specialists. Cultural resource background information has been provided to the BLM's Nevada Sierra Front Field Office and Eagle Lake Field Offices on 4/5/2011.

The project alternatives were evaluated using the best available information obtained for the project region for each resource in accordance with NEPA and CEQA guidelines. The level of detail presented in this EA is commensurate with the anticipated project effects and in accordance with the applicable regulatory compliance requirements.

Potential effects from implementation of the Proposed Action are qualified as short-term or long-term and may be described as direct or indirect. Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by an action and occur later or farther removed from the area.

As discussed in Section 2.4 for the project's design criteria and PSREC's environmental protection measures, PSREC has committed to implement a number of measures, encompassing the USFS and BLM's ROW Grant conditions, PSREC's established BMPs, and additional protection measures developed for the project by resource. Table 2-4 summarizes these committed protection measures, which have been applied to the interdisciplinary impact analyses. Incorporating these measures into the impact analysis better defines and streamlines the discussion of the anticipated impacts to cultural, natural, and human resources from implementation of the Proposed Action.

CEQ regulations for implementing NEPA also require assessment of cumulative effects in the decision-making process for federal projects. Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative effects are considered for each resource and are analyzed in Section 4.16 of this document. The applicable resources potentially affected by the Proposed Action were assessed with other past, present, and reasonably foreseeable future actions identified for the project area and vicinity to summarize anticipated cumulative impacts or incremental contribution the project would have on these resources.

As previously stated in Section 1.7.7, the Proposed Action is subject to the requirements of CEQA, based on the approval by the CPUC to approve the IS/MND and release 10% matching funds to construct the Fiber Project. The EA is designed to meet the requirements of CEQA, Section 15225 (14 California Code of Regulations [CCR] 15225). Although it is anticipated that the state and local agencies will use this EA/FONS/IS/MND to adhere to state regulations under CEQA, the use of the term “significant” in the following sections is used as defined under the CEQA regulations (Guidelines sec. 15064(g) and 15382 and not as defined by NEPA regulations, 40 CFR, sec 1508.27.

Table 4-1: Summary of Environmental Consequences

Resource Issue	Alternatives	
	No Action	Proposed Action
Air Quality	No effect	Temporary and localized increases in criteria pollutant concentrations and GHG emissions would occur during install & construction. No air district thresholds would be exceeded. Up to 1681 metric tons total of CO ₂ would be emitted during construction period over 20 months. Less than significant project and cumulative effect.
Cultural Resources	No effect	Known cultural resources eligible for the NRHP and California Register of Historic Resources to be avoided. Potential impacts to resources that may be discovered during construction would be minimized by applying committed protection measures. Less than significant project and cumulative effect. For inadvertent discoveries, an Inadvertent Discovery Plan (Plan) is proposed, see Appendix F.
Native American Religious Concerns	No effect	Correspondence and/or telephone calls to 38 tribal entities; 9 tribes responded; additional information sent to 3 tribes. Tribal monitor will be on site during 8 miles of construction in US395 ROW in CA; Inadvertent Discovery Plan is proposed for inadvertent discoveries (Appendix F). See Tribal Consultation in Appendix A3 for Comments. No project or cumulative effect.
Environmental Justice	No effect	No project or cumulative effect
Prime Farmland	No effect	No project or cumulative effect
Flood Hazards	No effect	No project or cumulative effect
Geology, Minerals and Seismicity	No effect	The Proposed Action would result in the permanent disturbance of approximately 0.034 acres from vault placement and buildings. Potential effects to topography would be insignificant. All spoils would be used onsite. The potential for movement along faults and new landslides in the project area would be low. The potential for landslides would be low. Committed protection measures would minimize impacts from erosion or potential geologic shifts. Less than significant project and cumulative effect.

Resource Issue	Alternatives	
	No Action	Proposed Action
Soils	No effect	During construction, soils would be disturbed, mixed structurally, compacted, and exposed to wind or precipitation events, resulting in a temporary increase in potential soil erosion. These short-term impacts would be minimized by applying committed protection measures. Construction would temporarily disturb approximately 51.63 acres. Long-term disturbance would affect 0.034 acres of soils. Less than significant project and cumulative effect.
Noise	No effect	Construction, primarily underground installation, would create both intermittent and continuous noise; overall noise levels would be low to moderate. Committed protection measures would limit noise to daylight hours. Potential noise impacts would be short term during construction. Anticipated noise levels would range from 60 dBA up to infrequent peaks of 85-90 dBA at 50 feet during underground installation. Less than significant project and cumulative effect.
Human Health and Safety	No effect	Potential effects would be minimized by applying committed protection measures. Less than significant project and cumulative effect.
Fire Management	No effect	Committed protection measures would be implemented to minimize potential effects. Less than significant project and cumulative effect.
Area of Critical Environmental Concerns (ACECs)	No effect	There are no Area of Critical of Environmental Concerns (ACECs), which are special management areas designated by BLM to protect significant historic, cultural, or scenic values; fish and wildlife resources; natural process or systems; and/or natural hazards, in the project area. The closest ACEC s are west (Susan River) and northeast (Willow Creek) of the project area..
Wilderness/WSA	No effect	Wilderness characteristics do not exist in the project area because the lands do not meet the naturalness criterion due to extensive surface disturbance of roads/highways, OHV network of trails, and do not meet the size criterion of 5,000 acres, or any of the size exceptions.

Resource Issue	Alternatives	
	No Action	Proposed Action
Biological Resources – T/E, State listed, Candidate Species	No effect	<p>One federal-threatened species, Lahontan cutthroat trout, is known to occur in the Truckee River; federal-endangered Cui-ui is known to occur in the Truckee River downstream of the proposed project area. Since the project would cross the Truckee River in existing conduit located in a bridge; therefore the project will have no effect on Lahontan cutthroat trout or Cui-ui. Less than significant project and cumulative effect.</p> <p>The federal-endangered Carson wandering skipper occurs around Honey Lake; however, there are no suitable areas of saltgrass habitat for Carson wandering skipper in the proposed project area, and there are no known records in the proposed project area. The project will have no effect on Carson wandering skipper. Less than significant project and cumulative effect.</p> <p>The project will have no effect on federal candidate species that occur in the region, or historically occurred in the region, consisting of Sierra Nevada yellow-legged frog, greater sage grouse, Pacific fisher, wolverine, and Webber's ivesia. There are no known records of these species in the proposed project area. Less than significant project and cumulative effect.</p> <p>California-endangered willow flycatcher and California-threatened Swainson's hawk occur in the project area. The project will have no effect on these two species with the implementation of avoidance measures. Less than significant project and cumulative effect.</p> <p>The project will have no effect on six other California-listed or candidate species that occur in the region, American peregrine falcon (CA-endangered), greater sandhill crane (CA-threatened), bank swallow (CA-threatened), wolverine (CA-threatened), Sierra Nevada red fox (CA-threatened), and Boggs Lake hedge-hyssop (CA-endangered). Less than significant project and cumulative effect.</p>

Resource Issue	Alternatives	
	No Action	Proposed Action
Biological Resources – T/E, State listed, Special Status, Candidate Species	No effect	<p><u>Vegetation Resources:</u> Surface disturbance from construction could directly affect vegetation and special status plant habitat by increasing soil erosion, mechanically impacting soils, and increasing the potential for establishment and spread of invasive and noxious weed species. Temporary construction activities on 62.12 acres would contribute to short-term effects. Committed protection measures would be implemented to minimize potential impacts to vegetation and to minimize noxious weeds. Less than significant project and cumulative effect.</p> <p><u>Special Status Species:</u> The proposed project area provides marginal or suitable habitat for 152 other special-status species (38 animals and 114 plant species) as designated by CDFG, NNHP, USFS, BLM, and CNPS. The implementation of the avoidance measures avoids effects to these species.</p> <p>Foraging and nesting habitat occurs in and adjacent to the project area for birds of protected under the Migratory Bird Treaty Act (MBTA). Implementation of the avoidance measures avoids effects to these species.</p> <p>Due to the committed environmental measures to minimize impacts to vegetation, short- and long-term effects would be low and incremental, and no population-level effects would be anticipated for any of the species with marginal habitat. Less than significant project and cumulative effect.</p> <p><u>Habitat Effects:</u> No direct or indirect impacts to aquatic resources would occur from construction or operation. Construction would temporarily disturb approximately 51.63 acres. Long-term impacts would affect 0.034 acres. Environmental committed protection measures would aid in minimizing impacts to native habitats from construction, minimize noxious weed infestations, and support final site reclamation for regional wildlife species. Less than significant project and cumulative effect.</p>
PSREC-PST MID-MILE FIBER PROJECT NT10 BIX 5570125		<p style="text-align: right;">ENVIRONMENTAL ASSESSMENT</p> <p>The project area does not occur in areas designated as Wilderness Study Areas or Wilderness Areas (BLM 2007, 2001). The small segments of BLM land traversed by the proposed project are generally close to major roadways and do not provide outstanding</p>

Resource Issue	Alternatives	
	No Action	Proposed Action
Wetlands	No effect	No direct effects to wetlands as no construction in wetlands area; existing overhead construction avoids areas by spanning so indirect effects minimized to less than significant with mitigation measures. Less than significant project and cumulative effect.
Infrastructure	No effects	Construction in the existing ROWS will utilize committed protection measures to minimize potential effects. Less than significant project and cumulative effect.
Visual Resources	No effect	Construction would result in low short-term visual effects. Operation would not result in disruption of scenic vistas or degrade the overall character or quality of the area. Less than significant project and cumulative effect.
Land Use	No effect	The construction and operation of the Proposed Action would not conflict with any land use plans. No established communities would be divided by the Proposed Action. Less than significant project and cumulative effect.
Recreation	No effect	Construction could result in a temporary and minor increase in traffic, human presence, and noise impacts to recreational users but would be low and short term. Less than significant project and cumulative effect.
Socioeconomics	No effect	Positive and beneficial effects would result from the temporary increase in jobs, income, and spending during the 20-month construction period. Operation would increase the tax revenues received by Plumas, Sierra, Lassen Counties, California. Less than significant project and cumulative effect.

4.1 Air Quality

This section describes potential air quality impacts that could result from construction and operation of the Proposed Action. Potential air quality impacts would be related to emissions from vehicles and fugitive dust associated with construction, operation, and maintenance activities. Air quality impacts would be significant if they conflict with the implementation of the applicable air quality plan, violate any air quality standard or contribute substantially to an existing or projected air quality violation, result in a cumulative considerable net increase in a criteria pollutant for which the region is in non attainment, expose sensitive receptors to substantial pollutant concentrations or create objectionable odors affecting a substantial number of people. Project related impacts on sensitive receptors are also discussed in this section.

No Action Alternative

Under the No Action Alternative, there would be no new sources of emissions or fugitive dust. Fugitive dust from wind erosion of existing dirt roads would continue to occur. Smoke from wildland fires could result in a temporary reduction of air quality standards.

Proposed Action

4.1.1 Construction

As described in Chapter 2, the construction of the Proposed Action involves installation of approximately 162 miles of fiber cable to be placed on existing pole infrastructure and 21 miles of fiber cable to be placed underground. In cities and other urban areas, new fiber will be placed in existing conduits and some new fiber will be installed with boring or trenching construction methods. Approximately 9 miles of the underground construction is trenching or plowing along the US395 corridor from Reno, NV to Hallelujah Junction, CA.

Construction activities would occur over approximately 20 months; no construction will occur during the six month period of November 15 to April 15.

The Sacramento Metropolitan Air Quality Management District (AQMD) Road Construction Emissions Model was used to calculate potential maximum grading, earthmoving, and construction emissions for the Proposed Action. This Model anticipates the construction of a paved road, with grubbing/land clearing, grading/excavation, utilities/subgrade, and paving phases. Potential maximum construction emissions (pounds per day) were calculated using modified settings in the Road Construction Emissions Model program. (See Table 4-2: Road Construction Emissions Model).

The default settings were modified to reflect the different overhead and underground construction methods to be used for the project. The grubbing/land clearing portion of the project is a very small component. The grading/excavation and the paving phases were removed. In the utilities/subgrade phase, the number of vehicles was calculated using two sets of crews. The Model includes emissions from off-road and on-road diesel equipment, vehicle calculations, construction worker trips, and stationary equipment.

A project type of “new road construction” was selected with a 14 month construction time. A 185 mile project length was identified. The project area was 50 acres with a maximum of 2 acres being disturbed per day. The construction periods were modified from the default values. A duration of 1 month for grubbing/land clearing was used; 1 month for grading/excavation was used; 5 months for drainage/subgrade was used and 0 months for paving. The soil hauling emissions were left at the default of 30 miles per round trip. The worker commute miles/one-way trip was doubled to 40 miles and the number of one-way trips/day were increased to 5. The number of employees was reduced to reflect the small size of the crews used for installing fiber optic in comparison to a standard road construction project. Off-road equipment emissions were added. The number of signal boards was reduced.

Table 4-2: Road Construction Emissions Model, Version 6.3.2

Emission Estimates for -> PSREC-PST Mid-Mile Fiber				Total	Exhaust	Fugitive Dust	Total
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
Grubbing/Land Clearing	7.0	29.6	52.9	22.5	2.5	20.0	6.4
Grading/Excavation	0.4	6.1	1.6	20.1	0.1	20.0	4.2
Drainage/Utilities/Sub-Grade	17.5	68.8	122.8	27.7	7.7	20.0	11.2
Paving	-	-	-	-	-	-	-
Maximum (pounds/day)	17.5	68.8	122.8	27.7	7.7	20.0	11.2
Total (tons/construction project)	2.0	8.0	14.1	4.4	0.9	3.5	1.5
Notes:	Project Start Year -> 2011						
	Project Length (months) -> 20						
	Total Project Area (acres) -> 50						
	Maximum Area Disturbed/Day (acres) -> 2						
	Total Soil Imported/Exported (yd ³ /day)-> 0						
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.							
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of fugitive dust emissions shown in columns K and L.							
Emission Estimates for -> PSREC-PST Mid-Mile Fiber				Total	Exhaust	Fugitive Dust	Total
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)
Grubbing/Land Clearing	3.2	13.5	24.0	10.2	1.1	9.1	2.9
Grading/Excavation	0.2	2.8	0.7	9.1	0.1	9.1	1.9
Drainage/Utilities/Sub-Grade	7.9	31.3	55.8	12.6	3.5	9.1	5.1
Paving	-	-	-	-	-	-	-
Maximum (kilograms/day)	7.9	31.3	55.8	12.6	3.5	9.1	5.1
Total (megagrams/construction project)	1.8	7.2	12.8	4.0	0.8	3.2	1.4
Notes:	Project Start Year -> 2011						
	Project Length (months) -> 20						
	Total Project Area (hectares) -> 20						

Maximum Area Disturbed/Day (hectares) -> 1

Total Soil Imported/Exported (meters³/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Table 4-3: Potential Maximum Construction Emissions Output Generated Utilizing the Sacramento Metropolitan Road Construction Emissions Model, Version 6.3.2

	ROG ¹	NO _x ²	PM ₁₀ ³ <i>Mitigated</i>	PM _{2.5} ⁴ <i>Mitigated</i>	CO ⁵	CO ₂ ⁶
Potential Emissions (pounds per day)	17.5	122.8	27.7	11.2	68.8	14,568
LCAPCD Thresholds	NA	NA	NA	NA	NA	NA
NSAQMD Thresholds	NA	NA	NA	NA	NA	NA
Washoe AQMD Thresholds	NA	NA	NA	NA	NA	NA

¹Reactive Organic Gas

²Nitrogen oxides

³Particulate matter less than 10 micrometers in diameter

⁴Particulate matter less than 2.5 micrometers in diameter

⁵Carbon monoxide

⁶Carbon dioxide

Temporary and localized increases in criteria pollutant concentrations would occur during construction. Expected emissions would consist of tailpipe emissions from the exhaust of construction equipment, fugitive dust emissions from vehicular traffic, and fugitive dust emissions from soil disturbances. Construction-related air pollution effects would be temporary and localized and the impact to ambient air quality values in the project area would be minor.

The LCAPCD, the NSAQMD, and Washoe AQMD do not have thresholds of significance for criteria pollutants. The LCAPCD and NSAQMD have not established GHG guidelines or thresholds of significance for GHG emissions. Therefore, the significance of project-related GHG impacts was evaluated using the October 24, 2008, CARB Preliminary Draft Staff Proposal for Setting Significance Thresholds for GHGs (CARB 2008). CARB has proposed significance thresholds for industrial and residential/commercial projects; however, no significance thresholds for construction have been established. The CARB preliminary draft proposal presumes that there would be a less than significant impact related to climate change if interim CARB performance standards are implemented for construction- and transportation-related activities. Additionally, the construction emissions are temporary in nature.

For construction, LCAPCD BMPs (as outlined in Rule 4:18, Fugitive Dust Emissions) are identified for the construction activities to help ensure less-than-significant impacts from fugitive dust air quality emissions (LCAPCD 2009). These BMPs would be included in the LCAPCD required Fugitive Dust Plan Application, and were included, where possible, in the Road Construction Emissions Model.

For construction, NSAQMD BMPs (as outlined in Rule 226, Dust Control) are identified for the construction activities to help ensure less-than-significant impacts from fugitive dust air quality emissions (NSAQMD 1991). The NSAQMD requires preparation of a Dust Control Plan.

The project construction activities would not result in emissions exceeding air quality standards, conflict with the implementation of any air quality management plan, result in any cumulatively considerable net increase in criteria pollutants for which the region is in nonattainment, or contribute significantly to GHG emissions within the Northeast Plateau Air Basin or Mountain Counties Air Basin (as discussed below).

As referenced in Table 2-4: Measures *Air Quality-1* through *Air Quality-4*, PSREC impacts to air quality emissions would be minimized by following the LCAPCD and NSAQMD permitting requirements for portable engine equipment and implementation of BMPs for control of fugitive dust during construction activities.

Sensitive receptors in the construction area are not expected to be affected by the project. Sensitive receptors include children, seniors, sick persons, or persons subject to continuous exposure based on the averaging period for the pollutant. With the exception of the cities of Quincy, Portola, and Susanville, the project area is rural with relatively unpopulated, low density farming/ranching operations and scattered residences. Sensitive receptors are limited to sparse single-family residences located along the existing powerline ROW alignment.

4.1.2 Operation and Maintenance

The operations and maintenance of the fiber cable would be very limited and would occur when line personnel are routinely observing the existing power line structures, resulting in no change from current maintenance emissions. These activities would be of limited duration with no local or regional effects. Therefore, operation and maintenance of the Proposed Action would not impact ambient air quality conditions.

4.1.3 Greenhouse Gas Emissions

The sources of GHG emissions for this project would include the combustion of diesel fuel used in construction equipment and the daily commute of construction employees. Emissions of nitrogen oxides and methane would be negligible, therefore carbon dioxide equivalent (CO₂-e) emissions would be the same as CO₂.

As shown in Table 4-2 and Table 4-3, up to 14,568 pounds per day of CO₂ (1,681 tons for the project) would be emitted during construction. GHG emissions after implementation of the reduction measures in Table 4-5 would be reduced by approximately 5 percent to 13,840 pounds per day (1,597 tons for the project). Additional minor GHG emissions would be generated during operation and maintenance activities from vehicle use per Table 4-4.

GHG emissions from operation and maintenance of the line can be estimated using EPA's MOBILE vehicle emission factor model that predicts emissions per mile for hydrocarbons, CO, NO_x, CO₂, particulate matter (PM), and air toxics. The incremental vehicle miles for this project

and other assumptions for estimating GHG emissions from operations and maintenance traffic (using the MOBILE model) are shown in Table 4-4.

Table 4-4: Greenhouse Gas Emissions¹ Calculations from Annual Operation/Maintenance Traffic

Truck Type	Fuel Efficiency (miles per gallon)	Miles Driven	Gallons of Fuel	Annual CO ₂ e Emissions (metric tonnes)
Pickup Truck	8	56	7	0.07

As a member of the Golden State Power Cooperative, PSREC is exempt from the GHG emissions reporting portion of the Global Warming Solutions Act of 2006 (AB 32), as documented in a letter dated March 3, 2008 from the Climate Change Reporting section of the CARB. Currently, the reporting regulation does not apply to electricity cooperatives.

The GHG emissions generated from the project operation and maintenance activities would be negligible. Review of SB 97 and the associated Office of Planning and Research-proposed CEQA guideline amendments for GHG emissions, indicates this document meets the analysis requirements for potential impacts to GHG emissions.

Recommended Measures

The GHG emissions from the proposed project would not be significant. The Project will include the feasible measures listed in Table 4-5 to reduce GHG emissions:

Table 4-5: Greenhouse Gas Emission Reduction Measures

Category	Committed Protection Measure
<i>Greenhouse Gas</i>	
GHG-1	Limit idling of construction equipment.
GHG-2	Limit the hours of operation to daylight hours, so that diesel generators are not required for operation of lights.
GHG-3	Encourage project workers to car pool to construction site.
GHG-4	Maintain construction equipment to manufacturer's specifications
GHG-5	Utilize biodiesel fuels if available.

Other general minimization and mitigation measures include the use of electric or other zero emission vehicles for construction. These types of vehicles are not yet commercially available. It is not possible to install the fiber cable without the use of standard construction equipment.

Table 4-6: Air Quality Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
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Category	Committed Protection Measure
Air Quality	
Air Quality-1	All requirements of the applicable Counties' Air Pollution Control District and the Washoe County District Health Department, Air Quality Division, in Nevada, as applicable, would be followed and any necessary permits for construction activities would be obtained.
Air Quality-2 PSREC BMP	PSREC would furnish and apply water on construction areas for dust control.
Air Quality-3 PSREC BMP	<p>PSREC would be responsible for controlling dust by reducing travel speed and/or applying dust suppressants (e.g., magnesium chloride or other materials approved by the landowners or land managers). Dust would be considered a nuisance or hazard when a visible dust plume extends more than 300 feet from the source and has an estimated opacity exceeding 20% (objects are partially obscured). Additional methods of dust control that may be used by PSREC include, but are not limited to:</p> <ul style="list-style-type: none"> • Application of water or magnesium chloride to access roads or sections of the ROW. • Application of water to specific activities on the ROW that generate dust plumes (i.e., trenching or blasting). • Curtailing of dust-generating activities during high winds. • Implementation of speed limits on vehicles using access roads or traveling the ROW. • Limitation of number of vehicles allowed on the ROW.
Air Quality-4	Open burning of construction debris (cleared brush, etc.) would not be allowed.
Air Quality-5 LCAPCD & NSAQMD BMP	<p>Reasonable precautions would be taken to prevent particulate matter from becoming airborne including, but not limited to, the following provisions:</p> <ul style="list-style-type: none"> • Covering open-bodied trucks when used for transporting materials likely to cause airborne dust. • Cleanup, sweeping, compacting, enclosing and/or the use of wind screens or snow fences at the construction site. • The application of asphalt, oil, water, or suitable chemicals to dirt roads, material stockpiles, land-clearing activities, excavation, grading, or other surfaces that can give rise to airborne dusts. • The prompt removal of earth or other material from paved streets that have been deposited by earth-moving equipment, water, or other means. • For NSAQMD only: Submittal of Dust Control Plan to the Air Pollution Control Officer prior to project start. • For LCAPCD only: Submittal of Fugitive Dust Plan Application

Cumulative Impacts to Air Quality

According to the Sacramento Metropolitan AQMD Road Construction Emissions Model calculations for the Proposed Action, there would be minor short-term increases in fugitive dust and heavy equipment emissions during construction that would have a low cumulative impact on the region with respect to criteria pollutants and GHGs. Operationally, no significant criteria

pollutants would be emitted by the project and the GHG emissions generated from the project operation and maintenance activities would be negligible. Therefore, the project would not contribute to any cumulative impact on air quality or global climate change.

4.2 Cultural Resources

This section describes potential impacts to cultural resources that could result from construction and operation of the Proposed Action. Under the NHPA, if the Proposed Action has the potential to adversely impact a cultural resource eligible for the NRHP, then the protocol identified in the proposed Inadvertent Discovery Plan (Plan) in Appendix F will be utilized. NRHP evaluation of cultural resources is codified under 36 CFR 60.4 (NRHP, National Register Bulletin, revised 1998). The Western Cultural Resources Management (WCRM) survey led to the recommendation that two of the sites should be considered eligible for inclusion in the National Register of Historic Places (NRHP) and the remaining 11 sites are considered to be not eligible for NRHP listing. Portions of the old US 395 highway are considered NRHP eligible under criteria a and prehistoric site C04 is considered NRHP eligible under criteria d due to artifacts being present in road maintenance berms. None of the isolates are considered worthy of NRHP inclusion.

NRHP eligible sites will be avoided or have proposed impacts mitigated through development and implementation of a treatment plan. The potential exists for the Proposed Action to adversely affect cultural resources that are eligible for inclusion in the NRHP. It is through implementation of the treatment plan as proposed in the Plan this is signed and included as Appendix F that adverse effects can be avoided or mitigated.

4.2.1 Native American Religious Concerns

There are cultural resources dating from the prehistoric and historic eras present within the area of the Proposed Action, including sites previously documented, as well as sites newly documented as part of the WCRM inventory of the proposed buried line segments. Tribal groups and individuals are known to have interest in cultural resources, natural resources and access to resources in and near the area of Proposed Action. To date, Tribes have identified no specific traditional use or sacred areas or needs. Additional consultation with Tribes will occur prior to construction and will be ongoing for the duration of the proposed project. A tribal monitor will be present during installation of the new underground conduit in the US395 ROW.

No Action Alternative

Under the No Action Alternative no direct, indirect, and cumulative effects would occur to cultural resources.

Proposed Action

Under the Proposed Action, as presently described, a total of 51.63 acres of ground disturbance is planned from construction activities for the network operating centers and construction of the overhead portion of the line on existing poles. Additionally, 9 miles of trenching with a

maximum width of two feet and depth of four feet will occur as part of the fiber cable installation. The trenching will be limited to existing highway or street ROW.

Potential direct effects to cultural resources may include alterations to the physical integrity of the resource. If a cultural resource is important for other than its scientific information, direct effects may include introduction of audible or visual elements that are out of character for the cultural site. A potential indirect effect would be the increase in human activity or access to this area during construction. No additional permanent access is part of the Proposed Action; therefore, no increased indirect effects to cultural resources during project operation are anticipated.

For the historic properties eligible to the NRHP, avoidance is recommended. For sites that cannot be avoided, appropriate treatment and/or data recovery measures will be proposed to mitigate any adverse effects. Treatment and/or data recovery might include subsurface excavation, artifact collection and analysis, photo documentation, or historical research. The committed mitigation measures will help to ensure that adverse effects are addressed. For the sites not eligible to the NRHP, a recommendation of “No Effect/No Further Work” is proposed.

Due to the nature of the soils, there is a slight possibility that additional excavations and inadvertent discoveries of cultural resources could be encountered during construction. To ensure no adverse effects would occur to inadvertent discoveries, a Plan that establishes protocol should a resource be unearthed is proposed in consultation with the CA and NV SHPOs. See Appendix F. The Plan will serve to direct the Section 106 compliance process for the entire project. The Plan will also include procedures for inadvertent discovery situations, and in the event that human remains are found during the construction.

Additionally, PSREC has committed to four protection measures specific to cultural resources. Table 4-7 outlines the protection measures applicable to the Proposed Action, protecting known resources and reporting unexpected discoveries if found during construction. During construction, archaeological monitors would be on site. In the event cultural materials (i.e., prehistoric or historic) are unearthed during construction, to protect such materials protocol and treatment of these materials as specified in Plan will be followed. California or Nevada state law would be followed in the event human remains are discovered on non-federal lands. Implementation of the protection measures listed in Table 4-7 would reduce potential cultural resource impacts to a less than significant level.

Table 4-7: Cultural Resources Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
<i>Cultural Resources</i>	
Cultural-1	As appropriate and required by the BLM, an Inadvertent Discovery Plan (Plan) has been developed that identifies the protocol and treatment of inadvertent discoveries of cultural and historic properties. See Appendix F.
Cultural-2 PSREC BMP	If an area proposed to be disturbed by construction or other ancillary project activity has not been surveyed for cultural resources, an inventory would be conducted before construction activities begin. PSREC will retain qualified archaeologists that meet Secretary of the Interior standards to conduct the pre-construction inventories. A tribal monitoring program for the area of underground installation in Caltrans US395 ROW would be developed for this project to ensure avoidance of known historic properties (NRHP-eligible cultural resources) and on landscapes with a potential for buried cultural resources.
Cultural-3 PSREC BMP	Any cultural resources inadvertently discovered during construction by PSREC or any person working on PSREC’s behalf on private, state, or federal land would be reported immediately to the authorized officer and environmental monitor; the protocol of the Plan would be followed. If human remains are discovered, PSREC would suspend construction, notify the county coroner, notify the applicable landowner or land management agency, and follow the applicable Federal or California/Nevada state law. If Native American remains are suspected, the Native American Heritage Commission and local tribe(s) also would be notified and PSREC would suspend operations in the area until an evaluation is completed. See Appendix F for inadvertent discovery plan.
Cultural-4 PSREC BMP	No surface disturbance or construction activity would be allowed within 100 feet of any NRHP-eligible cultural sites, as specified by the federal or state authorized officer. Any deviation from this requirement would be negotiated with the authorized officer per the terms of the proposed Plan.

Cumulative Impacts to Cultural Resources

The Proposed Action identified a number of measures to avoid or minimize potential impacts to cultural resources during project construction and operation. Potential cumulative effects to area cultural resources would be low to none, based on the implementation of these Proposed Action measures. Existing uses of the federal and state lands would continue in the region, potentially affecting cultural resources at the same level as present. Since no new, permanent access roads are proposed for the project, no increased cumulative effects to cultural resources from long-term public access would result.

4.3 Environmental Justice and Demographics

No Action Alternative

The No Action Alternative would have no impact to Environmental Justice and Demographics

Proposed Action

4.3.1 Environmental Justice

There are no disproportionate environmental effects from the Proposed Action on low-income and minority communities. Each community served by this project will be able to utilize broadband internet service without regard to socioeconomic considerations. It will be incumbent on each individual whether or not they take advantage of the service. The Proposed Action does not discriminate with respect to income level or minority status.

4.3.2 Demographics

As rural counties, Lassen, Plumas, Sierra, and Washoe have significantly fewer minorities than urban areas, or the respective states as a whole. These numbers are not expected to change to any appreciable degree. However, the Proposed Action may allow greater numbers of minorities to have access to broadband services, and more fully participate within their respective communities.

The same can be said for those below the poverty line, especially those under age 18. The Proposed Action may facilitate additional learning opportunities and provide new economic opportunities for those individuals.

Cumulative Impacts to Environmental Justice and Demographics

Because no adverse environmental impacts to minority or low income populations from implementation of the Proposed Action are anticipated, no cumulative impacts would occur.

4.4 Prime, Unique Farmland, Farmland of Local Importance, or Farmland of Statewide Importance

This section describes impacts to farmlands that could result from construction and operations of the Proposed Action. The Proposed Action has the potential to adversely impact farmland if it will convert an area designated as prime or unique farmland, farmland of local or statewide importance to a non-agricultural use

No Action Alternative

Under the No Action Alternative, no effects to Prime, Unique, Farmland of Local Importance, or Farmland of Statewide Importance would occur.

Proposed Action

The project will install fiber conduit on existing power poles in PSREC existing easements. The project will not result in the conversion or loss of Prime, Statewide Importance, or Unique farmland where the route crosses farmland with these designations. Portions of the route will be installed underground in the urban areas of Reno, Susanville, Portola, and Quincy and along

US395 from Reno to the intersection of SR70 at Hallelujah Junction. No designated soils occur along portions of the route where the fiber conduit will be installed underground.

Cumulative Impacts to Prime Farmland

The installation of fiber conduit on existing utility poles in PSREC existing easements does not result in the conversion or loss of Prime, Statewide Importance, or Unique farmland. The project does not result in direct or incremental impacts to prime farmland; therefore, no cumulative impacts would occur.

4.5 Flood Hazards

The Proposed Action has the potential to have an adverse flood hazard impact if it would significantly increase the potential for flooding or impede or redirect flood flows so as to cause a significant, adverse impact.

No Action Alternative

Under the No Action Alternative no increased risk for area flooding would occur.

Proposed Action

The project does not create new encroachments on the floodplains crossed by the Proposed Action. The Proposed Action will not construction in, place fill, or similarly alter the topography of the floodplains such that it reduces the area available to convey floodwaters. Therefore, the Proposed Action does not require the preparation of a floodplain risk assessment, which is required by Executive Order 11988 (Floodplains-only Practicable Finding) because there is no encroachment. The Proposed Action would span all designated floodplains on existing power poles. No adverse impacts from construction, operation, or maintenance of the Proposed Action are anticipated. The Proposed Action does not include activities or components that would impede or redirect flood flows.

Cumulative Impacts to Flood Hazards

No adverse impacts from construction, operation, or maintenance of the Proposed Action are anticipated. No cumulative impacts were identified.

4.6 Geology, Minerals, and Seismicity

This section describes impacts from geology and seismicity that could result from construction and operation of the Proposed Action. The Proposed Action has the potential to have an adverse impact from geology and seismicity if it would expose people or structures to substantial adverse effects from rupture, seismic ground shaking, or landslides.

No Action Alternative

Under the No Action Alternative no impacts relative to area geology or seismicity would occur.

Proposed Action

No short-term impacts to area geology from project construction would occur. The analysis of potential geological effects associated with the Proposed Action focused on the area of ground disturbance for overhead and underground installation of the fiber conduit. The Proposed Action would result in the temporary disturbance of approximately 51.63 acres from underground construction. Permanent disturbance would include placement of the two node buildings re-generation building, underground vaults and anchors for 0.034 acres. Potential effects on area topography would be minor and limited to conduit placement.

The Proposed Action will not adversely affect any existing mineral resources or active mining projects. Conversely, ongoing mining operations will not have an adverse affect on the fiber cable routes.

Care will need to be exercised when stringing cable for the Marble Lateral as it passes adjacent to the Blasted Rock Quarry on Beckwourth-Calpine Road.

Given the regional seismic history, the potential for movement along faults and new landslides in the project area would be considered to be low to moderate. Because the project area for underground installation is relatively flat, the potential for landslides would be low. PSREC's BMPs for construction would minimize impacts from erosion or potential geologic shifts. The node and re-gen buildings are prefabricated, modular units, which would be designed to comply with the applicable building guidelines, seismic codes, and similar requirements. Therefore, these designs would minimize effects from possible future seismic activity. Construction and operation of the Proposed Action would not expose people or structures to substantial adverse effects from rupture, seismic ground shaking or landslides. Project impacts related to geology, minerals, and seismicity would be less than significant.

Cumulative Impacts to Geology and Seismicity

No past, present, or reasonably foreseeable future actions, as identified for this region, would increase the potential geologic or seismic hazards from implementation of the Proposed Action.

4.7 Soils

This section describes impacts to soils that could result from construction and operations of the Proposed Action. The Proposed Action has the potential to have an adverse impact to soils if it would expose people or structures to substantial erosion or soil instability.

No Action Alternative

Under the No Action Alternative, no additional impacts to soils would occur.

Proposed Action

The primary impacts to soils from the Proposed Action are short-term impacts resulting from underground construction and installation of the fiber conduit and the footprint of construction

equipment. The impacts to soils are relatively small, compared to the size of the project, because the overhead installation will occur on existing power poles and much of the underground installation occurs in streets and in existing conduits.

No long-term soil disturbance/loss during project operation is anticipated. During construction soils would be disturbed, mixed structurally, compacted, and exposed to wind or precipitation events, resulting in a temporary increase in potential soil erosion. The potential for adverse impacts to soil resources during project construction would be limited and short term, given PSREC’s committed environmental protection measures listed in Table 2-4 and Appendix B. Specifically, the commitment to restrict vehicle use to the existing ROW easements, approved access routes, and the existing road system, as well as the commitment to eliminate compaction, seed disturbed areas to approved seed mixtures, and implement applicable reclamation measures would aid in minimizing direct and indirect effects to area soils.

Table 4-8 summarizes the amount of surface disturbance to soil resources anticipated for both short-term and long-term effects. An estimated 51.63 acres of soils would be disturbed during construction. The installation of underground vaults results in the permanent impacts to soils. The underground vaults will be installed approximately every 3,500-feet were the fiber line is installed underground. Underground vaults are not used where the overhead installation method is utilized.

Table 2-1 in Chapter 2 outlines the project design standards developed for the Proposed Action. Specific to the installation of the overhead lines, temporary equipment workspace for maneuvering typical bucket truck equipment would require a 20-foot by 10-foot area around each structure, totaling 10.19 acres. Cable pulling and tensioning along the 162 miles of existing overhead structures would comprise 1,000 sf per mile or approximately 3.4 acres.

Typically, HDD requires two excavation pits that are 2-feet wide by 12-feet long. Where trenching or plowing is used, the trench is assumed to be 2-feet wide and the footprint of the construction equipment is an additional 10-feet wide.

Table 4-8: Short-Term Soil Disturbance (Temporary Construction)

Surface Disturbance by Construction Activity	Foot Print of Bucket Truck to Attach Cable to Pole (acres)	Cable Pulling & Tensioning (acres)	HDD (acres)	Trenching Cable (acres)	Staging Areas (acres)	Foot Print of Trenching Equipment (acres)	Total (acres)
Short-Term Disturbance	11.34	3.72	0.02	4.96	15.00	16.59	51.63

Table 4-9: Long-Term Soil Disturbance (Permanent Construction)

Surface	Underground	Modular	Angle Pole	Total Acres
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Disturbance	Vaults (acres)	Buildings (Acres)	Ground Anchors (Acres)	
Long-Term Disturbance	0.011	0.017	0.006	0.034

PSREC is able to access the existing power poles using existing access roads. Some access roads are accessible only with 4x4 or other off-highway vehicles. No new access roads are proposed.

During construction, ancillary work spaces are proposed, including cable pulling and tensioning sites and construction yards for material laydown, storage, and parking. The amount of soil disturbance in the short-term is approximately 3.4 acres for cable pulling and tensioning sites. The staging areas, up to 15, all under one acre, will use existing construction yards that are already disturbed sites.

PSREC would develop and comply with applicable NPDES requirements, including a stormwater pollution prevention plan (SWPPP), required and filed with the Lahontan Regional Water Quality Control Board. In addition to compliance with the SWPPP, which would detail runoff, erosion, and sedimentation mitigation practices, PSREC's committed protection measure to regrade and reseed areas to facilitate natural revegetation would aid in minimizing increased soil erosion, particularly in areas with existing surface disturbance. Refer to protection measures in Table 2-4 developed specifically for ROW construction, reclamation practices, and soils resources.

In summary, PSREC's committed protection measures and BMPs detailed in Table 2-4 and Appendix B were developed to minimize effects to soil resources impacted by project construction. Therefore, anticipated impacts to soils would be low and would be considered less than significant with the implementation of the committed protection measures. Long-term, permanent disturbance would affect 0.034 acres for the installation of new vaults, modular buildings' foot print, and pole anchors.

The Proposed Action will be subject to the committed environmental protection measures set forth in Section 2.4 and the MMRP in Appendix B (Soils 1 - 5), including compliance with all NPDES requirements and will not result in a significant impact to soils.

Table 4-10: Reclamation/Soils Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
Reclamation	
Reclamation-1 PSREC BMP	In construction areas where re-contouring is not required and as requested by the landowner, vegetation would be left in place wherever possible to avoid excessive root damage and allow for re-sprouting.
Reclamation-2 PSREC BMP	In construction areas where ground disturbance requires more extensive re-contouring and surface restoration, PSREC would communicate with the landowner or land management agency on the techniques to be used before ground-

Category	Committed Protection Measure
	disturbance activities begin. The method of restoration typically consists of returning disturbed areas to their natural contour (to the extent practical), installing cross drains for erosion control, placing water bars in the road, and filling ditches, applicable.
Reclamation-3 PSREC BMP	At HDD or vault locations, disturbed areas to be reclaimed would be stabilized by redistribution of topsoil, reseeding, and placement of a chopped, certified weed-free straw, reinforced with paper or synthetic netting to hold the matting in place.
Reclamation-4 PSREC BMP	A silt fence would be installed along the perimeter of temporary topsoil stockpile areas where runoff from a storm would be filtered for sediment prior to its release into a natural drainage. It is anticipated that no material would be spoiled or hauled off site. Excavated materials would be re-graded to maintain the general drainage profile.
Reclamation-5 PSREC BMP	Following construction, PSREC would minimize residual rubble or debris that could provide microhabitats for small and medium-sized mammals. This measure would limit the potential increase in the site's prey base that may attract raptors or other predators.
Reclamation-6 PSREC BMP	PSREC would uniformly spread topsoil over disturbed areas for site reclamation. Spreading would not be done when the ground or topsoil is frozen or wet.
Reclamation-7 PSREC BMP	As part of PSREC's project reclamation plan, local native seed would be used to the extent possible for surface reclamation following construction activities. There would be no primary or secondary noxious weed seed allowed in the seed mixture. Commercial seed would be either certified or registered seed. The seed mixture container would be tagged in accordance with state law(s) and available for inspection by the federal and state authorized officers.
Reclamation-8 PSREC BMP	Seed would be planted in an economic and efficient manner, using techniques such as hydroseeding, broadcasting, or pre-planted seed mats. The seed mixture would be evenly and uniformly distributed over the disturbed area. When broadcasting, the pounds per acre noted below would be doubled. On federal and state lands, the authorized officer would be notified at least 14 days prior to seeding.
Reclamation-9	<p>PSREC would develop a construction environmental monitoring program per communications with the applicable landowner or land management agency that includes:</p> <ul style="list-style-type: none"> • Ensuring compliance with the requirements of the project EA, the mitigation measures and BMPs proposed by PSREC, and other environmental permits and approvals. • Identifying, documenting, and overseeing corrective actions, as necessary, to bring an activity back into compliance. • Verifying that the limits of all authorized construction work areas and locations of access roads are properly marked before clearing. • Verifying the location of signs and highly visible flagging that mark the boundaries of sensitive resource areas, drainages, water bodies, or areas with special requirements along the construction work area. • Identifying erosion/sediment control and soil stabilization needs in all areas. • Ensuring that subsoil and topsoil are tested to measure compaction and

Category	Committed Protection Measure
	<p>determine the need for corrective action.</p> <ul style="list-style-type: none"> • Advising the construction contractor when conditions (such as wet weather) make it advisable to restrict construction activities to avoid excessive vehicle rutting. • Ensuring restoration of contours, replacement of topsoil, and monitoring of revegetation efforts. • Verifying that any soils or materials imported for use have been certified free of noxious weeds. • Determining the need for erosion control measures and ensuring that these measures are properly installed, as necessary, to prevent sediment flow into drainages, water bodies, and sensitive areas and on to roads. • Inspecting and ensuring the maintenance of temporary erosion control measures at least: <ul style="list-style-type: none"> · on a daily basis in areas of active construction or equipment operation; · on a weekly basis in areas with no construction or equipment operation; and · within 24 hours of each 0.5-inch rainfall. • Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification. • Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase.
Soils	
Soils-1 PSREC BMP	As applicable, temporary erosion and sediment control devices, including sediment barriers, would be installed promptly after soil disturbance, in accordance with the NPDES requirements. These devices would be inspected on a daily basis in areas of active construction; on a weekly basis in areas with no active construction; and within 24 hours of each 0.5-inch or greater rainfall. PSREC would install temporary sediment barriers (e.g., staked straw bales) on either side of a water body channel, and around spoil and topsoil stockpiles. Sediment barriers would be maintained, as necessary, to ensure effectiveness during construction. Temporary slope breakers consisting of wattles or compacted soil would be installed across the underground construction site, as necessary.
Soils-2	Following vault placement, PSREC would replace fill using the soil excavated from the vault holes. Most of the soil would be used on site; the remaining amount would be spread in the ROW so as to not destroy any existing vegetation.
Soils-3	In site-specific areas where soils are sensitive to disturbance, no widening or upgrading of existing access roads would occur during project construction or operation, except for repairs necessary to make roads passable.
Soils-4 PSREC BMP	No construction activities would be performed when the soil is too wet to adequately support construction equipment. If equipment creates ruts more than 6 inches deep, the soil would be deemed too wet and construction would cease in that area.
Soils-5 PSREC BMP	No soil removal is anticipated. If soil removal is deemed necessary, however, before soils are removed, PSREC would ensure soil storage sites are located within the

Category	Committed Protection Measure
	appropriate areas along the ROW to prevent impacts to cultural and biological resources.

Cumulative Impacts to Soils

Implementation of the Proposed Action would result in short-term effects to 51.63 acres of soils. Long-term permanent disturbance of soils would affect a total of 0.034 acres. Past, present, and future projects have affected and would continue to affect regional soil resources, particularly soil effects from incremental changes to area infrastructure. However, the Proposed Action’s compliance with required reclamation standards and soil protection measures, would minimize the cumulative effects to area soils. In summary, the incremental increase in short-term soil disturbance and long-term soil loss from the Proposed Action would be low, and cumulative impacts to soils would be less than significant.

4.8 Noise

This section focuses on potential short- and long-term effects to human resources from project-related noise sources. The Proposed Action has the potential to have an adverse impact from noise if it would expose people to noise levels in excess of federal, state, or local standards.

No Action Alternative

Under the No Action Alternative, existing noise levels would continue at current baseline levels. Regional noise sources would include the aircraft operations at the Susanville Municipal Airport, on-going highway construction improvements along US 395, traffic on all area roads, railroad operations along SR 70 and in the City of Portola, and existing Sierra Pacific Industries, Quincy Division (logging and milling operations).

Proposed Action

Table 4-11 outlines sound levels for common noise sources. The A-weighted decibel scale (dBA) is cited as a comparison for noise levels anticipated and discussed for project construction, operation, and maintenance.

Table 4-11: Typical Sound Levels of Common Noise Sources

Sound Pressure Level (dBA)	Noise Source
0	Lowest Level Audible to Human Ear
30	Quiet Library, Soft Whisper ¹
40	Quiet Office, Living Room
40-50	Corona Noise Levels
50	Light Traffic, Refrigerator
60	Air Conditioner, Conversation
70	Busy Traffic, Noisy Restaurant (Critical Level Begins)
80	Subway, Heavy City Traffic
90	Truck Traffic, Shop Tools, Lawn Mower
100	Chain Saw, Pneumatic Drill
110	Jet Flyover at 1,000 Feet
120	Rock Concert, Thunderclap (Danger Level)
180	Rocket Pad During Launch (Hearing Loss)

Source: American Academy of Otolaryngology 2007

The proposed construction equipment to be used for installation of the overhead fiber cable and the underground fiber conduit would generate short term, temporary construction noise. See Table 4-12.

Table 4-12: Praxis Noise Level Worksheet

Equipment Description	Actual Measured Lmax* Noise at 50 ft.
All Other Equipment > 5 HP	N/A
Backhoe	78
Boring Jack Power Unit	83
Compactor (ground)	83
Compressor (air)	78
Concrete Mixer Truck (1)	79
Concrete Pump Truck (1)	81
Concrete Saw	90
Directional Bore Machine < 50 HP	
Directional Bore Machine > 50 HP	
Dump Truck (1)	76
Excavator (1)	81
Flat Bed Truck (1)	74
Fluid Mixing System	
Front End Loader	79
Generator	81
Generator (<25KVA, VMS Signs)	73
Grader	N/A
Horizontal Boring Hydraulic Jack	82
Jackhammer	89
Paver	77
Pickup Trucks (5)	75
Plow > 75 HP	
Pneumatic Tools	85
Pumps	81
Rock Drill	81
Roller	80
Scraper	84
Truck < 26,000 lbs. GVW(1)	N/A
Truck > 26,000 lbs. GVW (1)	
Trencher < 50 HP	N/A
Trencher > 50 HP	
Vacuum Excavator (Vac-Truck) (1)	
Vacuum Street Sweeper	85
Vibratory Concrete Mixer	87
Welder/Torch	83
Lmax refers to the maximum A-weighted noise level recorded for a single noise event.	

4.8.1 Construction

Construction of the Proposed Action would create both intermittent and continuous noise. Along the existing power line ROW overall noise levels would be expected to be low to moderate during the installation of overhead fiber cable. Noise levels would be moderate to high during the underground fiber conduit construction period in this remote, unpopulated area although there are no noise receptors along this stretch of US395 ROW until reaching the northern boundary of the City of Reno.

Potential noise impacts to sensitive receptors would be short term during the project overhead fiber cable construction period from use of vehicles and tensioning equipment associated with pole access and cable tensioning/pulling. Anticipated noise levels during construction would be expected to range from 68 dBA up to infrequent peaks of 85 dBA at 50 feet from the operating equipment (EPA 1974). In the urban hardscape areas where underground conduit placement is anticipated, a concrete saw (90 dBA) may be used to cut pavement to install the conduit. Although the overall construction period is anticipated to total 20 months, the construction sequence and sporadic level of activity at any one location would minimize noise impacts to area residents in the short term. As stated in Table 2-4: *Measure Noise-3*, PSREC's standard BMP restricts construction activities to daylight hours, between 7 a.m. to 7 p.m. Therefore, construction-related noise impacts to area residents would be limited to those hours. Additionally, to minimize noise effects to area residents, PSREC would notify the applicable residents 5 days prior initiation of construction within 500 feet of their respective residence (see Table 2-4: *Measure Noise-4*).

Construction activities also would create noise off site, mainly from trucks transporting materials to work areas and removing construction-generated waste from the site. In addition, noise would be generated off site by commuting workers who would meet at staging areas and travel to the construction site in crews.

The affected Counties' recommended noise levels range from 65-75 Ldn measured as day-night average levels (i.e., time-weighted 24-hour average noise level based on the A-weighted sound level [dBA]). Given the anticipated construction noise levels range from 60 dBA to 85 dBA, construction-related noise is expected to be at or below the Counties' standards for a majority of the time between operating hours of 7 a.m. and 7 p.m. Higher levels of equipment noise would be brief and sporadic. Since the counties' recommended noise levels are measured as day-night average levels, infrequent peaks of 85-90 dBA, which is a one-time measurement level, would not reduce the community noise equivalent level measured as the day-night average (Ldn). Therefore, noise levels would not exceed the Counties' noise requirements.

Thus, with the environmental protection measures set forth in Table 2-4 and Appendix B, construction noise effects would be less than significant.

4.8.2 Operation and Maintenance

During project operation, the noise emissions would be limited to occasional maintenance activities, generally supported by pickup trucks. Noise levels from such activities would be low and would not exceed the Counties' noise standards.

Small trucks used for sporadic maintenance activities would periodically access the fiber cable during project operation, or in the event of an emergency. However, these long-term noise levels would be similar to automobiles and light trucks commonly using area roads. Consequently, the noise effects on nearby residences would be minor and, for the most part, indiscernible from everyday traffic noise.

Noise levels from operational activities would be low and would not exceed the Counties' noise standards and therefore would have a less than significant effect.

Table 4-13: Noise Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
<i>Noise</i>	
Noise-1 PSREC BMP	Construction activities would occur during daylight hours, or from 7 a.m. to 7 p.m.
Noise-2 PSREC BMP	Residents located along the project ROW would be notified 5 days prior to construction occurring within 500 feet of their residence.

Cumulative Impacts from Noise

Potential cumulative effects from the Proposed Action in combination with past, present, and reasonably foreseeable future actions would primarily include low to moderate levels of cumulative noise emissions during project construction and virtually no noise generated during project operation.

Construction noise would add to existing traffic levels in the project vicinity; however, none of these levels would be anticipated to exceed the Counties' criteria of recommended noise levels thresholds of 65 to 75 Ldn, at property boundaries of sensitive noise receptors (i.e., residences) located along the ROW.

Potential long-term cumulative noise effects would be inconsequential for conduit operation, other than an emergency event. This assessment is based on the anticipated operational noise levels being lower than current ambient noise levels and the distance of the project to area residences. Potential cumulative impacts would not be expected to exceed ambient noise levels in the project area. Cumulative noise impacts would be considered less than significant.

4.9 Human Health and Safety

4.9.1 Hazardous Materials

This section describes impacts from hazardous materials that could result from construction and operation of the Proposed Action. The Proposed Action has the potential to have an adverse impact from hazardous materials if it would create a significant hazard to the public through the transport or use of hazardous materials or emission of hazardous materials, if it is located on a federally or state-listed contaminated site, or would impair implementation of an emergency response plan.

No Action Alternative

Under the No Action Alternative, no additional impacts to natural or human resources from hazardous materials would occur.

Proposed Action

The project area is not on a federally or state-listed contamination site thus no impacts from hazardous materials exposure would be anticipated from construction and operation of the Proposed Action.

With respect to use of hazardous materials, construction products may contain such materials as fuels, oils, and lubricants, so a number of committed protection measures have been developed for this project, based on several of PSREC’s existing construction BMPs and the pending ROW Grant with the BLM. Vehicles used during maintenance activities would be refueled at existing PSREC facilities which already have SPCC (Spill Prevention Control and Countermeasure) plans in place. Table 2-4 and Appendix B reflect several of PSREC’s BMPs to minimize potential impacts from hazardous materials. Committed Protection Measure “Hazardous Materials-2 PSREC BMP” (see Table 2-4) requires that totally enclosed containment would be provided for all hazardous material and would be removed to the nearest county disposal site. Therefore, there will be no health and safety effects on workers, the travelling public, recreation users, and sensitive receptors at the CAIs from hazardous materials. A formal Health and Safety Plan will not be prepared for the project. During line and substation construction, in the event a hazardous spill occurred, the on-site Environmental Monitors would respond and notify the respective County in California and Nevada and other appropriate California and Nevada agencies, as applicable.

Operation of the fiber cable would not emit any hazardous substances and neither the construction nor operation of the project would interfere with any emergency response plans. Thus, impacts from hazardous materials would be less than significant.

Table 4-14: Hazardous Materials Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
<i>Hazardous Materials and Waste</i>	
Hazardous Materials-1 PSREC BMP	Construction sites would be maintained in a sanitary condition at all times; waste materials at those sites would be disposed of promptly at an appropriate and the nearest county waste disposal site. 'Waste' means all discarded matter including, but

Category	Committed Protection Measure
	not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.
Hazardous Materials-2 PSREC BMP	Totally enclosed containment would be provided for all trash and hazardous materials (if needed). All construction waste including trash, litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials would be removed to the nearest county waste disposal site.
Hazardous Materials-3 PSREC BMP	PSREC would comply with all applicable federal, state, and local laws and regulations, existing or hereafter enacted or promulgated, with regard to any hazardous materials, as defined in this paragraph, that would be used, produced, transported or stored on or within the ROW or any of the ROW facilities or used in the construction, operation, maintenance, or termination of the ROW or any of its facilities. "Hazardous material" means any substance, pollutant, or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended, 42 U.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste," as defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 U.S.C. 6901 et seq. and its regulations. The term "hazardous material" also includes any nuclear material or byproduct as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA Section 101(14), 42 U.S.C. 9601(14), nor does the term include natural gas.
Hazardous Materials-4 PSREC BMP	PSREC, as cited by existing Grant ROW, agrees to indemnify the U.S. against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined by CERCLA or RCRA) on the ROW unless the release or threatened release is wholly unrelated to PSREC's activity on the ROW. This agreement applies without regard to whether a release is caused by PSREC, its agent, or third parties.

Cumulative Impacts from Hazardous Materials

Cumulative impacts in Lassen County, Plumas County, and Sierra County, California, and Washoe County, NV from potential hazardous materials in or near the project area from past, present, and future actions in combination with the Proposed Action would be low to none. PSREC's committed BMPs and protection measures to minimize the potential for accidental spills of hazardous materials during project construction and maintenance activities would minimize the possibility for chemical exposure or contamination issues, and cumulative impacts from hazardous materials would be considered less than significant.

No materials that could be considered hazardous are expected to be used during construction of the fiber cable and ancillary facilities.

4.9.2 Fire Management

This section describes impacts from fire that could result from construction and operation of the Proposed Action. The Proposed Action has the potential to have an adverse impact from fire risk if it would substantially increase the fire risk or expose people or structures to substantial adverse effects from the risk of fire.

No Action Alternative

Under the No Action Alternative, regional fire management would continue under the current federal, state, and county policies and guidelines.

Proposed Action

Construction activities resulting in new ground disturbance could increase the potential for growth of vegetation such as cheatgrass, an exotic weedy grass that is a highly flammable fine-textured fuel that increases fire intensity. Because of the potential for wildfire effects during project construction, a number of measures have been developed to minimize this risk.

During construction of the Proposed Action, emphasis would be focused on prevention (e.g., using techniques that would reduce the chance for unwanted ignitions), detection, and rapid suppression response.

PSREC also has committed to several environmental protection measures listed in Table 2-4 and Appendix B to enhance reclamation, prevent or minimize noxious weeds, and minimize wildfire danger. Measures Reclamation 1-8 and Measures Vegetation 3 and 5 delineate the efforts to reclaim disturbed areas following project construction to minimize weeds (e.g., cheatgrass) and future fire risks. A Construction Fire Plan has been developed and is included in Appendix G.

In the event of a wildfire, projects may be subsequently implemented to minimize area erosion. Emergency Stabilization and Rehabilitation projects are generally undertaken within the first year after a wildfire and continue for up to two growing seasons. Projects aim to establish vegetative cover within the burned area to discourage runoff, weed colonization, and reduce erosion potential. The application of seed to a burned area may expedite the return of desirable vegetative cover within burned areas. Seed may be applied aerially (e.g. helicopter), mechanically (e.g., rangeland drill, chaining, or disking), or by hand.

No impacts to regional fire management or response capabilities would be anticipated because the potential for ignition, surface fuel alteration, or safety hazards would not change outside the project area as a result of the Proposed Action. Thus, with implementation of the applicable protection measures, potential effects from fire risk would be less than significant.

Cumulative Impacts

Past and current fire suppression, and current and future dispersed recreation have the most potential to affect fuels, rangeland vegetation, potential wildfire behavior, and invasive species in the project area. During construction of the Proposed Action, the risk of wild land fire would incrementally increase during the construction period. However, PSREC's committed BMPs,

environmental protection measures developed for the project, and additional approaches on USFS and BLM lands would aid in minimizing both wildfire risks and enhance reclamation efforts to minimize flammable fuels (i.e., weeds) (see *Measures ROW Grant 31 and 32*, *Measures Reclamation 1-8*, and *Measures Vegetation 3 and 5* in Table 2-4 and Appendix B). (<http://www.blm.gov/pubs>, <http://www.fs.us/publications.html>). See the Fire Plan in Appendix G. Cumulative impacts in regard to fire management would be considered less than significant.

4.10 Biological Resources

This section describes impacts to plant and wildlife special status plant species and sensitive natural communities that could result from construction and operations of the Proposed Action. The Proposed Action has the potential to have a significant impact if it would have a substantial adverse effect on any special status species or natural community identified by the federal or state agencies either directly or through habitat modification, interferes substantially with the movement of a special status species, or conflicts with local policies or adopted plans protecting biological resources. All references in this section are included in the BAHA in Appendix D.

No Action Alternative

No impacts to special status plant or wildlife species or sensitive natural habitat would be anticipated for the No Action Alternative.

Proposed Action

Chapter 2 and Tables 4-15, 4-16, and 4-17 describe the committed environmental protection measures that will be implemented during construction. With the implementation of the environmental protection measures, the project will have no effect on federal listed species or their critical habitat. The project will not affect State listed species. The project avoids and minimizes effects on non-federal and State listed species through the incorporation of the environmental protection measures.

A letter was sent by PSREC to the USFWS Reno and USFWS Sacramento offices on 11 February 2011 requesting written concurrence from USFWS of a 'No Effects' determination for the project. In a letter dated 8 March 2011 the USFWS Reno office provided written concurrence that the project is not likely to adversely impact federal listed species. In an email dated 30 March 2011 USFWS Sacramento office concurred with the determination made by the USFWS Reno office.

Table 4-15: Biological Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
<i>Biological</i>	
Biological-1 PSREC BMP	PSREC would ensure the appropriate biological resource surveys have been conducted prior to the initiation of construction, per coordination with the federal agencies.
Biological-2 PSREC BMP	Construction excavations left open overnight would be covered to prevent injury to wildlife. Covers would be secured in place and would be strong enough to prevent wildlife from falling through the openings.
Biological-3 PSREC BMP	PSREC will conduct Worker Environmental Awareness Training (WEAT) workshop to make construction crews aware of sensitive biological resources, environmentally sensitive areas (ESA), and avoidance measures.
Biological-4 PSREC BMP	PSREC will retain qualified biologists to conduct a pre-construction botanical survey, consistent with DFG (2009b) guidelines, to map the location of special-status plants and noxious weeds wherever drilling or trenching will occur, or wherever vehicles will be driven along the route. Sensitive botanical resources and noxious weed populations will be mapped and identified on construction drawings or project maps prior to construction
Biological-5 PSREC BMP	A focused survey for three-ranked hump moss and broad-nerved hump moss shall be conducted in potential habitat along with the pre-construction botanical survey described in Biological-4. If found, the same ESA conditions described in Biological-20 for plants will be implemented for special-status mosses.
Biological-6 PSREC BMP	A focused survey for cylindrical trichodon shall be conducted in potential habitat along with the pre-construction botanical survey described in Biological-4. If found, the same ESA conditions described in Biological-20 for plants also apply to special-status mosses.
Biological-7 PSREC BMP	Prior to construction, a botanical survey for Webber's ivesia shall be conducted in potential habitat in the project area, during the evident and identifiable period, by a qualified botanist. If Webber's ivesia is found, an ESA will be established, with temporary fencing, around the occurrence prior to construction in that part of the project area. The ESA shall remain in place until the completion of construction in that part of the project area. No vehicles or equipment staging shall be allowed in the ESA. Construction personnel, on foot, may need to cross part of an ESA if a pole is surrounded by Webber's ivesia. In that instance, the botanist shall be present when the ESA is entered and shall assist construction personnel in gaining pole access without harming Webber's ivesia. If the ESA is in a segment of the project area where the line will be installed underground, the trench alignment will be moved to avoid the ESA, or the ESA will be avoided with an underground horizontal directional bore.
Biological-8 PSREC BMP	A floristic survey according to DFG (2009b) guidelines shall be conducted as described in Biological-4. If Boggs Lake hedge hyssop is found, an ESA will be established with temporary fencing around the occurrence, prior to construction in that part of the project area. The ESA shall remain in place until construction is completed in that part of the project area. No vehicles or equipment staging shall be allowed in the ESA. If the ESA is in a segment of the project area where the line will be installed

Category	Committed Protection Measure
	underground, the trench alignment will be moved to avoid the ESA, or the ESA will be avoided with an underground horizontal directional bore.
Biological-9 PSREC BMP	<p>One of the two measures below shall be implemented in order to prevent establishment of swallow nests prior to construction on bridges where new conduit will be attached. Swallows arrive in mid February, increase in numbers until late March, and remain until October. Nesting begins in April, peaks in June, and continues into August.</p> <ul style="list-style-type: none"> <li>g. Beginning 15 February and continuing every week thereafter, remove partially completed nests using either hand tools or high pressure water; or <li>h. Hang netting from the bridge before nesting begins. If this technique is used, netting should be in place from late February until construction within 250 ft is complete.
Biological-10 PSREC BMP	<p>If Project construction activities are scheduled to occur during the bird nesting season (1 Feb – 31 August), PSREC will retain a qualified biologist to conduct a nest clearance survey using the methods described below.</p> <p style="padding-left: 40px;">Birds of Prey and Special-Status Birds:</p> <ul style="list-style-type: none"> <li>a. A qualified biologist shall conduct nest clearance surveys for birds of prey and special-status birds within 2 weeks prior to the start of construction. No further mitigation measures are necessary where no active nests of a bird of prey or special-status bird are found. <li>b. If an active nest of a bird of prey or special-status bird (i.e., an actively defended nest, or a nest containing eggs or young) is found, PSREC will coordinate with the appropriate agency (e.g., BLM wildlife biologist if the nest is on BLM land, USFS wildlife biologist if the nest is on USFS land, or DFG environmental scientist if the nest is on state or private land) to determine if construction activities should be restricted near active nests for a specific distance and/or period of time. The potential ESA and extent of the seasonal restriction would be determined on a case-by-case and species-specific basis. Some bird species are more tolerant of human presence and disturbance than other species and whether a nest is within line-of-sight of the construction activities is integral to determining whether avoidance measures would be warranted. <li>c. The Eagle Lake Resource Management Plan (RMP; BLM 2007, 2008) delineates the applicable buffer zone distances and seasonal restriction dates by bird-of-prey species. Where an active nest occurs on BLM land, the RMP will be used as a guideline for construction restrictions. <li>d. The applicable ESA and seasonal restrictions can vary and shall take into account the species affected, topography, habitat suitability, degree of existing disturbance, associated prey base, breeding phenology, and degree or extent of proposed disturbance. Protection of active bird-of-prey and special-status bird nests shall apply during project construction and the breeding season period until the young have fledged or if the nesting attempt fails.

Category	Committed Protection Measure
	<p>Non Special-Status MBTA Birds:</p> <p>e. A qualified biologist shall conduct nest clearance surveys for nesting MBTA birds where drilling or trenching will occur, or wherever vehicles will be driven along the route within 2 weeks prior to the start of construction. No further mitigation measures are necessary where no active MBTA bird nests are found.</p> <p>f. If a nesting MBTA bird is found, then the biologist shall flag a minimum 50-ft ESA around the nest. No construction activity shall be allowed in the ESA until the biologist determines that the nest is no longer active. The ESA may be reduced if the biologist monitors the construction activities and determines in coordination with appropriate resource agency staff (e.g., BLM, USFS, or DFG), that no disturbance to the active nest is occurring.</p>
Biological-11 PSREC BMP	Between 15 February and 15 September, work within 0.25 mi of northern goshawk nests or PACs will be limited to two days. If more than two days are needed to complete the work, PSREC will coordinate with the appropriate agency, e.g., BLM wildlife biologist if the nest is on BLM land, USFS wildlife biologist if the nest is on USFS land, or DFG environmental scientist if the nest is on state or private land, to determine if construction activities should be restricted near active nests for a specific distance and/or period of time.
Biological-12 PSREC BMP	Between 1 February and 31 August, project construction within 0.5 mi of golden eagle nests will be limited to two days of work. If more than two days are needed to complete the work, PSREC will coordinate with the appropriate agency, e.g., BLM wildlife biologist if the nest is on BLM land, USFS wildlife biologist if the nest is on USFS land, or DFG environmental scientist if the nest is on state or private land, to determine if construction activities should be restricted near active nests for a specific distance and/or period of time.
Biological-13 PSREC BMP	Between 1 February and 31 August, no work within 0.5 mi of the documented eyrie at Bonta Ridge or any other peregrine falcon eyrie identified during preconstruction surveys will occur. If it becomes necessary to conduct work within 0.5 mi of a peregrine falcon eyrie, PSREC will coordinate with DFG and the appropriate agency (e.g., BLM wildlife biologist if the nest is on BLM land; USFS wildlife biologist if the nest is on USFS land), to determine if construction activities should be restricted for a specific distance and/or period of time.
Biological-14 PSREC BMP	Between 1 March and 15 August, work within 0.25 mi of the California spotted owl PAC will be limited to two days of work. If more than two days are needed to complete the work, PSREC will coordinate with DFG and the USFS wildlife biologist to determine if construction activities should be restricted near the PAC.
Biological-15 PSREC BMP	Willow flycatcher habitat in the project area is included in willow flycatcher avoidance areas shown on Figure 2, Sheets 7, 10, 15, 18 (US395) and 20, 22, 23, 26, 28-30 (SR70). In order for construction to occur during the willow flycatcher breeding season (June 1 through August 15; USFS 2004), protocol surveys shall be conducted the

Category	Committed Protection Measure
	same year construction will occur and must conclude absence of nesting/ territorial willow flycatcher. The surveys will be conducted in accordance with A Willow Flycatcher Survey Protocol for California (Bombay et al. 2003). If protocol surveys are not conducted, no work shall occur between 1 June and 15 August in the willow flycatcher avoidance areas mapped on Figure 2, Sheets 7, 10, 15, 18 (US395) and 20, 22, 23, 26, 28-30 (SR70).
Biological-16 PSREC BMP	Between 15 February and 31 August, wherever the project area comes within 250 ft or crosses a creek with steep, eroded banks, a survey will be conducted by a qualified biologist for nesting bank swallows no more than two weeks prior to construction. If no nesting bank swallows are found, construction may commence. If active bank swallow nests are found, biologist shall flag a minimum 250-ft Environmentally Sensitive Area (ESA) around the active nests. No work will occur in the ESA until the nests are no longer active and the bank swallows have left the area.
Biological-17 PSREC BMP	PSREC will retain a qualified biologist to conduct a preconstruction survey for roosting bats within 2 weeks prior to the start of construction. The survey can be conducted concurrently with the nesting bird preconstruction survey. The survey will include, but is not limited to, the underside of bridges and culverts and rock crevices and overhangs. If no roosting bats are found, then no further mitigation measures are necessary. If roosting bats are found, PSREC will coordinate with the appropriate agency (e.g., BLM, USFS, or DFG) to determine if construction activities should be restricted near bat roosts for a specific distance and/or period of time. The potential Environmentally Sensitive Area (ESA) and extent of the seasonal restriction would be determined on a case-by-case and species-specific basis.
Biological-18 PSREC BMP	Between 1 February to 31 July, two weeks prior to work in the forested areas of the project area (from Quincy east to Big Grizzly Creek), the project shall contact DFG staff involved with the fisher reintroduction to ascertain if there are any denning female fishers within 0.5 mi of construction (Richard Callas: 530-340-5977, or Pete Figura: 530-225-3224). Radio or GPS-enabled collars on the released fishers allow their location and movement to be tracked (pers. comm. R. Callas). If there are denning female fishers within 0.5 mi, no construction shall occur within 0.5 mi of the den until the den has been vacated. DFG shall continue to be contacted every two weeks during construction from 1 February to 31 July in the forested areas to check for denning fishers.
Biological-19 PSREC BMP	PSREC will retain a qualified biologist to conduct a preconstruction survey for active burrows of special-status burrowing animals in the project area within 2 weeks prior to the start of construction, wherever drilling or trenching will occur, or wherever vehicles will be driven along the route. If no active burrows are found, then no further mitigation measures are necessary. If active burrows of special-status burrowing animals are found, PSREC will coordinate with the appropriate agency (e.g., BLM, USFS, or DFG) to determine if construction activities should be restricted nearby for a specific distance and/or period of time. The potential ESA and extent of the temporal restriction would be determined on a case-by-case basis.
Biological-20	Prior to construction, PSREC will retain a qualified biologist to direct the establishment

Category	Committed Protection Measure
PSREC BMP	of environmentally sensitive areas (ESA) around special-status plant populations or other sensitive resources to be avoided. ESAs will be marked both in the field with temporary fencing, and on the construction drawings. Construction-related activities will be prohibited within ESAs, unless construction personnel on foot need to cross part of an ESA to access and climb an existing pole.
Biological-21 PSREC BMP	Perennial and intermittent waters in the project area, including any adjacent willow thickets, riparian corridors, and wetlands, shall be avoided by either hanging new conduit on existing utility poles, installing conduit underneath waters with horizontal directional drills, or blowing new fiber in existing conduit. No vehicles or equipment staging shall be allowed in perennial or intermittent waters, wetlands, willow thickets, or riparian corridors. Construction personnel, on foot, may need to cross narrow portions of wetlands, willow thickets, or riparian corridors, if a pole is surrounded by such a feature.
Biological-22 PSREC BMP	PSREC will retain qualified biologists and resource specialists to monitor construction activities in areas near sensitive resources.
Biological-23 PSREC BMP	Specific fiber optic vault locations are flexible and will be placed to avoid sensitive resources including, but not limited to, riparian areas, water courses, wetlands, special-status plant populations, etc.
Biological-24 PSREC BMP	PSREC will implement the appropriate noxious weed control measures from the following; Partners against Weeds (BLM 1996), The National Invasive Species Management Plan (National Invasive Species Council 2008), and the Weed Prevention and Management Guidelines for Public Lands (BLM 2011).
Biological-25 PSREC BMP	Structures (if needed) will be constructed to conform to RUS (Rural Utilities Service) raptor-safe specifications. Additional resources used in design will be the <i>Avian Power Line Interaction Committee's Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006</i> and <i>Mitigating Bird Collisions with Power Lines: The State of the Art in 1994</i> .
Biological-26 PSREC BMP	If construction of any associated project infrastructure (e.g. re-generation site, secondary NOCs etc.) requires installation of outdoor lighting the lighting will be designed to minimize bird attraction or nocturnal insect attraction and swarming. At a minimum, lights should be down shielded to minimize attracting birds or insects. This measure will minimize the potential for nocturnal bird foraging (e.g., nighthawks).
Biological-27 PSREC BMP	To the extent practicable, and to mitigate potential disturbance to migrating deer moving east to west, underground construction of the 9 miles (8 miles if existing conduit is utilized in NV) in the US395 ROW would not occur during November 1 to May 1 in Nevada, and April-May, spring migration, or October-November, fall migration, in California.

4.10.1 Water Resources, Aquatic Habitats and Wetlands

This section describes impacts to aquatic habitats, including rivers, creeks, wetlands, and riparian habitats that could result from construction and operations of the Proposed Action. The

Proposed Action has the potential to adversely impact aquatic habitats if it would directly remove, fill or otherwise interrupt the hydrology.

No Action Alternative

Under the No Action Alternative no effects to wetlands, waters, or riparian would occur in the project area.

Proposed Action

Rivers and Associated Riparian Areas and Wetlands

Avoidance and Minimization Efforts: In addition to the BMPs for water quality in Table 4-16, all rivers in the proposed project area, including any adjacent willow thickets and wetlands, shall be avoided by either hanging new conduit on existing utility poles, attaching new conduit to existing bridges, or blowing new fiber in existing conduit. During construction, vehicles shall not drive across creeks or other wetland areas. No vehicles or equipment staging shall be allowed in wetlands or willow thickets. Construction personnel, on foot, may need to cross part of a wetland or willow thicket if a pole is surrounded by a wetland or willow thicket.

Project Impacts: With implementation of the avoidance measures, the project will not impact rivers or adjacent riparian areas or wetlands, and impacts would be considered less than significant.

Wild and Scenic Rivers

The Middle Fork Feather River is a designated Wild and Scenic River, which is crossed by the project several times. The fiber cable is proposed to be hung on existing power poles which cross the River.

Project Impacts: The project is not a water development project. The project will not result in new development along the River. The project will not have an adverse effect on the free-flowing characteristics of the River. The project will not create development which is inconsistent with the Middle Fork Feather River's designation as a Wild and Scenic River. Project impacts on wild and scenic rivers would be less than significant.

Perennial Creeks and Canals, and Associated Riparian Areas and Wetlands

Avoidance and Minimization Efforts: In addition to the BMPs for water quality in Table 4-16, all perennial creeks and canals in the proposed project area, including any adjacent willow thickets and wetlands, shall be avoided by either hanging new conduit on existing utility poles, attaching new conduit to existing bridges, or blowing new fiber in existing conduit. During construction, vehicles shall not drive across creeks or other wetland areas. No vehicles or equipment staging shall be allowed in wetlands or willow thickets. Construction personnel, on foot, may need to cross part of a wetland or willow thicket if a pole is surrounded by a wetland or willow thicket.

Project Impacts: With implementation of the avoidance measures, the project will not impact perennial creeks and canals, or adjacent riparian areas or wetlands. Impacts would be considered less than significant.

Intermittent and Ephemeral Creeks, and Associated Riparian Areas and Wetlands

Avoidance and Minimization Efforts: In addition to the BMPs for water quality in Table 4-16, all intermittent and ephemeral creeks north and west of Hallelujah Junction, including any adjacent willow thickets and wetlands, shall be avoided by either hanging new conduit on existing utility poles, attaching new conduit to existing bridges, or blowing new fiber in existing conduit. During construction, vehicles shall not drive across creeks or other wetland areas. No vehicles or equipment staging shall be allowed in wetlands or willow thickets. Construction personnel, on foot, may need to cross part of a wetland or willow thicket if a pole is surrounded by a wetland or willow thicket.

Some of the ephemeral creeks between Hallelujah Junction and Reno will be avoided with horizontal directional drills (HDD) conducted consistent with the standards of Caltrans (2008) and the Nevada Department of Transportation. Trenching through ephemeral creeks in this segment would occur during the dry season.

Project Impacts: With implementation of the avoidance measures, the project will not impact intermittent and ephemeral creeks and canals north and west of Hallelujah Junction, or adjacent riparian areas or wetlands.

The project will temporarily impact the bed of some ephemeral creeks between Hallelujah Junction and Reno during trenching, consistent with the conditions of Nationwide Permit 12. The trenching will occur when the creeks are dry and the bed will be returned to pre-construction grade. The ephemeral creeks between Hallelujah Junction and Reno do not have associated wetlands or riparian corridors. The temporary impacts to these ephemeral creeks are less than significant.

Wetlands

Avoidance and Minimization Efforts: In addition to the erosion and sedimentation avoidance measure in Table 4-16, wetlands in the proposed project area, including willow thickets, riparian corridors, and wet meadows, shall be avoided by either hanging new conduit on existing utility poles, installing conduit underground with horizontal directional drills, or blowing new fiber in existing conduit. No vehicles or equipment staging shall be allowed in wetlands. Construction personnel, on foot, may need to cross part of a wetland if a pole is surrounded by such a feature.

Project Impacts: With implementation of the avoidance measures, the project will not impact wetlands in the proposed project area, and impacts would be less than significant. The project will not fill wetlands.

Table 4-16: Water Resources Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
Water Resources	
Water-1 PSREC BMP	If damaged or destroyed by construction activities, water sources or facilities (e.g., tanks, developed springs, water lines, wells) would be repaired or replaced to their pre-disturbed condition, as required by the landowner or land management agency.
Water-2 PSREC BMP	All construction and maintenance activities would be conducted to minimize disturbance to vegetation, drainage channels, and intermittent and perennial stream banks.
Water-3 PSREC BMP	Surface water quality would be protected from construction impacts by use of sediment barriers that would be maintained until satisfactory reclamation is established.
Water-4 PSREC BMP	PSREC does not use fuel trucks; they would refuel equipment at their existing construction yards in Milford and Portola.

Cumulative Impacts to Aquatic Habitats

The Proposed Action avoids impacts to aquatic habitats (rivers, perennial creeks, Canals, intermittent creeks, ephemeral creeks, riparian areas, and wetlands). Implementation of PSREC's committed environmental protection measures listed in Tables 4-16 and 4-15 will ensure avoidance of direct or indirect impacts to aquatic habitats. The Proposed Action will not result in cumulative impacts to aquatic habitats; cumulative impacts to aquatic habitats would be considered less than significant.

4.10.2 Invertebrates

California Floater

Avoidance and Minimization Efforts: The avoidance measures for rivers and creeks in Tables 4-16 and 4-15 avoid impacts to California floater.

Project Impacts: The project will not impact California floater with implementation of the avoidance measure.

Carson Wandering Skipper

Avoidance and Minimization Efforts: No avoidance measures for CWS are proposed.

Project Impacts: The proposed project area does not cross the margin of Honey Lake or any area dominated by alkaline vegetation. Saltgrass occurs sporadically in the proposed project area in the Honey Lake area, generally along disturbed roadsides, but not with high cover or in the context of shorelines or other substantial water source. Substantial patches of saltgrass occur along the margin of White Lake, on the east side of US 395 near the California-Nevada border. The proposed project area at this location is on the west side of US 395. Completion of the Proposed Project adjacent to Honey Lake and White Lake will consist of hanging fiber conduit on existing utility poles within the existing utility corridor. Project construction adjacent to

White Lake will on the west side the US 395. There are no known occurrences of CWS in the proposed project area, and the project will have no affect on any known occurrences of CWS outside the proposed project area. In a letter dated 8 March 2011 the USFWS Reno office provided written concurrence that the proposed project is not likely to adversely impact CWS. In an email dated 30 March 2011 USFWS Sacramento office concurred with the determination made by the USFWS Reno office. The proposed project will not affect CWS.

4.10.3 Fish

Cui-ui

Avoidance and Minimization Efforts: The avoidance measures for rivers and creeks in Tables 4-16 and 4-15 will avoid impacts to Cui-ui.

Project Impacts: Completion of the Proposed Project will not result in temporary or permanent impacts to the Truckee River in the proposed project area. Fiber conduit will be placed on the Virginia Street Bridge over the Truckee River. No in-water construction will occur at this crossing. In a letter dated 8 March 2011 the USFWS Reno office provided written concurrence that the proposed project is not likely to adversely impact Cui-ui. In an email dated 30 March 2011 USFWS Sacramento office concurred with the determination made by the USFWS Reno office. The Proposed Project will not affect Cui-ui.

Hardhead

Avoidance and Minimization Efforts: The avoidance measures for rivers and creeks in Tables 4-16 and 4-15 will avoid impacts to Hardhead.

Project Impacts: The Project will not impact hardhead with implementation of the avoidance measures.

Lahontan Cutthroat Trout

Avoidance and Minimization Efforts: The avoidance measures for rivers and creeks in Tables 4-16 and 4-15 will avoid impacts to Lahontan Cutthroat Trout.

Project Impacts: Completion of the Proposed Project will not result in temporary or permanent impacts to the Truckee River in the proposed project area. Fiber conduit will be placed on the Virginia Street Bridge over the Truckee River. No in-water construction will occur at this crossing. In a letter dated 8 March 2011 the USFWS Reno office provided written concurrence that the proposed project is not likely to adversely impact Lahontan Cutthroat Trout. In an email dated 30 March 2011 USFWS Sacramento office concurred with the determination made by the USFWS Reno office. The Proposed Project will not affect Lahontan Cutthroat Trout.

4.10.4 Amphibians

Foothill Yellow-Legged Frog (FYLF)

Avoidance and Minimization Efforts: The avoidance measures for waters, wetlands, and riparian areas in Tables 4-16 and 4-15 will avoid impacts to FYLF. The project will hang conduit on existing utility lines crossing Spanish Creek.

Project Impacts: The Project will not impact FYLF with implementation of the avoidance measure.

Sierra Nevada Yellow-Legged Frog (SNYLF)

Avoidance and Minimization Efforts: The avoidance measures for rivers and creeks in Tables 4-16 and 4-15 will avoid impacts to SNYLF.

Project Impacts: There are no known occurrences of SNYLF in the proposed project area. The project will hang conduit on existing utility poles over aquatic habitats that could contain unknown occurrences of SNYLF. The project will not affect SNYLF with implementation of the avoidance measure.

Northern Leopard Frog (NLF)

Avoidance and Minimization Efforts: The avoidance measures for rivers and creeks in Tables 4-16 and 4-15 will avoid impacts to NLF.

Project Impacts: The Project will not affect NLF with implementation of the avoidance measure.

4.10.5 Reptiles

Western Pond Turtle (WPT)

Avoidance and Minimization Efforts: The avoidance measures for rivers and creeks in Tables 4-16 and 4-15 will avoid impacts to WPT.

Project Impacts: The Project will not affect WPT with implementation of the avoidance measure.

Northern Sagebrush Lizard

Avoidance and Minimization Efforts: No avoidance or minimization efforts are proposed.

Project Impacts: Northern sagebrush lizard is not a special-status species in Nevada. Northern sagebrush lizard is considered sensitive by the Eagle Lake Field Office of BLM in California. The project could result in the sporadic loss of Northern sagebrush lizard individuals, but would have a less than significant impact on the species.

4.10.6 Birds

Migratory Birds and Birds of Prey

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include migratory birds and birds of prey.

Project Impacts: The project will not affect birds of prey or migratory birds with implementation of the avoidance measures.

Northern Goshawk

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include northern goshawk. In addition, the SNFPA (USFS January 2004) specifies a limited operating period (LOP) within 0.25 mi of a northern goshawk territory or active nest site between 15 February and 15 September. The PNF wildlife biologist stated that the LOP period would not be necessary if project activities in the area could be implemented within a day or two with little to no increase above existing noise levels as well as being implemented as close to or after August 31 as possible (pers. comm., Nickerson 2010). Hwy 70 occurs between the proposed project area and the PAC that occurs 0.2 mi from the proposed project area. The proposed project area will either be accessed on existing roads or on foot. Noise levels from project construction will not exceed noise levels generated by the highway. There are no other northern goshawk PACs or nest sites within 0.25 mi of the proposed project area. If no project activities are conducted during the limited operating period (LOP), within a 0.25 mi of a northern goshawk territory or active nest site, the project will not affect the northern goshawk. If project activities are conducted, for approximately one or two days (short duration), within a 0.25 mi of a northern goshawk territory or active nest site during the LOP, the project may affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability for the northern goshawk (pers. comm., Nickerson 2011). With implementation of the avoidance measures, the project will not impact northern goshawk. The preconstruction survey for birds-of-prey listed in Table 4-15 will identify any new northern goshawk nests in the vicinity of the proposed project area.

Between 15 February and 15 September, work within 0.25 mi of northern goshawk nests or PACs will be limited to two days. If more than two days are needed to complete the work, PSREC will coordinate with the appropriate agency, e.g., BLM wildlife biologist if the nest is on BLM land, USFS wildlife biologist if the nest is on USFS land, or DFG environmental scientist

if the nest is on state or private land, to determine if construction activities should be restricted near active nests for a specific distance and/or period of time.

Project Impacts: The project will not affect northern goshawk with implementation of the avoidance measures.

Tricolored Blackbird

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include tricolored blackbird.

Project Impacts: The project will not affect tricolored blackbird with implementation of the avoidance measures.

Golden Eagle

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include Golden Eagle. In addition, the PNF wildlife biologist stated that an LOP would be required for construction activities between 1 February and 31 August in the vicinity of active golden eagle nests. The LOP period, however, would not be necessary if project activities in the area could be implemented within one or two day window with little to no increase above existing noise levels and if they were implemented as close to or after August 31 as possible (pers. comm., Nickerson 2010). The proposed project area in the area of the golden eagle nest occurs approximately 0.1 mi from SR 70. The proposed project area will either be accessed on existing roads or on foot. Noise levels from project construction will not exceed noise levels generated by the highway. There are no other documented golden eagle nest sites within 0.5 mi of the proposed project area. The preconstruction survey for birds-of-prey listed in Table 4-15 will identify any new golden eagle nests in the vicinity of the proposed project area.

Between 1 February and 31 August, project construction within 0.5 mi of golden eagle nests will be limited to two days of work. If more than two days are needed to complete the work, PSREC will coordinate with the appropriate agency, e.g., BLM wildlife biologist if the nest is on BLM land, USFS wildlife biologist if the nest is on USFS land, or DFG environmental scientist if the nest is on state or private land, to determine if construction activities should be restricted near active nests for a specific distance and/or period of time.

Project Impacts: If no project activities are conducted during the limited operating period (LOP), within 0.5 mi of an active golden eagle nest, the project will not affect the golden eagle. If project activities are conducted, for approximately one or two days (short duration), within 0.5 mi of an active golden eagle nest site during the LOP, the project may affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability for the golden eagle (pers. comm., Nickerson 2011). The project will not impact golden eagle with implementation of the avoidance measure.

Short-Eared Owl

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include short-eared owl.

Project Impacts: The project will not affect short-eared owl with implementation of the avoidance measures.

Long-Eared Owl

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include long-eared owl.

Project Impacts: The project will not affect long-eared owl with implementation of the avoidance measures.

Burrowing Owl

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include burrowing owl. In addition, prior to construction during the breeding season (1 February through 31 August), the applicant shall retain a qualified biologist to conduct preconstruction surveys in accordance with DFG burrowing owl mitigation guidelines (17 October 1995) of all potential burrowing owl habitat within 500 ft of the proposed project area. Habitat located on privately owned land shall be surveyed visually from the proposed project area. The presence of individual burrowing owl, sign of burrowing owl (i.e., fecal whitewash at the entrance to burrows, feathers, etc.), and all burrows that are in use by burrowing owls will be recorded. Preconstruction surveys shall be conducted two weeks prior to construction. If active burrowing owl nests are found, PSREC will erect ESA buffers 160 ft from the occupied burrow in accordance with the burrowing owl mitigation guidelines (DFG 1995). If active burrowing owl nests are found in or within 500 ft of the proposed project area after preconstruction surveys are completed and construction begins, construction will temporarily stop in the vicinity of the burrow until a qualified biologist has erected appropriate ESA buffers. If buffers are not feasible, DFG will be contacted for further instructions.

Project Impacts: The project will not affect burrowing owl with implementation of the avoidance measures.

Ferruginous Hawk

Avoidance and Minimization Efforts: No avoidance and minimization measures are proposed.

Project Impacts: The project will not affect ferruginous hawk with implementation of the avoidance measures.

Swainson's Hawk

Avoidance and minimization Efforts: The avoidance measures for birds in Table 4-15 include Swainson's hawk. In addition, the preconstruction survey for nesting Swainson's hawk shall cover potential habitat within 0.25 mi of the proposed project area. Surveys will be conducted from the proposed project area and publicly accessible areas.

Project Impacts: The project will not affect Swainson's hawk with implementation of the avoidance measures.

Greater Sage Grouse (GSG)

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include GSG.

Project Impacts: The proposed project area does not contain potential GSG leking sites. The proposed project area contains potential GSG foraging and nesting habitat only along approximately 1.5 mi of the Red Rock Fire Department Lateral. Completion of the Proposed Project along the Red Rock Fire Department Lateral will consist of hanging fiber conduit on existing utility poles within the PSREC ROW. No vegetation removal is anticipated. With implementation of the proposed avoidance measures, the Project will not affect GSG.

Black Tern

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include black tern.

Project Impacts: The project will not affect black tern with implementation of the avoidance measures.

Northern Harrier

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include northern harrier.

Project Impacts: The project will not affect northern harrier with implementation of the avoidance measures.

Yellow warbler

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include yellow warbler.

Project Impacts: The project will not affect yellow warbler with implementation of the avoidance measures.

Willow flycatcher

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include willow flycatcher. In addition, Willow flycatcher habitat in the proposed project area is included in willow flycatcher avoidance areas shown on Figure 2 in the BAHA in Appendix D. In order for construction to occur during the willow flycatcher breeding season (June 1 through August 15; USFS 2004), protocol surveys shall be conducted the same year construction will occur and must conclude absence of nesting/ territorial willow flycatcher. The surveys will be conducted in accordance with A Willow Flycatcher Survey Protocol for California (Bombay et al. 2003). If protocol surveys are not conducted, no work shall occur in the willow flycatcher avoidance areas mapped on Figure 2, between June 1 and August 15.

Project Impacts: The project will attach new conduit to the Gulling Street Bridge in downtown Portola. The project will hang new conduit on existing utility poles at the other areas in the proposed project area with potential willow flycatcher habitat. Implementation of the avoidance measure will result in work occurring when willow flycatchers are either absent or after young have fledged. The Project will not affect willow flycatcher with implementation of the avoidance measures.

American Peregrine Falcon

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include American Peregrine Falcon. In addition, The Herger-Feinstein Quincy Library Group Forest Recovery Act – Final EIS (1999) specifies a limited operating period (LOP) within designated peregrine falcon territories between 1 February and 31 August. The PNF wildlife biologist stated that the LOP period would not be necessary if project activities in the area could be implemented within a day or two with little to no increase above existing noise levels as well as being implemented as close to or after August 31 as possible (pers. comm., Nickerson 2010). The proposed project area in the area of the peregrine falcon eyrie occurs approximately 0.1 mi from SR 70. The proposed project area will either be accessed on existing roads or on foot. Noise levels from project construction will not exceed noise levels generated by the highway. There are no other document peregrine falcon eyries within 10 mi of the proposed project area. The preconstruction survey for birds-of-prey listed in Chapter 2 will identify any new peregrine falcon nests in the vicinity of the proposed project area.

Between 1 February and 31 August, no work within 0.5 mi of the documented eyrie at Bonta Ridge or any other peregrine falcon eyrie identified during preconstruction surveys will occur. If it becomes necessary to conduct work within 0.5 mi of a peregrine falcon eyrie, PSREC will coordinate with DFG and the appropriate agency (e.g., BLM wildlife biologist if the nest is on BLM land; USFS wildlife biologist if the nest is on USFS land), to determine if construction activities should be restricted for a specific distance and/or period of time.

Project Impacts: If no project activities are conducted during the limited operating period (LOP), within 0.5 mi of an active peregrine falcon eyrie, the project will not affect the peregrine falcon. If project activities are conducted, for approximately one or two days (short duration), within 0.5 mi of an active peregrine falcon eyrie during the LOP, the project may affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability for the peregrine falcon (pers. comm., Nickerson 2011). The project will not impact peregrine falcon with implementation of the avoidance measure.

Greater Sandhill Crane

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include greater sandhill crane.

Project Impacts: The project will not affect greater sandhill crane with implementation of the avoidance measures.

Yellow-Breasted Chat

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include yellow-breasted chat.

Project Impacts: The project will not affect yellow-breasted chat with implementation of the avoidance measures.

Loggerhead Shrike

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include loggerhead shrike.

Project Impacts: The project will not affect loggerhead shrike with implementation of the avoidance measures.

Mountain Quail

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include mountain quail.

Project Impacts: The project will not affect mountain quail with implementation of the avoidance measures.

Vesper Sparrow

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include vesper sparrow.

Project Impacts: The project will not affect vesper sparrow with implementation of the avoidance measures.

Bank Swallow

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include bank swallow. In addition, Between 15 February and 31 August, wherever the proposed project area comes within 250 ft or crosses a creek with steep, eroded banks, a survey will be conducted by a qualified biologist for nesting bank swallows no more than two weeks prior to construction. If no nesting bank swallows are found, construction may commence. If active bank swallow nests are found, biologist shall flag a minimum 250-ft Environmentally Sensitive Area (ESA) around the active nests. No work will occur in the ESA until the nests are no longer active and the bank swallows have left the area.

Project Impacts: The project will not affect bank swallow with implementation of the avoidance measures.

California Spotted Owl

Avoidance and Minimization Efforts: The avoidance measures for birds in Table 4-15 include California spotted owl. In addition, The SNFPA specifies a limited operating period (LOP) within 0.25 mile of a California spotted owl protected activity center boundary or active nest site between 1 March and 15 August unless surveys confirm that California spotted owls are not nesting (USFS January 2004; pers. comm., Nickerson 2010). The PNF wildlife biologist stated that the LOP period would not be necessary if project activities in the area could be implemented within a day or two with little to no increase above existing noise levels as well as being implemented as close to or after August 31 as possible (pers. comm., Nickerson 2010). The SNFPA specifies that the LOP for California spotted owl may be waived for projects of limited scope and duration or when a biological evaluation documents that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. Where a biological evaluation determines that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the LOP buffer distance may be reduced (USFS January 2004).

There is one PAC located within 0.25 mi of the proposed project area, which is mapped to the edge of SR 70. The CNDDDB record of the nesting California spotted owl in this PAC is located 0.35 mi northeast of the proposed project area. The proposed project area occurs approximately 0.05 to 0.08 mi northeast of and parallel to SR 70 at this location. The proposed project area will either be accessed on existing roads or on foot. Noise levels from project construction will not exceed noise levels generated by the highway.

Between 1 March and 15 August, work within 0.25 mi of the California spotted owl PAC will be limited to two days of work. If more than two days are needed to complete the work, PSREC will coordinate with DFG and the USFS wildlife biologist to determine if construction activities should be restricted near the PAC.

Project Impacts: If no project activities are conducted during the limited operating period (LOP), within 0.25 mi of the California spotted owl PAC, the project will not affect the California spotted owl. If project activities are conducted, for approximately one or two days (short duration), within 0.25 mi of the California spotted owl PAC during the LOP, the project may affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability for the California spotted owl (pers. comm., Nickerson 2011). The project will not impact California spotted owl with implementation of the avoidance measure.

Yellow-Headed Blackbird

Avoidance and Minimization Efforts: The avoidance measures for birds and waters in Tables 4-15 and 4-16, will avoid impacts to yellow-headed blackbird.

Project Impacts: The project will not affect yellow-headed blackbird with implementation of the avoidance measures.

4.10.7 Project Operation and Potential Effects to Birds

Since this project is the installation of a fiber cable and not a power line, the project would not pose an electrocution risk to birds.

The potential risk of birds colliding with transmission lines depends on a number of factors, such as habitat types, line orientation to migratory flyways and foraging flight patterns, number of migratory and resident bird species, species composition and area familiarity, visibility and weather patterns, types of human-related disturbance, and line design (Anderson 1978; Beaulaurier et al. 1982; Bevanger 1994, 1999; Crowder 2000; Ferrer and Janss 1999; Hebert and Reese 1995; Heck 2007; Olendorff and Lehman 1985; Thompson 1978). The flight altitude and flight speed of species approaching the line and the wing loading to aspect ratio also are key factors in collisions (Beaulaurier et al. 1982; Rayner 1988).

Overhead static wires located over the transmission conductors to intercept lightning strikes are not energized and are typically smaller diameter than the conductor wires. The reduced visibility of the static wires increases the collision risk for birds (APLIC 1994; Crowder 2000; Heck 2007). Previous studies on avian collisions with transmission lines have indicated that 65% to 93% of observed collisions occurred with the overhead static wire (Beaulaurier et al. 1982; Faanes 1987; Murphy et al. 2009).

The potential for bird collisions with the proposed fiber cable would be low, based on a number of factors and associated studies on this issue. Project-specific factors that would reduce the collision risk to both resident and migrant birds would be line location relative to adjacent habitats, avian species present, and past studies examining bird interactions with these types of

structures. Specifically, 1) the line ROW does not cross or bisect habitats that typically attract large numbers of birds (e.g., foraging, nesting, or roosting areas), 2) no bird concentrations occur on or near the ROW corridor, 3) the line does not cross a daily movement or seasonal migration corridor for birds, and 4) there is no historical evidence to suggest the existing transmission or distribution lines where the fiber cable will be hung have posed a moderate to high collision risk to either resident or migratory species. Impacts of bird collisions with the proposed fiber cable would be less than significant.

4.10.8 Mammals

Pallid Bat

Avoidance and Minimization Efforts: The avoidance measures for bats in Table 4-15 include pallid bat.

Project Impacts: The project will not affect pallid bat with implementation of the avoidance measures.

Sierra Nevada Mountain Beaver

Avoidance and Minimization Efforts: The avoidance measures for burrowing special-status animals in Table 4-15 include Sierra Nevada mountain beaver.

Project Impacts: The project will not affect Sierra Nevada mountain beaver with implementation of the avoidance measures.

Pygmy Rabbit

Avoidance and Minimization Efforts: The avoidance measures for burrowing special-status animals in Table 4-15 include pygmy rabbit.

Project Impacts: The project will not affect pygmy rabbit with implementation of the avoidance measures.

Townsend's Big-Eared Bat, including Western Big-Eared Bat

Avoidance and Minimization Efforts: The avoidance measures for bats in Table 4-15 include Townsend's big-eared bat and western big-eared bat.

Project Impacts: The project will not affect Townsend's big-eared bat and western big-eared bat with implementation of the avoidance measures.

Big Brown Bat

Avoidance and Minimization Efforts: The avoidance measures for bats in Table 4-15 include big brown bat.

Project Impacts: The project will not affect big brown bat with implementation of the avoidance measures.

Spotted Bat

Avoidance and Minimization Efforts: The avoidance measures for bats in Table 4-15 include spotted bat.

Project Impacts: The project will not affect spotted bat with implementation of the avoidance measures.

California wolverine

Avoidance and Minimization Efforts: No avoidance or minimization measures are proposed.

Project Impacts: Completion of the Proposed Project in segments of the proposed project area that traverse mixed coniferous forest will consist of hanging fiber conduit on existing utility poles within the PSREC ROW. The PSREC ROW that traverses mixed coniferous forest is subject to vegetation clearing and management. It is unlikely that wolverines would den in the proposed project area because of the presence of ongoing traffic and maintenance activities. The project will not affect California wolverine.

Sierra Nevada Snowshoe Hare

Avoidance and Minimization Efforts: No avoidance or minimization measures are proposed.

Project Impacts: Sierra Nevada snowshoe hare is unlikely to be present in the proposed project area during construction. The project will have a less than significant impact on Sierra Nevada snowshoe hare.

Western White-Tailed Jackrabbit

Avoidance and Minimization Efforts: No work will occur in the proposed project area between 15 November and 15 April per the Lahontan RWQCB construction general permit. Western white-tailed jackrabbit generally occur at elevations higher than the proposed project area at the time of year work will occur. No further avoidance or minimization measures are proposed for western white-tailed jackrabbit.

Project Impacts: The project will not affect western white-tailed jackrabbit.

American Marten

Avoidance and Minimization Efforts: No avoidance or minimization measures are proposed.

Project Impacts: The project will not affect American marten.

Pacific Fisher

Avoidance and Minimization Efforts: Between 1 February to 31 July, two weeks prior to work in the forested areas of the proposed project area (from Quincy east to Big Grizzly Creek), the project shall contact DFG staff involved with the fisher reintroduction to ascertain if there are any denning female fishers within 0.5 mi of construction (Richard Callas: 530-340-5977, or Pete Figura: 530-225-3224). Radio or GPS-enabled collars on the released fishers allow their location and movement to be tracked (pers. comm. R. Callas). If there are denning female fishers within 0.5 mi, no construction shall occur within 0.5 mi of the den until the den has been vacated. DFG shall continue to be contacted every two weeks during construction from 1 February to 31 July in the forested areas to check for denning fishers.

Project Impacts: Pacific fisher was previously extirpated or reduced to very low numbers in the central and northern Sierra Nevada and the reintroduced fishers have not dispersed into the area of the proposed project area. The project will have no effect on lone fishers. The project will not affect fishers outside the breeding season. With the avoidance measure above, the project will also have no effect on denning fishers.

Myotis Bats

Avoidance and Minimization Efforts: The avoidance measures for bats in Table 4-15 include Myotis bats.

Project Impacts: The project will not affect Myotis bats with implementation of the avoidance measures.

Western Pipistrelle Bat

Avoidance and Minimization Efforts: The avoidance measures for bats in Table 4-15 include western pipistrelle bat.

Project Impacts: The project will not affect western pipistrelle bat with implementation of the avoidance measures.

American Badger

Avoidance and Minimization Efforts: The avoidance measures for burrowing special-status animals in Table 4-15 include American badger.

Project Impacts: The project will not affect American badger with implementation of the avoidance measures.

Sierra Nevada Red Fox

Avoidance and Minimization Efforts: No avoidance or minimization measures are proposed.

Project Impacts: The project will not affect Sierra Nevada Red Fox.

Wildlife Resources Summary

During project operation, no increased effects to area wildlife resources would occur from occasional maintenance activities (e.g., maintenance trucks). The Proposed Action will have no effect on federal listed species or their critical habitat. The Proposed Action would not result in a substantial adverse modification to wildlife habitat, native species populations or interfere with any migratory patterns, as the pole and structure placement would not impede wildlife movement. With the implementation of mitigation measures in Table 2.4 and Appendix B, impacts to wildlife and fisheries are less than significant.

Cumulative Impacts to Wildlife Resources (Invertebrates, Fish, Amphibians, Reptiles, Birds and Mammals)

The Proposed Action will have no effect on federal or state listed animal species or their critical habitat. The Proposed Action would not result in a substantial adverse modification to wildlife habitat, native species populations or interfere with any migratory patterns or other wildlife movement. Implementation of PSREC's committed environmental protection measures listed in Table 4-15 will ensure avoidance of direct or indirect impacts to wildlife resources. The Proposed Action will not result in cumulative impacts to wildlife resources.

4.10.9 Lichens, Mosses, and Vascular Plants

Veined Water Lichen

Avoidance and Minimization Efforts: The avoidance measures for rivers and creeks in Tables 4-15 and 4-16 will also avoid impacts to veined water lichen.

Project Impacts: The project will not impact veined water lichen with implementation of the avoidance measure.

Three-ranked Hump Moss and Broad-Nerved Hump Moss

Avoidance and Minimization Efforts: A focused survey for three-ranked hump moss and broad-nerved hump moss shall be conducted in potential habitat along with the pre-construction botanical survey described in Table 4-15. If found, the same ESA conditions described in Table 4-15 for plants will be implemented for special-status mosses.

Project Impacts: The project will not impact three-ranked hump moss and broad-nerved hump moss with implementation of the avoidance measure.

Cylindrical Trichodon

Avoidance and minimization efforts: A focused survey for cylindrical trichodon shall be conducted in potential habitat along with the pre-construction botanical survey described in Table 4-15. If found, the same ESA conditions described in Table 4-15 for plants also apply to special-status mosses.

Project Impacts: The project will not impact cylindrical trichodon with implementation of the avoidance measure.

Webber's Ivesia

Avoidance and Minimization Efforts: Prior to construction, a botanical survey for Webber's ivesia shall be conducted in potential habitat in the proposed project area, during the evident and identifiable period, by a qualified botanist. If Webber's ivesia is found, an ESA shall be established, with temporary fencing, around the occurrence prior to construction in that part of the proposed project area. The ESA shall remain in place until the completion of construction in that part of the proposed project area. No vehicles or equipment staging shall be allowed in the ESA. Construction personnel, on foot, may need to cross part of an ESA if a pole is surrounded by Webber's ivesia. In that instance, the botanist shall be present when the ESA is entered and shall assist construction personnel in gaining pole access without harming Webber's ivesia. If the ESA is in a segment of the proposed project area where the line will be installed underground, the trench alignment shall be moved to avoid the ESA, or the ESA shall be avoided with an underground horizontal directional bore.

Project Impacts: There are no known occurrences of Webber's ivesia in the proposed project area, and the project will have no affect on any known occurrences of Webber's ivesia outside the proposed project area. The project will not affect Webber's ivesia with implementation of the avoidance measures listed above and in Table 4-15.

Boggs Lake Hedge-Hyssop

Avoidance and Minimization Efforts: A floristic survey according to DFG (2009b) guidelines shall be conducted as described in Table 4-15. If Boggs Lake hedge hyssop is found, an ESA shall be established with temporary fencing around the occurrence, prior to construction in that part of the proposed project area. The ESA shall remain in place until construction is completed in that part of the proposed project area. No vehicles or equipment staging shall be allowed in the ESA. If the ESA is in a segment of the proposed project area where the line will be installed underground, the trench alignment shall be moved to avoid the ESA, or the ESA shall be avoided with an underground horizontal directional bore.

Project Impacts: There are no known occurrences of Boggs Lake hedge hyssop in the proposed project area, and the project will have no affect on any known occurrences of Boggs Lake hedge hyssop outside the proposed project area. If a new occurrence of Boggs Lake hedge hyssop is found in the proposed project area during the botanical survey, the project will not affect Boggs Lake hedge hyssop with implementation of the avoidance measure.

Other Special-Status Plants

The BAHA in Appendix D identifies special-status plants without listing status under the federal or California ESA, with potential to occur in the proposed project area. The BAHA includes descriptions of these species' habitat and range.

Avoidance and Minimization Efforts: A floristic survey according to DFG (2009b) guidelines shall be conducted as described in Table 4-15. ESA's will be established around locations of special-status plants as described in Table 4-15.

Project Impacts: The project will not impact special-status plants with implementation of the avoidance measure.

Table 4-17: Vegetation Design Criteria/Committed Environmental Protection Measures

Category	Committed Protection Measure
<i>Vegetation</i>	
Vegetation-1 PSREC BMP	PSREC would ensure the appropriate biological resource surveys have been conducted before construction begins, per coordination with the federal agencies.
Vegetation-2 PSREC BMP	Where possible, PSREC would trim (rather than cut) brush, and would cut (rather than blade) brush. Blading would be allowed only if terrain and brush present a clear hazard to personnel and equipment.
Vegetation-3 PSREC BMP	To minimize the potential to spread invasive weeds, PSREC would clean off-road equipment (power or high-pressure cleaning) of all mud, dirt, and plant parts at their existing construction yards in Milford and Portola before moving equipment onto the project lands.
Vegetation-4 PSREC BMP	In site-specific areas where vegetation is sensitive to disturbance (and has been identified as such by the landowner or land manager, prior to construction), no widening or upgrading of existing access roads would occur during project construction, except for repairs necessary to make roads passable.
Vegetation-5 PSREC BMP	The BLM's Eagle Lake Field Office pamphlet on noxious weeds (BLM 2000) would be provided to all contractors and PSREC personnel. The terms and conditions of the USFS Special Use Permit also would be met relative to minimizing the potential spread of invasive plant species.
Vegetation-6 PSREC BMP	<p>The project shall implement the following avoidance and minimization efforts for invasive plants/noxious weeds:</p> <ul style="list-style-type: none"> <li>g. Prior to construction, discrete occurrences of noxious weeds shall be mapped (including areas previously surveyed on public lands) during botanical surveys. Vast areas of common noxious weeds, such as cheat grass in big sagebrush scrub, will be noted, but not mapped. <li>h. Weeds rated A, B, or Q by CDFA (2010) for the parts of the project area in CA, or rated A or B by NDA (2010) for the parts of the project area in Nevada, shall be reported to the appropriate state or County Agricultural officer. <li>i. The results of the botanical surveys and weed mapping, shall be reported to USFS and BLM for their lands.

Category	Committed Protection Measure
	<ul style="list-style-type: none"> j. Construction equipment used in the project area shall be cleaned (power or high-pressure cleaning) of all mud, debris, and plant parts before arriving at the project area. k. Boots and clothing of project personnel shall be cleaned of seed before entering the project area. l. Mapped weed locations will be avoided with equipment and vehicles if possible. If avoidance is not possible, the equipment, vehicles, and any contaminated clothing or footwear will be cleaned immediately adjacent to the existing infestation before leaving the that area of the project area. If avoidance is not possible for mapped weeds on USFS or BLM land, the agency will be contacted prior to work for approval of cleaning methods and locations.

Cumulative Impacts to Lichens, Mosses, and Vascular Plants

The Proposed Action will have no effect on federal or state listed plant species, their designated critical habitat (if applicable), or other special status-plants. The Proposed Action would not result in a substantial adverse modification to plant habitat or native plant species populations. Implementation of PSREC's committed environmental protection measures listed in Tables 4-15, 4-16, and 4-17 will ensure avoidance of direct or indirect impacts to vegetation resources. The Proposed Action will not result in cumulative impacts to vegetation resources including special-status plant populations.

4.10.10 Invasive Species

Avoidance and Minimization Efforts: The USFS identified the following botanical objectives for the project: 1) do not spread or introduce weeds into rare plant occurrences 2) do not introduce weeds onto USFS lands 3) do not spread existing weed occurrences either onto private land or onto uninfested areas of USFS lands (pers. comm., Lynee Crawford).

Noxious weeds/invasive plants for the purpose of the project includes plants rated A, B, or Q by CDFA (2010) for the parts of the proposed project area in CA, rated A or B by NDA (2010) for the parts of the proposed project area in Nevada, or rated high or moderate by Cal-IPC (2006) for the parts of the proposed project area in CA. The project shall implement the following avoidance and minimization efforts for invasive plants/noxious weeds:

- Prior to construction, discrete occurrences of noxious weeds shall be mapped (including areas previously surveyed on public lands) during floristic botanical surveys (See Table 4-15). Vast areas of common noxious weeds, such as cheat grass in big sagebrush scrub, will be noted but not mapped.
- Weeds rated A, B, or Q by CDFA (2010) for the parts of the proposed project area in CA, or rated A or B by NDA (2010) for the parts of the proposed project area in Nevada, shall be reported to the appropriate state or County Agricultural officer.

- The results of the floristic botanical surveys, including weed mapping, shall be reported to USFS and BLM for their lands.
- Construction equipment used in the proposed project area shall be cleaned (power or high-pressure cleaning) of all mud, debris, and plant parts before arriving at the proposed project area.
- Boots and clothing of project personnel shall be cleaned of seed before entering the proposed project area.
- Mapped weed locations will be avoided with equipment and vehicles if possible. If avoidance is not possible, the equipment, vehicles, and any contaminated clothing or footwear will be cleaned immediately adjacent to the existing infestation before leaving the that area of the proposed project area. If avoidance is not possible for mapped weeds on USFS or BLM land, the agency will be contacted prior to work for approval of cleaning methods and locations.
- PSREC will implement the appropriate noxious weed control measures from the following; Partners against Weeds (BLM 1996), The National Invasive Species Management Plan (National Invasive Species Council 2008), and the Weed Prevention and Management Guidelines for Public Lands (BLM 2011).

Project Impacts: Most of the noxious weed and invasive plant species that have been observed in the proposed project area are common in the counties in which they were observed. The limited scope of this Project precludes effective eradication of these invasive species from the proposed project area or the counties in which the proposed project area occurs. The Project will have a less than significant impact on the establishment and spread of noxious and invasive weeds with implementation of the avoidance and minimization measures.

Cumulative Impacts from Invasive Plant Species

Most of the noxious weed and invasive plant species observed in the Proposed Action area are common in the counties in which they were observed. The limited scope of the Proposed Action precludes effective eradication of these invasive species from the Proposed Action area and the counties in which the Proposed Action occurs. Implementation of PSREC's committed environmental protection measures listed in Table 4-15, 4-16, and 4-17 will reduce the potential for the establishment and or spread of noxious and invasive weed species. The Proposed Action will not result in cumulative impacts caused by the spread of invasive plant species, and cumulative impacts in regard to invasive plant species would therefore be considered less than significant.

4.11 Infrastructure

4.11.1 Traffic and Circulation

No Action Alternative

Under the No Action Alternative, no direct effects would occur. LOS would remain at the same levels.

Proposed Action

The major and minor highways and local roadways would continue to remain accessible to motorists across the states. During installation of the overhead fiber cable there may be some traffic delays along the existing federal, state, and/or local roadways. The Level of Service data along the project area would be considered during development of traffic control devices along with the mitigation measures described in the Caltrans *Manual of Traffic Control for Construction and Maintenance Work Zones* and the FHWA *Manual of Uniform Traffic Control Devices*.

All requisite state and county permits would be obtained. Although there may be partial obstructions, no roadway would be blocked during proposed project construction. Emergency vehicles, school buses, and general traffic will have road accessibility in accordance with the applicable traffic control and safety plans. One or more lanes of a primary or secondary arterial during peak-hour traffic would not be restricted; no arterial or collector roadway would be closed for more than one consecutive hour. With the implementation of these measures, the proposed action is not anticipated to have adverse effects on the existing traffic and circulation.

During the Proposed Action construction phase, all existing utilities and infrastructure will be considered along the fiber cable route. For the underground segments, adequate testing will be conducted to determine the location of existing water, sewer, storm drainage, electrical power, natural gas, and telecommunication lines. For the overhead segments, installation equipment will utilize existing service roads along the power line route where ever possible.

Care will need to exercised when installing cable in sensitive areas, when crossing roads, rivers and railroad tracks, and on congested streets. Traffic control measures will be required for all of these critical crossings.

Cumulative Impacts on Infrastructure

The Proposed Action would not cause an increase in traffic or affect the Level of Service standards. The condition of the paved roadway would not be affected by the construction equipment and disruption of access to or from adjacent land uses would not occur. Therefore the Proposed Action would not contribute to any cumulative effects on the traffic and circulation.

4.12 Visual Resources

The detailed Visual Analysis Summary is presented in Appendix C. The following characterizes the visual nature of the project area surrounding the Proposed Action.

4.12.1 Summary

Plumas National Forest landscapes along the route of the proposed project pass through the Beckwourth and Mt. Hough Ranger Districts and are viewed from the State Highway 70 travel

route which has been designated the Feather River Scenic Byway. The Visual Quality Object assigned to viewsheds seen from this scenic byway is Retention. The Visual Quality Objective of Retention directs forest managers to retain the existing character of the landscape.

Management activities occurring within scenic viewsheds of a *'Retention'* area are allowed when the level of change to the characteristic landscape is minimal and when the changes *'are not visually evident.'* The resulting change to the landscape must repeat form, line, color and texture of the surrounding *'characteristic landscape'*. *'Duration'* of the visual impact must be limited because the *'Retention'* visual quality object (VQO) must be met during or immediately following the Proposed Action as an essential aim of the Proposed Action's operations plan. (National Forest Landscape Management, Volume 2, Chapter 1: The Visual Management System, USDA Forest Service, Agriculture Handbook Number 462, 1976, pp. 7, 28 & 30-31).

On the 11.12 miles of BLM-administered lands, the fiber cable would be hung from existing power line poles that are located in an authorized ROW. These poles traverse areas designated as Class II and Class III in Visual Resource Management areas. The addition of a less than one inch in diameter, black cable to existing power poles that typically are 60-65 feet in length repeats the design element (placement of non-specular wire) of the existing poles and thus, will not create contrast.

4.12.2 Conclusion

The Proposed Action to install fiber cable encased in a one-inch diameter black conduit that traverses approximately 13 miles through lands within the Beckwourth and Mt. Hough Ranger Districts and the 11.12 miles on BLM-administered lands in the ELFO and SFFO would have no adverse impact on the surrounding visual resources of the Plumas National Forest or the BLM's ELFO and SFFO for the follow reasons:

Level of Dominance within the Characteristic Landscape

The proposed fiber cable would be hung onto existing power line poles and would repeat the form, line, color and texture of existing power line infrastructure that is permitted to traverse national forest lands. Additionally, the proposed cable would be visually subordinate to power lines and to the forms, lines, colors and textures of the surrounding characteristic landscape.

Impact of Distance Zones from which Project may be Viewed

For most of the route on national forest lands, the fiber cable would be screened from view of the Feather River Scenic Byway at middle-ground and background distances by a dense buffer of mixed coniferous forest cover. Where the power line currently crosses the scenic byway at four locations, it brings the cable essentially into a foreground viewing position. However, the visually subordinate size and color of the proposed cable and its position on existing power poles would repeat surrounding lines and colors allowing it to be absorbed into the existing landscape setting.

The existing power line pole structures on BLM-administered lands in Long Valley that parallel US395, in most locations, are located between 1-4 miles west of US395, and are not always visible to viewers traveling in autos at 55-65 mph. As the poles become closer to US395, and the viewing opportunities are greater, the duration of time to see a less than one-inch in diameter black cable would continue to be brief at traveling speeds of 55-65 mph.

Effects of Project Installation and Management Activities

By utilizing existing power poles and the existing power line corridor to install the proposed cable, the project operations would avoid trenching, timber cuts and vegetative disturbance that would typically be evident within the characteristic landscape. By accessing the project route from forest service system roads and permitted power line maintenance roads, terrain and vegetative scarring that occurs with new road cuts would be avoided all together. Tree clearing that occurs on national forest lands during this project must be identified through a tree inventory and power pole maintenance plan. Vegetative clearing is allowed by the Forest Service as necessary for regular and permitted power line maintenance. Because the project installation procedures are proposed to operate within power line maintenance protocols, management activities associated with the Proposed Action would not impact or alter the characteristic landscape.

Impacts to Variety Classes, Sensitivity Level and Quality Objective

Because the proposed fiber cable would be subordinate in size, repeat line and color, and maintain the form of existing features in the viewed landscape it would not present a newly contrasting feature within the surrounding natural landscape. The designated landscape Variety Classes would not be altered. The non-reflective color and surface material of the proposed cable along with its small diameter would prevent the fiber cables from presenting a visual distraction to scenic byway viewers particularly where the cable crosses the highway. The High Sensitivity-Level 1 of the scenic byway would remain undisturbed. By using existing access roads, the maintained utility corridor and existing power poles to hang and maintain the proposed cable, the management activity would not be evident in the landscape and there would be no duration of visual impact. The Visual Quality Management Objective of Retention would be met and maintained during and after project operations as proposed.

Other Federal, State, and Private Rights of Way

With the exception of the new underground construction along US395, the impacts associated with the installation of new one-inch diameter black cable on existing overhead pole structures, would have a low impact on the visual and aesthetic resources. Once the underground installation areas have been revegetated, no effects would be noticeable to motorists along the US395 ROW corridor due to the high speeds at which they would be traveling.

No Action Alternative

The No Action alternative would have no impact to aesthetic and visual resources.

Proposed Action Alternative

In general, potential aesthetic disruptions for most areas will be limited to the short-term presence of construction equipment installing the overhead fiber cable on existing power line poles in existing ROWs along with the construction equipment installing the underground conduit in the existing US395 ROW. The presence of an additional one-inch diameter black cable hung from the existing overhead power line would be insignificant.

The trenching operations are expected to install underground conduit approximately 3-5 miles per day, limiting the time the presence of equipment will adversely affect the aesthetics of a particular location along the route. Boring operations are also expected to move rather quickly; some locations such as the one mile in the NDOT US395 ROW would take longer than other locations in the rural, undeveloped ROW. Underground installation and construction in existing ROWs would total approximately 15 days (pers. comm., Jan 2011, Praxis Assoc., Steve Janovick). Permanent aesthetic impacts would be short term and temporary except for the locations of the underground vaults which will be flush with the ground cover.

Because the fiber cable can be installed onto existing and permitted power line poles using access roads and crews on foot, the installation operations can avoid damage to terrain and vegetation seen from the scenic highway travel corridor. Because the management activity should not be at all evident in the landscape, all Variety Class and Sensitivity Level designations along the Portola-to-Quincy segment of the Feather River Scenic Byway can be maintained undisturbed. Because characteristic landscapes and critical viewsheds would not be visually impacted, the primary Visual Quality Object of ‘Retention’ for this segment of scenic byway through national forest lands can be maintained throughout the duration of the proposed cable installation project. The Feather River Scenic Byway scenic viewsheds would remain unaltered as a result of this Proposed Action.

The Visual Resource Management objectives of the BLM for “Partial Retention” and “Retention” can be maintained in the area along US395 on BLM-administered lands. Since Lassen County has designated a portion of this area as a county scenic byway, there would be no effect to this county designation.

Cumulative Impacts to Visual Resources

Introduction of the Proposed Action to past, present, and future features within the regional viewshed would result in low and incremental long-term impacts to visual resources. Impacts on BLM-administered and USFS-administered lands would consist of the minimal and incremental changes to the landscape from the addition of the Proposed Action to the existing transmission line. Clustering these aboveground and underground ROWs within an existing utility and transportation corridor and applying project-specific reclamation in the areas of installation of new underground fiber conduit would aid in minimizing visual effects. Cumulative impacts to state, county, and private lands from the existing and proposed infrastructure would not substantially degrade the overall character or quality of area aesthetics within Lassen County's designated Scenic Corridor established along U.S. 395, or along the Wild and Scenic River corridor of the Middle Fork of the Feather River. Cumulative impacts to visual resources would be less than significant.

4.13 Land Use and Planning

No Action Alternative

The No Action Alternative would have no impact to Land Use and Planning

Proposed Action Alternative

All fiber cable associated with the Proposed Action will be placed underground within existing state, county or city street rights-of-way. All overhead cable will be attached to existing power lines. Minimal ground disturbance is anticipated from either underground or overhead cable installation.

The only new construction will be the Re-generation Facility at Hallelujah Junction. This will be a new modular building placed on an existing disturbed area (vacant land) on property owned by Caltrans. The site is appropriate for the use, having been zoned Commercial (C) by Lassen County and having direct access from SR 70. No short term impacts to land use would occur as construction would move rapidly from place to place and would not impede other local or regional projects' construction or development abilities. Impacts to land use would be less than significant.

Cumulative Impacts to Land Use

No cumulative impacts to important land uses, such as prime farmland, big game management, or residential areas would occur from implementation of the Proposed Action. No established communities would be divided. The Proposed Action would not directly induce growth or foster the conversion of agricultural land to urban development. The General Plans for Lassen, Plumas and Sierra Counties emphasize preservation of open space and agricultural lands in the areas of open, flat, irrigated terrain. The project's location and incremental cumulative impacts to existing land uses would be in conformance with both these General Plans and Washoe County's North Valleys Area Plan. No additional cumulative long-term effects would be anticipated, and cumulative impacts to land use would therefore be considered less than significant.

4.13.1 Recreation Areas

No Action Alternative

The No Action Alternative would have no impact to recreation areas.

Proposed Action Alternative

Introducing broadband services will enhance the already extensive recreation activities occurring in the four-county region. With broadband capabilities, the respective counties, cities, chambers of commerce, visitor organizations, and recreation-oriented businesses will be able to further promote their recreational economies. Project construction and operation would not interfere with recreation activities, and therefore recreation impacts would be less than significant.

Cumulative Impacts to Recreation Areas

Potential cumulative impacts to area recreational users from past, present, and future activities in conjunction with the Proposed Action would be low and incremental. Construction effects would be limited to minor, short-term impacts from possible user avoidance along ROW segments. Cumulative impacts to recreation would be considered less than significant.

4.14 Socioeconomics

No Action Alternative

The No Action Alternative would have no impact to socioeconomics.

Proposed Action Alternative

The four county region has been hard-hit by the economic downturn. Housing starts are off significantly, and except for Lassen County, employment is down, especially in Sierra County.

The Proposed Action will assist Lassen, Plumas, Sierra and Washoe Counties to increase their respective economic activity, retain existing jobs, and develop new capabilities for 'growing' the region.

Cumulative Impacts to Socioeconomics

For the installation of underground conduit of the Proposed Action, workers would not likely relocate to cities or unincorporated areas near the project area, since the 3-month construction period would be of short duration and in increments. The overhead portion of the Proposed Action would be constructed by the Proponent who owns the existing infrastructure. Beneficial effects to local businesses and the economy would include additional spending by the few workers for food, gas, and lodging; spending by the construction contractor for materials needed

for construction; and additional jobs and related income. These effects are expected to be low to moderately low.

No cumulative effects to area tourism would be anticipated, since 1) the underground construction period would be relatively short and 2) construction activities would be occurring in an existing transportation corridor that is not accessed by tourists.

4.15 Population and Housing

No Action Alternative

The No Action Alternative would have no impact to population and housing.

Proposed Action Alternative

The proposed project is not anticipated to induce population growth. The project would provide current residents with fiber cable service. Though the proposed conduits would provide capacity for future fiber cable service growth, the project itself would not induce such growth. The project does not include infrastructure that can induce population growth. Construction workers would not permanently relocate to the project area. There would be no impacts related to population growth due to the proposed project.

The proposed project would not displace existing housing, and would not necessitate relocation and/or construction of replacement housing elsewhere. The proposed project would have no impact on housing resources.

The proposed project would not displace existing population, and would not necessitate relocation and/or construction of replacement housing elsewhere to accommodate displaced population. The proposed project would have no impact on population displacement or the need for replacement housing resources.

Cumulative Impacts to Socioeconomics

The project would have no impact to population and housing in the project area, and therefore would also not contribute to any cumulative population and housing impacts in the region.

Chapter 5
List of Permits

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5.0 AGENCY PERMITS AND APPROVALS

Federal Permits and Approvals:

Section 106 Compliance

Section 401 Clean Water Act (CWA) Certification from California Regional Water Quality Control Board if Section 404 CWA is triggered

Section 402 CWA National Pollutant Discharge and Elimination System (NPDES) for General Construction (Notice of Intent and Stormwater Pollution and Prevention Plan (SWPPP) application to Lahontan Regional Water Quality Control Board (RWQCB).

Section 404 CWA Nationwide Permit 12 for Utilities for crossing ephemeral drainages along US395.

SF 299, Grant of Right of Way Authorization and Special Use Permit from BLM and USFS to cross federal lands

State Permits and Approvals:

See above for federal delegated permits.

California Public Utilities Commission, Mitigated Negative Declaration & Certificate of Public Convenience and Necessity (CPCN)

California DFG 1602 Streambed Alteration Agreement for Trenching in ephemeral drainages along US395 and SR70, as applicable.

California Transportation Department, Standard Encroachment Permit and Transportation Permit
Nevada Dept. of Transportation, Standard Encroachment Permit and Transportation Permit

5.1 Local Permits and Approvals

City of Reno

Community Development Department
Site Plan Review Permit

Public Works Department
Encroachment and Excavation Permit
Franchise Agreement

Sierra County

Public Works Department
Encroachment Permit

City of Portola

Franchise Agreement

Public Works Department
Encroachment Permit

City of Loyalton

Public Works Department
Encroachment Permit

Washoe County

No permits required.

Lassen County

Department of Planning and Building Services

No permits required.

Public Works Department
Encroachment Permit

Plumas County

Planning and Building Services Department

No permits required.

Public Works Department
Encroachment Permit

City of Susanville

Community Development Services Department

Unknown.

Public Works Department
Encroachment Permit

Lassen County Air Pollution Control District

No permits required.

Northern Sierra Air Quality Management District

Dust Control Plan.

Other Agencies

Union Pacific Railroad to amend existing permit for overhead crossing.

Chapter 6
List of Preparers

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6.0 LIST OF PREPARERS

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Nevada Department of Wildlife

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Nevada Department of Cultural Affairs, State Historic Preservation Office

Rebecca Lynn Palmer, Deputy

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