DRAFT

JOINT NEPA ENVIRONMENTAL ASSESSMENT AND CEQA INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

Volume I

FOR THE DIGITAL 395 MIDDLE MILE PROJECT

San Bernardino, Kern, Inyo, and Mono Counties in California
Douglas, Carson City, and Washoe Counties in Nevada

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ACRONYMS

ACHP	Advisory Council on Historic Preservation
AIRFA	American Indian Religious Freedom Act
APE	Area of Potential Effect
AQMP	Air Quality Management Plan
ARB	Air Resource Board
ARPA	Archaeological Resources Protection Act
ARRA	American Recovery and Reinvestment Act of 2007
BA	Biological Assessment
BAPC	Nevada Bureau of Air Pollution Control
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BLMS	BLM Sensitive Species
BMP	Best Management Practice
BNSF	Burlington Northern Santa Fe Railway Company
BO	Biological Opinion
BTOP	Broadband Technology Opportunities Program
CA	California
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CASF	California Advanced Services Fund
CBC	California Broadband Cooperative, Inc.
CBTF	California Broadband Task Force
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CDCA	California Desert Conservation Area
CDFG	California Department of Fish and Game
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CESA	California Endangered Species Act
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CH_4	methane
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CNCA	California Noise Control Act of 1973
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CPUC	California Public Utilities Commission
CSLC	California State Lands Commission
CSC	State Species of Special Concern
CWA	Clean Water Act
dB(A)	A-weighted decibel scale
dB	decibel
DNL	Daytime-Nighttime Noise Level

DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EA	Environmental Assessment
EKAPCD	Eastern Kern Air Pollution Control District
EIC	Eastern Information Center
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FCAA	Federal Clean Air Act
FC	Federal Candidate for Listing
FE	Federally listed; Endangered
FESA	Federal Endangered Species Act of 1973
FOC	Fiber Optic Cables
FONSI	Finding of No Significant Impact
FSC	Federal Species of Concern
FSC	Full Service Capability
FSS	Forest Service Sensitive Species
FT	Federally listed; Threatened
FUR	Federal Under Review
FWCA	Fish and Wildlife Coordination Act
GHG	Greenhouse Gasses
Gbps	Gigabit per second
GBUAPCD	Great Basin Unified Air Pollution Control District
GBVAB	Great Basin Valleys Air Basin
GLO	General Land Office
GWP	global warming potential
HASB	High Air Speed Blowing
HAP	hazardous air pollutants
HDD	Horizontal Directional Drilling
Hz	Hertz
IPCC	International Panel on Climate Change
IS	Initial Study
IUCN	International Union for Conservation of Nature
LA	Los Angeles
LADWP	Los Angeles Department of Water and Power
Ldn	Daytime-Nighttime Noise Level
Leq	Equivalent sound pressure level
LSC	Limited Service Capability
Mbps	megabit per second
MBTA	Migratory Bird Treaty Act
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
Mg/L	milligrams per liter
MMRP	Mitigation Monitoring and Reporting Plan
MND	Mitigated Negative Declaration
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection & Repatriation Act
NAHC	Native American Heritage Commission
NAWSCL	Naval Air Weapons Station China Lake
NBTF	Nevada Broadband Task Force
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation

NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NHP	Nevada Highway Patrol
NHPA	National Historic Preservation Act
NNHP	Nevada Natural Heritage Program
NNNPS	Northern Nevada Native Plant Society
N_2O	nitrous oxide
NO_2	nitrogen dioxide
NOAA	National Oceanographic and Atmospheric Administration
NPL	National Priorities List
NRHP	National Register of Historic Places
NSC	Nevada State Species of Special Concern
NTIA	National Telecommunications and Information Administration
NV	Nevada
NVCRIS	Nevada Cultural Resource Information System
OHV	Off-highway vehicle
ONAC	Office of Noise Abatement and Control
ONC	Office of Noise Control
OSHA	Occupational Health and Safety Act of 1970
OVRO	Owens Valley Radio Observatory
O&M	Operations and Maintenance
PM	particulate matter
Ppm	parts per million
PRC	California Public Resources Code
PSC	Partial Service Capability
RARE	State listed; Rare
ROG	reactive organic gases
ROW	Right-of-way
RWQCB	Regional Water Quality Control Board
SBAIC	San Bernardino Archaeological Information Center
SC	State Candidate
SE	State listed; Endangered
SFP	State Fully Protected
SHPO	State Historic Preservation Officer
SHR	State Harvest Regulated
SIP	State Implementation Plan
SNARL	Sierra Nevada Aquatic Research Laboratories
SO_X	sulfur oxides
SPPP	Spill Prevention and Pollution Plan
SSJVIC	Southern San Joaquin Valley Information Center
ST	State listed; Threatened
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TMP	Traffic Management Plan
µg/m3	micrograms per cubic meter
UPRR	Union Pacific Railroad
US 395	U.S. Highway 395
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USMC	United States Marine Corps

VdB	Vibration decibels
VOC	volatile organic compounds
WATCH	Work Area Traffic Control Handbook
WCAQMD	Washoe County Air Quality Management Division
WRCC	Western Regional Climate Center

GLOSSARY OF TERMS

Backbone	The core network path where conduit is placed along a major highway or regional network
Broadband	Of or related to being a high speeds 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)
Dark fiber	Optical fiber infrastructure that is currently in place but is not being used. For example, some electrical utilities have infrastructure in place where power lines are already installed in the expectation that they can lease the infrastructure to other companies.
End user	The end user is the individual who uses the product after it has been fully developed and marketed.
Fiber optic	Refers to systems that use optical fiber to transfer information in a communication network.
Last-mile	The segment of a telecommunications network that provides broadband service to end-user devices through an intermediate point of aggregation and terminating at the customer's router.
Middle-mile	The segment of a telecommunications network that provides broadband service from one or more centralized facilities to the local network plant. Middle-mile facilities provide relatively fast, large-capacity connections between the network backbone and last-mile connection.
Node	The end point of a spur that leads from the main backbone into communities; the end point of the middle-mile fiber optic route.
Rural Area	Any area, as confirmed by the latest decentennial census of the Bureau of the Census, which is not located within: 1) a city, town or incorporated area that has a population of greater than 20,000 inhabitants; or 2) An urbanized area contiguous and adjacent to a city or town that has a population of greater than 50,000 inhabitants.
Spur	The extension of the fiber optic line from the backbone, which ends into fiber nodes that then transmit the information to the end user.
Underserved Area	Service area, where at least one of the following factors is met: (1) no more than 50 percent of the households in the last mile or middle mile services area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed; (2) no fixed or mobile terrestrial broadband service provider advertises broadband transmission speeds of at least three mega bits per second (Mbps) downstream in the last mile or middle mile service area; (3) the rate of terrestrial broadband subscribership for the last mile or middle mile service area is 40 percent of households or less.

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EXECUTIVE SUMMARY

The Proposed Project is to install approximately 593 miles of middle-mile fiber-optic cable and associated infrastructure, to provide broadband service in unserved and underserved areas of the Eastern Sierra, with a proposed service area encompassing 36 communities, 7 Native American tribal reservations, and 2 military bases. In addition to internet services, high-capacity "dark" fiber also will be made available to the region's last-mile providers, government agencies, cellular and long-distance carriers. The purpose is to improve local internet services, provide diverse routing between Northern and Southern California and Southern Nevada, and enhance public safety. The proposed action involves the installation of underground fiber optical cables (FOC) within the California Department of Transportation (Caltrans) right-of-way (ROW)/easements, county-maintained dirt roads, Los Angeles Department of Water and Power, or Nevada Department of Transportation (NDOT) ROW/easements. Installation of underground optical fiber cables will also occur on Naval Air Weapons Station China Lake and the United States Marine Corps Mountain Warfare Training Center. Buildings to be constructed are proposed within existing land use types zoned for utilities. The Proposed Project would not change any land use or zoning types. For purposes of this document, the term "Proposed Project ROW" includes the footprint or area of direct placement/disturbance of the Proposed Project features (e.g., conduit, nodes), as well as the construction footprint related to those features (e.g., boring, plowing, drilling, staging areas, pathway of construction related equipment).

The Proposed Project features include:

- construction of a new, approximate 479-mile backbone fiber route;
- construction of approximately 62 miles of new distribution lines;
- placement of approximately 52 miles of fiber in existing utility conduit; and
- construction of 17 nodes or prefabricated buildings to support wireless systems.

The Proposed Project benefits align with key benefits of the American Recovery and Reinvestment Act of 2009 (ARRA) by creating jobs and stimulating the economy. This Proposed Project would make middle-mile fiber available for broadband service providers to bring cost effective, high-speed broadband services to areas that currently do not have access. This middle-mile infrastructure would provide access to (1) unserved communities; (2) underserved communities; (3) schools, libraries, community colleges, and other institutions of higher education; (4) public safety agencies and healthcare providers; and would (5) stimulate demand for broadband, economic growth, and job creation. The Proposed Project addresses the lack of middle-mile or backbone fiber-optic infrastructure in the Eastern Sierra area of California and Nevada by installing approximately 593 miles of high strand count fiber-optic cable with various spurs that lead away from the main backbone, connecting to nodes within communities along the route. The Proposed Project balances the need for reliable, cost-effective middle-mile infrastructure and backbone connectivity. The establishment of the middle-mile broadband will allow for flexibility in future last mile network projects that will extend access to all users. Local communications providers would be able to deliver the content over the last mile to rural homes using the best technology for the application. The Proposed Project is designed to maximize network traffic, utilization, and economies of scale and enable development of the most scalable, reliable, and resilient network. The fiber-optic infrastructure would be managed, administered, and made available in an open access, non-discriminatory fashion to any interested service provider.

1.1. PROPOSED PROJECT LOCATION

The Digital 395 network will be located between Barstow, California, and Reno, Nevada, providing broadband services to the area commonly referred to as the Eastern Sierra. The Proposed Project route maps are included as Appendix C. The route mainly follows U.S. Highway 58 and US 395, a major transportation corridor between southern California and northern Nevada. The Proposed Project route crosses through San Bernardino, Kern, Inyo, and Mono counties in California and Douglas, Carson City, and Washoe counties in Nevada. The service area contains 36 communities as well as 7 Native American reservations. In addition to these civilian areas, the region is host to two military bases: Naval Air Weapons Station China Lake and the United States Marine Corps Mountain Warfare Training Center. The Proposed Project route consists of a main backbone and various spurs that lead away from the main backbone. The various spurs along the Proposed Project route branch from the main backbone to connect to nodes within communities along the route.

1.2. ALTERNATIVES

Several alternatives were evaluated to address the purpose and need of the Proposed Project and assess its overall impact. These alternatives include a no action alternative, evaluation of alternate technology, alternative method for fiber installation, and the preferred route as identified in Section 2.1 of this Joint EA/IS/MND. A discussion of each of these alternatives is included below. Table 1 provides a comparison of the potential effects of the no action alternative and the preferred alternative.

1.2.1 No Action Alternative

To comply with the requirements of NEPA, the No Action (or Future without Project) Alternative is required to be considered. The No Action Alternative assumes that no project would be implemented by the Federal government to achieve the planning objectives. For the purposes of the initial screening, the No Action Alternative assumes the communities along the Proposed Project route will continue to receive current broadband services with maximum upgrades to those services without expansion of infrastructure.

1.2.2 Alternatives Eliminated from Detailed Analysis

1.2.2.1 Alternate Technology

This alternative considered the use of non-fiber based technologies to address the purpose and need of providing broadband services to the communities between Barstow, California and Reno, Nevada. As part of the application to the NTIA for consideration in the BTOP (March 26, 2010), wireless internet technologies were assessed as an alternative to the fiber-optic network proposed. The technology does not have the capacity to provide consistent middle-mile services to the area. Wireless technologies currently are used by several of the communities along the Proposed Project route to facilitate “last-mile” internet access, which are at broadband speeds slower than those available for the middle-mile segments of the network. While these technologies provide a level of internet connectivity for today’s applications, these current technologies are less effective for both middle-mile and long-term applications. Last-mile wireless technologies typically depend on wire-line middle-mile networks for aggregated traffic, sometimes referred to as “backhaul.”

In the CBTF Final Report (CBTF 2008), forty percent of the households in the East Side region (including the Eastern Sierra) lacked broadband service and less than one percent had access to greater than 10

megabits per second (Mbps). The leading edge speeds of 1 gigabit per second (Gbps) currently meet most last mile requirements, demonstrating how increasing demands of the Eastern Sierra would quickly result in insufficient broadband services. For example, cellular providers in the Eastern Sierra are seeking 100 Mbps bandwidth to as many as 120 cell sites in order to upgrade their current networks to "4G" services that will support up to 30 Mbps at the user. Similarly, single applications, such as a local university's radio observatory, have expressed interest in speeds of up to 2.5 Gbps.

1.2.2.2 Alternate Method for Fiber Installation

The installation of fiber optics for the backbone route through aerial facilities, like poles or towers, also was considered in the application for the BTOP. While this method does have the advantages of lower costs and less ground disturbance, the agencies opted to support the underground methodology for the following reasons: (1) significant internet routes are deemed national security assets; (2) underground facilities are not subject to wildfires, vandalism, or accidental shooting by hunters, thereby meeting public safety and national security interests; (3) high winds and snow loadings in the Eastern Sierra tend to force aerial cable sizing to be smaller, thereby lowering the life of the cable or the amount of time before reinforcement is needed. The capacity of the proposed underground conduit has been planned to satisfy long-term needs so that post-project construction for broadband services would not be necessary in the near future, if at all. While aerial alternatives may be prudently used in some distribution areas, existing aerial facilities along the Hwy 395 corridor are not continuous and not all of the structures support the attachment and span lengths for fiber cables proposed for this project.

1.2.3 Preferred Alternative

This alternative evaluates the impacts of constructing the Proposed Project as proposed, along the Proposed Project route identified in Section 2.1.

Table 1: Potential Effects of the Preferred and No Action Alternatives

RESOURCE	ALTERNATIVES	
	Preferred	No Action
Noise	Temporary and minimal effects related to equipment noise during installation will occur. However, there will be no effects during operation. Effects related to groundbourne vibration during construction will be reduced with implementation of mitigation measure N-1.	None
Air	Air quality impacts associated with the Preferred Alternative will primarily be short-term, occurring during construction activities. Long-term operational emissions will be minimal.	None
Greenhouse Gases (GHGs)	The Preferred Alternative's operational GHGs would be minimal since long-term operations would be very limited.	None

Table 1: Potential Effects of the Preferred and No Action Alternatives

RESOURCE	ALTERNATIVES	
	Preferred	No Action
Geology/Soils	Temporary soil disturbance will occur during cable plowing, Horizontal Directional Drilling (HDD), trenching, and back-hoeing; but soil surface will be restored and will return to original condition after compaction.	None
Water	By avoiding direct disturbance to waterbodies through the use of HDD at stream crossings, the implementation of a HDD Contingency and Resource Protection Plan, and adherence to a Spill Prevention and Pollution Plan (SPPP), the potential for the Proposed Project to violate water quality standards or otherwise substantially degrade water quality will be reduced .	None
Biological	With implementation of the applicant proposed measures and mitigation measures identified in the Mitigation Monitoring and Reporting Program (MMRP), impacts to biological resources will be reduced.	None
Historical/Cultural	In order to minimize potential impacts to these areas, the measures described in Appendix B , Cultural Resources, Applicant Proposed Measures (APMs) will be implemented for the Preferred Alternative. With the implementation of these measures, potential impacts to Cultural Resources will be reduced to no adverse effect.	None
Aesthetic/Visual	Adverse visual impacts would occur with the visible presence of construction equipment, vehicles, materials, and personnel; however, these visual impacts would be temporary in nature. With the implementation of applicant proposed measures, these impacts will be reduced.	None

Table 1: Potential Effects of the Preferred and No Action Alternatives

RESOURCE	ALTERNATIVES	
	Preferred	No Action
Land Use	Compliance with aesthetic, noise, traffic, air quality, and other environmental mitigation measures described in this document will reduce temporary construction impacts. In addition, implementation of applicant proposed measures will reduce temporary construction impacts.	None
Agriculture	None	None
Infrastructure	During the construction of the Preferred Alternative, Caltrans and NDOT ROW/easements and possibly lanes of roadways would be temporarily closed. While any closures of roadways during construction activities would be temporary, such closures could increase traffic levels and constrain circulation in the area, resulting in potentially significant impacts. Measures identified in the MMRP will be implemented to ensure that potential impacts associated with short-term lane closures during construction are reduced. The Preferred Alternative would provide high-speed internet to currently underserved areas, a positive impact on the area in terms of communication.	The No Action Alternative would not provide the high-speed internet and communications connectivity to areas of the two states that are populated and presently unserved or underserved.
Socioeconomic	The proposed project will introduce and enhance high-speed broadband access to residences and business, government, and medical and educational organizations along the US 395 route.	The No Action Alternative would not gain the socioeconomic benefits through the provision of high-speed internet and communications connectivity to areas of the two states that are populated and presently unserved or underserved.
Human Health/Safety	In order to minimize potential impacts, the measures described in Appendix B, Human Health and Safety, APMs, will be implemented for the Preferred Alternative. With the implementation of these measures, potential impacts to Human Health and Safety will be reduced.	None

Table 1: Potential Effects of the Preferred and No Action Alternatives

RESOURCE	ALTERNATIVES	
	Preferred	No Action
Cumulative Impacts	With implementation of APMs and mitigation measures, many of the cumulative impacts would be reduced. Some of the issue areas may cause short-term cumulative impacts during construction due to the nature of construction activities. However, there would only be minimal long-term operational cumulative impacts related to noise.	None

This Draft Joint Environmental Assessment/Initial Study/Mitigated Negative Declaration (Draft EA/IS/MND) has been prepared for the California Broadband Cooperative, Inc. (CBC), to meet the requirements of the Department of Commerce, National Telecommunications and Information Administration (NTIA), USDA Forest Service, Bureau of Land Management, the California Public Utilities Commission (CPUC), and all other agencies with decision-making authority for the Digital 395 Middle Mile Project (Proposed Project). This Draft EA/IS analyzes potential environmental impacts associated with the proposed action and alternatives for providing broadband infrastructure to unserved and underserved areas in the Eastern Sierra.

This Draft Joint EA/IS/MND is an informational document to advise decision-makers and the general public of the benefits and potential adverse impacts of the Proposed Project as well as feasible alternatives. This document assesses short-term, long-term, and cumulative impacts and benefits of the Proposed Project. This Draft Joint EA/IS/MND also is intended to provide information to all agencies whose discretionary approvals must be obtained for Proposed Project actions.

The NTIA is the Federal lead agency responsible for compliance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. § 4331 (1996)), and the CPUC is the lead agency under the California Environmental Quality Act (CEQA) of 1970 (Cal. Pub. Res. Code § 21,000 et seq.), as amended. This Draft EA/IS has been prepared at the project-level of detail and complies with the requirements of both NEPA and CEQA. For the purposes of this environmental document, all CEQA-only related issues are addressed in Appendix A (IS Checklist).

SECTION 1.0 – INTRODUCTION

Under the American Recovery and Reinvestment Act of 2009 (ARRA), the Department of Commerce, National Telecommunications and Information Administration (NTIA) solicited proposals for the Broadband Technology Opportunities Program (BTOP) to expand broadband infrastructure to underserved populations. The California Broadband Cooperative, Inc. (CBC), as a grant recipient of the BTOP funded by the ARRA (awarded by the NTIA on August 18,2010) and the California Public Utility Commission's (CPUC) California Advanced Services Fund (CASF) grants program, proposes the installation of the Digital 395 Middle Mile Project (Proposed Project), approximately 593 miles of middle-mile fiber-optic network and infrastructure, providing broadband service to unserved and underserved areas in the Eastern Sierra. This includes portions of San Bernardino, Kern, Inyo, and Mono counties of California and Douglas, Carson City, and Washoe counties of Nevada.

The NTIA is the Federal lead agency responsible for compliance with the National Environmental Policy Act (NEPA); and the CPUC is the lead agency responsible for compliance with the California Environmental Quality Act (CEQA).

1.1. ACTIVITIES TO BE AUTHORIZED, FUNDED, OR CARRIED OUT BY THE FEDERAL ACTION AGENCY

NEPA requires federal agencies (e.g., NTIA) to integrate environmental values into the decision making processes by considering the environmental impacts of proposed actions and reasonable alternatives to those actions. CEQA is a statute that requires state (e.g., CPUC) and local agencies to identify the significant environmental impacts of proposed actions and to avoid or mitigate those impacts, if feasible.

For clarity, the NTIA and the CPUC emphasize to the reader that this "joint, environmental document" is being used by the NTIA, CPUC, and other agencies with decision-making authority, in separate and distinctly different licensing, permitting, and/or authorization processes. Overall, the decision making agencies will rely on the Joint Environmental Assessment (EA)/Initial Study (IS)/Mitigated Negative Declaration (MND) document to consider the Proposed Project's potential impacts on the environment.

1.2. OBJECTIVES, PURPOSE, AND NEED FOR THE PROJECT

The goal of the BTOP is to "accelerate broadband deployment in unserved and underserved areas, supporting strategic institutions that are likely to create jobs or provide significant public benefits." To achieve this objective, NTIA funds projects across the nation in three categories: Broadband Infrastructure, Public Computer Centers, and Sustainable Broadband Adoption. The Proposed Project is a Broadband Infrastructure project; Middle Mile projects "focus on the provision of interoffice transport, backhaul, connectivity, or other special access services."

Former Governor Arnold Schwarzenegger commissioned the California Broadband Task Force (CBTF) to "remove barriers to broadband access, identify opportunities for increased broadband adoption, and enable the creation and deployment of new advanced communication technologies." The Proposed Project would support the efforts of the California Broadband Task Force (CBTF) to increase broadband use in the schools, libraries, and other community anchor institutions in the rural areas along the Proposed Project route with fiber optics supporting broadband service. According to the 2008 Final Report of the CBTF, 96% of California residences statewide have access to broadband; however, 1.4 million mostly rural Californians lack broadband access at any speed. The CBTF identified that barely

more than half of Californians have adopted broadband at home and only half of Californians have access to broadband at speeds greater than 10 Mbps. Finally, the CBTF identified that "broadband infrastructure is deployed unevenly throughout the state, from state-of–the-art to nonexistent (CBTF 2008)."

This Proposed Project would make middle-mile fiber available for broadband service providers to bring cost effective, high-speed broadband services to areas that currently do not have access. This middle-mile infrastructure would provide access to (1) unserved communities; (2) underserved communities; (3) schools, libraries, community colleges, and other institutions of higher education; (4) public safety agencies and healthcare providers; and would (5) stimulate demand for broadband, economic growth, and job creation.

The Proposed Project would help support the CBTF goals of building out high-speed and affordable broadband infrastructure, through a variety of technologies, to all Californians. The Proposed Project would increase connections to community anchor institutions, including K-12 schools, colleges, and libraries. The Proposed Project also allows the delivery of state-of-the-art medical services to remote and rural sites through the use of telemedicine and telehealth technologies. Doctors, nurses, and health care professionals who serve the Eastern Sierra's rural, underserved, or unserved populations would gain the necessary resources to provide optimized health care to these communities and populations. These technologies would facilitate health education, training, and awareness, resulting in problem prevention as well as timely accurate diagnosis of health problems. The CBTF found that broadband provides health care benefits through "increased access to health care; availability of health education in underserved communities; enhanced integration of clinical data; and point-of-care systems that provide better treatment and fewer medical errors."

The Proposed Project also would support the efforts of the State of Nevada Broadband Task Force (NBTF) appointed by former Governor Jim Gibbons to remove barriers to broadband access and increased broadband applications and adoption in unserved and underserved areas of Nevada (NBTF 2009). The Proposed Project would help support the NBTF policies of addressing the concrete and pragmatic benefits that broadband technology can afford every community, neighborhood, school, library, community center, and household.

The Proposed Project addresses the lack of middle-mile or backbone fiber-optic infrastructure in the Eastern Sierra area of California and Nevada by installing approximately 593 miles of high strand count fiber-optic cable with various spurs that lead away from the main backbone, connecting to nodes within communities along the route. The Proposed Project balances the need for reliable, cost-effective middle-mile infrastructure and backbone connectivity. The establishment of the middle-mile broadband will allow for flexibility in future last mile network projects that will extend access to all users. Local communications providers would be able to deliver the content over the last mile to rural homes using the best technology for the application. The Proposed Project is designed to maximize network traffic, utilization, and economies of scale and enable development of the most scalable, reliable, and resilient network. The fiber-optic infrastructure would be managed, administered, and made available in an open access, non-discriminatory fashion to any interested service provider.

The Proposed Project provides the availability of broadband infrastructure to populations in the vicinity of the Proposed Project and will help to "drive the creation and use of applications that produce the greatest economic, educational, and social benefits for California's economy and communities" (CBTF 2008). The goal of the Proposed Project is to make broadband capacity in the Eastern Sierra equal to

that available in major metropolitan areas and more populated areas of California and Nevada so that these communities can participate in the global economy.

1.3. RELATIONSHIP TO NEPA GUIDELINES

The Proposed Project is subject to the NEPA because the Proposed Project will be funded by a grant from the NTIA, a federal agency, and the Proposed Project will be installed on land managed by other federal agencies (e.g., US Forest Service, Bureau of Land Management, Department of Defense). While the grant provides funds for only the construction and installation of the middle-mile fiber-optic network and infrastructure, the operation and maintenance of the network and infrastructure also have been considered in the EA. The preparation, review, and certification process for the NEPA document will involve the following procedural steps:

1.3.1 Environmental Assessment

This document constitutes the EA and contains a description of the Proposed Action (Proposed Project), description of the existing environment, identification of environmental consequences (impacts), and Applicant Proposed Measures (APMs) and Mitigation Measures.

1.3.2 Public Review and Involvement

This document will be circulated for public review, including review by applicable federal, state, and local agencies, for a maximum of 30 days.

Public involvement is a process by which interested and affected individuals, organizations, agencies, and government entities are consulted and included in the decision-making process of a planning effort. Through the planning process, the action agencies are able to respond to what the public perceives as problems and opportunities and to formulate and select alternative plans that reflect public preferences. In addition, the National Environmental Policy Act (PL 91-190), among other Federal laws and regulations, mandate public involvement and encouraged this practice.

1.3.3 Response to Comments/Final EA

Following the public review period, a Final Joint EA/IS/MND will be prepared. CBC and CPUC will respond to written comments received during the public review period. For purposes of the EA, Forest Service regulations require that all substantive written and oral comments received during the legally noticed 30-day comment period on the EA be considered (36 CFR 215).

1.3.4 Adoption of the EA/Project Consideration

The NTIA and other federal agencies (e.g., USFS, BLM, DOD) will review and consider all information contained in the Draft and Final Joint EA/IS/MND. If the federal agencies find that the Final Joint EA/IS/MND is “adequate and complete,” the agencies 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 Proposed Project in contemplation of its environmental consequences.

Upon review and consideration of the Final Joint EA/IS/MND, the NTIA and other federal agencies may take action to approve, revise, or reject the Proposed Project. A decision to approve the Proposed Project would be accompanied by written findings in accordance with 40 CFR 1503.4.

1.3.5 Finding of No Significant Impact

The primary purpose of conducting an environmental assessment is to determine whether a proposed action will have a significant impact on the human environment and, therefore, require the preparation of an 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 will 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. Significance of impacts is to be considered in terms of context and intensity and includes:

(a) **Context.** This means that 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 would usually depend upon the effects in the locale rather than in the world as a whole. Both short-term and long-term effects are relevant. (40 CFR 1508.27(a)) and

(b) **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 in evaluating intensity: (40 CFR 1508.27(b))

- Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial. (40 CFR 1508.27(b)(1));
- The degree to which the proposed action affects public health or safety. (40 CFR 1508.27(b)(2));
- 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. (40 CFR 1508.27(b)(3));
- The degree to which the effects on the quality of the human environment are likely to be highly controversial. (40 CFR 1508.27(b)(4));
- The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks. (40 CFR 1508.27(b)(5));
- The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration (40 CFR 1508.27(b)(6));
- 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. (40 CFR 1508.27(b)(7));

- The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources (40 CFR 1508.27(b)(8));

- 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 Endangered Species Act of 1973 (40 CFR 1508.27(b)(9)); and

- 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(b)(10)).

1.4. RELATIONSHIP TO CEQA GUIDELINES

The Proposed Project also is subject to the requirements of CEQA because the Proposed Project will be funded by a grant from CPUC, a California state agency, and because the Proposed Project requires discretionary approval by the CPUC. The CPUC is the designated Lead Agency for CEQA review purposes. The Lead Agency also has authority to prepare and adopt a Mitigated Negative Declaration and mitigation monitoring program prepared in accordance with CEQA. While the grant funds only the construction and installation of the middle-mile fiber-optic network and infrastructure, the operation and maintenance of the network and infrastructure also have been considered in the IS/MND.

1.4.1 Intended Uses of the Mitigated Negative Declaration

The preparation, review, and adoption process for the Mitigated Negative Declaration will involve the following procedural steps:

1.4.1.1 Mitigated Negative Declaration

This document constitutes the Mitigated Negative Declaration for the Proposed Project and contains a description of the Proposed Project, description of the environmental setting, identification of Proposed Project impacts, and Applicant Proposed Measures (APMs) and Mitigation Measures to reduce potentially significant impacts to a less than significant level. This document also contains a completed Environmental Checklist Form (Appendix A) as required by CEQA. For each question listed in the Impact Statement checklist, a determination of the level of significance of the impact is provided. The public notice and review period for this document is 30 days as authorized by Section 15205(d) of the CEQA Guidelines and Public Resources Code, Section 21091(e). Upon completion of the public notice and review period for this document, the CPUC will meet to consider whether to adopt this Mitigated Negative Declaration after consideration of all comments received from the public and commenting agencies.

1.4.1.2 Public Notice/Public Review

The CPUC will provide public notice of the availability of the Draft IS/MND for a 30-day public review and invite comment from the general public, agencies, organizations, and other interested parties.

Following the public review period, CPUC will meet to review and consider the Final Joint EA/IS/MND, together with any comments received during the public review process. If the CPUC finds on the basis of the whole record before it that there is no substantial evidence that the Proposed Project will have a significant effect on the environment, and that the EA/IS/MND reflects CPUC's independent judgment and analysis, CPUC shall then adopt the Final IS/MND.

Upon adoption of the Final Joint EA/IS/MND, the CPUC may take action to approve, revise, or reject the Proposed Project.

1.4.1.3 Mitigation Monitoring

Pursuant to § 21081.6(a)(1) of the California Public Resources Code, the lead agency shall adopt a Mitigation Monitoring Program to monitor Applicant Proposed Measures (APMs) and Mitigation Measures, best management practices (BMPs), and conditions of approval outlined in this EA/IS/MND. This program serves to document compliance with applicant-initiated environmental construction measures, BMPs, and conditions of approval required to minimize effects of the Proposed Project on the environment. A Mitigation Monitoring and Reporting Plan (MMRP), including Applicant Proposed Measures (APMs), for the Proposed Project is included as Appendix B.

1.5. COMPLIANCE WITH APPLICABLE REGULATORY STATUTES AND PERMIT REQUIREMENTS

Federal and State environmental requirements considered in the preparation of this Draft EA/IS/MND are briefly reviewed in this subsection. The NTIA, CPUC, and other cooperating, responsible, and participating agencies shall use the environmental analysis included in this Draft Joint EA/IS/MND to support permit applications and other required compliance activities pursuant to the respective agency laws, orders, and regulations.

1.5.1 <u>Federal Environmental Regulations</u>

1.5.1.1 American Indian Religious Freedom Act

This Act requires Federal agencies to “evaluate their policies and procedures in consultation with native traditional religious leaders in order to determine appropriate changes necessary to protect and preserve Native American religious cultural rights and practices.” This act was considered in the development of the Proposed Project.

1.5.1.2 Bureau of Land Management Sensitive Species

Bureau of Land Management (BLM) Sensitive Species are species that are not federally listed that occur on BLM public lands, where BLM “has the capability to significantly affect the conservation status of the species through management.” BLM’s policy is to “ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered.” BLM offices maintain a list of special status plant and wildlife species specific to BLM management activities. BLM Sensitive Species were considered in the development of the Proposed Project.

1.5.1.3 Forest Service Sensitive Species

Forest Service Sensitive (FSS) species are plant and animal species identified by a Regional Forester for which population viability is a concern (FSM 2670.5). The analysis of effects must include an assessment

of the effects of each alternative on FSS species; this assessment is documented in a Biological Evaluation (BE); the BE for the Proposed Project currently is in preparation and will be completed and submitted to the Forest Service prior to any decisions made on the Proposed Project. Only alternatives that do not lead to a trend toward listing of loss of viability can be selected.

1.5.1.4 Forest Service Management Indicator Species

Management indicator species (MIS), identified in the Toiyabe National Forest Land and Resource Management Plan, act as representative species for others with similar habitat requirements. MIS are not federally listed as threatened, endangered, or Forest Sensitive, but they have the potential to be affected by project activities. An MIS report currently is in preparation and will be completed and submitted to the Forest Service prior to any decisions made on the Proposed Project.

1.5.1.5 BLM Resource Management Plans

<u>California</u>

The BLM within the State of California distinguished and set forth guidance for the management of 26 Resource Management Plan (RMP) areas. Of these 26 RMP areas, the Proposed Project is located in two of these RMP areas; the West Mojave Plan as an amendment to the California Desert Conservation Area Plan and the Bishop RMP.

California Desert Conservation Area Plan and West Mojave Plan

The California Desert Conservation Area Plan (CDCA Plan) serves as a land-use guide for much of southern California and provides guidance for proposed projects to remain in compliance with numerous local, state, and federal regulations. The West Mojave Plan serves as an amendment to the CDCA Plan and provides additional management guidance and preservation strategies as it pertains to the desert tortoise, the Mohave ground squirrel, and numerous other sensitive plant and wildlife species that are known to occur throughout the Western Mohave Desert. The specific purpose of the West Mojave Plan is to provide measures for projects to remain in regulatory compliance with the Federal and State Endangered Species Acts. The Proposed Project has accounted for and developed strategies to cooperate with the BLM in the management of natural resources on the public lands located within the West Mohave Plan resource area. The MMRP, APMs, and Sections 4.0 and 5.0 of this Joint EA/IS/MND identify project-specific measures that address the resources within the CDCA and West Mojave Plans; the Proposed Project considered these plans in the evaluation of environmental consequences of the Proposed Project and alternatives.

Bishop RMP

The Bishop Resource Area RMP encompasses approximately 750,000 acres of public lands and 9,000 acres of federal mineral estate under private land that is located in the Sierra Region of Inyo and Mono Counties in California. This resource area is subdivided into 9 management areas. The Proposed Project passes through eight of the nine management areas within the Bishop Resource Area (as indentified in the Bishop RMP): 1) Coleville, 2) Bridgeport Valley, 3) Bodie Hills, 5) Long Valley, 6) Benton, 7) Owens Valley, 8) South Inyo, 9) Owens Lake. Standard Operating Procedures are outlined in the RMP to provide specific guidance for managing resources within the Bishop Resource Area. In addition to the Bishop Resource Area-wide management requirements, each individual management area within the Bishop Resource Area (outlined above) is prescribed area-specific resource management measures. The

Proposed Project developed appropriate measures to address the preservation of natural resources and avoidance of impacts to support the Bishop RMP and the eight applicable subdivided management areas. The MMRP, APMs, and Sections 4.0 and 5.0 of this Joint EA/IS/MND identify project-specific measures that address the resources within the Bishop Resource Area RMP; the Proposed Project considered this plan in the evaluation of environmental consequences of the Proposed Project and alternatives.

Nevada

Similar to the BLM within California, the BLM within Nevada also publish RMPs for the purpose of providing guidance and management strategies for public lands in Nevada. The Proposed Project is located with the Carson City Consolidated RMP area.

Carson City Consolidated RMP

The Cason City Field Office Consolidated RMP (CRMP) incorporates the planning documents from two BLM field offices in Nevada. The Proposed Project is located within the Sierra Front Field Office region. The CRMP provides management strategies for the protection of natural resources on public lands in Nevada and provides guidance on the decision-making process for project conformance to the CRMP. The Proposed Project identified and developed construction and operation methods that conform to the measures outlined in the CRMP. The MMRP, APMs, and Sections 4.0 and 5.0 of this Joint EA/IS/MND identify project-specific measures that address the resources within the CRMP; the Proposed Project considered this plan in the evaluation of environmental consequences of the Proposed Project and alternatives.

1.5.1.6 USFS National Forest Land and Resource Management Plans

Inyo National Forest Land and Resource Management Plan

The Inyo National Forest Land and Resource Management Plan provides direction for management activities on the Inyo National Forest. This plan guides where and under what conditions an activity or project on national forest lands can generally proceed.

Toiyabe National Forest Land and Resource Management Plan

The Toiyabe National Forest Land and Resource Management Plan directs the management of the Toiyabe National Forest. This plan provides management activities that allow use and protection of Forest resources; fulfill legislative requirements; and address local, regional, and national issues and concerns.

Humboldt National Forest Land and Resource Management Plan

The Humboldt National Forest Land and Resource Management Plan provides long term direction for the Humboldt National Forest. This plan guides natural resource management activities and establishes management standards and guidelines for the Humboldt National Forest.

1.5.1.7 USFS Sensitive Species

Forest Service Sensitive (FSS) species are plant and animal species identified by a Regional Forester for which population viability is a concern (FSM 2670.5). The analysis of effects must include an assessment of the effects of each alternative on FSS species; this assessment is documented in a Biological Evaluation (BE) and summarized in this chapter. Only alternatives that do not lead to a trend toward listing of loss of viability can be selected.

1.5.1.8 Naval Air Weapons Station China Lake

Naval Air Weapons Station China Lake (NAWSCL) implemented a Comprehensive Land Use Management Plan (CLUMP) in an effort to support the current and long-term military requirements and environmental stewardship on public withdrawn lands. The CLUMP serves as a guide for land use on NAWSCL in partnership with the BLM and public. The CLUMP is applicable to the draft Integrated Natural Resources Management Plan, the draft Integrated Cultural Resources Management Plan, draft the Range Management Plan, the Air Installation Compatible Use Zone update, and other such technical plans.

NAWSCL also implements the NAWSCL Desert Tortoise Habitat Management Plan. This plan minimizes the potential impacts to desert tortoise and desert tortoise habitat. A Biological Opinion was issued in 1995 stating that the implementation of the NAWSCL Desert Tortoise Habitat Management Plan would result in impacts that are less than significant.

1.5.1.9 Clean Air Act of 1972

The Clean Air Act (CAA) regulates emissions of air pollutants to protect the nation's air quality. This Act requires all Federal agencies engaged in activities that may result in the discharge of air pollutants to comply with Federal and State laws, and interstate and local requirements regarding control and abatement of air pollution. This Act also requires all Federal projects to conform to U.S. Environmental Protection Agency (USEPA) approved or promulgated State Implementation Plans (SIPs). This act was considered in the evaluation of environmental consequences of the Proposed Project and alternatives.

1.5.1.10 Clean Water Act of 1977 (Public Law 95-217)

The Clean Water Act (CWA) governs discharge or dredge of materials in the waters of the United States, and it governs the discharge of pollutants to the Nation's waters, restoring and maintaining the physical, chemical, and biological integrity of the Nation's waters. Section 404 outlines the permit program required for the discharge of dredged or fill material in Waters of the US. The CBC must follow all the environmental commitments identified in the EA/IS/MND where applicable.

1.5.1.11 Executive Order 11514, Protection and Enhancement of Environmental Quality

This order is related to the implementation of procedural provisions of NEPA. The guidelines recommend early environmental document preparation and impact statements that are concise, clear, and supported by evidence that agencies have made the necessary analyses. This order was considered in the preparation of this Draft EA/IS/MND.

1.5.1.12 Executive Order 11988, Floodplain Management

This order requires Federal agencies to "avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative." This order was considered in the development of the Proposed Project.

1.5.1.13 Executive Order 11990, Protection of Wetlands

This order requires that governmental agencies, in carrying out their responsibilities, provide leadership and "take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands." This order was considered in the development of the Proposed Project.

1.5.1.14 Executive Order 12088, Pollution Control Standards

This order requires Federal compliance with applicable pollution control standards concerning air and water pollution, and hazardous materials and substances. Federal agencies are directed to consult with State and local agencies concerning the best techniques and methods available for the prevention, control, and abatement of environmental pollution. This order was considered in the development of the Proposed Project.

1.5.1.15 Executive Order 12898, Environmental Justice in Minority Populations and Low-Income Populations

This executive order requires that the joint EA/IS/MND analyze the impacts of federal actions on minority and low-income populations and provides opportunities for input on the joint EA/IS/MND by affected communities. The alternatives developed for the Draft EA/IS/MND were based on a set of criteria that did not discriminate on the basis of race, color, or national origin. This order was considered in the development of the Proposed Project.

1.5.1.16 Executive Order 13007, Indian Sacred Sites

This order requires Federal agencies to (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites. This order was considered in the development of the Proposed Project. Because this order requires the Federal agencies to maintain the confidentiality of sacred sites, any identified sites will not be included in the public document.

1.5.1.17 Executive Order 13045, Environmental Health and Safety Risks to Children

This order is designed to focus Federal attention on actions that affect human health and safety conditions that may disproportionately affect children. This order was considered in the development of the Proposed Project.

1.5.1.18 Executive Order 13112, Invasive Species

This Order requires agencies to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause. This order was considered in the development of the Proposed Project.

1.5.1.19 Federal Endangered Species Act of 1973

The Federal Endangered Species Act of 1973 (ESA) protects endangered and threatened species by prohibiting Federal actions that would jeopardize the continued existence of such species or result in the destruction or adverse modification of habitat of such species. Coordination with respect to Federal endangered and threatened species has occurred with both California and Nevada USFWS in the development of this Draft Joint EA/IS/MND.

Under Section 7(a)(2) of the ESA, Federal agencies must consult with Federal resource agencies (i.e., USFWS) and prepare a Biological Assessment (BA) if listed species and/or critical habitat are present in an area to be impacted by Proposed Project activity. The USFWS then would prepare a Biological Opinion (BO) on how the action would affect the species and/or its critical habitat, and would suggest reasonable and prudent measures or alternatives to minimize take of a listed specices, avoid jeopardizing the continued existence of the species, or avoid adversely modifying its critical habitat. A BA has been prepared for the Proposed Project. The NTIA has initiated formal Section 7 consultation for the Proposed Project.

1.5.1.20 Fish and Wildlife Coordination Act of 1958 (Public Law 85-624, 16 USC 661-666(c))

The Fish and Wildlife Coordination Act (FWCA) protects fish and wildlife from Federal actions that result in the control or modification of a natural stream or waterbody. The FWCA requires consultation with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG), whom have been coordinated with during the initial and current stages of planning, development of the environmental commitments, proposed APMs and potential mitigation measures.

1.5.1.21 Migratory Bird Treaty Act, as amended (16 USC 703-711)

The Migratory Bird Treaty Act (MBTA), as amended, provides legal protection for almost all bird species occurring in, migrating through, or spending a portion of their life cycle in North America by restricting the killing, taking, collecting, and selling or purchasing of native bird species or their parts, nests, or eggs. Certain game bird species are allowed to be hunted for specific periods determined by Federal and State governments. The intent of the MBTA is to eliminate any commercial market for migratory birds, feathers, or bird parts, especially for eagles and other birds of prey. The MBTA was considered in the evaluation of environmental consequences of the Proposed Project.

1.5.1.22 Bald and Golden Eagle Protection Act, as amended (16 U.S.C. 668-668c)

The Bald and Golden Eagle Protection Act (BGEPA) of 1940, as amended, provides legal protection to bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) in addition to protection afforded under the MBTA. The BGEPA prohibits the “take” (to pursue, shoot, shoot at, wound, kill, capture, trap, collect, molest or disturb) of bald and golden eagles includinght their nests, eggs or parts. “Disturbance” of bald and golden eagles is also prohibited under the BGEPA, and “disturbance” relates to injuries to bald or golden eagles or a disruption to life cycles, productivity, and/or substantial

interference of normal bald and golden eagle behavior. The BGEPA also extends to potential impacts to bald and golden eagles caused by human-induced environmental changes near a previously used nest when the eagles are not present. The BGEPA was considered in the evaluation of environmental consequences of the Proposed Project.

1.5.1.23 National Environmental Policy Act of 1969 (Public Law 91-190) as amended

This Draft Joint EA/IS/MND has been prepared in accordance with the requirements of the NEPA of 1969 (42 USC 43221, as amended) and the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), dated 1 July 1988. NEPA requires that agencies of the Federal Government shall evaluate federal actions that may affect the quality of the human environment. NEPA regulations were followed in the preparation of this EA.

1.5.1.24 National Historic Preservation Act of 1966, as amended (16 USC 479)

Section 106 of the National Historic Preservation Act (NHPA) established the National Register of Historic Places (NRHP), which is a list of historic properties of National, State, and local significance. Under Section 106, agencies are required to consider the effects of their actions on properties that may be eligible for or are listed in the NRHP. The NRHP established the Advisory Council on Historic Preservation (ACHP) to comment on Federally licensed, funded, or executed undertakings affecting National Register properties. Regulations of the ACHP (36 CFR 800) provide guidance for Federal agencies to meet Section 106 requirements. This process involves consultation with the State Historic Preservation Officer (SHPO), the ACHP, and other interested parties, including Native American Tribes, as warranted.

A Section 106 Programmatic Agreement (PA) is a document that spells out the terms of a formal, legally binding agreement among Federal agencies, states agencies, and Native American tribes. The PA establishes a process for consultation, review, and compliance with those federal laws concerning historic preservation. The ACHP regulation implementing Section 106 of the NHPA provides for a PA alternative mechanism for compliance with the law. Section 800.14(b) of the regulation encourages use of a PA for large complex projects or programs wherefore other reasons the effects of the project cannot be fully determined prior to approval of the project.

During early project coordination with the parties involved with Section 106 review, considering the project timeline and the number of parties involved, it was determined that the effects on historic properties would not be fully determined prior to approval of the undertaking. Two state SHPOs, three Federal agencies, the Advisory Council on Historic Preservation, three state agencies and seven Native American tribes are affected by the Proposed Project.

In an effort to meet the ARRA requirement to complete the Proposed Project within three years, and in light of on-going project design and engineering, per 36 CFR 800.14(b), NTIA and CBC have decided to pursue a PA in order to streamline Section 106 compliance. The CBC is authorized by NTIA to gather information to identify and evaluate historic properties and work with consulting parties to assess effects. NTIA remains the lead agency and is working cooperatively with other state and federal agencies and Native American tribes associated with the Proposed Project.

The PA recipients are federal and state agencies, and Native American tribes affected by the Proposed Project. Signatories include the National Telecommunications and Information Administration, California

State Historic Preservation Officer, Nevada State Historic Preservation Officer, California Broadband Cooperative, Inc., Big Pine Band of Owens Valley - Owens Valley Paiute, Bishop Paiute Tribe – Paiute, Shoshone, Washoe Tribe of Nevada and California, and Advisory Council on Historic Preservation.

Invited signatories include the Benton Paiute Reservation, Bridgeport Paiute Indian Colony, Fort Independence Community of Paiute, Lone Pine Paiute -Shoshone Reservation, U.S. Forest Service, Bureau of Land Management, California Public Utilities Commission, California Department of Transportation, and Nevada Department of Transportation.

The PA was circulated in a 30-day review period with the listed parties. Signatories and invited signatories received a copy of the PA the week of June 13, 2011. The review period ended the week of July 18, 2011. Efforts to complete all requirements under Section 106 will continue as the PA is finalized.

1.5.1.25 Safe Drinking Water Act

This Act requires Federal agencies to protect public health by protecting drinking water and its sources, such as rivers, lakes, reservoirs, springs, and ground water wells. This act was considered in the development of the Proposed Project.

1.5.1.26 Wild and Scenic Rivers Act

This Act requires Federal agencies recognize “certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations.” This act was considered in the development of the Proposed Project.

1.5.1.27 Wilderness Act

This Act identified areas designated as “wilderness areas” to be administered for the use and enjoyment of the American people for future use and enjoyment as wilderness, and to provide protection of these areas, the preservation of their wilderness character, and education regarding their use and enjoyment as wilderness. This act was considered in the development of the Proposed Project.

1.5.2 <u>State Environmental Regulations</u>

1.5.2.1 California Endangered Species Act (California Fish and Game Code Sections 2050-2116)

The California Endangered Species Act (CESA) parallels the Federal ESA. As a responsible agency, the CDFG has regulatory authority over State-listed endangered and threatened species. The State legislature encourages cooperative and simultaneous findings between State and Federal agencies. The Proposed Project would comply with this act.

1.5.2.2 California Environmental Quality Act (Public Resources Code, Sections 21000-21177)

CEQA requires that State and Local agencies consider environmental consequences and project alternatives before a decision is made to implement a project requiring State or local government approval, financing, or participation by the State of California. In addition, CEQA requires the identification of ways to avoid or reduce environmental degradation or prevent environmental damage

by requiring implementation of feasible alternatives or mitigation measures. This Joint EA/IS/MND was prepared in accordance with this regulation.

1.5.2.3 California Fish and Game Code

The California Fish and Game Code outlines protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected may not be taken or possessed at any time. The CDFG has designated certain species native to California as Species of Special Concern to "focus attention on animals at conservation risk by the Department, other State, local and Federal governmental entities, regulators, land managers, planners, consulting biologists, and others; stimulate research on poorly known species; achieve conservation and recovery of these animals before they meet CESA criteria for listing as threatened or endangered." California Species of Special Concern were considered in the development of this Proposed Project.

1.5.2.4 California Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 directed the CDFG to "preserve, protect and enhance rare and endangered plants in this State." The CDFG "requires a CESA Section 2081 (a) permit for take of candidate or listed threatened and endangered plants for scientific, educational, or management purposes, and a CESA Section 2081 (b) permit for incidental take of listed threatened and endangered plants from all activities, except those specifically authorized by the NPPA." The California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California was referenced in the literature review of the Proposed Project. Although rare plants are not included in CESA, impacts to rare plants have been considered in the development of this Proposed Project.

1.5.2.5 California State Lands Commission

The California State Lands Commission (CSLC) has regulatory authority to administer, sell, lease or dispose of the public lands owned by the State or under its control, including not only school lands but tidelands, submerged lands, swamp and overflowed lands, and beds of navigable rivers and lakes (California Public Resources Code [PRC] Section 6216). The Proposed Project has been developed in consideration of State Lands.

1.5.2.6 Porter-Cologne Water Quality Control Act of 1966 (California Water Code §§ 13000-13999.10)

This act mandates that activities that may affect waters of the State shall be regulated to attain the highest quality. The RWQCB provides regulations for a "non-degradation policy" that are especially protective of waters with high quality. This act was considered in the evaluation of the Proposed Project.

1.5.3 <u>Local Environmental Regulations</u>

The CBC is responsible for compliance with and executing local actions with a number of regional environmental regulations.

1.6. RESPONSIBLE, TRUSTEE, AND COOPERATING AGENCIES

A Responsible Agency is a public agency that has discretionary approval authority over a portion of the Proposed Project. The Responsible Agency is available to the Lead Agency to provide information and

early consultation, providing guidance on applicable regulations or methodologies. A Trustee Agency is a state agency that has jurisdiction by law over natural resources that may be affected by the Proposed Project, which are held in trust for the people of the state. A Cooperating Agency is a federal, state, tribal, or local agency having special expertise with respect to an environmental issue or jurisdiction by law. A cooperating agency has the responsibility to assist the lead agency by participating in the NEPA process at the earliest possible time; by participating in the scoping process; in developing information and preparing environmental analyses including portions of the environmental impact statement concerning which the cooperating agency has special expertise; and in making available staff support at the lead agency's request to enhance the lead agency's interdisciplinary capabilities. The following agencies were contacted as part of the consulting process for this Proposed Project: U.S. Fish and Wildlife Service, U.S. Forest Service, U.S. Bureau of Land Management, U.S. Army Corps of Engineers, U.S. Bureau of Indian Affairs, U.S. Department of the Navy, Office of Historic Preservation / Advisory Council on Historic Preservation, California Native American Heritage Commission, California Department of Transportation, Nevada Department of Transportation, California Department of Fish and Game, Nevada Department of Wildlife, California Regional Water Quality Control Board, Nevada Division of Environmental Protection, California Public Utilities Commission, Los Angeles Department of Water and Power, Burlington Northern Santa Fe Railway, County of Mono, County of Kern, County of Inyo, County of San Bernardino, County of Douglas, County of Washoe, Carson City, and relevant Native American tribes.

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SECTION 2.0 – PROPOSED ACTION

The California Broadband Cooperative, Inc. (CBC), as a grant recipient of the Broadband Technology Opportunities Program (BTOP) funded by the American Recovery and Reinvestment Act of 2009 (ARRA) and the California Public Utility Commission's (CPUC) California Advanced Services Fund (CASF) grants program, proposes the installation of the Digital 395 Project, approximately 593 miles of middle-mile fiber-optic network and infrastructure, providing broadband service to unserved and underserved areas in the Eastern Sierra. The middle-mile network is the segment of a telecommunications network that provides broadband service from one or more centralized facilities to the local network plant; these facilities provide relatively fast, large-capacity connections between the network backbone and last-mile connection. The Department of Commerce, National Telecommunications and Information Administration (NTIA) is the Federal lead agency responsible for compliance with the National Environmental Policy Act (NEPA) and the CPUC is the lead agency responsible for compliance with the California Environmental Quality Act (CEQA).

The Proposed Project is to install approximately 593 miles of middle-mile fiber-optic cable and associated infrastructure, to provide broadband service in unserved and underserved areas of the Eastern Sierra, with a proposed service area encompassing 36 communities, 7 Native American tribal reservations, and 2 military bases. In addition to internet services, high-capacity "dark" fiber also will be made available to the region's last-mile providers, government agencies, cellular and long-distance carriers. The purpose is to improve local internet services, provide diverse routing between Northern and Southern California and Southern Nevada, and enhance public safety. The proposed action involves the installation of underground fiber optical cables (FOC) within the California Department of Transportation (Caltrans) right-of-way (ROW)/easements, county-maintained dirt roads, Los Angeles Department of Water and Power, or Nevada Department of Transportation (NDOT) ROW/easements. Installation of underground optical fiber cables will also occur on Naval Air Weapons Station China Lake (NAWSCL) and the United States Marine Corps Mountain Warfare Training Center. Buildings to be constructed are proposed within existing land use types zoned for utilities. The Proposed Project would not change any land use or zoning types. For purposes of this document, the term "Proposed Project ROW" includes the footprint or area of direct placement/disturbance of the Proposed Project features (e.g., conduit, nodes), as well as the construction footprint related to those features (e.g., boring, plowing, drilling, staging areas, pathway of construction related equipment).

The Proposed Project features include:

- construction of a new, approximate 479-mile backbone FOC route;
- construction of approximately 62 miles of new distribution lines;
- placement of approximately 52 miles of FOC in existing utility conduit; and
- construction of 17 nodes or prefabricated buildings to support wireless systems.

This Draft Joint EA/IS/MND has been prepared for CBC, to meet the requirements of the NTIA, CPUC, and other agencies with decision-making authority for the Proposed Project. This Draft Joint EA/IS/MND analyzes potential environmental impacts associated with the proposed action and alternatives for providing broadband infrastructure to unserved and underserved areas in the Eastern Sierra.

2.1. LOCATION

The Digital 395 network will be located between Barstow, California, and Reno, Nevada, providing broadband services to the area commonly referred to as the Eastern Sierra (Figure 1). The Proposed Project route maps are included as Appendix C. The route mainly follows U.S. Highway 58 and US 395, a major transportation corridor between southern California and northern Nevada. The Proposed Project route crosses through San Bernardino, Kern, Inyo, and Mono counties in California and Douglas, Carson City, and Washoe counties in Nevada. The service area contains 36 communities as well as 7 Native American reservations. In addition to these civilian areas, the region is host to two military bases: Naval Air Weapons Station China Lake and the United States Marine Corps Mountain Warfare Training Center. The Proposed Project route consists of a main backbone and various spurs that lead away from the main backbone. The various spurs along the Proposed Project route branch from the main backbone to connect to nodes within communities along the route. Table 2 provides the distance of lands crossed by the Proposed Project backbone FOC.

Table 2: Proposed Project Distances of Backbone FOC

County	Agency/Land Owner	Distance Proposed Project Crosses (linear feet)
Backbone - California		
San Bernardino	Bureau of Land Management	34.28
	Military	0.51
	Other	42.96
Kern	Bureau of Land Management	8.71
	Military	14.59
	Other	7.54
Inyo	Bureau of Land Management	51.86
	Local Government	75.73
	Military	1.77
	Other	20.64
Mono	Bureau of Land Management	33.35
	Local Government	21.72
	Humboldt-Toiyabe National Forest	25.38
	Inyo National Forest	42.40
	Other	63.77
Total California		**445.21**
Backbone - Nevada		
Douglas	Bureau of Indian Affairs	0.01
	Bureau of Land Management	1.03
	Humboldt-Toiyabe National Forest	1.13
	Other	28.57
Carson City	Other	2.86
Total Nevada		**33.6**

Figure 1: Project Location Map

2.1.1 San Bernardino

The main backbone begins in the city of Barstow at Sandstone Court, with a spur extending east of Sandstone Court to the Verizon Central Office near North First Street and West Main Street. From Sandstone Court, the main backbone follows West Main Street eastward, then Petit Road northward, Jasper Road westward, Cedar Road westward, Agate Road westward, and Lenwood Road northward. In the town of Lenwood the main backbone begins to follow Highway (Hwy) 58 westward until Kramer Junction, where one section of the backbone turns northward to follow US 395 while a spur continues westward on Highway 58. Following the westward spur along Hwy 58, the main backbone continues to the Kern County line near Boron. From Kramer Junction, following the northward portion, the route follows US 395 northward through San Bernardino County until the route branches off at Trona Road.

2.1.1.1 Agency Jurisdictions

The portions of the route located in San Bernardino County are located within the California Desert Conservation Area (CDCA), administered by the Bureau of Land Management (BLM), , as well as within Desert Tortoise Critical Habitat. A portion of the route between Lenwood and Boron also crosses through BLM Public Domain Land.

2.1.2 Kern

After the main backbone reaches Kramer Junction, a portion of the backbone continues along Highway 58 and 20 Mule Team Road westward into Kern County, where various spurs branch to nodes in the community of Boron, including a spur into the community of Desert Lake. In the community of Johannesburg, a spur branches from the main backbone to connect to various nodes in the community. The main backbone crosses into Kern County as the route continues westward on Searles Station Road. The backbone then continues on an unidentified dirt road northward, then South Tor Road northward. South Tor Road then turns to the north east where the main backbone follows College Heights Boulevard northward into the community of Ridgecrest. The main backbone then follows China Lake Boulevard northward, Highway 178 westward, and an unidentified dirt road east of US 395 northward. The main backbone follows the dirt road until crossing into Inyo County. In the communities of Ridgecrest and Inyokern various spurs branch off from the main route, connecting to various anchors in those communities. One spur follows Highway 178 eastward to connect to a building at the NAWSCL. Another spur follows Doren Street to connect to a spur at the Inyokern Airport.

2.1.2.1 Agency Jurisdictions

The Mojave spur crosses through the CDCA, administered by the BLM, and also is adjacent to Department of Defense property at Edwards Air Force Base. In Ridgecrest, following a portion of Highway 178 towards China Lake as well as the dirt road where the backbone follows the road north of Highway 178, the route is within Department of Defense property at the NAWSCL In addition, near the community of Ridgecrest, the main backbone crosses into BLM Public Domain Land.

2.1.3 Inyo South (Lone Pine)

The main backbone crosses into Inyo County at a dirt road, and follows that road northward until it meets up with US 395 just north of Pearsonville. After that point, the main backbone route follows US 395 until the town of Olancha, where the main backbone turns to follow Highway 190 northward. Near the community of Coso Junction a short spur leads from the main route eastward, following Gill

Station Coso Road. South of the community of Olancha, a spur leads away from US 395 westward on Sage Flats Road. In the community of Olancha a short spur branches off from the main backbone to Olancha Elementary School and a node site.

The main backbone continues to follow Highway 190 northward until it meets Highway 136, and follows that road in a north-westerly direction. Before the town of Dolomite, the main backbone turns to follow Dolomite Loop northward, then Owenyo Lone Pine Road northward, until reaching Lone Pine Narrow Gauge Road where one portion of the backbone branches into the community of Lone Pine. Within the community of Lone Pine multiple spurs branch off the backbone route into the community. The main backbone continues northward on Owenyo Lone Pine Road northward until turning to follow Mazourka Canyon Road westward into the community of Independence. Within Independence, the main backbone turns off Mazourka Canyon Road to follow South Clay Street northward, then East Inyo Street westward, until meeting up with US 395. Various spurs branch off from the main backbone in the community of Independence to connect to nodes. After Independence, the main backbone follows US 395 northward until turning to follow Schabbell Lane northward, Fort Independence Road westward, then follow US 395 northward, and Tinemaha Road northward. The main backbone continues to follow Tinemaha Road northward until it meets up with Old Highway 395. North of the community of Aberdeen, the backbone follows Old Highway 395 until it meets back up with Tinemaha Road and continues northward. The backbone of the route follows Tinemaha Road until it turns to follow Griffith Road northward, and then Fish Springs Road northward. At Fish Springs, a spur branches off from the main backbone to connect to an anchor in the community.

North of the Tinemaha Reservoir, the backbone route meets up with US 395 and continues northward into the community of Big Pine. Within Big Pine, the backbone follows US 395, then Blake Street westward, School Street northward, then County Road eastward until it meets up with Highway 168. The backbone route then turns to follow unnamed County roads northward, until meeting up with Eastside Road which then follows Poleta Road and East Line Street westward into the town of Bishop.

2.1.3.1 Agency Jurisdictions

After the main backbone crosses into Inyo County, the route crosses through a portion of land designated as “State Land.” The portion of the backbone and spurs in southern Inyo County cross through the CDCA and BLM Public Domain Land.

2.1.4 <u>Inyo North (Bishop)</u>

A portion of the main backbone approaches Bishop from the east, following East Line Street, after a spur branches to the Bishop Airport. Within Bishop, multiple spurs branch of from the main backbone following West Line Street into the community of West Bishop, as well as multiple spurs within the city of Bishop. The northward portion of the main backbone continues north on Laws Poleta Road, turning westward on Silver Canyon Road, northward on Joe Smith Road, and westward on Jean Blanc Road. At Jean Blanc Road a large spur follows Highway 6 northward, while the main backbone continues along Jean Blanc Road until meeting up with Casa Diablo Road, then crossing into Mono County.

2.1.4.1 Agency Jurisdictions

The portions of the route located within the northern portion of Inyo County cross through BLM-administered Public Land. Additionally, the Proposed Project route crosses through the Fort Independence, Big Pine Paiute, and Bishop Paiute reservations.

2.1.5 Mono South (Lee Vining/June Lake/Mammoth Lakes)

The first portion of the route is a large spur that crosses into Mono County while following Highway 6 northward, ultimately leading to anchors in the communities of Benton, Benton Hot Springs, and Benton Paiute Reservation. The Benton Hot Springs spur leads from Highway 6 on Route 120 into the community. Later, the main backbone crosses into Mono County, following Casa Diablo Road, Casa Diablo Mine Cutoff Road, Round Mountain Road, Owens Gorge Road, Rock Creek Road, and Crowley Lake Drive before rejoining with US 395. Northward on the main backbone, US 395 intersects with Sawmill Road, where the backbone leads into the community of Mammoth Lakes, Sawmill Cutoff. In this section, two spurs off the backbone follow county roads to the Sierra Nevada Aquatic Research Laboratories (SNARL) and the Mammoth Airport. From the city of Mammoth Lakes, the main backbone continues northward on Sawmill Cutoff, and follows unnamed county roads through the Inyo National Forest until meeting up with US 395 at June Lake Junction. The main backbone then continues on US 395 northward into the community of Mono City. Various spurs branch off from the main backbone, one at Highway 158 towards June Lake, and multiple spurs in the community of Lee Vining.

2.1.5.1 Agency Jurisdictions

North of Bishop, in southern Mono County, the backbone of the Proposed Project route crosses through a BLM Wilderness Study Area, a small portion of the Inyo National Forest, BLM-administered Public Land, and a Forest Service National Scenic Area. The Benton spur crosses through the Inyo National Forest, and also extends to the Benton Paiute Reservation.

2.1.6 Mono North (Coleville/Walker/Bridgeport)

Past Mono City, the backbone moves from US 395 and switches back to county roads. Between Mill Creek Powerhouse Road and Virginia Lakes Road, the backbone is deployed on a short section of maintenance road which services the Southern California Edison pole line. The additional county roads include Dunderburg Meadows Road and Green Creek Road, which the backbone follows before meeting back up with US 395, which it follows northward to the community of Bridgeport. A spur extends east on Sweet Water Road to the Bridgeport Indian Colony, located at Sagebrush Road. In the community of Bridgeport, a small distribution network connects to a number of community institutions.

The backbone continues on US 395 northward through Fales Hot Springs. Approximately two miles northwest of Fales Hot Springs, the main route switches from US 395 to Burcham Flat Road. Near this location, a spur extends west to the Caltrans Maintenance Facilities at the intersection of Highway 108 (Sonora Pass) and then four miles further to the United States Marine Corps (USMC) Mountain Warfare Training Center at Pickle Meadows. To serve the community of Walker, a spur leads from the main backbone at Burcham Flat Road via Eastside Road into the community. From Burcham Flat Road the main route follows Eastside Road northward to reach Larson Lane. Larson Lane then intersects US 395, which the main route follows northward until reaching Topaz Lake at the California-Nevada border.

2.1.6.1 Agency Jurisdictions

In the northern portion of Mono County, the Proposed Project route crosses through BLM-administered Public Land, and the Inyo National Forest. The route also passes through a small portion of State Land while on Burcham Flat Road, as well as State Land when bordering Mono Lake. The Bridgeport Indian Colony, located near the community of Bridgeport, also has jurisdiction in the Mono North area.

2.1.7 Nevada (Douglas, Carson City, and Washoe Counties)

After the backbone of the route crosses into Nevada, it continues to follow US 395 until Gardnerville, where the route follows Douglas County and Carson City roads into Carson City. These county roads include Pinenut Road, East Valley Road, Fish Springs Road, Toler Avenue, Orchard Road, Bently Parkway, Buckeye Road, and Heybourne Road. At Heybourne Road and the intersection with Highway 209, a spur extends northward into Carson City and Washoe County using existing conduit. The spur follows Bigelow Drive, Snyder Avenue, Conte Avenue, South Edmonds Drive, Fairview Drive, and Modoc Court. After Modoc Court, the backbone route continues north on US 395, before turning to follow Hot Springs Road, Wedco Way, to the intersection of Goni Road and Arrowhead Drive. At Arrowhead Drive, the route returns to existing conduit and a short spur heads eastward along Arrowhead Drive, while the northward route continues along Goni Road to an unnamed County Road, County Road 224, East Lake Boulevard, South Virginia Street, West Holcomb Lane, Lakeside Drive, West Lake Ridge Terrace, Pluma Street, Mary Street, Holcomb Avenue, and Pine Street. The northernmost point of the spur ends in Reno, Nevada.

2.1.7.1 Agency Jurisdictions

In Washoe County, the route passes through or borders multiple areas of State Land. The Proposed Project route crosses through Washoe Tribe land just north of Gardnerville, Nevada. In Douglas County the main backbone passes through the Humboldt-Toiyabe National Forest in multiple areas. The Proposed Project route crosses through BLM-administered Public Land in Douglas, Carson City and Washoe Counties.

2.2. CONSTRUCTION METHODS

Project construction methods currently are detailed in the following subsections for the Proposed Project route. Applicant Proposed Measures (APMs) to avoid and minimize construction impacts to sensitive resources will be conducted to the extent practicable and are based on data from surveys for biological and cultural resources as well as through coordination with the various jurisdictional agencies.

2.2.1 Conduit Construction Strategy

Two types of conduit are included in this Proposed Project: fiber-optic cable (FOC) backbone and distribution lines. The FOC backbone will consist of one 1.50-inch duct, where one cable will initially be installed, and two 1.25-inch ducts for future use. The distribution line will consist of one 1.25-inch duct, where between 2 and 7 microducts will be installed.

Three methods of conduit construction will be used to account for variations in geology, route accessibility, terrain, or environmental issues. Most of the southern portions of the route traverse plowable desert soil; however, northern portions of the route contain mountainous terrain, narrow road embankments, volcanic rock, and areas that may be environmentally sensitive.

The three construction methods are cable plowing, horizontal directional drilling, and trenching with either a trencher or track-hoe. Approximately 46 percent of the Proposed Project route will be constructed by cable plowing. Approximately 27 percent will require trenching, and the remaining 27 percent will be performed by horizontal directional drilling or HDD. About 10 percent of the HDD will be performed in solid rock. For the purpose of this document, consideration of trenching and plowing methods assume the greater footprint of ground disturbance of the two methods (i.e., trenching

method) to account for potential variation in actual construction method based on restrictions of ground conditions during construction. CBC will implement a HDD Contingency and Resource Protection Plan.

The cable will be placed as far as possible from State Highway edge of pavement, as practicable, to minimize disruption and damage to cable in the event of future highway maintenance/construction. The location of broadband facilities within the California State Highway ROW is determined by Caltrans policy with the intent of ensuring the preservation of highway safety, maintenance, and operational needs; Caltrans policy is that broadband facilities shall be located outside the Clear Recovery Zone (CRZ) and shall be placed as far from the traveled way, as feasible. Where physical conditions at spot locations make it infeasible to place the cable as normally required, an alternate location may be proposed by submitting an exception request to Caltrans; vegetation/habitat disturbance is not considered to be a physical restriction.

2.2.2 Fiber-optic Cable in Existing Conduit

There are two primary methods for installation of the FOC into existing conduit: cable pulling, and cable blowing. The two methods may be combined to improve the FOC installation for a greater distance.

2.2.2.1 Conduit Proving

Prior to installing the FOC, the conduit must be proved. During the process of installing fiber-optic cable into the existing conduit, blockages, snags, or other blockage may occur. To remedy this problem requires locating the area of blockage and excavating that area. Once the conduit is exposed, the area of blockage will be cut out and replaced with new conduit. The process of proving involves pulling a mandrel (small mandrel of wood or metal) through the conduit on a line to ensure clear passage for the fiber-optic cable. Conduit for the new construction will be “proved” as soon as conduit installation is complete and the pull boxes and splice boxes have been set but before the fiber-optic cable is pulled. Once the conduit is proved, a pull and splice crew will pull in the fiber-optic cable from the access vaults and splice vaults. All activities will be contained within the Caltrans and NDOT ROW/easements and existing access roads. No undisturbed habitat will be affected by FOC installation activities along the segments with existing conduit, as the utilization of existing conduit in the ground allows maintenance/repair access without additional ground disturbance.

2.2.2.2 Cable Pulling

Traditionally, the most common method of installing fiber-optic cable into a conduit is through a method called “cable pulling.” The cable installation process is initiated by accessing the conduit system through opening existing splice vaults or access vaults. Generally, a cable pulling crew opens only the vaults or manholes needed to install a predetermined length of cable. These vaults or manholes are then closed or plated at the end of each day to ensure safety. All pulling of fiber-optic cable will occur within the Caltrans and NDOT ROW/easements and within existing access roads.

The cable reels are attached to a flatbed truck or trailer hitched to a tractor. Cable lengths vary based on design characteristics; a typical length is 16,000 feet. The cable pulling process begins by moving the reel of cable and cable placing equipment to an open access point for a section of conduit in which the cable is to be installed. Placement methods may include “figure-eighting” or “bi-directional” pulling, wherein a mid-point vault is selected and the cable is pulled in both directions. Since cable pulling tension increases with distance, a figure eight reel allows cable to be pulled in two directions at once. This

method allows almost twice as much cable to be installed (both ways from a central point) while avoiding a mid-point splice. The placement technique that is selected for a fiber-optic cable pulling operation is dependent upon site-specific variables relating to the section of conduit to be installed. Cable installation experts make the decision at the time of cable placement regarding which technique to use. To aid in the speed and length that a cable can be pulled, lubricants are manually placed into the conduit during the threading of pull rope and applied to the cable itself during cable pulling. Although the lubricants are composed of non-toxic materials, proper spill containment materials to isolate potential spills will be utilized. A construction Spill Prevention and Control Plan will be prepared.

2.2.2.3 Cable Blowing

As with cable pulling, the cable blowing process is initiated by accessing the conduit system through opening existing buried vaults or manholes. Also like cable pulling, the installation crew begins the cable blowing process by moving the reel of cable and all cable blowing equipment (consisting of a trailer-based compressor and a 3-feet by 2 foot "blowing machine" that channels the cable and compressed air from the compressor along a tube and into the conduit) at an access point at either the beginning or middle of the segment to be installed. Using either the figure-eight or bidirectional placement technique, the cable is then blown through the conduit using a method such as the high air speed blowing (HASB) or the piston (push/pull) method. The placement technique and blowing method that is selected for a fiber-optic cable blowing operation is dependent upon site-specific variables relating to the segment of conduit to be installed. Cable installation experts decide at the time of cable placement which technique and method to use. All activities, including the staging of equipment during pulling/blowing will occur within the Caltrans and NDOT ROW/easements and be contained within existing road ROWs.

To aid in the speed and length that a cable can be blown, lubricants may be applied to the FOC as it enters the conduit or applied to the insides of the conduit walls by blowing a lubricant-soaked sponge through the conduit; the amount of lubricant used for cable blowing typically is less than cable pulling. As with cable pulling lubricants, modern cable blowing lubricants are comprised of non-toxic, water-based polymer materials. Although the lubricants are composed of non-toxic materials, proper spill containment materials to isolate potential spills will be utilized. A construction Spill Prevention and Control Plan will be prepared.

2.2.3 <u>Bridge Attachments</u>

Although horizontal directional boring is proposed at river crossings, attachments may be used if (1) authorizing agencies prohibit boring alternatives and (2) boring is not feasible and conduit within the bridge structure is not available. Ten locations have been identified along the route where the Proposed Project plans to install one 6-inch steel or plastic conduit along the length of the bridge, terminating in access vaults or splice boxes on either end of the bridge. The FOC backbone also will cross Long Valley Dam, which will be surface mounted or located on the dam face along a maintenance road, depending on the preferences of Los Angeles Department of Water and Power (LADWP). The locations of the eight bridge crossings are identified in Table 3 and shown in Figure 2. Three plastic inner-ducts will be installed within the steel conduit to support future needs.

Table 3: Proposed Bridge Crossings and Attachments

Location	County / GPS Location	Bridge Number	Length (meters)	Method
Five Mile Canyon	Inyo County 35.871454, -117.882822	480046R	51.8	Attach – Steel Duct / bore
LA Aqueduct /US 395	Inyo County 36.094239, -117.963187	480015R	12.8	Attach – Steel Duct / bore
LA Aqueduct /US 395	Inyo County 36.104850, -117.967853	480064R	11.6	Attach – Steel Duct / bore
LA Aqueduct /US 395	Inyo County 36.236509, -117.984058	48 0010	14.6	Attach – Steel Duct / bore
LA Aqueduct /US 395	Mono County 37.861675, -119.085956	470057R	14.9	Attach – Steel Duct / bore
Rush Creek	Mono County 37.891604, -119.091588	47 0059R	36	Attach – Steel Duct / bore
Eastside Lane / Walker River	Mono County 38.51629, -119.457572	NF	26	Attach – Steel Duct / bore
Larson Lane / West Fork Walker River	Mono County 38.545669, -119.494938	NF	6	Attach – Steel Duct / bore

Figure 2: Proposed Bridge Crossings

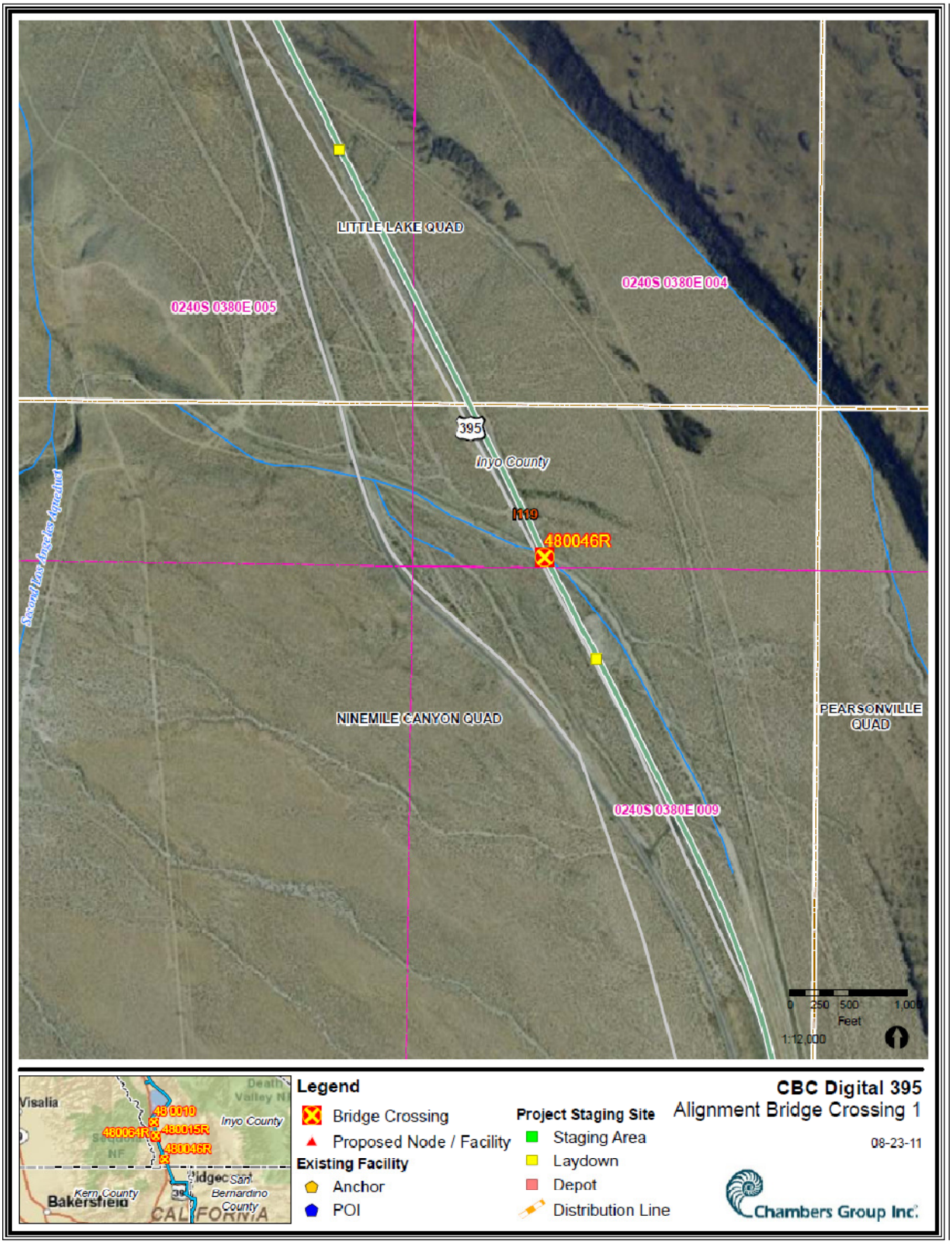


Figure 2: Proposed Bridge Crossings (continued)

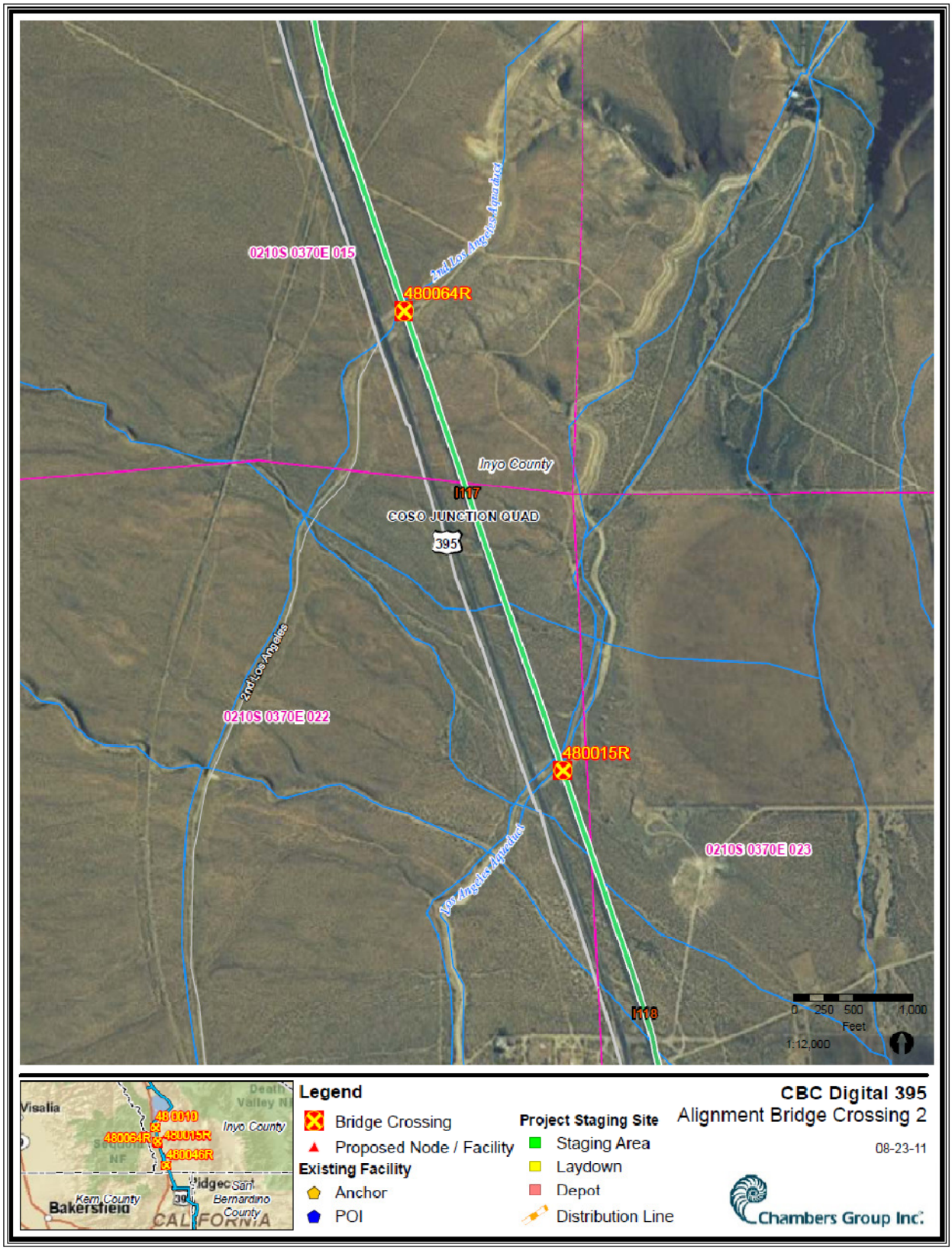


Figure 2: Proposed Bridge Crossings (continued)

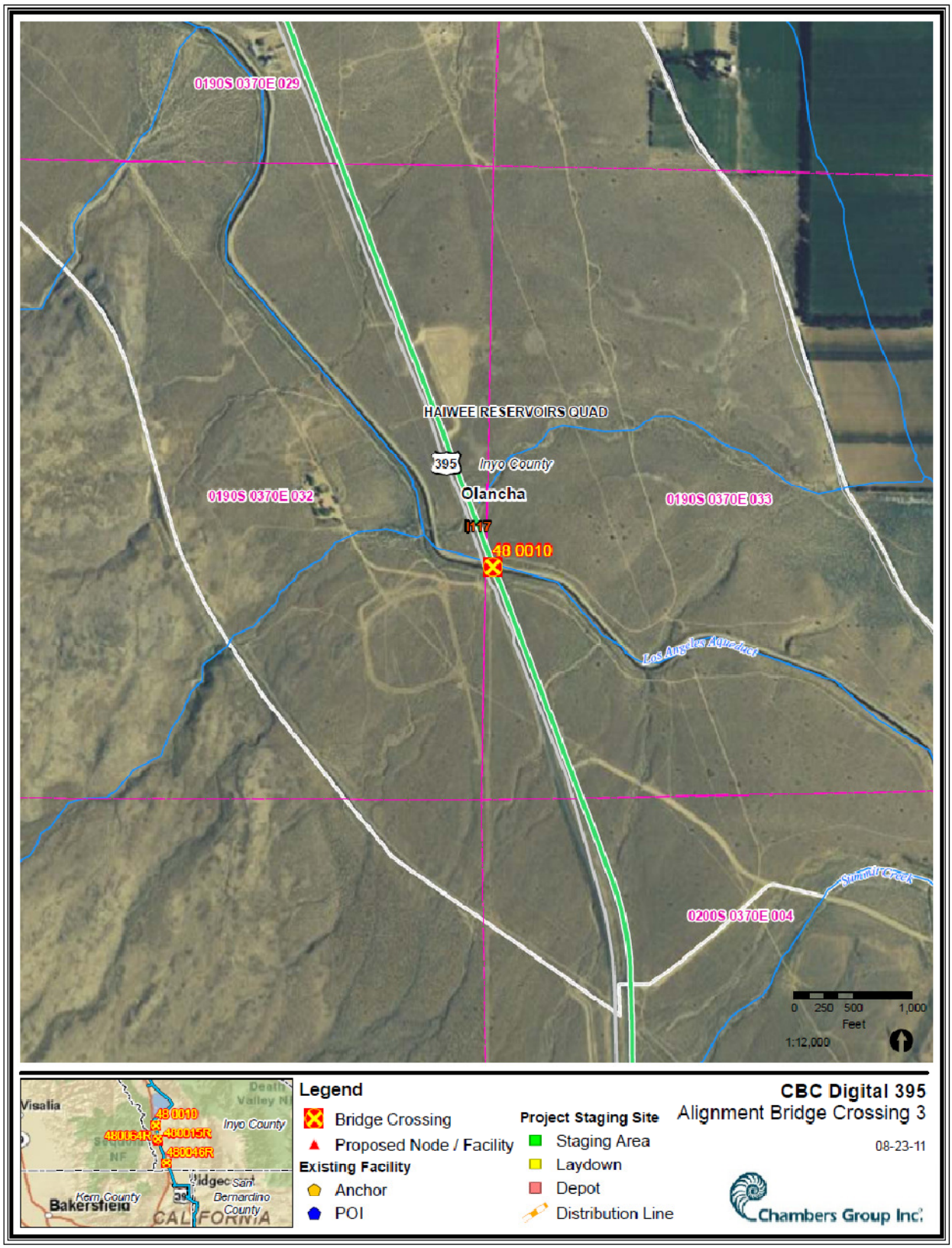


Figure 2: Proposed Bridge Crossings (continued)

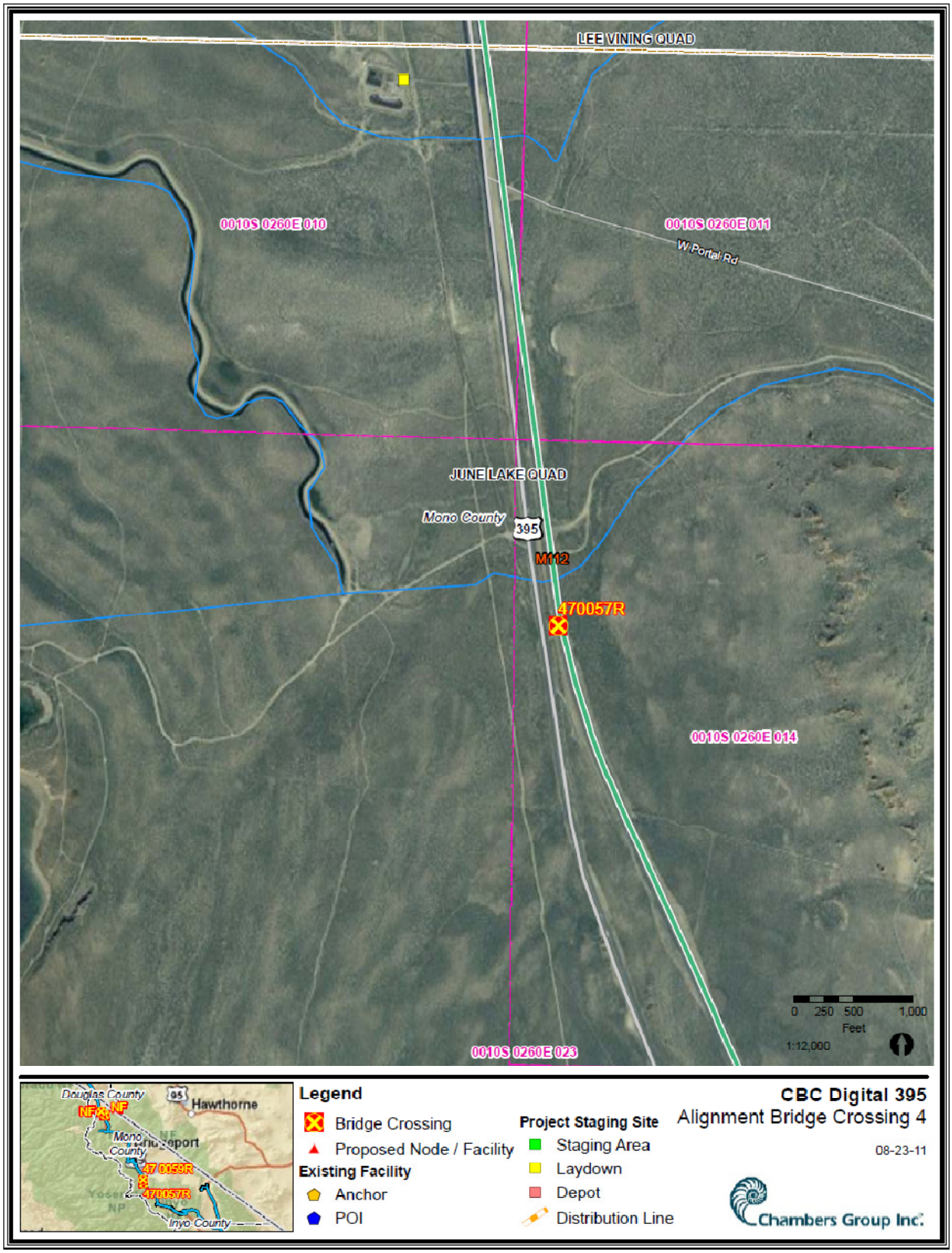


Figure 2: Proposed Bridge Crossings (continued)

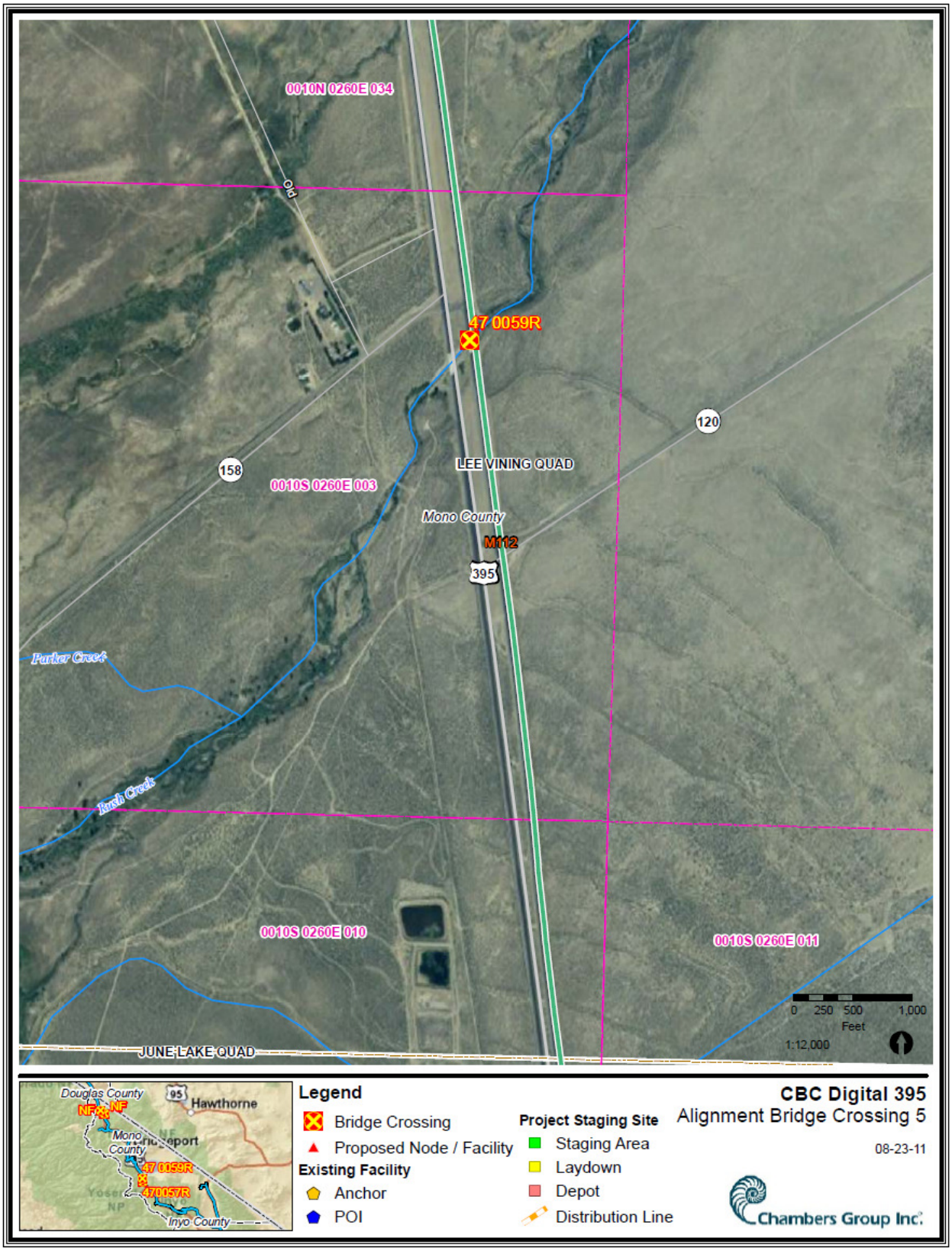


Figure 2: Proposed Bridge Crossings (continued)

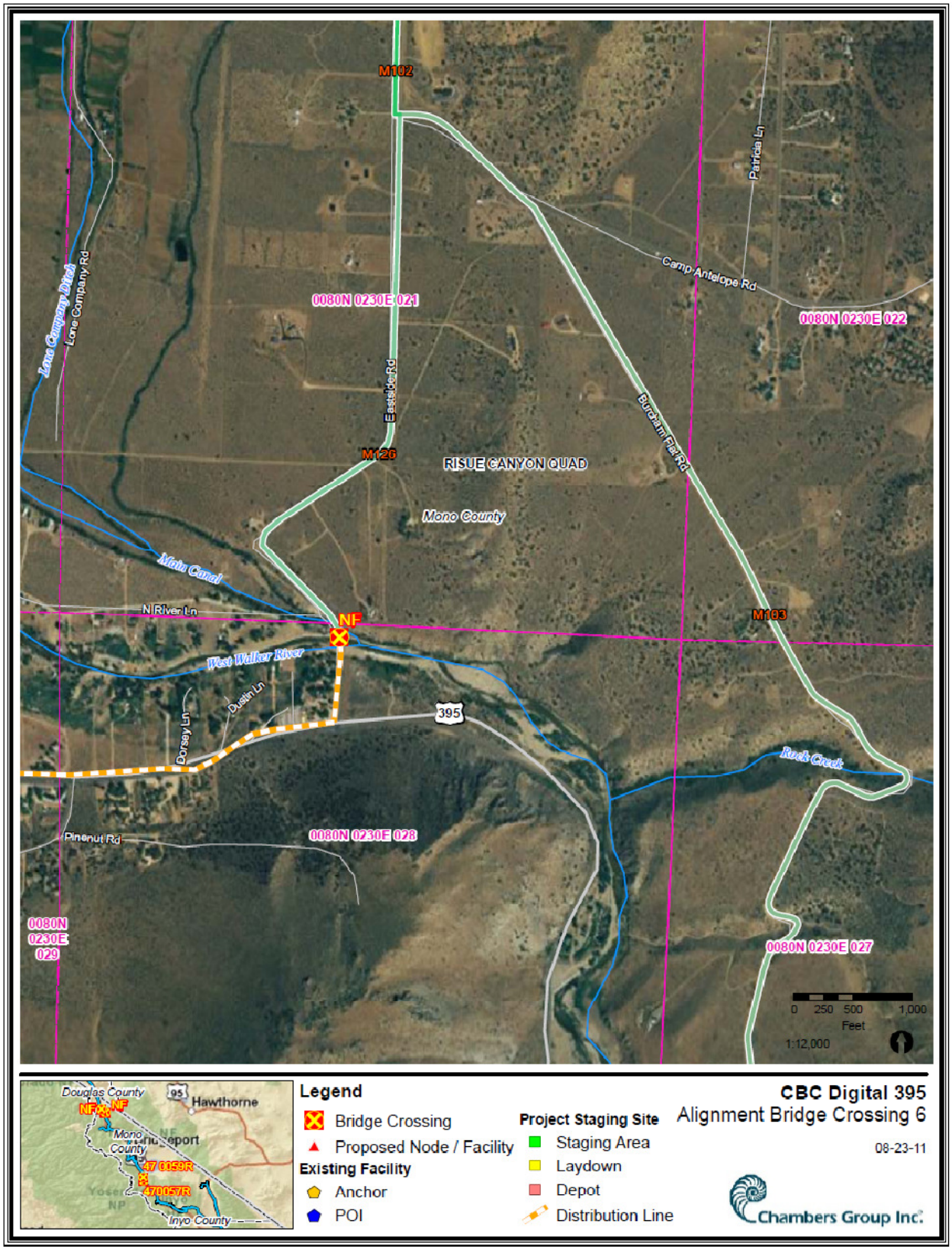
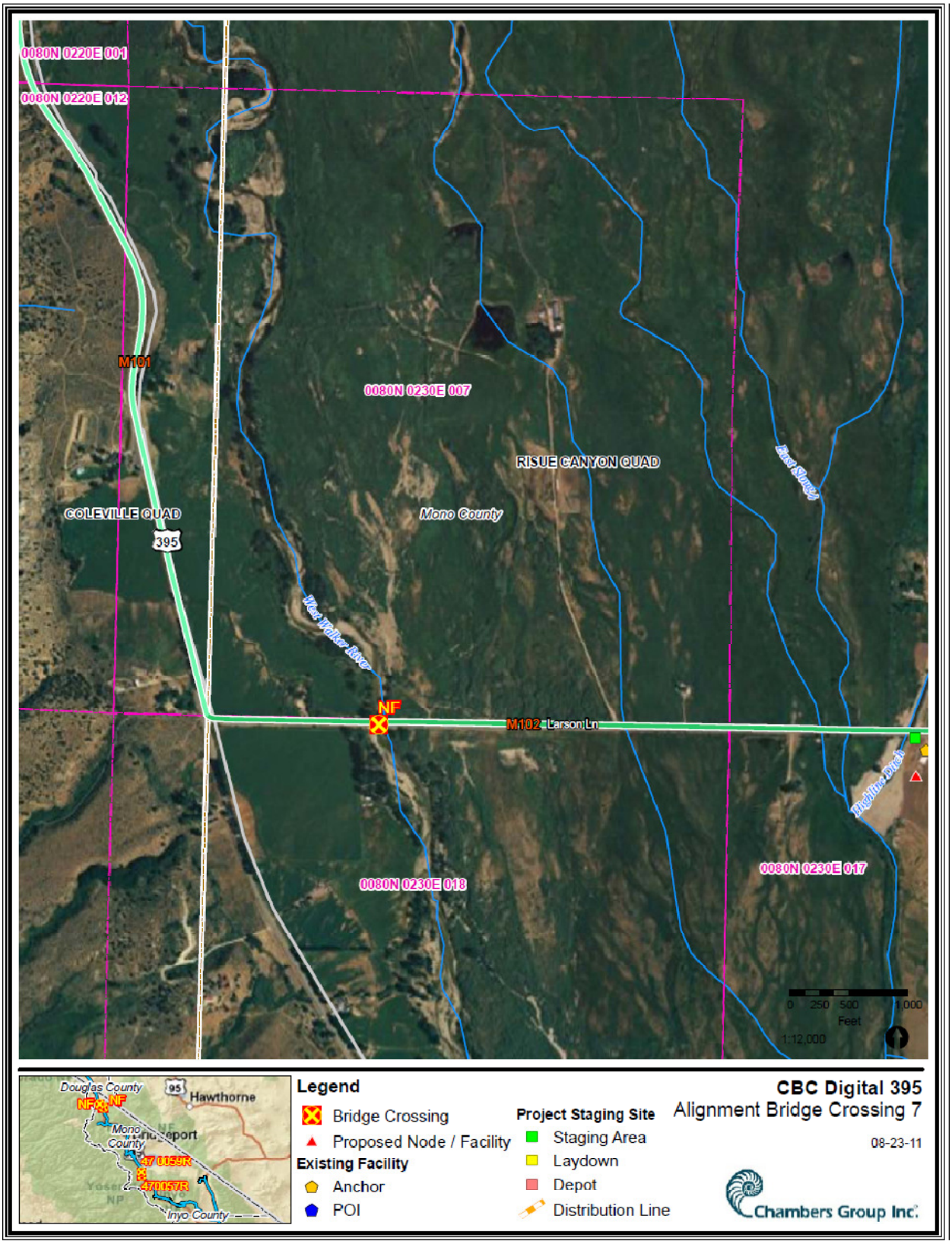


Figure 2: Proposed Bridge Crossings (continued)



2.3. RAILROAD CROSSINGS

Four railroad crossings occur in the Proposed Project route, all of which are in either Kern or San Bernardino counties and operated by Burlington Northern Santa Fe Railroad (BNSF) and Union Pacific Railroad (UPRR). In each case, these crossings will be constructed below grade by HDD or jack and bore methods at least 10 feet below grade. The locations of the railroad crossings are identified in Table 4 and shown in Figure 3.

Table 4: Railroad Crossings

Location	County / GPS Location	RR Owner	Length (meters)
BNSF / Boron Ave, Boron	Kern County 34.998767, -117.64975	BNSF	20
BNSF / Hwy 58, 2.6 miles west of Kramer Junction	San Bernardino County 34.99534, -117.58756	BNSF	20
BNSF / US 395, 200 ft, north of Hwy 58, Kramer Junction	San Bernardino County 34.992773, -117.541695	BNSF	20
UPRR/ dirt road 1 mile north of Searles Station Road	Kern County 35.498651, -117.637981	UPRR	20

Figure 3: Railroad Crossings

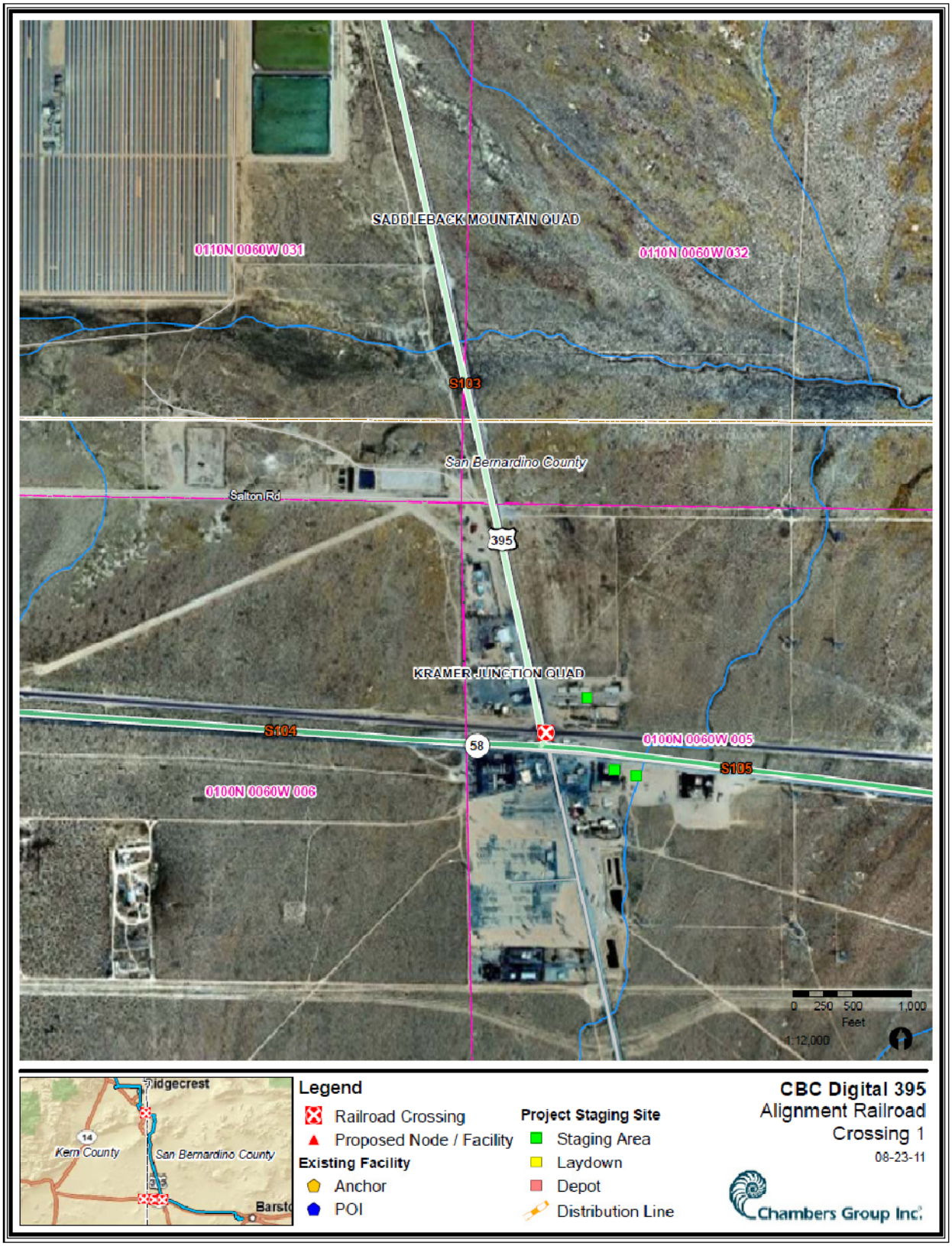


Figure 3: Railroad Crossings (continued)

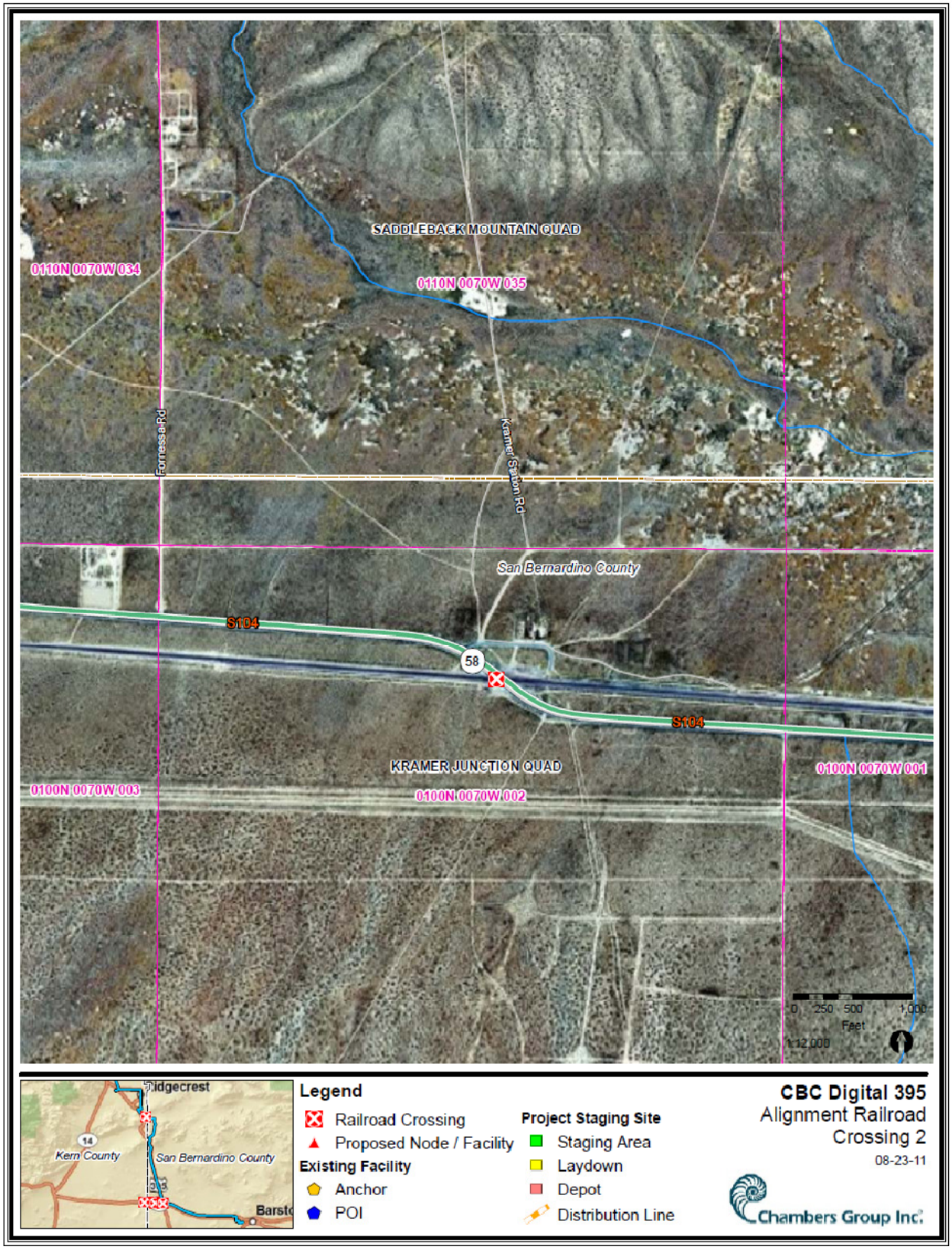


Figure 3: Railroad Crossings (continued)

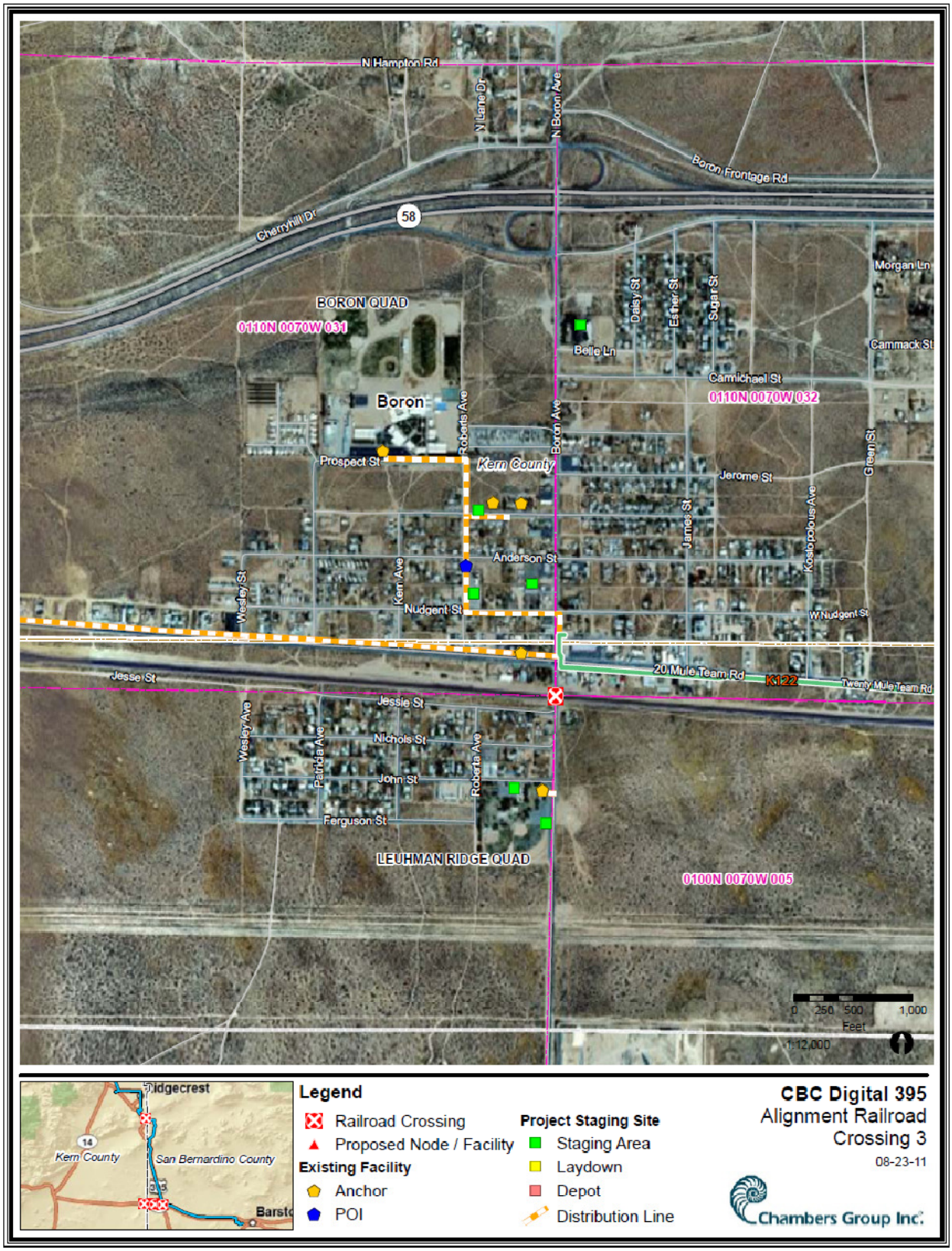
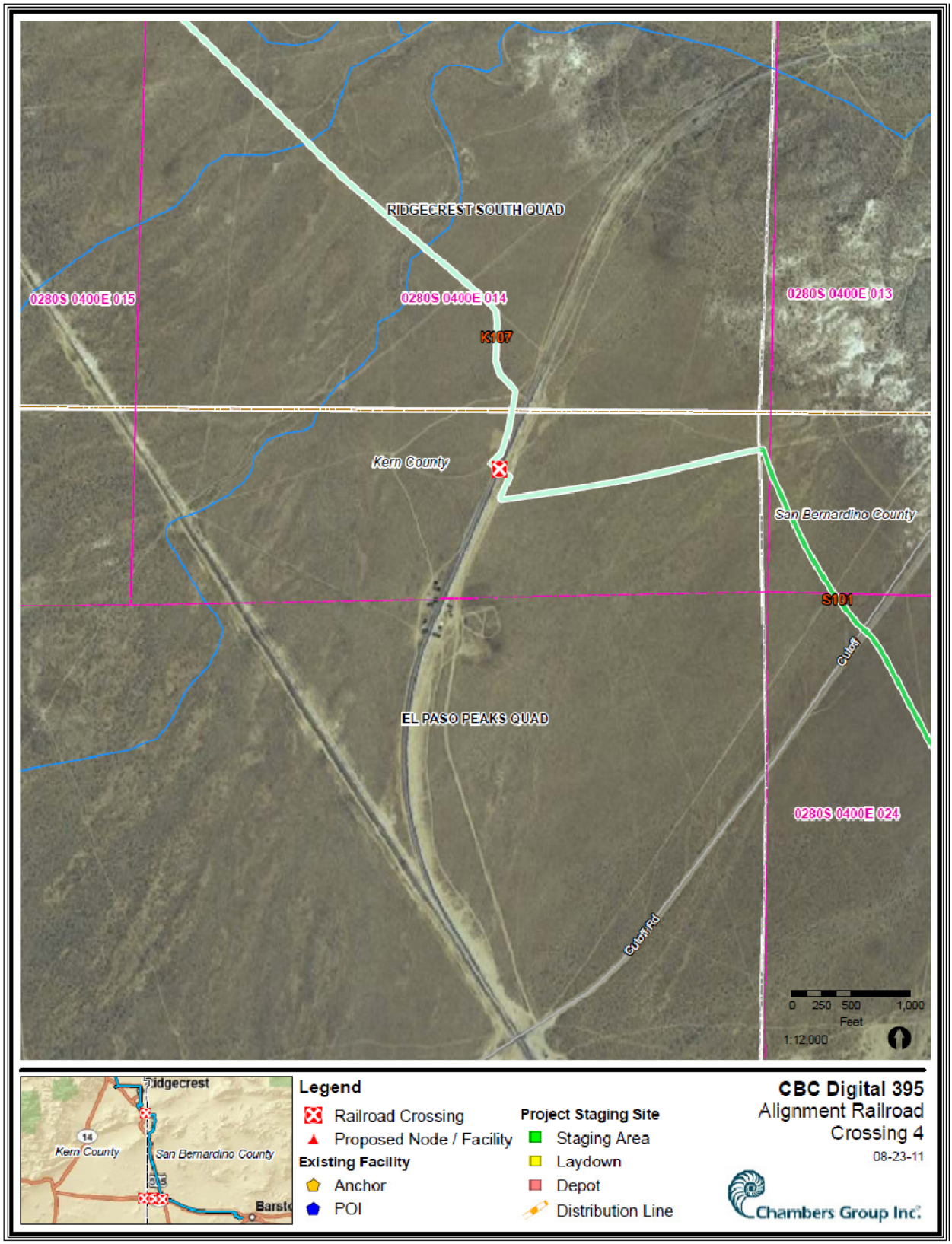


Figure 3: Railroad Crossings (continued)



2.4. AERIAL ATTACHMENTS

While the entire backbone and majority of distribution line will be constructed underground, an aerial construction method is planned for one spur off the main route, heading east off Highway 178 to NAWSCL in the community of Ridgecrest. A pole line exists at the location with adequate clearance for additional attachments. Once the poles are climbed and the attachments made, the cable will be pulled through rollers from the uphill end of the route. Once the cable is pulled through the rollers, the linemen will return to the poles, detach the rollers, and permanently affix the cable to the pole.

2.5. CONSTRUCTION EQUIPMENT

Because of the variety of equipment that may be employed to accomplish installation of the FOC in both newly constructed and existing conduit segments, and because each contractor has a slightly different equipment inventory, equipment may include D-8 Caterpillar, backhoe, 10-wheeler truck, semi-trailer truck, ¾-ton pickup truck, excavator, trencher, dozer/plow, loader, cable reel trailer, air blower device, air compressor, mechanical pusher/puller, and water truck. All equipment will stay within the confines of the Proposed Project ROW or access road to the ROW identified for the Proposed Project.

Based on the Proposed Project schedule required to complete the Project, multiple crews likely will be working concurrently along the route. See Section 2.5.7, Construction Schedule Timeline Schedule, for further discussion of project schedule and deployment of construction crews.Table 5 identifies the potential number of crews conducting each type of construction method and the equipment typically associated with that activity.

Table 5: Typical Crew and Equipment List per Construction Method

Crew Type	Peak # Crews	Crew Composition	Equipment Type	Motor Vehicles*
Plowing	5	Foreman (1) Equip Operator (4) Laborers (6)	D-8 Caterpillar (2) Backhoe (2) Conduit Reel Trailer (2) Trench Roller (1) Equip. Trailer (4)	F350 Flat Bed (1) F550 (1) F750 (4) F250 4x4 Pick-up (1)
Trenching	5	Foreman (1) Equip Operator (2) Laborers (4)	Conduit Reel Trailer (1) Trencher (1) Trench Roller (1) Backhoe (1) Equip. Trailer (2)	F350 Flat Bed (1) F550 (1) F750 (2) F650 2K-gal. Water Truck (shared)
Boring	12	Foreman (1) Equip Operator (2) Laborers (4)	Cable Reel Trailer (1) FX60 Suction Excavator (1) Backhoe (1) JT922 Borer (1) Slurry Pump (1)	F750 (3) F550 (1) F350 Flatbed (1) F650 2K-gal. Water Truck (shared)
Vault Placing	4	Equip Operator (1) Laborer (1)	Backhoe (1) FX30 Suction Excavator (1) Equipment Trailer (1)	F550 (1) F750 6-ton Dump Truck (1)

Table 5: Typical Crew and Equipment List per Construction Method

Crew Type	Peak # Crews	Crew Composition	Equipment Type	Motor Vehicles*
Cable Placing	2	Foreman (1) Lineman (2) Laborers (3)	Cable Reel Trailer (1) Cable Blower equipment (1) Air Compressor (1)	F350 Utility (1) F250 4x4 Pick-up (3)
Cable Splicing	2	Sr. Splicer (1) Asst. Splicer (1)	Splicing Truck or Van (1)	F250 4x4 Pick-up (1) F150 4x4 Pick-up (1)
Node Site Prep	2	Foreman (1) Laborers (3)	Backhoe / Tractor (1)	F250 Pick-up (2) F450 Utility (1)

*Motor vehicles may be an equivalent sized vehicle.

2.6. OTHER PROJECT COMPONENTS

2.6.1 Project Facilities

In order to support wireless systems, 17 new prefabricated buildings (or nodes) will be placed at the end of distribution lines as points of interconnection on the Proposed Project route. These buildings are being installed to allow regeneration of transport signals along long fiber routes as well as provide tie-ins to providers servicing the communities referenced above. The prefabricated buildings will have a concrete or steel exterior. These buildings will be manufactured offsite and will not require construction of the building onsite. The building will be secured to a concrete slab, which may require grading prior to installation to create a level surface. These buildings are planned to be placed within existing industrial parks and commercial areas and will be approximately 35 feet x 45 feet x 11 feet in size, depending on location. These buildings will be transported via trailer and installed at the proposed locations identified in Table 6. At the Benton, June Lake, and Crowley Lake locations, a 4 feet x 4 feet x 7 feet building (or "cabinet") may be placed instead of the above-mentioned node building if it is determined services will not be affected. A cabinet provides fewer services, is not a central node, and is not a regeneration station.

Table 6: New Nodes per County

State	County	Community	Address	Total
California	San Bernardino	Barstow	Main St. & Sand Stone, Barstow	
		Boron/Kramer	US 395 and Farmer Rd.	
	San Bernardino Total			**2**
	Kern	Ridgecrest	1514 N. Inyo Rd., Ridgecrest	
	Kern Total			**1**
	Inyo	Big Pine	Hall St. & Dewey, Big Pine	
		Central Bishop	601 Airport Rd., Bishop or 3000 E. Line St., Bishop	
		Independence	Mazourke Cnyn Rd & S. Clay Street	
		Olancha/Coso	123 School Road, Olancha or Hay Ranch (US 395 s/o Olancha)	
		Lone Pine	Narrow Gauge Rd. (next to cell site)	
	Inyo Total			**5**
	Mono	Antelope Valley (FD)	1166 Larson Ln., Coleville	
		Benton	Highway 120, Benton	

		Bridgeport	221 Twin Lakes Rd., Bridgeport	
		Crowley Lake	58 Pierce Rd., Crowley Lake	
		June Lake	90 Granite Ave., June Lake	
		Lee Vining	School Bus Yard/ Mattly Ave.	
		Mammoth Lakes	Merridian Blvd., Mammoth Lakes or Old 395 and Sherwin Creek Rd	
	Mono Total			**7**
California Total				**15**
Nevada	Carson City	Carson City	2271 Arrowhead Dr., Carson City	
	Carson City Total			**1**
	Washoe	Reno	2nd Street, Reno	
	Washoe Total			**1**
Nevada Total				**2**
Grand Total				**17**

The building systems require electrical service, which will be provided primarily by local existing electrical service. Each building's power system will be backed up by battery (eight-hour capacity) and generator (Generac Modular Power System®). These buildings also may be supported by solar power, and all buildings will have an air conditioning system, similar to large, window-mounted type units.

These buildings will not be manned and will have no permanent occupancy. The buildings can accommodate one to two persons who would work on equipment. It is likely that these buildings will be visited on a monthly basis to check on equipment, exercise the generator, and service replacement parts, as needed. On such visits, parking will be in city streets in areas normally designated for vehicle parking. The vehicle used for such visits will be one of the following: passenger cars, pick-up trucks, or ½-ton service vans.

2.6.2 Access Vaults

Additional underground components include buried access or splice vaults. Within the new construction portions of the route only, vaults will be placed approximately every 4,500 feet to enable access to the underground conduits. Approximately 1,180 vaults are proposed for installation. The buried access vaults measure 48 inches in diameter and are 48 inches deep. With the exception of the flush metal manhole lids, the remaining body of the round, prefabricated structure will not be visible from the surface. The vaults will be installed with backhoes and vacuum excavation methods. They will be located within the existing road ROWs and a minimum of 20 to 30 feet from the edge of pavement (depending on type of highway), or nearest appropriate/accessible location, as stipulated by the recently (December 30, 2010) issued guidelines from Caltrans; vaults will be placed outside of the State Highway ROW, as practicable.

2.6.3 Subsurface Warning Tape and Cable Locating Technology

Where methods permit, a continuous ribbon of Buried Cable Warning Tape will be placed above, and parallel to, the new conduit within the ground. The warning tape will be imprinted with a warning message as a final warning to excavators that fiber-optic cable is buried below. The tape will be impervious to soil acid, alkali, and/or other natural soil agents. Installation of the tape will occur simultaneously with the installation of the conduit. The subsurface tape may be magnetic, which will allow engineers to scan the road for the fiber cable location without having to resort to ground-disturbing activities, such as potholing, to locate the cable line. In all areas, a "tracer" wire will be

installed as part of the plastic ducts. This tracer wire allows a tone to be induced on the wire so that the exact location of the conduit can be located with electronic equipment. This method is used by standard underground cable locating procedures prior to any future digging in the area (Underground Service Alert).

2.6.4 Marker Posts

Above-ground warning marker posts will be placed along the entire cable route at intervals of approximately 700 feet. An estimated 2,500 new marker poles will be installed. The posts will be contained within the Proposed Project ROW directly above or offset as required of the conduit/cable. Mechanical equipment consisting of a tractor with a power auger extension arm may be required for pole installation. Ground disturbance during the installation of marker posts is typically limited to a relatively small disturbance of earth as wide as 12 by 12 inches. This area of disturbance lies within the area of disturbance for installation of fiber-optic cable and conduit. These metal, poly-vinyl, or fiberglass posts are installed to provide visible evidence of the presence of buried cable, identify the owner of the cable, and provide a telephone number for emergency notifications. The location of the marker post may be adjusted to accommodate sensitive environments (e.g., sensitive vegetation communities) or physical limitations (e.g., rocks) present at the edge of the Caltrans and NDOT ROW/easements; marker posts will be installed outside fo the CRZ, where practicable. Marker poles will be installed, as much as possible, in areas that lack vegetation. Locating the innerducts along with the associated markers away from the highway improves safety and lessens the adverse impacts to Caltrans maintenance and operations, including but not limited to delineator and sign installation and maintenance, as well as shoulder backing, grading, plowing and repair operations.

2.6.5 Staging and Laydown Areas

Staging areas will be established outside the Proposed Project footprint, mainly in commercial property areas, to provide the locations to store material and large equipment for intermittent periods of time and to conduct fueling and maintenance work. Laydown areas are areas identified for vehicle parking and/or short-term placement of equipment, conduit, and cable. The general size of staging/laydown areas is approximately 100 feet wide by 100 feet long; the exact size will be dependent upon the individual locations. Temporary parking of vehicles (overnight) will occur within areas of the ROW or in laydown areas. The laydown areas generally are composed of previously disturbed/developed areas (e.g., dirt parking lots) that may contain sparsely scattered and disturbed vegetation, if any. In sensitive areas, the construction contractor will have laydown areas marked, and the areas will be cleared (surveyed) by the Project biologists prior to parking equipment. A detailed list of potential staging/laydown areas is provided in Appendix D of the Joint EA/IS/MND. It is expected that more staging/laydown areas are identified than will actually be needed. Additional locations were identified to allow for options, should any of the staging/laydown areas prove to be inadequate.

The number of potential staging and laydown areas that have been identified for the Proposed Project per county is presented below in Table 7

.

Table 7: Potential Staging and Laydown Areas per County

State	County	Total
California	San Bernardino	25
	Kern	31
	Inyo	87
	Mono	33
California Total		**176**
Nevada	Douglas	6
	Carson City	2
Nevada Total		**8**
Grand Total		**184**

2.6.6 Construction Schedule

The total duration of construction activity of the approximately 593-mile network is estimated at up to 24 months. Proposed Project construction is estimated to begin in Fall 2011. Construction crews generally will work 8-10-hour days five days a week during daylight hours. Saturday work may be required in some areas, as needed; and the appropriate approval from the proper agency would be obtained prior to construction on weekends. No work is anticipated to occur on major holidays. The Proposed Project will avoid traffic control on State highways when peak volumes are anticipated (e.g., Fridays after 3:00 PM) and days preceding and following holiday weekends. The Proposed Project will avoid lane closures during times of inclement weather, including but not limited to rain, snow, and ice.

Based on the Proposed Project schedule required to complete the Proposed Project, multiple crews will likely be working concurrently along the route. During this period, various aspects of construction will be occurring simultaneously, including the following: conduit plowing; trenching; cable pulling; splicing; marker poles installation; and final restoration of the roads and access roads. As it takes longer to install the conduit, the cable installation crews will not start work until the conduit installation has made sufficient progress. This will facilitate keeping the cable installation crews from catching up too soon to the conduit installation crews. This will create greater lag time between the cable and conduit crews at the beginning of construction. This lag time will likely shorten over the course of the construction period. Due to the use of multiple crews, it is possible that some of the laydown and staging areas will be used for more than one period of time.

2.6.7 Applicant-Proposed Measures

Applicant proposed measures are methods, measures, or practices that avoid, reduce, or minimize a project's adverse effects on various environmental resources. They can be applied before, during, or after construction of the project to reduce or eliminate potential environmental effects. Applicant proposed measures would be employed by the Proposed Project applicant and/or the construction superintendent. Applicant proposed measures are listed in Appendix B.

2.6.8 Operation and Maintenance

Operation and maintenance activities will be implemented along the Proposed Project ROW over the life of the Proposed Project. The utility owner will be required to apply for and obtain an encroachment

permit to operate and maintain the facilities within the State Highway ROW; required every other year after construction completion. Existing access roads would be utilized for operation and maintenance activities. Surveyors would drive along the existing roads to inspect the line after rainstorm events and may stop and open the hatches to ground vaults and manholes. Ground-disturbing activities associated with ongoing operation and maintenance procedures are typically minor, if any. These activities would result mainly for repair of erosion control devices or cable conduits in the event of storm damage, landslides, or other emergencies. In most emergency situations, review of damaged areas will be accessed via public roads, private transmission access roads, and route access roads. No new habitat will be affected by maintenance activities, and maintenance activities will occur only within the Caltrans and NDOT ROW/easements. The appropriate agencies will be contacted if maintenance activities outside previously authorized areas are required.

2.7. ALTERNATIVES

Several alternatives were evaluated to address the purpose and need of the Proposed Project and assess its overall impact. These alternatives include a no action alternative, evaluation of alternate technology, alternative method for fiber installation, and the preferred route as identified in Section 2.1 of this Joint EA/IS/MND. A discussion of each of these alternatives is included below.

2.7.1 No Action Alternative

To comply with the requirements of NEPA, the No Action (or Future without Project) Alternative is required to be considered. The No Action Alternative assumes that no project would be implemented by the Federal government to achieve the planning objectives. For the purposes of the initial screening, the No Action Alternative assumes the communities along the Proposed Project route will continue to receive current broadband services with maximum upgrades to those services without expansion of infrastructure.

2.7.2 Alternatives Eliminated from Detailed Analysis

2.7.3 Alternate Technology

This alternative considered the use of non-fiber based technologies to address the purpose and need of providing broadband services to the communities between Barstow, California and Reno, Nevada. As part of the application to the NTIA for consideration in the BTOP (March 26, 2010), wireless internet technologies were assessed as an alternative to the fiber-optic network proposed. The technology does not have the capacity to provide consistent middle-mile services to the area. Wireless technologies currently are used by several of the communities along the Proposed Project route to facilitate “last-mile” internet access, which are at broadband speeds slower than those available for the middle-mile segments of the network. While these technologies provide a level of internet connectivity for today’s applications, these current technologies are less effective for both middle-mile and long-term applications. Last-mile wireless technologies typically depend on wire-line middle-mile networks for aggregated traffic, sometimes referred to as “backhaul.”

In the CBTF Final Report (CBTF 2008), forty percent of the households in the East Side region (including the Eastern Sierra) lacked broadband service and less than one percent had access to greater than 10 megabytes per second (Mbps). The leading edge speeds of 1 gigabit per second (Gbps) currently meet most last mile requirements, demonstrating how increasing demands of the Eastern Sierra would quickly result in insufficient broadband services. For example, cellular providers in the Eastern Sierra are

seeking 100 Mbps bandwidth to as many as 120 cell sites in order to upgrade their current networks to "4G" services that will support up to 30 Mbps at the user. Similarly, single applications, such as a local university's radio observatory, have expressed interest in speeds of up to 2.5 Gbps.

2.7.3.1 Alternate Method for Fiber Installation

The installation of fiber optics for the backbone route through aerial facilities, like poles or tower, also was considered in the application for the BTOP. While this method does have the advantages of lower costs and less ground disturbance, the agencies opted to support the underground methodology for the following reasons: (1) significant internet routes are deemed national security assets; (2) underground facilities are not subject to wildfires, vandalism, or accidental shooting by hunters, thereby meeting public safety and national security interests; (3) high winds and snow loadings in the Eastern Sierra tend to force aerial cable sizing to be smaller, thereby lowering the life of the cable or the amount of time before reinforcement is needed. The capacity of the proposed underground conduit has been planned to satisfy long-term needs so that post-project construction for broadband services would not be necessary in the near future, if at all. While aerial alternatives may be prudently used in some distribution areas, existing aerial facilities along the Hwy 395 corridor are not continuous and not all of the structures support the attachment and span lengths for fiber cables proposed for this project.

2.7.4 Preferred Alternative

This alternative evaluates the impacts of constructing the Proposed Project as proposed, along the Proposed Project route identified in Section 2.1.

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SECTION 3.0 – EXISTING ENVIRONMENT

3.1. NOISE

Evaluation of potential noise impacts from the Proposed Project included review of relevant federal, state, county, and city noise standards; characterization of the existing noise environment; possible noise impacts related to construction and operation of the proposed facilities; and recommendation of measures to reduce impacts.

3.1.1 General Characteristics of Community Noise

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hertz (Hz) are not heard at all and are felt more as a vibration rather than heard as a sound. Similarly, while people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz. Since the human ear is not equally sensitive to sound at all frequencies, a special frequency dependent rating scale is usually used to relate noise to human sensitivity. The A-weighted decibel scale (dB(A)) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in Hertz or cycles per second), and duration (measured in seconds or minutes).

As described above, sound intensity is measured through the A-weighted measure to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. On a logarithmic scale, an increase of 10-dB is 10 times more intense than 1-dB, while 20-dB is 100 times more intense, and 30-dB is 1,000 times more intense. A sound as soft as human breathing is about 10 times greater than 0-dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. Ambient sounds generally range from 30-dB(A) (very quiet) to 100-dB(A) (very loud). Table 8 shows the relationship of various noise levels to commonly experienced noise events.

A-weighted sound levels are typically measured or presented as the equivalent sound pressure level (L_{eq}), which is the logarithmic average noise energy level due to all sources (for example, the ambient noise level in addition to construction and traffic noise) in a given area for a defined period of time (for example, 1 hour or 24 hours). The L_{eq} is commonly used to measure steady-state sound or noise that is usually dominant. Statistical methods are used to capture the dynamics of a changing acoustical environment. Statistical measurements are typically denoted by Lxx, where xx represents the percentage of time the sound level is exceeded. For example, L90 represents the noise level exceeded during 90 percent of the measurement period. Similarly, L10 represents the noise level exceeded for 10 percent of the measurement period. Values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period.

Table 8: Typical Sound Levels

Sound Level (dB)	Community/Outdoor	Industry/Home Indoor	Impression/Effect
130	Jet takeoff (200')		Threshold of Pain (130-140 dB)
120			
110	Chainsaw (2')	Discotheque	
100	Pile driver (50')		
90	Power mower Heavy truck (50')	Boiler room	Hearing damage (8 hour exposure)
80	Concrete mixer (50')	Garbage disposal	Loud/annoying
70	Freeway (100')	Noisy restaurant	Shouting required at 3 feet
60	Air conditioner unit	Department store	Loud speech required at 3 feet
50	Light auto traffic (100')	Quiet office	Normal speech at 3 feet Disturbs sleep
40	Bird calls	Library	Quiet
	Soft whisper (6')		
30		Quiet bedroom	
20	North rim of Grand Canyon	Recording studio	
10			Threshold of hearing

Another metric used to determine the impact of environmental noise considers the differences in human responses to daytime and nighttime noise levels. During the evening and at night, exterior background noises are generally more noticeable. Furthermore, most people sleep at night and are therefore more sensitive to intrusive noise. To account for human sensitivity to evening and nighttime noise levels, the Daytime-Nighttime Noise Level (DNL, also abbreviated as Ldn) and Community Noise Equivalent Level (CNEL) metrics were developed. The DNL accounts for the greater annoyance of noise during the night (10 p.m. to 7 a.m.). The CNEL accounts for the greater annoyance of noise during the evening (7 p.m. to 10 p.m.) and nighttime hours.

The effects of noise on people can be listed in three general categories:

- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, learning
- Physiological effects such as startling and hearing loss

In most cases, environmental noise may produce effects in the first two categories only. No completely satisfactory way exists to measure the subjective effects of noise or to measure the corresponding reactions of annoyance and dissatisfaction. This lack of a common standard is primarily due to the wide variation in individual thresholds of annoyance and habituation to noise. Thus, an important way of determining a person‘s subjective reaction to a new noise is to compare it to the existing or ambient environment to which that person has adapted. In general, the more the level or the tonal (frequency) variations of a noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual.

The general human response to changes in noise levels that are similar in frequency content (for example, comparing increases in continuous [L_{eq}] traffic noise levels) is summarized as follows:

- A 3-decibel (dB(A)) change in sound level is a barely noticeable difference.
- A 5-dB(A) change in sound level is typically noticeable.
- A 10-dB(A) change is perceived by the listener as a doubling in loudness.

In addition to noise, construction and traffic can generate low levels of vibration which is also reported in decibels and denoted as VdB.

3.1.2 Noise Environment in the Project Area

A wide range of noise sources occur in the Proposed Project area, mainly due to the wide range of land uses that will be traversed by the Proposed Project. Ambient noise levels would tend to be lowest in the desert areas, recreational and open areas, and locations away from highways and industrial or commercial uses of the suburban areas. Noise levels in the Proposed Project area are the highest near major interstate highways, urban areas, and in industrial and commercial areas.

In the desert areas, natural noise levels would generally be low. Natural desert noise levels do not exceed 66 dB(A), and desert wildlife do not create sounds above 56 dB(A). The minimum ambient noise levels in remote desert areas are expected to be as low as 35 to 50 dB(A). Ambient noise levels would be greater near roads, highways, and urban areas (55-75 dB(A) @ 100 feet, depending on location and traffic volumes). Noise-generating activities in the Proposed Project area may include:

- Vehicular traffic noise on major roadways in the Proposed Project area,
- Noise associated with recreational activities,
- Intermittent military, border patrol, and civilian aircraft traffic,
- Natural sources such as wind, rain, thunder, and wildlife,
- Audible Noise from existing utilities, transmission lines, and substations,
- Occasional construction activities,
- Noise associated with property maintenance
- Commercial activities including truck loading, unloading, parking lot activity
- Drive-through restaurant speakers

3.1.3 Sensitive Receptors

Sensitive noise receptors are, in general, those areas of human habitation or substantial use where the intrusion of noise has the potential to adversely impact the occupancy, use, or enjoyment of the environment. Sensitive receptors along the Proposed Project route include: residences, schools, hospitals, parks, and places of business requiring low levels of noise. Table 9 is a list of representative sensitive receptors by community that may be affected by Project-related noise. Each jurisdiction sets its own standards and noise level limits for what it considers to be sensitive receptors.

Table 9: Sensitive Receptors

Community	Existing Land Uses That May Be Affected by Project Noise
City of Barstow	Single family residential, multiple family residential, school, commercial, industrial, office park, transient lodging/motel, Barstow Community College
San Bernardino County, CA	
Red Mountain	Single family residential, commercial
Atolia	Single family residential, office/professional
Kramer Junction	Commercial

Table 9: Sensitive Receptors

Community	Existing Land Uses That May Be Affected by Project Noise
Hinkley	Single family residential, school
Lenwood	Single family residential, industrial, commercial
Kern County, CA	
China Lake Acres	Single family residential, commercial
Inyokern	Single family residential
Ridgecrest	Single family, commercial, Cerro Coso Community College, school
Johannesburg	Single family residential, commercial
City of Bishop, CA	Single family residential, park, school, church, office park, commercial
Inyo County, CA	
Laws	Single family residential, commercial/tourist
Poleta	Single family residential, research/educational
West Bishop	Single family residential, County park, school, church
Big Pine	Single family residential, commercial, transient residential/motel, school, park
Independence	Single family residential, commercial, transient residential/motel
Manzanar , Detention Camp Historical Site	Detention Camp Historical site, commercial
Lone Pine	Single family residential, school, park, commercial
Cartago	Single family residential
Olancha	Single family residential, school, commercial, transient residential/motel
Grant	Single family residential, commercial
Dunmovin	Single family residential further from US 395
Pearsonville	Single family residential, commercial
Town of Mammoth Lakes	Single family residential, office park, school, commercial
Mono County, CA	
Benton Hot Springs	Single family residential, resort commercial
Benton	Single family residential, school
Hammil	Single family residential
Chalfant Valley	Single family residential, commercial
Topaz	Single family residential, commercial
Coleville	Single family residential, school
Walker	Single family residential, church, commercial, transient lodging
Fales Hot Springs	Resort commercial, single family residential
Bridgeport	Single family residential, school, park, commercial, lodging/motel
Mono City	Single family residential
Lee Vining	Single family residential, park, transient lodging, commercial
June Lake	Single family residential, commercial, transient lodging, library
Crestview	Single family residential, warehouse
Lake Crowley	Single family residential, park
Aspen Springs	Single family residential
Tom's Place, Crowley Lake	Resort, commercial
Douglas County, NV	
Indian Hills, Alternative Alignment	Single family residential, commercial
Johnson Lane	Single family residential, commercial
Minden/Gardnerville	Single family residential, multiple family, schools, commercial industrial

Table 9: Sensitive Receptors

Community	Existing Land Uses That May Be Affected by Project Noise
Washoe County, NV	
New Washoe City	Single family residential
Carson City, NV	Single family residential, multiple family residential, commercial, industrial, recreation/park, school.
City of Reno, NV	Single family residential, multiple family residential, park/recreation, commercial

3.1.4 Applicable Regulations, Plans, and Standards

3.1.4.1 Federal Regulations

Noise Control Act of 1972, 42 USC & 4901 et seq.; 40 CFR Parts 201-211

The Noise Control Act, administered by U.S. Environmental Protection Agency (EPA), sets performance standards for noise emissions from "major sources." The Act sets noise standards for products distributed in commerce and also contains provisions for national noise standards for trains and motor carriers used in intra-state commerce. The Act required U.S. EPA to develop and publish information concerning noise levels that jeopardize human health and welfare. Funding for the U.S. EPA Office of Noise Abatement and Control (ONAC) was discontinued in 1981, and noise control programs were shifted to state agencies. The Noise Control Act and its regulations are still in effect but are without any agency enforcement.

Occupational Safety and Health Act of 1970, (29 CFR & 1910 et seq.)

Onsite noise levels are regulated through the Occupational Health and Safety Act of 1970. The administering agency for this regulation is the Federal Occupational Safety and Health Administration (OSHA). The noise exposure level of workers is regulated at 90 dB(A) over an 8-hour work shift to protect hearing (29 Code of Federal Regulations [CFR] 1910.95). Areas above 85 dB(A) would be posted as high noise level areas, and hearing protection would be required. Employee exposure to levels exceeding 85 dB(A) requires that employers develop a hearing conservation program. Such programs include adequate warning, the provision of hearing protection devices, and periodic employee testing for hearing loss.

3.1.4.2 State Laws and Regulations

California

California does not promulgate a statewide uniform standard but requires that each county include within its General Plan a Noise Element for control of environmental noise. Additionally, requirements for occupational noise exposure are set forth in Title 8 of the California Code of Regulations.

California Environmental Quality Act (CEQA); California Public Resources Code, Section 2100 et seq.

CEQA requires that significant environmental impacts be identified and that such impacts be eliminated or mitigated to the extent feasible. CEQA Guidelines (14 CCR Appendix F) suggest that noise changes in

excess of standards, a substantial permanent increase above background, or a substantial temporary or periodic increase could be significant.

California Health & Safety Code Sections 46000 et seq.

The California Health and Safety Code was expanded in 1973 to incorporate the California Noise Control Act (CNCA) of 1973, establishing the California Office of Noise Control (ONC) in mirroring the ONAC. The Act required the ONC to develop guidelines for the preparation and content of noise elements in local general plans, as required by Section 65302 of the Government Code. These guidelines were released in 1976. As with the federal ONAC, the state ONC became dormant after noise control responsibilities were relegated to incorporated and county jurisdictions. Therefore no administering agency exists for the CNCA of 1973.

Cal-OSHA Occupational Noise Exposure Regulations (8 CCR, General Industrial Safety Orders, Article 105, Control of Noise Exposure, & 5095 et seq)

Cal-OSHA regulations are the same as the federal OSHA criteria described above. The criteria are based on a worker's noise level exposure over a specific time period. Maximum permissible worker noise exposure levels have been established to protect against damage to the worker's hearing. Compliance with these levels must be achieved through either engineering controls or hearing protection and warning signs. The administering agency for the above authority is Cal-OSHA.

California Vehicle Code, Sections 23130 and 23130.5

Noise limits for highway vehicles are regulated under this code. The vehicle code is administered by the California Highway Patrol. Local jurisdictions also enforce vehicle code requirements, such as requiring properly operating mufflers.

<u>Nevada</u>

The State of Nevada does not have any laws, regulations, or policies regarding noise issues that are applicable to the Proposed Project.

3.1.4.3 Local Ordinances and Plans

Table 10 lists applicable local ordinances, goals, and policies for each community that may be affected by Project-generated noise.

Table 10: Applicable Local Ordinances, Goals, and Policies

Community	Applicable Local Ordinances, Goals, and Policies
City of Barstow	No applicable local noise standards are presented in the City of Barstow General Plan or Municipal Ordinance.
San Bernardino County Red Mountain, Atolia, Kramer Junction, Hinkley, Lenwood	Section 83.01.080(c) of the County's Development Code sets forth performance standards for affected (receiving) land uses from stationary, during daytime (7 a.m. to 10 p.m.) and nighttime (10 p.m. to 7 a.m.) periods. Exemptions from these standards include motor vehicles not under the control of the industrial use, emergency equipment, vehicles and devices, and temporary construction and repair or demolition activities taking place between the hours of 7 a.m. and 7 p.m., Monday through Saturday, excluding federal holidays. Section 83.01.090(a) of the County's Development Code Section The County of San Bernardino advents the exclusion of vibration-producing land uses near sensitive land uses, "that can be felt without the aid of instruments at or beyond the lot line, nor shall any vibration be allowed which produces a particle velocity greater than or equal to two-tenths (0.2) inches per second measured at or beyond the lot line." However, section 83.01.090(c) of the County's Development Code exempts motor vehicles not under the control of the subject use and temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.
Kern County, CA China Lake Acres; Inyokern;, Ridgecrest; Johannesburg; Mojave, Alternative Alignment; Desert Lake, Alternative Alignment; Boron, Alternative Alignment	The Kern County General Plan presents a goal to ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained. A General Plan Policies suggests that the County require noise level criteria for all categories of land uses, consistent with the recommendations of the California Division of Occupational Safety and Health. Kern County Ordinance 8.36.020 prohibits the creation of construction related noise which is audible to a person with average hearing faculties or capacity at a distance of 150 feet from the construction site between the hours of 9:00 p.m. and 6:00 a.m. on weekdays and 9:00 p.m. and 8:00 a.m. on weekends, if the construction site is within 1,000 feet of an occupied residential dwelling, except as allowed by the development services agency director or his designated representative.
City of Bishop, CA	Section 8.12.010 of the City of Bishop Municipal code prohibits loud, unnecessary, or unusual noise which injures or endangers the health, peace, or safety of others. Construction activities between the hours of 7 a.m. to 10 p.m. are exempt.

Table 10: Applicable Local Ordinances, Goals, and Policies

Community	Applicable Local Ordinances, Goals, and Policies
Inyo County, CA Laws, Poleta, West Bishop, Big Pine, Independence, Manzanar Detention Camp Historical Site, Lone Pine, Cartago, Olancha, Grant, Dunmovin, Pearsonville	Local noise standards are presented in the County of Inyo General Plan Noise Element. Goal NOI-1: "Prevent incompatible land uses, by reason of excessive noise levels, from occurring in the future. This includes protecting sensitive land uses from exposure to excessive noise and to protect the economic base of County by preventing the encroachment of incompatible land uses within areas affected by existing or planned noise-producing uses." The goal sets unacceptable noise levels at greater than 80 dB(A). Policy NOI-1.5: "Implementation of Mitigation Measures. Require that proponents of new projects provide or fund the implementation of noise-reducing mitigation measures to reduce noise to required levels." Policy NOI-1.7: "Noise Controls During Construction. Contractors will be required to implement noise-reducing mitigation measures during construction when residential uses or other sensitive receptors are located within 500 feet." Goal NOI-2: "Preserve and maintain a quiet rural environmental character."
Town of Mammoth Lakes	The Town of Mammoth Lakes General Plan includes a goal to enhance community character by minimizing noise. Town Ordinance 8.16.090 sets the standards that may apply to project construction, including maximum noise level limits for stationary and mobile equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment: daily, including Sundays and legal holidays, all hours; maximum of 85 dB(A). Maximum noise levels for repetitively scheduled and relatively long-term operation of mobile equipment: daily, including Sundays and legal holidays, all hours; maximum of 75 dB(A). All mobile or stationary internal combustion engine-powered equipment or machinery shall be equipped with suitable exhaust and air intake silencers in proper working order. The Town Ordinance also prohibits the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at 150 feet (46 meters) from the source if on a public space or public right-of-way.

Table 10: Applicable Local Ordinances, Goals, and Policies

Community	Applicable Local Ordinances, Goals, and Policies
Mono County, CA Topaz, Coleville, Walker, Fales Hot Springs, Bridgeport, Mono City, Lee Vining, June Lake, Crestview, Lake Crowley, Aspen Springs, Tom's Place, Benton Hot Springs, Benton, Hammil, Chalfant Valley	The County has established that maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment are not to exceed 85 dB(A) L_{max}. The County also requires that all mobile or stationary internal combustion engine-powered equipment or machinery shall be equipped with suitable exhaust and air intake silencers in proper working order. County Code also prohibits the operation of any device that creates a vibration above the perception threshold of an individual at or beyond the property boundary of the source if on private property or at 150 feet (46 meters) from the source if on a public space or public right-of-way.
Douglas County, NV Indian Hills, Alt Alignment; Johnson Lane; Minden/Gardnerville	The Douglas County Master Plan Conservation Element recommends that the following standards be utilized: Industrial 70 dB(A) Leq(24), Commercial 64 dB(A) Ldn, and Residential 55 dB(A) Ldn. Leq (24) represents an all day, 24-hour average noise level. Ldn is an averaged 24-hour noise level with 10 dB(A) added during nighttime hours. GOAL 5.21 of the Master Plan recommends that noise levels be minimized throughout the County and, wherever economically feasible, mitigated to provide a safe and healthy environment.
Washoe County, NV New Washoe City	Washoe County Code Section 110.414.20 exempts from the noise level limits temporary construction, repair, or demolition activities that occur between 7:00 a.m. and 7:00 p.m. on any day except Sunday.
Carson City, NV	The Carson City Master Plan includes a goal to “Minimize noise impacts on residential uses and noise sensitive receptors along the City’s streets.” General Plan Policy N-2.1, “Limit truck traffic to specific routes and designated hours of travel, where necessary, as defined in the Transportation and Infrastructure Element and by the City’s Development Services Group” may apply to truck trips associated with construction of the Proposed Project.
City of Reno, NV	The City of Reno has codified its policy of requiring conditions of approval prior to construction and/or disturbance on streets, highways, and public rights-of-way that are considered by the city council, to be an integral part of the city. Section 12.08.030 of the City of Reno Administrative Code establishes conditions that may be required, including conditions for the purpose of preventing noise.

3.2. AIR QUALITY

3.2.1 Atmospheric Setting

The Proposed Project route will be located between Carson City, Nevada, and Barstow, California, allowing the Proposed Project to provide middle mile broadband services to the area commonly referred to as the Eastern Sierra. The route mainly follows US 395, a major transportation corridor between southern California and northern Nevada. The Proposed Project route crosses through San Bernardino, Kern, Inyo, and Mono counties in California and Douglas, Carson City, and Washoe counties in Nevada. The service area contains 36 communities as well as 7 Native American tribal reservations and 2 military bases.

The Proposed Project is proposed to be constructed within both the Mojave Desert Air Basin (MDAB) and the Great Basin Valleys Air Basin (GBVAB) within the State of California. The MDAB is comprised of San Bernardino and Kern counties. The GBVAB is comprised of Inyo, Mono, and Alpine counties. The Proposed Project continues into the Nevada counties of Douglas, Carson City, and Washoe.

The Proposed Project lies within the Great Basin, an area of climatological extremes which extends from Utah to the Sierra Nevada and has no surface drainage to the ocean. The Proposed Project's defined route is on the eastern, lee side of the Sierra Nevada Range, a massive mountain barrier that markedly influences the climate of this portion of California and the State of Nevada. One of the greatest contrasts in precipitation found within a short distance in the United States occurs between the western slopes of the Sierra Nevada mountains in California and the valleys just to the east of this range. The prevailing winds are from the west; and as the warm, moist air from the Pacific Ocean ascend the western slopes of the Sierra Range, the air cools, condensation takes place, and most of the moisture falls as precipitation. As the air descends the eastern slope, it is warmed by compression, and very little precipitation occurs. The effects of this mountain barrier are felt not only in the Great Basin Valleys in California and western Nevada but throughout Nevada, with the result that the lowlands of Nevada are largely desert or steppes.

Since the Proposed Project is an approximately 593-mile fiber network that lies within two California air basins and three Nevada counties and traverses a little over 5 degrees in latitude, it is necessary to look at weather observations from several locations along the Proposed Project route in order to get a reasonable picture of the localized climate. National Weather Service Cooperative Observer Program weather stations (WRCC 2010) located in and near Carson City, Mindin, Bridgeport Dam, Mono Lake, Lee Vining, Bishop Airport, Independence, Haiwee, Inyokern, Randsburg, and Barstow were analyzed; and detailed weather information appears in Appendix F. Maximum temperatures in the Proposed Project area range from 102.7 degrees Fahrenheit (°F) in Inyokern to 83.7 °F at the Bridgeport Dam. Minimum temperatures range from 50.5 °F in Barstow to 27.6 °F at the Bridgeport Dam. 35.7 °F in Randsburg to 10.4 °F at the Bridgeport Dam. Rainfall within the Proposed Project area is limited due to being in a rain shadow but also varies from south to north; e.g. Inyokern has an annual average rainfall of less than 5 inches, while Lee Vining has an annual average rainfall of over 14 inches. Snowfall in the Proposed Project area ranges from an annual average of less than 1 inch in Inyokern to almost 70 inches in Lee Vining.

3.2.2 Air Quality Standards

The Environmental Protection Agency (EPA) sets national ambient air quality standards (NAAQS), also known as federal standards, for six common air pollutants called criteria air pollutants. The six federal

criteria pollutants are ozone, particulate matter (PM), nitrogen dioxide (NO_2), carbon monoxide (CO), lead, and sulfur dioxide. The NAAQS were set to protect public health, including that of sensitive individuals. Nevada recognizes only NAAQSs; but in California, the California Air Resources Board (CARB) also administers California ambient air quality standards (CAAQS) for the 10 air pollutants designated in the California Clean Air Act. The 10 California air pollutants are the six federal criteria pollutants listed above plus visibility reducing particles, hydrogen sulfide, sulfates, and vinyl chloride.

Table 11 shows California and national air quality standards.

Table 11: Ambient Air Quality Standards for Criteria Pollutants

Air Pollutant	Averaging Time	California Standard	National Standard
Ozone (O_3)	1 hour	0.09 ppm	—
	8 hour	0.070 ppm	0.075 ppm
Respirable particulate matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3
	Mean	20 µg/m^3	—
Fine particulate matter ($PM_{2.5}$)	24 hour	—	35 µg/m^3
	Mean	12 µg/m^3	15.0 µg/m^3
Carbon monoxide (CO)	1 hour	20 ppm	35 ppm
	8 hour	9.0 ppm	9 ppm
Nitrogen dioxide (NO_2)	1 hour	0.18 ppm	0.100 ppm
	Mean	0.030 ppm	0.053 ppm
Sulfur dioxide (SO_2)	1 hour	0.25 ppm	0.075 ppm
	24 hour	0.04 ppm	—
Lead**	30-day	1.5 µg/m^3	—
	Rolling 3-month	—	0.15 µg/m^3
	Quarter	—	1.5 µg/m^3
Sulfates	24 hour	25 µg/m^3	**No Federal Standard**
Hydrogen sulfide	1 hour	0.03 ppm	
Vinyl chloride**	24 hour	0.01 ppm	
Visibility-reducing particles	8 hour	Extinction coefficient of 0.23 per kilometer, visibility of 10 miles or more due to particles when relative humidity is less than 70%.	

Abbreviations:
ppm = parts per million µg/m^3 = micrograms per cubic meter
30-day = 30-day average Quarter = Calendar quarter
* Mean = Annual Arithmetic Mean
** The CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
Source: CARB 2010.

3.2.3 Air Pollutants of Concern

3.2.3.1 Criteria Air Pollutants

The criteria pollutants consist of ozone, nitrogen oxides (NO_X), CO, sulfur oxides (SO_X), lead, and PM. These pollutants can harm health and the environment and can cause property damage. The EPA calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally based criteria for setting permissible levels. The standards are presented in Table 11, and the following text provides descriptions of each.

3.2.3.2 Nitrogen Oxides (NO_X)

NO_X is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NO_X is colorless and odorless, concentrations of NO_2 can often be seen as a reddish-brown layer over many urban areas. NO_X forms when carbon-based fuel is burned at high temperatures, as in a combustion process. The primary sources of NO_X in the GBVAB and MDAB combined are from on-road motor vehicles, which contribute almost half of the total NO_X emissions (CARB 2010b). The majority of on-road NO_X comes from heavy-duty diesel trucks. In Washoe County, NO_x is more distributed (WCAQMD 2010a); stationary point sources and on-road mobile both contribute approximately one-third each and non-road mobile contributes another one quarter. NO_X reacts with other pollutants to form ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NO_X and the pollutants formed from NO_X can be transported over long distances, following the patterns of prevailing winds. Therefore controlling NO_X is often most effective if done from a regional perspective rather than focusing on the nearest sources.

3.2.3.3 Ozone

Ozone is not usually emitted directly into the air but is created at ground level by a chemical reaction between NO_X and volatile organic compounds (VOC), or reactive organic gases (ROG)[1], in the presence of sunlight. Sources of primary NO_X emissions are mentioned above, but for VOC the emissions sources are much less distinct. In the GBVAB/MDAB area ROG originate from 37 percent non-road mobile, 28 percent on-road mobile, 20 percent area sources, and 16 percent stationary sources. In Washoe County, over half of the emissions come from what is designated as non-point source.

Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form, with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NO_X and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NO_X and VOC emissions.

3.2.3.4 Carbon Monoxide (CO)

CO is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust. In the GBVAB/MDAB area, almost 60 percent of CO comes from

[1] For the most part, VOC and ROG are synonymous. Both are those portions of organic gases, i.e. hydrocarbons, that are reactive enough to be a concern with the formation of ozone.

on-road motor vehicles, with another 28 percent from non-road mobile sources. Washoe County numbers reflect the same pattern: 53 percent from on-road and 30 percent from non-road mobile sources. The highest concentrations of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent and dramatic. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

3.2.3.5 Particulate Matter (PM)

PM is the term for a mixture of solid particles and liquid droplets found in the air. PM is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM_{10}) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter ($PM_{2.5}$) have been designated as a subset of PM_{10} due to their ability to penetrate deeper in the lungs and cause increased health impacts and their ability to remain suspended in the air longer and travel further.

In the GBVAB/MDAB area, almost 80 percent of the PM_{10} is from the inventory category entitled "Miscellaneous Processes." In this category, the majority of these emissions come from unpaved roads, paved roads, and construction/demolition. In Washoe County, almost 94 percent come from non-point sources of which the majority is contributed by the same three categories. However, since PM_{10} is generated by a mixture of fugitive dust and combustion while $PM_{2.5}$ is more closely aligned with combustion, the contribution of $PM_{2.5}$ is more influenced by residential fuel combustion and industrial/point sources.

The dry bed of Owens Lake has produced enormous amounts of windblown dust since the desiccation of the lake. As a result, the lakebed has been essentially dry since the late 1920s. As the lake dried up, the dissolved minerals and salts in the water crystallized into an alkali salt crust that covers most of the lakebed today. The artificial desiccation of Owens Lake has created the single largest source of PM_{10} dust in the United States. Dust storms from the dry lake bed are a significant health hazard to residents of Owens Valley and nearby areas, and impact air quality in a large region around the lake bed.

3.2.3.6 Other Criteria Pollutants

The standards for other criteria pollutants are either being met, maintained, or are unclassified in the entire Proposed Project area; and the latest pollutant trends suggest that these standards will not be exceeded in the foreseeable future.

3.2.3.7 Toxic Air Contaminants/Hazardous Air Pollutants

In addition to the above-listed criteria pollutants, toxic air contaminants (TAC), or hazardous air pollutants (HAP), are another group of pollutants of concern. According to the 2005 California Almanac of Emissions and Air Quality, the majority of the estimated health risk from TACs statewide can be attributed to relatively few compounds, the most important being diesel particulate matter (DPM). The identification of DPM as a TAC in 1998 led the CARB to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles (Plan) in September 2000. The Plan's goals are a 75-percent reduction in DPM by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot." Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of DPM as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to DPM is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources (CARB 2000).

3.2.4 <u>Regulatory Context</u>

Air pollutants are regulated at the national, state, and air basin level; each agency has a different degree of control. The EPA regulates at the national level, in California the California Air Resources Board (CARB) regulates at the state level, and in Nevada the state regulator is the Nevada Bureau of Air Pollution Control (BAPC); and the Regional Air Quality Management/Pollution Control Districts regulate at the air basin level in the Proposed Project area.

3.2.4.1 Environmental Protection Agency

The EPA is the federal agency responsible for overseeing state air programs as they relate to the Federal Clean Air Act (FCAA), approving State Implementation Plan (SIP), establishing National Ambient Air Quality Standards (NAAQS), and setting emission standards for mobile sources under federal jurisdiction. EPA has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

3.2.4.2 California Air Resources Board

The California Air Resources Board (CARB) is the state agency responsible for establishing California Ambient Air Quality Standards (CAAQS) and adopting and enforcing emission standards for various sources including mobile sources (except where federal law preempts their authority), fuels, consumer products, and toxic air contaminants (TAC). CARB is also responsible for providing technical support to California's 35 local air districts, which are organized at the county or regional level, overseeing local air district compliance with state and federal law, approving local air plans, and submitting the SIP to the

EPA. CARB also regulates mobile emission sources in California, such as construction equipment, trucks, and automobiles.

3.2.4.3 Nevada Division of Environmental Protection

The Nevada Division of Environmental Protection (NDEP) is part of the Department of Conservation and Natural Resources and is responsible for air quality in all areas of the state other than Clark and Washoe counties. These counties have their own distinct Air Quality jurisdictions with the BAPC retaining jurisdiction of (only) fossil fuel-fired units that generate steam for electrical production.

3.2.4.4 California Air Quality Management/Pollution Control Districts

The county or regional air districts in California are primarily responsible for regulating stationary emission sources at industrial and commercial facilities within their geographic area and for preparing the air quality plans that are required under the FCAA and California Clean Air Act (CCAA). The Mojave Desert Air Quality Management District (MDAQMD), the Eastern Kern Air Pollution Control District (EKAPCD), and the Great Basin Unified Air Pollution Control District (GBUAPCD) regulate at the air basin level in the Proposed Project area.

3.2.4.5 Washoe County Air Quality Management Division

The Washoe Air Quality Management Division (WCAQMD) regulates at the air basin level in the Proposed Project area. The Washoe County Health District Air Quality Management Division is responsible through its programs for controlling sources of air pollution and assuring compliance with federal, state, and local environmental laws governing air quality.

3.2.5 <u>Attainment Status</u>

The EPA has identified nonattainment and attainment areas for each criteria air pollutant. Under amendments to the Federal Clean Air Act (FCAA), the EPA has classified air basins or portions thereof as “attainment,” “nonattainment,” or “unclassifiable,” based on whether or not the national standards have been achieved. The EPA uses two categories to designate areas with respect to $PM_{2.5}$ and NO_2, which include (1) does not meet the standard (nonattainment) and (2) cannot be classified or better than national standards (unclassifiable/attainment). The EPA uses four categories to designate for sulfur dioxide, but the only two that are applicable in the Proposed Project area are nonattainment or unclassifiable. The EPA uses three categories to designate for ozone and PM_{10}: attainment, nonattainment, and unclassifiable. The FCAA uses the classification system to design cleanup requirements appropriate for the severity of the pollution and set realistic deadlines for reaching cleanup goals.

For determinations of federal attainment status, the various air basins sometimes have sub-areas within the County/Basin that have specific air quality concerns. In order not to unduly burden the larger basin areas and to focus air quality regulatory concerns where they will be most effective, some specific planning areas have been designated. The Proposed Project area traverses some of those specially designated planning areas. Whereas specific attainment designations are presented in Appendix F, areas of specific concern will be discussed here.

- The western portion of San Bernardino County is designated/classified Nonattainment/ Moderate for both ozone and PM10.

- The Trona (or East Searles) Planning Area is designated/classified Nonattainment/Moderate for PM10, as are the Mono Basin and Mammoth Lakes planning areas.
- The Owens Valley Planning Area is designated (classified) Nonattainment (Serious) for PM10.
- Eastern Kern County is classified as Nonattainment for the 8-hour ozone standard.
- The Indian Wells area within Eastern Kern County and the Coso Junction area of Inyo County are PM_{10} maintenance areas and have maintenance plans as required by the CAA.
- Washoe County was previously designated Marginal for the 1-hour ozone standard but, with the revocation of that standard, is no longer considered Nonattainment for ozone but also has a maintenance plan requirement under Section 110(a)(1) of the CAA.

The California designation criteria specify four categories: nonattainment, nonattainment-transitional, attainment, and unclassified. A nonattainment designation indicates one or more violations of the state standard have occurred. A nonattainment-transitional designation is a subcategory of nonattainment that indicates improving air quality, with only occasional violations or exceedances of the state standard. In contrast, an attainment designation indicates no violations of the state standard have been documented. Finally, an unclassified designation indicates either no air quality data or an incomplete set of air quality data.

Whereas specific California attainment designations are also presented in Appendix F, areas of specific concern will be discussed here:

- All areas traversed by the Proposed Project are designated nonattainment for ozone and PM_{10}.
- Western San Bernardino County is designated nonattainment for $PM_{2.5}$.
- The Trona (or East Searles) Planning Area is designated nonattainment for hydrogen sulfide (H_2S).

3.2.6 Air Quality Management Plans

Areas that do not meet standards are required to produce a plan to describe activities, efforts, and programs that will be implemented to assist the area towards compliance with the standards. These plans are generically called air quality management plans (AQMP). AQMP's are usually pollutant-specific and are produced by the local air district and combined with others in a state-wide SIP in California. The Proposed Project traverses through several AQMP areas, which are discussed below:

- Coso Junction PM_{10} Planning Area State Implementation Plan – This Plan includes a request to redesignate the area from nonattainment for the national standard for PM_{10} and a maintenance plan that contains requirements to ensure the federal standard will not be violated in the future.
- Mono Basin Planning Area PM_{10} State Implementation Plan – This Plan summarizes the air pollution problem and its projected resolution, including: a presentation of modeling results that predict the distribution and concentration of emissions at varying lake levels, and a demonstration of attainment through implementation of the control measure--a gradual restoration of the lake level to an elevation of at least 6,391 feet.

- 2008 Owens Valley PM-10 Planning Area Demonstration of Attainment State Implementation Plan – This Plan was prepared by the GBUAPCD in response to a finding by the EPA that the Owens Valley Planning Area (OVPA) did not attain the National Standard for PM_{10}. This Plan provides a revised control strategy to bring the area into attainment with the standard as soon as practicable by achieving at least a 5 percent reduction in PM_{10} emissions per year. This Plan incorporates provisions of the 2006 Settlement Agreement between the District and the City of Los Angeles Department of Water & Power (City) to expand dust control measures to additional areas at Owens Lake in order to attain the NAAQS as soon as practicable.

- Maintenance Plan for the Washoe County 8-Hour Ozone Attainment Area – The Washoe County Ozone Attainment Area covers an area that is governed by three entities: Washoe County and two incorporated cities, Reno and Sparks.

- $PM_{2.5}$ Infrastructure SIP for Washoe County – The Reno planning area (hydrographic area 87) is designated attainment of the $PM_{2.5}$ and this SIP provides for the implementation, maintenance, and enforcement of the standard.

3.2.7 Baseline Air Quality

Meteorology acts on the emissions released into the atmosphere to produce pollutant concentrations. These airborne pollutant concentrations are measured throughout California and Nevada at air quality monitoring sites. Since the Proposed Project is 593 miles long and lies within multiple counties, air basins, and two states, air quality data from multiple monitoring sites were analyzed in order to get a clear picture of the status of air quality within the Proposed Project area. A total of 17 monitoring sites that were within 20 miles — six of which were less than one mile — were reviewed; and details are presented in Appendix F. Since the primary pollutant of concern throughout the entire Proposed Project area is particulate matter, it is understandable that only one site — the one at Incline Village in Nevada — is not set up to measure PM_{10}. The Incline Village site stopped measuring PM_{10} and CO in 2002 and currently monitors only ozone. Five sites also monitor $PM_{2.5}$: South Lake Tahoe, Echo Summit, Mammoth Lakes, Keeler, Ridgecrest, and Barstow. Ozone was monitored at five sites: Incline Village, South Lake Tahoe, Echo Summit, Mammoth Lakes, and Barstow. CO was monitored at only three sites; South Lake Tahoe, Echo Summit, and Barstow.

Data from the last six years — 2004 through 2009 — were obtained, and specific details are presented in Appendix F. A summary is described below:

- Ozone – The South Lake Tahoe and Mammoth Lakes sites ceased monitoring ozone in 2004, and the Incline Village site was down for repair during 2006 and 2007. Incline Village did not register an exceedance of either the 1-hour or 8-hour NAAQS during the last 6 monitoring years. Echo Summit exceeded the 1-hour NAAQS in three of the years, and Barstow exceeded every year. The 8-hour NAAQS was exceeded every year except 2005 at the Echo Summit site, while exceeding the more stringent CAAQS every year and up to 13 times in 2004. Both the 8-hour NAAQS and CAAQS standards were frequently exceeded in all six years. In 2007, Barstow exceeded the NAAQS 25 times; and in 2005 Barstow exceeded the CAAQS 49 days.

- PM_{10} – Two sites, Echo Summit and China Lake, stopped monitoring PM_{10} in 2004. Several sites, South Lake Tahoe, Lee Vining, Mono Lake (Simis Residence), Mammoth Lakes, and Ridgecrest, did not document an exceedance of the NAAQS and Barstow exceeded the NAAQS only in 2007. Coco Junction and Lone Pine registered only two exceedances of the NAAQS. Several sites have

recorded extreme concentrations of PM_{10} during these six years. Noting that the NAAQS for a 24-hour average concentration of PM_{10} is 150 µg/m^3, the Flat Rock site registered a 24-hour reading of 5,920 µg/m^3, the Dirty Sox site registered a reading of 6,338 µg/m^3, the Shell Cut site registered a reading of 8,299 µg/m^3, and the Mono Lake North Shore site registered a 24-hour concentration of 10,020 µg/m^3 in 2007. The more restrictive CAAQS has been exceeded for half or more of the years at 11 of the 16 monitoring sites.

- $PM_{2.5}$ – The South Lake Tahoe site ended $PM_{2.5}$ monitoring in 2004, and Mammoth Lakes ended in 2005. The Ridgecrest site did not record an exceedance of the NAAQS for $PM_{2.5,}$ but the Keeler site recorded exceedances in every year except 2005.

- CO – Of the three sites recording data for CO within the last six years, only Barstow continues to do so. South Lake Tahoe and Echo Summit both ceased monitoring CO in 2004. However, even in Barstow, the highest 8-hour concentration of CO was 1.34 ppm (the NAAQS is 9 ppm).

3.2.8 Sensitive Receptors

The location of a development Proposed Project is a major factor in determining whether it will result in localized air quality impacts. The potential for adverse air-quality impacts increases as the distance between the source of emission and members of the public decreases. Impacts on sensitive receptors are of particular concern. Sensitive receptors are defined as facilities that house or attract children, the elderly, people with respiratory illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors. Multiple single-family homes and a few schools are located throughout the entire length of the Proposed Project route.

3.3. GREENHOUSE GAS EMISSIONS

Constituent gases that trap heat in the Earth's atmosphere are called greenhouse gases (GHGs), analogous to the way a greenhouse retains heat. GHGs play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface which would otherwise have escaped into space. Prominent GHGs contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). Without the natural heat-trapping effect of GHG, the earth's surface would be about 34 °F cooler (CAT 2006). This is a natural phenomenon, known as the "Greenhouse Effect," is responsible for maintaining a habitable climate; however, anthropogenic emissions of these GHGs in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate known as global warming or climate change or, more accurately, Global Climate Disruption. Emissions of these gases that induce global climate disruption are attributable to human activities associated with industrial/manufacturing, utilities, transportation, residential, and agricultural sectors.

In California, transportation is responsible for 41 percent of the state's GHG emissions, followed by electricity generation at approximately 22 percent. However, in Nevada, combustion of fossil fuels for electrical generation and transportation accounted for approximately 78 percent of the state's gross GHG emissions in 2005 (NDEP 2008).

Global warming potential (GWP) is the potential of a gas or aerosol to trap heat in the atmosphere. Individual GHG compounds have varying GWP and atmospheric lifetimes. The reference gas for the GWP

is CO_2, which has a GWP of one. The calculation of the CO_2 equivalent (CO_2e) is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent metric. Methane's warming potential of 21 indicates that methane has a 21 times greater warming effect than CO_2 on a molecule per molecule basis. A CO_2e is the mass emissions of an individual GHG multiplied by its GWP. GHGs are often presented in units called tonnes (t) (i.e. metric tons) of CO_2e (tCO_2e).

3.3.1 Greenhouse Gases

- **Carbon Dioxide -** The natural production and absorption of carbon dioxide (CO_2) is achieved through the terrestrial biosphere and the ocean; however, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid 1700s, each of these activities has increased in scale and distribution. Prior to the industrial revolution, concentrations of CO_2 were stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left unchecked, the IPCC projects that concentration of CO_2 in the atmosphere could increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources. This could result in an average global temperature rise of at least 3.6 °F.

- **Methane (CH_4)** is an extremely effective absorber of radiation, though its atmospheric concentration is less than CO_2 and its lifetime in the atmosphere is brief (10 to 12 years), compared with some other GHGs. CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropogenic sources include fossil-fuel combustion and biomass burning.

- **Nitrous Oxide -** Concentrations of nitrous oxide (N_2O) also began to rise at the beginning of the industrial revolution. N_2O is produced naturally by microbial processes in soil and water, including those reactions that occur in nitrogen-containing fertilizer. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. N_2O is used as an aerosol spray propellant, e.g., in whipped cream bottles. It is also used in potato chip bags to keep chips fresh, in rocket engines, and in racecars.

- **Chlorofluorocarbons (CFCs)** are gases formed synthetically by replacing all hydrogen atoms in CH_4 or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically un-reactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source and were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Because of the discovery that they are able to destroy stratospheric ozone, an ongoing global effort to halt their production was undertaken that has been extremely successful, so much so that levels of the major CFCs are now remaining steady or declining; however, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

- **Hydrofluorocarbons (HFCs)** are synthesized chemicals that are used as a substitute for CFCs. Of all of the GHGs, HFCs are one of three groups with the highest GWP. HFCs are synthesized for applications such as automobile air conditioners and refrigerants.

- **Perfluorocarbons (PFCs)** have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

- **Sulfur Hexafluoride (SF_6)** is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest GWP of any gas evaluated, 23,900 times that of CO_2. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

3.3.2 GHG Emission Levels

In 2004, total worldwide GHG emissions were estimated to be 20,135 million (M) tonnes of CO_2e ($MtCO_2e$), excluding emissions/removals from land use, land use change, and forestry. In 2004, GHG emissions in the U.S. were 7,074 $MtCO_2e$. In 2004, California emitted 500 $MtCO_2e$; and in 2005, Nevada's statewide emissions were 56.3 $MtCO_2e$ (NDEP 2008).

3.3.3 Potential Environmental Changes

Worldwide, average temperatures are likely to increase by 3 °F to 7 °F by the end of the twenty-first century (IPCC 2007). However, a global temperature increase does not directly translate to a uniform increase in temperature in all locations on the earth. Regional climate changes are dependent on multiple variables, such as topography. One region of the Earth may experience increased temperature, increased incidents of drought, and similar warming effects, whereas another region may experience a relative cooling. According to the IPCC's Working Group II Report, climate change impacts to North America may include diminishing snowpack, increasing evaporation, exacerbated shoreline erosion, exacerbated inundation from sea level rising, increased risk and frequency of wildfire, increased risk of insect outbreaks, increased experiences of heat waves, and rearrangement of ecosystems, as species and ecosystem zones shift northward and to higher elevations (IPCC 2007).

3.3.3.1 California Implications

Even though climate change is a global problem and GHGs are global pollutants, the specific potential effects of climate change on California have been studied. The California Natural Resources Agency (CNRA 2009) summarized the best known science on climate change impacts in seven specific sectors and provided recommendations on how to manage against those threats. Generally, research indicates that California should expect overall hotter and drier conditions with a continued reduction in winter snow (with concurrent increases in winter rains), as well as increased average temperatures and accelerating sea-level rise. In addition to these changes, the intensity of extreme weather events is also changing. The impacts assessment indicates that extreme weather events, such as heat waves, wildfires, droughts, and floods are likely to be some of the earliest climate impacts experienced. It is anticipated that temperatures in California could increase 5 °F by 2050 and 9 °F by 2100. Precipitation is expected to increase by 35 percent by 2050 and sea levels are expected to rise by 18 inches by 2050 and by 55 inches by 2100.

3.3.3.2 Nevada Implications

Based on projections made by the IPCC and results from the Hadley Centre for Climate Prediction and Research climate model (HadCM2), a model that accounts for both greenhouse gases and aerosols, by 2100, temperatures in Nevada could increase by 3 to 4 °F in spring and fall and by 5 to 6 °F in winter and summer. Precipitation is estimated to decrease in summer by 10 percent, to increase by 15 percent in spring, to increase by about 30 percent in fall, and to increase by about 40 percent in winter. The amount of precipitation received on extremely wet or snowy days in winter is likely to increase. The frequency of extremely hot days in summer would increase. It is not clear how the severity of storms might be affected, although an increase in the frequency and intensity of winter storms is possible.

3.3.4 Regulatory Context

3.3.4.1 Federal Climate Change Legislation

The EPA currently does not regulate GHG emissions from motor vehicles. Massachusetts v. EPA (*Supreme Court Case 05-1120*) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that EPA regulate four GHGs, including CO_2, under Section 202(a)(1) of the Clean Air Act. A decision was made on April 2, 2007, in which the Supreme Court held that petitioners have a standing to challenge the EPA and that the EPA has statutory authority to regulate emissions of GHGs from new motor vehicles.

Endangerment and Cause or Contribute Findings

On December 7, 2009, the administrator for the EPA signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act. The findings assert:

- Current and projected concentrations of the mix of six key GHGs — CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6) — in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the endangerment finding.

- The combined emissions of CO_2, CH_4, N_2O, and HFCs from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key GHGs and hence to the threat of climate change. This is referred to as the cause or contribute finding.

These findings do not themselves impose any requirements on industry or other entities; however, this action is a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009.

3.3.4.2 California Climate Change Legislation

Executive Order S 3-05

On June 1, 2005, the Governor issued EO S 3-05 which set the following GHG emission reduction targets:

- By 2010, reduce GHG emissions to 2000 levels;

- By 2020, reduce GHG emissions to 1990 levels;
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

To meet these targets, the Climate Action Team (CAT) prepared a report to the Governor in 2006 that contains recommendations and strategies to help ensure the targets in EO S-3-05 are met. The GHG emissions for this year will be estimated in 2011 to demonstrate if the first target was reached.

Assembly Bill 32 (AB 32)

In 2006, the California State Legislature enacted the California Global Warming Solutions Act of 2006, also known as AB 32, which focuses on reducing GHG emissions in California. GHGs, as defined under AB 32, include CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. The CARB is the state agency charged with monitoring and regulating sources of emissions of GHGs that cause global warming in order to reduce emissions of GHGs. AB 32 also requires that by January 1, 2008, the CARB must determine what the statewide GHG emissions level was in 1990, and it must approve a statewide GHG emissions limit so it may be applied to the 2020 benchmark. The CARB approved a 1990 GHG emissions level of 427 $MtCO_2e$, on December 6, 2007 in its Staff Report. Therefore, in 2020, emissions in California are required to be at or below 427 $MtCO_2e$.

Under the current "business as usual" scenario, statewide emissions are increasing at a rate of approximately 1 percent per year as noted below. Also shown are the average reductions needed from all statewide sources (including all existing sources) to reduce GHG emissions back to 1990 levels.

- 1990: 427 $MtCO_2e$
- 2004: 480 $MtCO_2e$ (an average 11-percent reduction needed to achieve 1990 base)
- 2008: 495 $MtCO_2e$ (an average 14-percent reduction needed to achieve 1990 base)
- 2020: 596 $MtCO_2e$ "Business As Usual" (an average 28-percent reduction needed to achieve 1990 base)

3.3.4.3 Nevada Climate Change Legislation

SB 422

Senate Bill 422, effective July 1, 2007, required the State Environmental Commission to establish, by regulation, a statewide registry of greenhouse gases and to mandate the reporting of greenhouse gas emissions by electric power plants, excluding those using renewable energy or having an output capacity of less than five megawatts.

Beginning December 31, 2008, the Department of Conservation and Natural Resources would issue a statewide inventory of greenhouse gases at least once every four years. The inventory shall include the sources, types, and amounts of greenhouse gases; an analysis of the emissions; and documentation of the information in the inventory.

3.3.4.4 Nevada [Renewable Portfolio Standard]

On June 7, 2005, Nevada Governor Kenny Guinn signed into law Assembly Bill 3, expanding Nevada's previous renewable portfolio standard. The updated standard requires that 20 percent of the state's electricity come from renewable energy sources by 2015, and for each year thereafter. Of the 20 percent, not less than five percent must be generated from solar renewable energy systems. Utilities can also earn credit for up to 25 percent of the standard through energy efficiency measures. Sources of energy that count toward the standard include biomass, fuel cells, geothermal, solar, waterpower, and wind.

3.4. GEOLOGY AND SOILS

The Proposed Project area is located within the Basin and Range Province, with mountains of moderate to high relief separated by alluvial basins. The geology and soils of the Proposed Project area are diverse, having been shaped by a variety of processes (RWQCB Lahontan Region 1995).

The southern portion of the Proposed Project route is in the northwestern Mojave Desert, which is characterized by mountain ranges and hills of moderate relief that are partially buried and separated by broad alluvial basins (County of San Bernardino 2005). The rocks found in the Mojave Desert consist of metamorphic rocks derived from pre-existing sedimentary, volcanic, and igneous intrusive rocks.

The Sierra Nevada mountain range lies along the western portion of the Proposed Project route. The Proposed Project route passes through the Owens Valley with the Sierra Nevada on the west and the Inyo-White Mountain range on the east. The Proposed Project route passes along the east slope of the Sierra Nevadas as it enters Mono County. In Nevada the Proposed Project route passes between the Sierra Nevada on the west and the Virginia Range and the Pinenut Mountains on the east.

Parent materials in the mountains are granitic or volcanic, with widespread evidence of glacial action. The valleys are composed primarily of sedimentary material (alluvium) and areas of volcanic flow rock (Jones & Stokes et al 2001, CEC 2010).

The geology of the Proposed Project area is characterized by alternating uplifted and downdropped fault blocks bounded by parallel faults. The mountain ranges are surface expressions of large uplifted fault blocks, while the valleys are fault blocks that have dropped. The tectonic stresses that built the mountains also gave rise to volcanic activity (Irwin 1991). Faults sometimes provide avenues along which magma moves to the surface. The Eastern Sierra has over 50 extinct or dormant volcanoes found along fault zones. The Mammoth-Mono region, with the youngest chain of lava domes and craters in the United States, is still active.

The area is characterized by severe seismic activity. Numerous faults occur along the Proposed Project route, and a great many of them would be considered potentially active. A number of earthquakes have occurred in the vicinity of the Proposed Project route. Volcanic activity has occurred fairly recently in the Mono Lake area.

Economically valuable minerals include gold, silver, lead, zinc, copper, sulfur, tungsten, borax, and rare earth metals. Active mines occur in the counties through which the Proposed Project route passes, but no current mining would be expected within the Proposed Project footprint.

The Proposed Project route passes through numerous soil types. A list of soils on the Proposed Project route can be found in Appendix G (Soil Descriptions). In general, mountainous regions contain coarse, gravelly and sandy soils (Jones & Stokes et al 2001). Valleys that historically did not contain lakes are generally loamy in texture, whereas areas with historic lake-type environments are generally clayey. The Owens Valley is underlain by clayey soils because water historically was present in the area.

Soils in San Bernardino and Kern counties are formed in alluvium derived from granitic and other rock sources. Because of the many different geographic features and geological history of Inyo County, soils found along the Proposed Project route in this county consist of a broad range of characteristics. In general, soils found along the Proposed Project route in Mono County are deep, well drained or excessively drained soils. These soils were formed in alluvium, residuum, or colluvium derived from several sources, such as granitic rock, basalt, tuff and tuff-breccia, volcanic rocks, and/or mixed rocks. Soils along the Proposed Project route in Nevada range from deep to shallow and poorly to well-drained soils. These soils were formed in alluvium, residuum, or colluvium derived from several sources.

Loose sandy soils that are characteristic of the project route are subject to erosion, especially where they are on steep slopes. Expansive soils are soils that expand when water is added, and shrink when they dry out. These changes in soil volume can cause structures on them to move and crack. In general, the project route is not characterized by expansive soils, but some soils with a high clay content, especially on the Nevada portion of the route, have a relatively high shrink-swell potential (Douglas County 2007)

3.5. WATER RESOURCES

3.5.1 Surface Water Bodies

The Proposed Project route in California is located in the Lahontan Region within the South Lahontan and North Lahontan Basins (RWQCB Lahontan Region 1995); the two basins are separated by the boundary between the Mono Lake and East Walker River watersheds. Communities of the North Lahontan Basin crossed by the Proposed Project include Bridgeport. Communities of the South Lahontan Basin crossed by the Proposed Project include Mammoth Lakes, Bishop, Ridgecrest, and Barstow. The Los Angeles Department of Water and Power diverts water from the Mono and Owens River Basins via the Los Angeles Aqueduct for use in the Los Angeles area. The major river systems in Nevada at the northern end of the Proposed Project route are the Truckee River and Carson River.

The Proposed Project route crosses various water features. A detailed discussion of rivers, streams, and wetlands on the Proposed Project route appears in the Preliminary Jurisdictional Report for the Digital 395 Middle Mile Project (Chambers Group, Inc, 2011). Table 12 lists named streams and rivers crossed by the Proposed Project route. Table 13 and Table 14 list the beneficial uses of those streams that have have been designated with beneficial uses within the Proposed Project area.

Table 12: Named Stream Crossings

County	Watershed	River	Type	River Count
San Bernardino				**2**
	Mojave			1
		Mojave River	Backbone	
	Fremont			1
		California Aqueduct	Backbone	
Kern				**1**
	Indian Wells			
		Little Dixie Wash	Backbone	
Inyo				**29**
	Indian Wells			4
		Los Angeles Aqueduct	Backbone	
		Haiwee Creek	Backbone	
		Hogback Creek	Backbone	
		Summit Creek	Backbone	
	Owens			25
		Summit Creek	Backbone	
		Los Angeles Aqueduct	Backbone	
		Owens River	Distribution Line	
		Owens River	Backbone	
		Stevens Canal	Distribution Line	
		Los Angeles Aqueduct	Distribution Line	
		Independence Creek	Backbone	
		Oak Creek	Backbone	
		Thibaut Creek	Backbone	
		Sawmill Creek	Backbone	
		Division Creek	Backbone	
		Goodale Creek	Backbone	
		Taboose Creek	Backbone	
		Tinemaha Creek	Backbone	
		Tinemaha Creek	Distribution Line	
		Big Pine Creek	Backbone	
		Big Pine Canal	Backbone	
		Collins Canal	Backbone	
		Geiger Canal	Backbone	
		Bishop Creek Canal	Distribution Line	
		South Fork Bishop Creek	Distribution Line	
		North Fork Bishop Creek	Distribution Line	
		Owens River Canal	Distribution Line	

Table 12: Named Stream Crossings

County	Watershed	River	Type	River Count
		Laws Ditch	Backbone	
		North McNally Canal	Backbone	
Mono				**40**
	Owens			14
		Millner Creek	Backbone	
		Marble Creek	Backbone	
		Spring Canyon Creek	Backbone	
		Montgomery Creek	Backbone	
		Owens River	Backbone	
		Rock Creek	Backbone	
		Whiskey Creek	Backbone	
		Hilton Creek	Backbone	
		Mc Gee Creek	Backbone	
		Convict Creek	Backbone	
		Mammoth Creek	Backbone	
		Dry Creek	Backbone	
		Deadman Creek	Backbone	
		Reversed Creek	Distribution Line	
	Mono			5
		Rush Creek	Backbone	
		Walker Creek	Backbone	
		Dechambeau Creek	Backbone	
		Mill Creek	Backbone	
		Wilson Creek	Backbone	
	East Walker River			6
		Virginia Creek	Backbone	
		Dunderberg	Backbone	
		East Walker River	Backbone	
		Robinson Creek	Backbone	
		Buckeye Creek	Backbone	
		Long Valley Creek	Backbone	
	West Walker River			15
		Hot Creek	Backbone	
		L Walker River	Backbone	
		Junction Creek	Backbone	
		West Walker River	Backbone	
		Silver Creek	Backbone	
		Burcham Creek	Backbone	
		Deep Creek	Backbone	
		Rock Creek	Backbone	
		Main Canal	Backbone	

Table 12: Named Stream Crossings

County	Watershed	River	Type	River Count
		Mill Creek	Distribution Line	
		Lone Company Ditch	Backbone	
		Highline Ditch	Backbone	
		East Slough	Backbone	
		Alkali Ditch	Backbone	
		Swagger Ditch	Backbone	

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Table 13: Beneficial Uses for Named Streams Crossed in California

Hydrologic Unit/ Subunit Drainage Feature	Waterbody Class Modifier	MUN	ARG	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	Receiving Water
Summit Creek	Perennial stream	x	x			x				x	x	x			x		x				x			LA Aqueduct
Owens River	Perennial stream	x					x		x	x	x	x			x		x		x		x			LA Power Plant and Pleasant Valley Reservoir
Independence Creek	Perennial stream	x	x			x				x	x	x			x		x				x			LA Aqueduct
Oak Creek	Perennial stream	x	x		x	x				x	x	x	x	x	x		x		x		x			LA Aqueduct
Thibaut Creek	Perennial stream	x	x			x				x	x	x			x		x				x			LA Aqueduct
Sawmill Creek	Perennial stream	x	x			x				x	x	x			x		x				x			LA Aqueduct
Division Creek	Perennial stream	x	x		x	x				x	x	x	x		x		x				x			LA Aqueduct
Goodale Creek	Perennial stream	x	x			x				x	x	x	x		x		x				x			LA Aqueduct
Taboose Creek	Perennial stream	x	x			x				x	x	x			x		x				x			LA Aqueduct
Tinemaha Creek	Perennial creek	x	x			x				x	x	x			x		x				x			Tinemaha Reservoir
Big Pine Canal	Ephemeral canal	x	x			x				x	x	x			x		x							Owens River
Collins Canal	Perennial canal	x				x				x	x	x			x		x							Owens River
Bishop Creek Canal	Perennial canal	x	x			x				x	x	x			x		x							Owens River
Owens River Canal	Ephemeral canal	x	x			x				x	x	x			x		x							Owens River
North McNally Canal	Ephemeral canal	x	x			x				x	x	x			x		x							Owens River
Marble Creek	Perennial in Upper Reach	x	x			x				x	x	x			x		x							Hamil Valley Groundwater
Montgomery Creek	Perennial in Upper Reach	x	x			x				x	x	x			x		x							Benton Valley Groundwater
Owens River	Ephemeral stream	x	x			x	x			x	x	x		x	x		x	x	x		x			Owens Lake
Rock Creek	Perennial stream	x	x		x	x	x		x	x	x	x			x		x				x			no info given
Reversed Creek	Perennial stream	x								x	x	x			x		x				x			Rush Creek
Rush Creek	Perennial stream	x	x			x	x			x	x	x			x		x							Mono Lake

Table 13: Beneficial Uses for Named Streams Crossed in California

Hydrologic Unit/ Subunit Drainage Feature	Waterbody Class Modifier	MUN	ARG	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	Receiving Water
Walker Creek	Perennial stream	x	x			x	x			x	x	x			x		x				x			Tributary to Owens
Mill Creek	Perenial stream	x	x			x	x		x	x	x	x			x		x				x			Mono Lake
Virginia Creek	Perennial stream	x	x			x				x	x	x			x		x				x			East Walker River
Robinson Creek	Perennial stream	x	x			x				x	x	x			x		x				x			East Walker River
Long Valley Creek	Perennial stream	x	x			x				x	x	x												
Hot Creek	Perennial stream	x	x			x				x	x	x			x		x		x		x			West Walker River
West Walker River	Perennial river	x	x			x	x	x		x	x	x			x		x			x	x			Walker Lake
Silver Creek	Perennial stream	x	x			x				x	x	x			x		x		x		x			West Walker River

ARG Agricultural Supply
AQUA Aquaculture
BIOL Preservation of Biological Habitats of Special Significance
COLD Cold Freshwater Habitat
COMM Commercial and Sportfishing
FLD Flood Peak Attenuation/ Flood Water
FRSH Freshwater Replenishment
GWR Ground Water Recharge
IND Industrial Service Supply
MIGR Migration of Aquatic Organisms
MUN Municipal and Domestic Supply
NAV Navigation
POW Hydropower Generation
PRO Industrial Process Supply
RARE Rare, Threatened, or Endangered
REC-1 Water Contract Recreation
REC-2 Non-contact Water Recreation
SAL Inland Saline Water Habitat
SPWN Spawning, Reproduction, and Development
WARM Warm Freshwater Habitat
WILD Wildlife Habitat
WQE Water Quality Enhancement

Water Quality Control Plan for the Lahontan Region
State of California, California Regional Water Control Board, Lahotan Region
http://www.usbr.gov/lc/socal/reports/brineconcentrate/3Regs_part3.pdf

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Table 14 Beneficial Uses for Named Streams Crossed in Nevada

Name	Description	IRR	STOCK	REC-1	REC-2	IND	MUN	WILD	AQUATIC	AESTHETIC	ENHANCE	MARSH	Aquatic species of concern
East Fork Carson River	Stateline to Highway 395	x	x	x	x	x	x	x	x				rainbow trout, brown trout

IRR	Irrigation
STOCK	Watering of livestock
REC-1	Recreation involving contact with the water
REC-2	Recreation not involving contact with the water
IND	Industrial supply
MUN	Municipal or domestic supply, or both
WILD	Propagation of wildlife
AQUATIC	Propagation of aquatic life
AESTH	Waters of extraordinary ecological or aesthetic value
ENHANCE	Enhancement of water quality
MARSH	Maintenance of freshwater marsh

Reference: State of Nevada Department of Conservation and Natural Resources, Nevada Division of Environmental Protection
Summary of Beneficial Uses for Waterbodies Identified in the Nevada Administrative Code
http://ndep.nv.gov/bwqp/file/uses.pdf

The natural quality of most high elevation waters, which are derived from snowmelt, is generally good to excellent; although localized problems related to heavy metals and radioactive elements occur. The soils and waters of the Sierra Nevada have low buffering capacity for acids, and its lakes and streams are considered sensitive to acidification as a result of deposition of pollutants from urban areas. Although high quality water supplies are available near streams in desert areas at the southern end of the Proposed Project route, many desert waters have naturally poor quality. Water quality problems in the Proposed Project area are largely related to nonpoint sources such as stormwater, acid drainage from inactive mines, erosion from construction, timber harvesting, and livestock grazing (RWQCB Lahontan Region 1995).

Four streams on the Proposed Project route in California are on the 303(d) list of impaired waterbodies. (State Water Resources Control Board 2006). Robinson Creek and Buckeye Creek in Mono County are on the list for pathogens. The East Walker River in Mono County is on the list for nitrogen, phosphorous, and sedimentation/siltation. Mammoth Creek in Mono County is on the list for mercury and metals. Three waterbodies on the Proposed Project Route in Nevada are on Nevada's 303(d) List of Impaired Waters (Nevada Division of Environmental Protection 2006). The Carson River is on the list for zinc and water temperature. Clear Creek is listed for iron, zinc, fecal coliform, dissolved oxygen and water temperature. Steamboat Creek is on the list for arsenic, boron, iron, and zinc.

The Proposed Project Route passes through many FEMA Flood Hazard areas especially from Ridgecrest to the north. The FEMA Flood Hazard Areas for the Project Route are shown in Appendix H (FEMA Maps).

Section 6 of this document lists regulatory requirements for the Proposed Project. Regulations related to water resources include Sections 303(d), 401, 402, and 404 of the Clean Water Act and the Porter Cologne Water Quality Act. In addition, the Record of Decision for the 2004 Sierra Nevada Forest Plan Amendment (SNFPA) includes standards and guidelines that apply to the 10 Sierran forests for management actions within Riparian Conservation Areas (RCAs). SNFPA standard and guideline #92 requires that the Forest Service evaluate new management activities within RCAs and Critical Aquatic Refuges (CARs) during environmental analysis to determine consistency with Riparian Conservation Objectives (RCOs) at the project level and the Aquatic Management Strategy (AMS) goals for the landscape. The RCO consistency review conducted for this project is incorporated into the analysis of Water Resources below. Consistency with RCOs ensures that Aquatic Management Strategy goals are met and that appropriate mitigation measures are enacted to minimize the risk of activity–related sediment entering the aquatic system and minimize impacts to habitat for aquatic- or riparian-dependent plant and animal species.

3.5.2 Groundwater

3.5.2.1 California

The entire Proposed Project route within California lies in the Lahontan Basin Region. The South Lahontan Hydrologic Region is subdivided into 76 groundwater basins that cover approximately 18,100 square miles. The Proposed Project route crosses 13 groundwater basins. Each of these basins is described briefly below.

The Antelope Valley Groundwater Basin has a surface area of 101,000 acres. The primary water-bearing materials are Pleistocene and Holocene age unconsolidated alluvial and lacustrine deposits that consist of compact gravels, sand, silt, and clay (California Department of Water Resources 2003). Recharge to

the basin is primarily accomplished by perennial runoff from the surrounding mountains and hills. Groundwater is typically calcium bicarbonate in character near the surrounding mountains and is sodium bicarbonate or sodium sulfate character in the central part of the basin. Total dissolved solid (TDS) content in the basin averages 300 milligrams per liter (mg/l) and ranges from 200 to 800 mg/l.

The Cuddeback Valley Groundwater Basin has a surface area of 94,900 acres. Quaternary alluvium forms the principal water-bearing unit within the basin (California Department of Water Resources 2003). Groundwater levels in this basin range from 20 to 230 feet below the surface. TDS content is variable and ranges from about 375 to 4,730 mg/l.

The Lower Mojave River Valley Groundwater Basin has a surface area of 286,000 acres. The two primary water-bearing units within the Mojave River Valley Basin system consist of regional Pliocene and younger alluvial fan deposits (fan unit) and of overlying Pleistocene and younger river channel and floodplain deposits. Natural recharge of the basin is from direct precipitation, ephemeral stream flow, infrequent surface flow of the Mojave River, and underflow of the Mojave River into the basin from the west. The groundwater in the Lower Mojave River Valley Basin is mainly sodium bicarbonate in character. TDS content ranges from 300 mg/l to 2,000 mg/l.

The Middle Mojave River Valley Groundwater Basin has a surface area of 211,000 acres. Water bearing units and recharge is similar to the Lower Mojave River Valley Groundwater Basin. The average TDS content for groundwater in this basin is about 500 mg/l but can be as high as 1,000 mg/l.

The Harper Valley Groundwater Basin has a surface area of 410,000 acres. Quaternary, lacustrine and alluvial deposits, including unconsolidated younger alluvial fan material and unconsolidated to semi-consolidated older alluvium, can be water-bearing within the basin (California Department of Water Resources 2003). The natural recharge of the basin is mainly from infiltration of rainfall and percolation of surface runoff through alluvial fans around the edges of the valley. Groundwater in the northern portion of the basin is sodium sulfate-bicarbonate in character with relatively high concentrations of sodium, fluoride, and boron. Water from the western part of the basin is mostly sodium chloride character with TDS levels of between 1,350 to 1,650 mg/l and high concentrations of fluoride, boron, and sulfate.

The Fremont Valley Groundwater Basin has a surface area of 335,000 acres. Both Quaternary alluvium and lacustrine deposits are water-bearing; however, the alluvium is the most important water-bearing material in the basin. Groundwater in the alluvium is generally unconfined, although locally confined conditions occur. Natural recharge of the basin includes percolation of ephemeral streams that flow from the Sierra Nevada. Groundwater in parts of the basin has high concentrations of fluoride and sodium.

The Indian Wells Valley Groundwater Basin has a surface area of 382,000 acres. It is a closed, internally drained basin bounded by outcrop of igneous and metamorphic basement rock complexes (California Department of Water Resources 2003). Pleistocene to Holocene age lakebed, stream, and alluvial fan deposits comprise the primary water-bearing formations. These unconsolidated deposits make up an upper aquifer and a lower aquifer. The lower aquifer is the primary producer for this basin because it has much better water quality than the upper aquifer. As a result of pumping, a regional core of depression has formed approximately three miles northwest of the City of Ridgecrest. Hydraulic heads have changed in the shallow aquifer due to effluent recharge, causing it to leak into the deep aquifer and migrate towards the cone of depression. This leakage is of concern because of the shallow aquifer's

historically poor water quality. Water quality may be poor with high levels of chloride and, in many cases, high levels of boron and arsenic.

The Searles Valley Groundwater Basin has a surface area of 197,000 acres. Quaternary alluvium, which forms the major water-bearing material within the basin, includes unconsolidated younger alluvial deposits and underlying unconsolidated to semiconsolidated older alluvial deposits (California Department of Water Resources 2003). Groundwater is impaired by high TDS levels of between 12,000 and 420,000 mg/l.

The Rose Valley Groundwater Basin has a surface area of 42,500 acres. Quaternary alluvium forms the principal water-bearing unit within the basin (California Department of Water Resources 2003). Replenishment to the basin is derived chiefly from the percolation of runoff and infiltration of precipitation that falls to the valley floor.

Groundwater levels in the basin range from flowing conditions to about 190 feet below the surface at the north end of the valley. TDS content averages about 350 mg/l except in the vicinity of Little Lake where groundwater is impaired by elevated levels of boron and high TDS content of between 700 and 1,300 mg/l.

The Owens Valley Groundwater Basin has a surface area of 661,000 acres (California Department of Water Resources 2003). The water-bearing materials of this basin are sediments that fill the valley and reach at least 1,200 feet thick. The primary productive unit is Quaternary in age and is separated into upper, lower, and middle members. The principal source of replenishment for this basin is percolation of stream flow from the surrounding mountains. Groundwater in this basin is mostly sodium bicarbonate and calcium bicarbonate in character, with total TDS less than 300 mg/l. North of Independence, boron concentrations reach 7.6 mg/L. Fluoride concentrations range from 0.3 to 9.0 mg/l, with the highest concentrations found near Bishop.

The Long Valley Groundwater Basin has a surface area of 71,800 acres. The water-bearing units in this basin include Holocene alluvium and underlying Pleistocene alluvial and lacustrine deposits. Recharge to the basin is chiefly from percolation of streamflow and precipitation on the valley floor. Most groundwater is calcium bicarbonate or sodium bicarbonate character with TDS concentrations of less than 300 mg/l.

The Mono Valley Groundwater Basin has a surface area of 173,000 acres. TDS levels may be as high as 2,060 mg/l.

The Bridgeport Valley Groundwater Basin has a surface area of 32,500 acres. The primary water-bearing formations are recent valley sediments. Groundwater is recharged by seepage principally from streams and by the infiltration of unconsumed irrigation water, snowmelt and rainfall.

3.5.2.2 Nevada

The Proposed Project route in Nevada crosses the Truckee and Carson River Groundwater Basins. The principal source of groundwater recharge to the valleys of the two river basins is from precipitation as rain and snow in the higher altitudes of the bordering mountain ranges, principally in the headwaters valleys along the east slope of the Sierra Nevada (Jeremy Pratt Clearwater Consulting Corporation 1997). Locally, infiltration of ephemeral stream flows down alluvial fans, from both surface water and groundwater irrigation from the rivers (both by natural infiltration losses and induced by pumping

adjacent alluvial aquifers) may be important secondary sources of groundwater recharge. Groundwater is discharged from the valleys of the two river basins by evapotranspiration of native plants and irrigated crops, domestic and municipal pumping, inflow into gaining reaches of some river segments, and minor underflow to adjacent down-gradient valleys. The principal production aquifers in the valleys are in thick, permeable, alluvial deposits under valley floors. Water yields from localized bedrock aquifers are usually much lower than from the alluvial deposits in the valley fills.

Generally the individual valleys of the Truckee River and Carson River basins act as closed systems with respect to groundwater flow (Jeremy Pratt Clearwater Consulting Corporation 1997). Most groundwater discharge is internal within the valleys or, where the valleys are connected by the channels of the two rivers, discharge to the river near the downstream end of the valley. Small amounts of groundwater underflow may occur to downgradient adjacent valleys. A general regional groundwater gradient exists in an easterly direction that follows the river drainages from the headwaters in the Sierra Nevada to the terminus of the Truckee River in Pyramid Lake Valley and the Carson River in the sink of the Carson Desert. Minor subsurface recharge to and discharge from adjacent valleys occurs along this regional gradient.

Groundwater quality is a function of both the sediments the water passes through and the water's residence time in those materials. Land uses in the surface water drainage area contribute minerals and chemicals, including metals associated with historic mining practices, to the water prior to seepage into the shallow aquifers (Jeremy Pratt Clearwater Consulting Corporation 1997). Areas of high total dissolved solids are found in the groundwater of these river basins.

3.6. BIOLOGICAL RESOURCES

3.6.1 Overview

Biological resources along the Proposed Project route were assessed by a literature review and a field reconnaissance survey of the approximately 593-mile length of the Proposed Project route and a 50-foot buffer (Survey Area). The results of that assessment are described in detail in the Draft Biological Technical Report for the Digital 395 Middle Mile Project (Chambers Group 2011) and are summarized in this section.

Prior to performing the California biological field surveys, existing documentation relevant to the Survey Area was reviewed. The most recent records of the California Natural Diversity Database managed by the California Department of Fish and Game (CDFG 2010) and the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2010) were reviewed for the quadrangle containing and surrounding the Proposed Project route. These databases contain records of reported occurrences of federal- and/or state-listed as endangered or threatened species, proposed endangered or threatened species, former Federal Species of Concern (FSC), California Species of Special Concern (CSC), or otherwise sensitive species or habitat that may occur within or in the immediate vicinity of the Proposed Project route. In addition, the Bureau of Land Management (BLM) lists of special status plant and wildlife species known to occur within the providence controlled by the Barstow, Ridgecrest, and Bishop field offices were also reviewed (BLM 2009, 2010). These databases contain records of reported occurrences of federal- or state-listed as endangered or threatened species, proposed endangered or threatened species, former Federal Species of Concern (FSC), California Species of Special Concern (CSC), or otherwise sensitive species or habitat that may occur within or in the immediate vicinity of the Proposed Project route. United States Forest

Service (USFS 2005) sensitive species lists for the Inyo and Humbolt-Toiyabe national forests were also reviewed.

Prior to performing the Nevada biological field surveys, existing documentation relevant to the Survey Area was reviewed. The most recent records of Nevada Department of Wildlife (NDOW 2010), and the Nevada Natural Heritage Program (NNHP 2004), for sensitive species that are known to occur within Douglas, Carson City, and Washoe counties, Nevada were reviewed. These databases contain records of reported occurrences of federal- or state-listed as endangered or threatened species, proposed endangered or threatened species, former FSC, Nevada Species of Special Concern, or otherwise sensitive species or habitats that may occur within or in the immediate vicinity of the Proposed Project route. In addition, the BLM list of special status plant and wildlife species known to occur within the providence controlled by the Carson City Field office was also reviewed (BLM 2010).

Biological reconnaissance-level surveys were conducted along the Survey Area in order to supplement results from the literature review to identify the potential for occurrence ofspecial status species, vegetation communities, or habitats that could support these species. The survey was conducted by car and on foot between 0700 and 1700 hours on October 15, 2010, through December 2, 2010. These surveys do not count as protocol-level focus plant surveys and only served to identify suitable habitat to support sensitive resources.

This section first describes the vegetation communities along the Proposed Project route in each county. The potential for special status species to occur within the Proposed Project footprint is then discussed for each county.

3.6.2 Vegetation Communities

Habitats within and adjacent to the Proposed Project ROW have been mapped according to Holland (1986) or Sawyer, Keeler-Wolf, and Evens (2009) where appropriate. These habitat types have been categorized into Desert Habitats, Riparian and Wetland Habitats, Grassland Habitats, Scrub and Chaparral Habitats, Woodland and Forest Habitats, and Other Habitats. A list of the vegetation communities observed along the Proposed Project route is located in Table 15. Habitats within the Proposed Project ROW in each county are listed below. Descriptions of vegetation communities can be found in Appendix I (Biological Resources Descriptions).

Table 15: Vegetation Communities by Habitat Type

Vegetation Communities by Habitat Type	Total (Miles)*
Desert Habitats	**201.435**
Mojave Creosote Bush Scrub	59.533
Mojave Mixed Woody Scrub	3.548
White Bursage Scrub	0.094
Desert Saltbush Scrub	76.413
Desert Sink Scrub	0.151
Joshua Tree Woodland	1.595
Desert Greasewood Scrub	55.105
Partially Stabilized and Stabilized Desert Sand Fields	4.975
Riparian and Wetland Habitats	**14.2**

Table 15: Vegetation Communities by Habitat Type

Vegetation Communities by Habitat Type	Total (Miles)*
Transmontane Alkali Marsh	1.055
Wet Subalpine Meadow	7.338
Montane Freshwater Marsh	0.025
Great Basin Cottonwood-Willow Riparian Forest	5.323
Montane Black Cottonwood Riparian Forest	0.004
Montane Riparian Forest	0.459
Grassland Habitats	**1.54**
Great Basin Grassland	1.54
Scrub and Chaparral Habitats	**85.494**
Rabbitbrush Scrub	15.055
Tamarisk Scrub	0.208
Big Sagebrush Scrub	0.078
Great Basin Mixed Scrub	48.817
Transitional Great Basin Mixed Scrub	7.571
Subalpine Sagebrush Scrub	2.077
Tobacco Brush Chaparral	0.209
Indigo Bush Scrub	7.512
Blackbrush Scrub	3.967
Woodland and Forest Habitats	**28.92**
Mojave Riparian Forest	0.004
Aspen Forest	0.267
Lodgepole Pine Forest	0.647
Sierran Mixed Conifer Forest	0.019
Great Basin Pinyon-Juniper Woodland	12.055
Great Basin Pinyon Woodland	2.403
Great Basin Juniper Woodland and Scrub	2.599
Eastside Ponderosa Pine Forest	10.926
Other Habitats	**52.641**
Ruderal/Disturbed	24.603
Ornamental Landscaping	1.079
Turf Grass	1.078
Developed	24.209
Open Water	0.125
Agriculture	1.547

**Notes: Miles equal linear miles along the entire project route including the Backbone and the Leased Conduit (existing and proposed)*

3.6.2.1 California

<u>San Bernardino County</u>

Nine vegetation communities were mapped in the Proposed Project ROW in San Bernardino County. Five communities accounted for approximately 99 percent of the acreage in the Proposed Project ROW. These communities are Desert Saltbush Scrub, Mojave Creosote Bush Scrub, Mojave Mixed Woody

Scrub, Developed, and Ruderal/Disturbed. Other communities that compose very little of the Proposed Project ROW inclue: Joshua Tree Woodland, Tamarisk Scrub, and Blackbrush Scrub. The following habitats are described in Appendix I (Biological Resources Descriptions).

Desert Saltbush Scrub

Desert Saltbush Scrub composes approximately 21.503 miles (52.817 acres) along theProposed Project ROW in San Bernardino County.

Mojave Creosote Bush Scrub

Mojave Creosote Bush Scrub composes approximately 22.601 miles (54.985 acres) along the Proposed Project ROW in San Bernardino County.

Mojave Mixed Woody Scrub

Mojave Mixed Woody Scrub composes approximately 0.922 miles (2.235 acres) along the Proposed Project ROW in San Bernardino County.

Developed

Developed areas compose approximately 7.276 miles (20.734 acres) along the Proposed Project ROW in San Bernardino County.

Ruderal/Disturbed

Ruderal/Disturbed habitats compose approximately 5.375 miles along the Proposed Project ROW in San Bernardino County.

Joshua Tree Woodland

Joshua Tree Woodland composes approximately 0.086 miles (0.209 acres) of the Proposed Project ROW in San Bernardino County.

Tamarisk Scrub

Tamarisk Scrub composes approximately 0.165 miles (0.4 acres) along the Proposed Project ROW in San Bernardino County.

Blackbrush Scrub

Blackbrush Scrub composes approximately 0.000167 miles (0.000406 acres) of the Proposed Project ROW in Kern County.

Kern County

Eleven vegetation communities were identified in the Proposed Project ROW in Kern County. Four communities dominate the Proposed Project ROW and account for about 99 percent of the Proposed Project area in Kern County. These habitats include: Mojave Creosote Bush Scrub, Desert Saltbush Scrub, Developed and Mixed Mojave Woody Scub. However, in Kern County, Mojave Creosote Bush Scrub is

more common than Desert Saltbush Scrub, the dominant habitat in San Bernardino County. Other communities that make up small portions of the Proposed Project route in Kern County include: Ornamental Landscaping, Ruderal/Disturbed, Blackbrush Scrub, Joshua Tree Woodland, and Rabbitbrush Scrub. The following habitats are described in Appendix I (Biological Resources Descriptions).

Mojave Creosote Bush Scrub

Mojave Creosote Bush Scrub composes approximately 14.97 miles (39.855 acres) along the Proposed Project ROW in Kern County.

Desert Saltbush Scrub

Desert Saltbush Scrub composes approximately 8.687 miles (26.234 acres) along theProposed Project ROW in Kern County.

Developed

Developed areas compose approximately 1.239 miles (8.165 acres) along the Proposed Project ROW in Kern County.

Mojave Mixed Woody Scrub

Mojave Mixed Woody Scrub composes approximately 2.626 miles (6.367 acres) along the Proposed Project ROW in Kern County.

Ornamental Landscaping/Turf Grass

Ornamental landscaping/turf grass makes up a small portion approximately 0.045 miles (0.11 acres) of the Proposed Project ROW in Kern County.

Ruderal/Disturbed

Ruderal/Disturbed habitats compose approximately 0.411 miles (0.977 acres) along the Proposed Project ROW in Kern County.

Blackbrush Scrub

Blackbrush Scrub composes approximately 0.242 miles (0.587 acres) of the Proposed Project ROW in Kern County.

Joshua Tree Woodland

Joshua Tree Woodland composes approximately 0.267 acres of the Proposed Project ROW in San Bernardino County.

Rabbitbrush Scrub

Rabbitbrush Scrub accounts for a small portion (0.099 acres) of the Proposed Project ROW in Kern County.

Inyo County

The Proposed Project route in Inyo County passes through a diverse array of habitats. In this county 22 vegetation communities occur along the Proposed Project ROW. Of these communities, 15 account for about 98 percent of the habitat types in the Proposed Project ROW. The most abundant community in Inyo County within the Proposed Project ROW is Desert Saltbush Scrub. The other 20 habitats along the Proposed Project ROW in Inyo County are described below. One of these communities, Transmontane Alkali Marsh, is considered sensitive by the California Department of Fish and Game. The following habitats are described in Appendix I (Biological Resources Descriptions).

Desert Saltbush Scrub

Desert Saltbush Scrub composes approximately 46.371 miles (116.033 acres) along the Proposed Project ROW in Inyo County.

Desert Greasewood Scrub

Desert Greasewood Scrub composes approximately 36.485 miles (89.701 acres) of the Proposed Project ROW in Inyo County.

Mojave Creosote Bush Scrub

Mojave Creosote Bush Scrub composes approximately 22.021 miles (54.31 acres) along the Proposed Project ROW in InyoCounty.

Developed

Developed areas compose approximately 3.143 miles (43.506 acres) along the Proposed Project ROW in Inyo County.

Ruderal/Disturbed

Ruderal/Disturbed habitats compose approximately 3.147miles (9.631 acres) along the Proposed Project ROW in Inyo County.

Transmontane Alkali Marsh

Areas of Transmontane Alkali Marsh in Inyo County near Little Lake are dominated by common reed (*Phragmites australis*). Additional patches of Transmontane Alkali Marsh were observed in the following locations ordered south to north in Inyo County: the town of Little Lake and on the shorelines of Little Lake; immediately south of Bartlett; along US 395, immediately south of the intersection with Route 136; immediately north of Lone Pine and west of US 395; east of Aberdeen along US 395; north of Klondike Lake and along Owens River; east of Bishop, north of Poleta Road along Laws Polenta Road; north of Bishop, along the south side of Jean Blanc Road; and approximately six miles to the north of Bishop along Highway 6.

Transmontane Alkali Marsh composes approximately 0.577 miles (1.48 acres) of the Proposed Project ROW in Inyo County.

Rabbitbrush Scrub

Rabbitbrush Scrub composes approximately 8.975 miles (22.751 acres) of the Proposed Project ROW in Inyo County.

Great Basin Cottonwood-Willow Riparian Forest

Great Basin Cottonwood-Willow Riparian Forest composes approximately 1.625 miles (9.133 acres) of the Proposed Project ROW in Inyo County.

Great Basin Mixed Scrub

Great Basin Mixed Scrub composes approximately 7.169 miles (18.963 acres) of the Proposed Project ROW in Inyo County.

Indigo Bush Scrub

Indigo Bush Scrub composes approximately 7.054 miles (17.1 acres) of the Proposed Project ROW in Inyo County.

Blackbush Scrub

Blackbrush Scrub composes approximately 2.142 miles (5.193 acres) of the Proposed Project ROW in Inyo County.

Wet Subalpine Meadow

Wet Subalpine Meadow composes approximately 0.1 miles (0.662 acres) of the Proposed Project ROW in Inyo County.

Big Sagebrush Scrub

Big Sagebrush Scrub composes approximately 0.055 miles (0.211 acres) of the Proposed Project ROW in Inyo County.

Ornamental Landscaping/Turf Grass

Ornamental landscaping composes approximately 0.712 miles (2.91 acres) and turf grass composes approximately 0.046 miles (1.279 acres) along the Proposed Project ROW in Inyo County.

Joshua Tree Woodland

Joshua Tree Woodland composes approximately 1.509 miles (3.658 acres) of the Proposed Project ROW in Inyo County.

Great Basin Grassland

Great Basin Grassland composes approximately 0.821 miles (2.987 acres) of the Proposed Project ROW in Inyo County.

Tamarisk Scrub

Tamarisk Scrub composes approximately 0.043 miles (0.104 acres) along the Proposed Project ROW in Inyo County.

Agriculture

Agriculture areas compose approximately 1.245 miles (3.019 acres) along the Proposed Project ROW in Inyo County.

Desert Sink Scrub

Desert sink scrub composes approximately 0.151 miles (0.367 acres) along the Proposed Project ROW in Inyo County.

White Bursage Scrub

White Bursage Scrub composes approximately 0.094 miles (0.227 acres) of the Proposed Project ROW in Inyo County.

Stabilized and Partially Stabilized Desert Sand Fields

This community composes approximately 4.975 miles (12.601 acres) along the Proposed Project ROW in Inyo County.

Mono County

The Proposed Project ROW crosses 27 different vegetation communities in Mono County and roughly 19 of these habitats account for 99 percent of the area in the Proposed Project ROW. All the identified communities are discussed in Appendix I (Biological Resources Descriptions).

Great Basin Mixed Scrub

Great Basin Mixed Scrub composes approximately 33.656 miles (87.319 acres) of the Proposed Project ROW in Mono County.

Desert Greasewood Scrub

Desert Greasewood Scrub composes approximately 19.237 miles (46.634 acres) of the Proposed Project ROW in Mono County.

Eastside Ponderosa Pine Forest

Eastside ponderosa pine forest composes approximately 10.926 miles (29.754 acres) of the Proposed Project Row in Mono County

Ruderal/Disturbed

Ruderal/Disturbed habitats compose approximately 10.173 miles (25.241 acres) along the Proposed Project ROW in Mono County.

Great Basin Pinyon-Juniper Woodland

Great Basin Pinyon-Juniper Woodland composes approximately 8.947 miles (21.948 acres) of the Proposed Project ROW in Mono County.

Rabbitbrush Scrub

Rabbitbrush Scrub composes approximately 4.927 miles (10.888 acres) of the Proposed Project ROW in Mono County.

Subalpine Sagebrush Scrub

Subalpine Sagebrush Scrub composes approximately 2.077 miles (6.1 acres) of the Proposed Project ROW in Mono County

Great Basin Cottonwood-Willow Riparian Forest

Great Basin Cottonwood-Willow Riparian Forest composes approximately 6.765 miles (2.743 acres) of the Proposed Project ROW in Mono County.

Developed

Developed areas compose approximately 2.487 miles (14.31 acres) along the Proposed Project ROW in Mono County.

Transitional Great Basin Mixed Scrub

Transitional Great Basin Mixed Scrub composes approximately7.5 miles (23 acres) along the Proposed Project ROW in Mono County.

Transmontane Alkali Marsh

Areas of Transmontane Alkali Marsh are present in Mono County, ordered south to north, in the following locations: approximately 10 miles north of Bishop along Highway 6, south of Chalfant Loop Road; along Highway 6, just south of White Mountain Ranch Road; approximately 2.5 miles north of Benton, on both sides of US 395; and along US 395 just east of Bridgeport.

Transmontane Alkali Marsh composes a small portion, 0.109 miles (0.263 acres) of the Proposed Project ROW in Mono County.

Great Basin Pinyon Woodland

Great Basin-Pinyon Woodland composes approximately 2.403 miles (5.826 acres) of the Proposed Project ROW in Mono County.

Wet Subalpine Meadow

Wet Subalpine Meadow composes approximately 2.038 miles (7.665 acres) of the Proposed Project ROW in Mono County.

Blackbrush Scrub

Blackbrush Scrub composes approximately 1.582 miles (3.836 acres) of the Proposed Project ROW in Mono County.

Great Basin Juniper Woodland and Scrub

Great Basin-Juniper Woodland and Scrub composes approximately 0.104 miles (0.252 acres) of the Proposed Project ROW in Mono County.

Aspen Forest

Aspen Forest composes approximately 0.267 miles (0.646 acres) of the Proposed Project ROW in Mono County.

Lodgepole Pine Forest

Lodgepole Pine Forest composes approximately 0.647 miles (1.569 acres) of the Proposed Project ROW in Mono County.

Tobacco Brush Chaparral

Tobacco Brush Chaparral composes approximately 0.209 miles (0.648 acres) of the Proposed Project ROW in Mono County.

Sierran Mixed Conifer Forest

Sierran Mixed Conifer Forest composes approximately 0.019 miles (0.046 acres) of the Proposed Project ROW in Mono County.

Montane Riparian Forest

Montane Riparian Forest composes approximately 0.459 miles (1.112 acres) of the Proposed Project ROW in Mono County.

Open Water

Open water bodies compose approximately 0.018 miles (0.077 acres) of the Proposed Project ROW in Mono County.

Ornamental Landscaping/Turf Grass

Ornamental landscaping/turf grass makes up a small portion approximately 0.228 miles (0.553 acres) of the Proposed Project ROW in Mono County.

Mojave Riparian Forest

Mojave Riparian Forest composes approximately 0.004 miles (0.011 acres) of the Proposed Project ROW in Mono County.

Great Basin Grassland

Great Basin Grassland composes approximately 0.35 miles (1.159 acres) of the Proposed Project ROW in Mono County.

Agriculture

Agriculture areas compose approximately 0.212 miles (0.515 acres) along the Proposed Project ROW in Mono County.

Indigo Bush Scrub

Indigo Bush Scrub composes approximately 0.461 miles (1.117 acres) of the Proposed Project ROW in Mono County.

Montane Black Cottonwood Riparian Forest

Montane Black Cottonwood Riparian Forest composes approximately 0.004 miles (0.011 acres) of the Proposed Project ROW in Mono County.

3.6.2.2 Nevada

Douglas County

The Proposed Project ROW crosses 11 vegetation communities in Douglas County. Of these, 7 habitats occupy 99 percent of the area along the Proposed Project ROW. The most abundant habitats along the Proposed Project route in Douglas County are Great Basin Pinyon -Juniper Woodland, Great Basin Juniper Woodland and Scrub, Great Basin Mixed Scrub, Developed land and Ruderal/Disturbed land. The other habitats that occupy substantial acreage in the Proposed Project ROW in Douglas County are Wet Subalpine Meadow, Great Basin Cottonwood-Willow Riparian Forest, Ornamental Landscaping, Rabbitbrush Scrub, Transmontane Alkali Marsh and Great Basin Grassland. Habitat descriptions can be found in Appendix I (Biological Resources Descriptons).

Ruderal/Disturbed

Ruderal/Disturbed habitats compose approximately 4.102 miles (10.066 acres) along the Proposed Project ROW in Douglas County.

Great Basin Mixed Scrub

Great Basin Mixed Scrub composes approximately 2.87 miles (6.957 acres) of the Proposed Project ROW in Douglas County.

Rabbitbrush Scrub

Rabbitbrush Scrub composes approximately 0.727 miles (1.762 acres) of the Proposed Project ROW in Douglas County.

Great Basin Pinyon-Juniper Woodland

Great Basin Pinyon-Juniper Woodland composes approximately 3.625 miles (8.787 acres) of the Proposed Project ROW in Douglas County.

Great Basin Juniper Woodland and Scrub

Great Basin-Juniper Woodland and Scrub composes approximately 2.495 miles (6.048 acres) of the Proposed Project ROW in Douglas County.

Wet Subalpine Meadow

West Subalpine Meadow composes approximately 2.665 miles (6.460 acres) of the Proposed Project ROW in Douglas County.

Developed

Developed areas compose approximately 0.815 miles (1.864 acres) along the Proposed Project ROW in Douglas County.

Ornamental Landscaping/Turf Grass

Ornamental landscaping/turf grass makes up a small portion approximately 0.1 miles (0.243 acres) of the Proposed Project ROW in Douglas County.

Great Basin Cottonwood-Willow Riparian Forest

Great Basin Cottonwood-Willow Riparian Forest composes approximately 0.071 miles (0.172 acres) of the Proposed Project ROW in Douglas County.

Transmontane Alkali Marsh

A small portion (0.892 acres) of Transmontane Alkali Marsh is present East of HWY 395 on Heybourne Road in the City of Johnson Lane just north of San Juan Circle.

Carson City

The Proposed Project ROW crosses 8 vegetation communities in Carson City. The most abundant habitats are Great Basin Mixed Scrub and Developd lands. Other habitats that occupy substantial area within the Proposed Project ROW in Carson City are Ruderal/Disturbed, Wet Subalpine Meadow, Great Basin Cottonwood-Willow Riparian Forest, Agriculture, Open Water, and Big Sagebrush Scrub. The following habaitats are described in Appendix I (Biological Resources Descriptions).

Great Basin Mixed Scrub

Great Basin Mixed Scrub composes approximately 2.434 miles (4.327 acres) of the Proposed Project ROW in Carson City.

Developed

Developed areas compose approximately 0.987 miles (2.788 acres) along the Proposed Project ROW in Carson City.

Wet Subalpine Meadow

Wet Subalpine Meadow composes approximately 0.603 miles (1. 463acres) of the Proposed Project ROW in Carson City.

Ruderal/Disturbed

Ruderal/Disturbed habitats compose approximately 0.552 miles (1.399 acres) along the Proposed Project ROW in Carson City.

Open Water

Open water bodies compose approximately 0.107 miles (0.26 acres) of the Proposed Project ROW in Carson City.

Big Sagebrush Scrub

Big Sagebrush Scrub composes approximately 0.023 miles (0.056 acres) of the Proposed Project ROW in Carson City.

Agriculture

Agriculture areas compose approximately 0.015 miles (0.037 acres) along the Proposed Project ROW in Carson City.

Great Basin Cottonwood-Willow Riparian Forest

Great Basin Cottonwood-Willow Riparian Forest composes approximately 0.331 miles (0.804 acres) of the Proposed Project ROW in Carson City.

Washoe County

The Proposed Project ROW crosses 8 vegetation communities in Washoe County. Of these, 7 communities occupy 99 percent of the area in the ROW. The most abundant habitats are Developed land and Great Basin Mixed Scrub. Other habitats that account for notable acreage within the Proposed Project ROW are Rabbitbrush Scrub, Ruderal/Disturbed, Montane Freshwater Marsh, Great Basin Cottonwood-Willow Riparian Forest, Wet Subalpine Meadow, and Ornamental Landscaping/Turf Grass. The following habaitats are described in Appendix I (Biological Resources Descriptions).

Great Basin Mixed Scrub

Great Basin Mixed Scrub composes approximately 2.725 miles (6.605 acres) of the Proposed Project ROW in Washoe County.

Developed

Developed areas compose approximately 8.263 miles (20.031 acres) along the Proposed Project ROW in Washoe County.

Wet Subalpine Meadow

Wet Subalpine Meadow composes approximately 0.860 miles (2.086 acres) of the Proposed Project ROW in Washoe County.

Ruderal/Disturbed

Ruderal/Disturbed habitats compose approximately 0.591 miles (1.433 acres) along the Proposed Project ROW in Washoe County.

Great Basin Cottonwood-Willow Riparian Forest

Great Basin Cottonwood-Willow Riparian Forest composes approximately 0.553 miles (1.34 acres) of the Proposed Project ROW in Washoe County.

Rabbitbrush Scrub

Rabbitbrush Scrub composes approximately 0.992 miles (2.404 acres) of the Proposed Project ROW in Washoe County.

Ornamental Landscaping/Turf Grass

Ornamental landscaping/turf grass makes up a small portion approximately 1.431 miles (3.469 acres) of the Proposed Project ROW in Washoe County.

Montane Freshwater Marsh

Montane Freshwater Marsh composes approximately 0.025 miles (0.061 acres) of the Proposed Project ROW in Washoe County.

3.6.3 Special Status Species

Data obtained from the literature search and reconnaissance-level surveys were analyzed to determine the potential for special status species to occur within the Proposed Project area. The criteria for evaluating the potential for each species to occur are provided in

Table 16.

Table 16: Criteria for Evaluating Special Status Plant Species Occurrences

Potential for Occurrence (PFO)	Criteria
Absent:	Species is restricted to habitats or environmental conditions that do not occur within the site.
Low:	Historical records for this species do not exist within the immediate vicinity (approximately 5 miles) of the site, and/or habitats or environmental conditions needed to support the species are of poor quality.
Moderate:	Either a historical record exists of the species within the immediate vicinity of the site (approximately 5 miles) and marginal habitat exists on the site, or the habitat requirements or environmental conditions associated with the species occur within the site, but no historical records exist within 5 miles of the site.
High:	Both a historical record exists of the species within the site or its immediate vicinity (approximately 5 miles), and the habitat requirements and environmental conditions associated with the species occur within the site.
Present:	Species was detected within the site at the time of the survey.

3.6.3.1 California

The following information is a list of abbreviations used to help determine the significance of biological resources potentially occurring in the Survey Area within California.

Federal

FE = Federally listed; Endangered

FT = Federally listed; Threatened

FC = Federal Candidate for listing

FSC = Federal Species of Concern

BLMS = BLM Sensitive Species

FSS = USFS Sensitive Species

State (California)

SE = State listed; Endangered

ST = State listed; Threatened

RARE = State-listed; Rare (Wildlife Listed as “Rare” have been re-designated as Threatened, however plants listed as Rare have retained the “Rare” designation in California.)

CSC = State Species of Special Concern

California Native Plant Society (CNPS)

List 1A = Plants presumed extinct in California.

List 1B = Plants rare and endangered in California and throughout their range.

List 2 = Plants rare, Threatened or endangered in California but more common elsewhere in their range.

List 3 = Plants about which more information is needed; a review list.

List 4 = Plants of limited distribution; a watch list.

CNPS Extensions

0.1 = Seriously endangered in California (greater than 80 percent of occurrences Threatened/high degree and immediacy of threat).

0.2 = Fairly endangered in California (20 to 80 percent occurrences Threatened).

0.3 = Not very endangered in California (less than 20 percent of occurrences Threatened)

San Bernardino County

According to the literature review, San Bernardino County has 11 special status plant species that have been reported to occur within the vicinity of the Proposed Project route. None of these 11 plant species are federal- and/or state-listed Endangered or Threatened. Seven species are BLM Sensitive species. These BLM Sensitive species are white pygmy-poppy (*Canbya candida*), desert cymopterus (*Cymopterus deserticola*), Barstow woolly sunflower (*Eriophyllum mohavense)*, Red Rock poppy (*Eschscholzia minutiflora* ssp. *twisselmannii*), sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*), Mojave monkeyflower (*Mimulus mohavensis*), and Parish's phacelia (*Phacelia pashii*). Sagebrush loeflingia and Parish's phacelia are presumed absent because of a lack of suitable habitat in the Proposed Project ROW. White pygmy-poppy, desert cymopterus, Barstow woolly sunflower, Red Rock poppy, and Mojave monkeyflower have a high potential to occur in the Proposed Project area. A list of these special status species and their potential to occur is provided in Table 17. Special status plant species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table 17: San Bernardino County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Abronia villosa var. aurita	chaparral sand-verbena	CNPS 1B.1	**Moderate** Occurrence within 0.5 mile Limited disturbed suitable habitat and sandy soils
Camissonia boothii ssp. boothii	Booth's evening-primrose	CNPS 2.3	**Moderate** Limited disturbed suitable habitat Occurrence within 0.5 mile

Table 17: San Bernardino County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Canbya candida	white pygmy-poppy	CNPS 4.2,	**High** Good quality suitable habitat Occurrence within 5 miles
Castela emoryi	Emory's crucifixion-thorn	CNPS 2.3	**High** Good quality suitable habitat Occurrence within less than 0.1 mile
Cymopterus deserticola	desert cymopterus	BLMS, CNPS 1B.2	**High** Good quality suitable habitat Occurrence within 0.3 miles
Eriophyllum mohavense	Barstow woolly sunflower	BLMS, CNPS 1B.2	**High** Good quality suitable habitat Occurrence less than 0.1 miles
Eschscholzia minutiflora ssp. twisselmannii	Red Rock poppy	BLMS, CNPS 1B.2	**High** Good quality suitable habitat Occurrence within 2 miles
Loeflingia squarrosa var. artemisiarum	sagebrush loeflingia	BLMS, CNPS 2.2	**Absent** Lack of suitable habitat Occurrence within 4 miles
Mentzelia tridentata	creamy blazing star	CNPS 1B.3	**High** Good quality suitable habitat Occurrence less than 0.1 mile
Mimulus mohavensis	Mojave monkeyflower	BLMS, CNPS 1B.2	**High** Good quality suitable habitat Occurrence less than 0.1 mile
Phacelia parishii	Parish's phacelia	BLMS, CNPS 1B.1	**Absent** Lack of suitable habitat Occurrence within 0.7 mile

According to the literature review, San Bernardino County has eight special status wildlife species that have been reported to have occurred within the vicinity of the Proposed Project site. Three of these species, Mohave tui chub (*Gila bicolor mohavensis*), desert tortoise (*Gopherus agassizii*), and Mohave ground squirrel (*Xerospermophilus mohavensis*), are federal- and/or state-listed Endangered or Threatened and are BLM Sensitive species. The Mohave tui chub is assumed absent because of a lack of suitable habitat on the Proposed Project route. Desert tortoise and Mohave ground squirrel have a high potential to occur in the Proposed Project area. Two additional species, the burrowing owl (*Athene cunicularia*) and Townsend's big-eared bat (*Corynorhinus townsendii*) are BLM Sensitive species. Burrowing owl has a high potential to occur in the Proposed Project area. Townsend's big-eared bat has a moderate potential to occur. A complete list of these special status species and their potential to occur within the Proposed Project site is provided in Table 18. Special status wildlife species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table 18: San Bernardino County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential To Occur
Asio otus	long-eared owl	CSC	**Low** Limited suitable habitat No reported occurrences within 5 miles
Athene cunicularia	burrowing owl	CSC, BLMS	**High** Suitable habitat present Occurrence within 0.1 mile
Corynorhinus townsendii	Townsend's big-eared bat	CSC, FSS, BLMS	**Moderate** Suitable habitat present No reported occurrences within 5 miles
Falco mexicanus	prairie falcon	n/a	**Moderate** Suitable habitat present No reported occurrences within 5 miles
Gila bicolor mohavensis	Mohave tui chub	FE, SE, BLMS	**Absent** Lack of suitable habitat
Gopherus agassizii	desert tortoise	FT, ST, BLMS	**High** Suitable habitat present Occurrence less than 0.1 mile
Lanius ludovicianus	loggerhead shrike	CSC	**Moderate** Suitable habitat present No reported occurrences within 5 miles
Taxidea taxus	American badger	CSC	**High** Suitable habitat present Occurrence within 0.1 mile
Toxostoma lecontei	Le Conte's thrasher	CSC	**High** Suitable habitat present Occurrence within 0.3 mile
Uma scoparia	Mojave fringe-toed lizard	CSC, BLMS	**Absent** Lack of suitable habitat
Xerospermophilus mohavensis	Mohave ground squirrel	ST, BLMS	**High** Suitable habitat present Occurrence less than 0.1 mile

Kern County

According to the literature review, Kern County has 10 special status plant species that have been reported to have occurred within the vicinity of the Proposed Project route. None of these 10 plant species are federal- and/or state-listed Endangered or Threatened. Eight of these species are BLM Sensitive species, and include: Spanish needle onion (*Allium shevockii*), white pygmy-poppy, desert cymopterus, recurved larkspur (*Delphinium recurvatum),* Barstow woolly sunflower, Red Rock poppy, sagebrush loeflingia, and Charlotte's phacelia (*Phacelia nashiana*). Spanish needle onion and sagebrush loeflingia are assumed absent because of a lack of suitable habitat within the Proposed Project ROW. A

complete list of these special status species and their potential to occur is provided in Table 19. Special status plant species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table 19: Kern County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential to Occur
Allium shevockii	Spanish needle onion	BLMS, CNPS 1B.3	**Absent** Lack of suitable habitat
Canbya candida	white pygmy-poppy	CNPS 4.2	**High** Suitable habitat present Occurrence within 2 miles
Cordylanthus eremicus ssp. *kernensis*	Kern Plateau bird's-beak	FSS, CNPS 1B.3	**Absent** Project site outside the species elevation range
Cymopterus deserticola	desert cymopterus	BLMS, CNPS 1B.2	**High** Suitable habitat present Occurrence within 0.4 mile
Delphinium recurvatum	recurved larkspur	BLMS, CNPS 1B.2	**High** Suitable habitat present Occurrence within 0.4 mile
Eriophyllum mohavense	Barstow woolly sunflower	BLMS, CNPS 1B.2	**High** Suitable habitat present Occurrence within 1 mile
Eschscholzia minutiflora ssp. *twisselmannii*	Red Rock poppy	BLMS, CNPS 1B.2	**High** Suitable habitat present Occurrence within 0.3 mile
Loeflingia squarrosa var. *artemisiarum*	sagebrush loeflingia	BLMS, CNPS 2.2	**Absent** Lack of suitable habitat
Phacelia nashiana	Charlotte's phacelia	BLMS, FSS, CNPS 1B.2	**High** Suitable habitat present Occurrence less than 2 miles
Viola aurea	golden violet	CNPS 2.2	**High** Suitable habitat present Occurrence less than 0.1 mile

According to the literature review, Kern County has 11 special status wildlife species that have been documented to have occurred within the vicinity of the Proposed Project site. Of these 11 species, three (Mohave tui chub, desert tortoise, and Mohave ground squirrel) are federal- and/or state-listed Endangered or Threatened and BLM Sensiteve. The Mojave tui chub is presumed absent from the Proposed Project site because of lack of suitable habitat. Five additional species are BLM Sensitive species that have a high or moderate potential to occur in the Proposed Project ROW. These BLM Sensitive species are pallid bat (*Antrozous pallidus*), burrowing owl, Townsend's big-eared bat, spotted bat (*Euderma maculatum*), and Yuma myotis (*Myotis yumanensis*). A complete list of these special status species and their potential to occur is provided in Table 20. Special status wildlife species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table 20: Kern County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Antrozous pallidus	pallid bat	CSC, FSS, BLMS	**Moderate** Minimal suitable habitat present Occurrence within 2 miles
Athene cunicularia	burrowing owl	BLMS, CSC	**High** Suitable habitat present Occurrence less than 0.1 mile
Corynorhinus townsendii	Townsend's big-eared bat	CSC, FSS, BLMS	**Moderate** Minimal suitable habitat present Occurrence within 2 miles
Euderma maculatum	spotted bat	CSC, BLMS, FSS	**High** Suitable habitat present Occurrence within 0.5 mile
Gila bicolor mohavensis	Mohave tui chub	**FE, SE,** BLMS	**Absent** Lack of suitable habitat
Gopherus agassizii	desert tortoise	**FT**, **ST,** BLMS	**High** Suitable habitat present Occurrence within 0.2 mile
Lanius ludovicianus	loggerhead shrike	CSC	**High** Suitable habitat present Occurrence less than 0.5 mile
Myotis yumanensis	Yuma myotis	BLMS	**Moderate** Minimal suitable habitat present Occurrence within 3 miles
Taxidea taxus	American badger	CSC	**High** Suitable habitat present Occurrence less than 0.1 mile
Toxostoma lecontei	Le Conte's thrasher	CSC	**High** Suitable habitat present Occurrence less than 0.1 mile
Xerospermophilus mohavensis	Mohave ground squirrel	**ST,** BLMS	**High** Suitable habitat present Occurrence less than 0.1 mile

Inyo County

According to the literature review, Inyo County has 41 special status plant species that have been documented to have occurred within the vicinity of the Proposed Project route. One of these 41 plant species, Fish Slough milk-vetch (*Astragalus lentiginosus* var. *piscinensis*) is federally-listed as Threatened. In addition, one species, Father Crowley's lupine (*Lupinus padre-crowleyi*), is listed as Rare by the State of California but is presumed absent from the site because the species occurs outside the elevation range of the Proposed Project. An additional 12 species are listed as BLM Sensitive species under the jurisdiction of the Bishop Field Office. These species are Geyer's milk-vetch (*Astragalus geyeri* var.

geyeri), Inyo County star-tulip (*Calochortus excavatus*), white pygmy-poppy, sanicle cymopterus (*Cymopterus ripleyi* var. *saniculoides*), July gold (*Dedeckera eurekensis*), alkali ivesia (*Ivesia kingii* var. *kingii*), sagebrush loeflingia, sweet-smelling monardella (*Monardella beneolens*), Charlotte's phacelia, Nine Mile Canyon phacelia (*Phacelia novenmillensis*), Owens Valley checkerbloom (*Sidalcea covillei*), and Dedecker's clover (*Trifolium dedeckerae*). Sweet-smelling monardella, Nine Mile Canyon phacelia, and Dedecker's clover are assumed absent from the site because these species occur outside the Proposed Project's elevation range. A list of special status plant species and their potential to occur on the Proposed Project route is provided in Table 21. Special status plant species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table 21: Inyo County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Aliciella triodon	coyote gilia	CNPS 2.2	**High** Suitable habitat present Occurrence within 1 mile
Arabis (Boechera) dispar	pinyon rock-cress	CNPS 2.3, INF Watch List	**High** Suitable habitat present Occurrence within less than 0.1 mile
Arabis (Boechera) shockleyi	Shockley's rock-cress	CNPS 2.2, FSS	**Absent** Lack of suitable habitat
Astragalus argophyllus var. *argophyllus*	silver-leaved milk-vetch	CNPS 2.2, INF Watch List	**Moderate** Minimal suitable habitat Occurrence within 0.3 mile
Astragalus geyeri var. *geyeri*	Geyer's milk-vetch	CNPS 2. 2	**Moderate** Minimal suitable habitat Occurrence within 3 miles
Astragalus hornii var. *hornii*	Horn's milk-vetch	CNPS 1B.1	**Moderate** Minimal suitable habitat Occurrence within 0.3 mile
Astragalus lentiginosus var. *piscinensis*	Fish Slough milk-vetch	**FT**, CNPS, 1B.1 BLMS	**High** Suitable habitat present Occurrence within 0.7 mile
Astragalus serenoi var. *shockleyi*	Shockley's milk-vetch	CNPS 2.2, INF Watch List	**High** Suitable habitat present Occurrence within 2 miles
Atriplex argentea var. *hillmanii*	Hillman's silverscale	CNPS 2.2	**High** Suitable habitat present Occurrence within 3 miles
Atriplex gardneri var. *falcata*	falcate saltbush	CNPS 2.2	**High** Suitable habitat present Occurrence within 3 miles
Blepharidachne kingii	King's eyelash grass	CNPS 2.3	**High** Suitable habitat present Occurrence within 2 miles

Table 21: Inyo County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Calochortus excavatus	Inyo County star-tulip	FSS, CNPS 1B.1, BLMS	**High** Suitable habitat present Occurrence within 0.3 mile
Camissonia boothii ssp. *boothii*	Booth's evening-primrose	CNPS 2.3	**High** Suitable habitat present Occurrence within less than 0.1 mile
Camissonia boothii ssp. *intermedia*	Booth's hairy evening-primrose	CNPS 2.3	**High** Suitable habitat present Occurrence within less than 0.1 miles
Canbya candida	white pygmy-poppy	CNPS 4.2	**High** Suitable habitat present Occurrence within 0.3 mile
Clarkia xantiana ssp. *parviflora*	Kern Canyon clarkia	CNPS 4.2	**High** Suitable habitat present Occurrence within 3 miles
Cordylanthus eremicus ssp. *kernensis*	Kern Plateau bird's-beak	FSS, CNPS 1B.3	**Absent** Project site outside the species elevation range
Crepis runcinata ssp. *hallii*	Hall's meadow hawksbeard	CNPS 2.1, INF Watch List	**High** Suitable habitat present Occurrence within 0.1 mile
Cryptantha circumscissa var. *rosulata*	rosette cushion cryptantha	CNPS 1B.2	**Absent** Project site outside the species elevation range
Cymopterus ripleyi var. *saniculoides*	sanicle cymopterus	CNPS 1B.2, BLMS	**High** Suitable habitat present Occurrence within 0.3 mile
Dedeckera eurekensis	July gold	CNPS 1B.3, FSS, BLMS	**High** Suitable habitat present Occurrence within 2 miles
Erigeron compactus	compact daisy	CNPS 2.3, INF Watch List (var. compactus)	**Low** Minimal suitable habitat No occurrence within 2 miles
Eriogonum wrightii var. *olanchense*	Olancha Peak buckwheat	CNPS 1B.3, FSS	**Absent** Project site outside the species elevation range
Fimbristylis thermalis	Hot Springs fimbristylis	CNPS 2.2	**High** Suitable habitat present Occurrence less than 1 mile
Ivesia kingii var. *kingii*	alkali ivesia	CNPS 2.2, BLMS, INF Watch list	**High** Suitable habitat present Occurrence within 0.8 mile
Leymus salinus ssp. *mojavensis*	hillside wheat grass	CNPS 2.3	**High** Suitable habitat present Occurrence 0.7 mile

Table 21: Inyo County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Loeflingia squarrosa var. *artemisiarum*	sagebrush loeflingia	BLMS, CNPS 2.2	**Absent** Lack of suitable habitat
Lupinus padre-crowleyi	Father Crowley's lupine	**RARE**, CNPS 1B.2, FSS	**Absent** Project site outside the species elevation range
Mentzelia torreyi	Torrey's blazing star	CNPS 2.2	**High** Suitable habitat present Occurrence within 0.5 mile
Mentzelia tridentata	creamy blazing star	CNPS 1B.3	**High** Suitable habitat present Occurrence 0.1 mile
Monardella beneolens	sweet-smelling monardella	CNPS 1B.3, FSS, BLMS	**Absent** Project site outside the species elevation range
Oryctes nevadensis	Nevada oryctes	CNPS 2.1	**High** Suitable habitat present Occurrence within 0.5 mile
Phacelia inyoensis	Inyo phacelia	CNPS 1B.2, FSS	**High** Suitable habitat present Occurrence within 0.1 mile
Phacelia nashiana	Charlotte's phacelia	CNPS 1B.2, BLMS, INF Watch list	**High** Suitable habitat present Occurrence within 2 miles
Phacelia novenmillensis	Nine Mile Canyon phacelia	CNPS 1B.2, FSS, BLMS	**Absent** Project site outside the species elevation range
Plagiobothrys parishii	Parish's popcorn-flower	CNPS 1B.1	**High** Suitable habitat present Occurrence within 0.3 mile
Ranunculus hydrocharoides	frog's-bit buttercup	CNPS 2.1, INF Watch list	**Moderate** Suitable habitat present No occurrence within 5 miles
Sidalcea covillei	Owens Valley checkerbloom	CNPS 1B.1, BLMS	**High** Suitable habitat present Occurrence within 0.1 mile
Sphenopholis obtusata	prairie wedge grass	CNPS 2.2	**High** Suitable habitat present Occurrence within 0.9 mile
Thelypodium integrifolium ssp. *complanatum*	foxtail thelypodium	CNPS 2.2	**High** Suitable habitat present Occurrence within 0.9 mile
Trifolium dedeckerae	Dedecker's clover	CNPS 1B.3, FSS, BLMS	**Absent** Project site outside the species elevation range

According to the literature review, Inyo County has 41 special status wildlife species that have been reported to have occurred within the vicinity of the Proposed Project route. Of these 41 species, 14 are federal- and/or state-listed Endangered or Threatened. These species include: Swainson's hawk (*Buteo swainsoni*), western snowy plover (*Charadrius alexandrinus nivosus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), Owens pupfish (*Cyprinodon radiosus*), southwestern willow flycatcher (*Empidonax traillii extimus and E. traillii adastus and E. traillii brewsterii* ssp.), Owens tui chub (*Gila bicolor snyderi*), California wolverine (*Gulo gulo*), bald eagle (*Haliaeetus leucocephalus*), desert tortoise (*Gopherus agassizii*), Sierra Nevada bighorn sheep (*Ovis canadensis sierra*), bank swallow (*Riparia riparia*), least Bell's vireo (*Vireo bellii pusillus*), Mohave ground squirrel (*Xerospermophilus* mohavensis), and Sierra Nevada red fox (*Vulpes vulpes necator*). The California wolverine is presumed absent from the Proposed Project ROW because of a lack of suitable habitat. An additional 10 species are listed as BLM or FS Sensitive species. These 10 species are pallid bat, burrowing owl, Inyo Mountains slender salamander (*Batrachoseps campi*), Townsend's big-eared bat, panamint alligator lizard (*Elgaria panamintina)*, spotted bat, Owens Valley vole (*Microtus californicus vallicola*), western small-footed myotis (*Myotis ciliolabru)*, Yuma myotis, Owens speckled dace (*Rhinichthys osculus* ssp.2), and northern sagebrush lizard (*Sceloporus graciosus graciosus*). The Inyo Mountains slender salamander is presumed to be absent because of a lack of suitable habitat. A complete list of special status species and their potential to occur on the Proposed Project route is provided in Table 22. Special status wildlife species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table 22: Inyo County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Anniella pulchra pulchra	silvery legless lizard	CSC	**High** Suitable habitat present Occurrence within 1 mile
Antrozous pallidus	pallid bat	CSC, FSS, BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Asio otus	long-eared owl	CSC	**High** Suitable habitat present Occurrence within 1 mile
Athene cunicularia	burrowing owl	CSC, BLMS	**High** Suitable habitat present Occurrence within 1 mile
Batrachoseps campi	Inyo Mountains slender salamander	CSC, FSS, BLMS	**Absent** Lack of suitable habitat No reported occurrences
Buteo swainsoni	Swainson's hawk	**ST**, BLMS	**High** Suitable habitat present Occurrence within 1 mile
Catostomus fumeiventris	Owens sucker	CSC	**High** Suitable habitat present Occurrence within 1 mile
Charadrius alexandrinus nivosus	western snowy plover	**FT**, CSC, FSS	**Moderate** Minimal suitable habitat less than 0.5 mile away Occurrence within 0.9 mile

Table 22: Inyo County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Circus cyaneus	northern harrier	CSC	**High** Suitable habitat present Occurrence within 3 miles
Coccyzus americanus occidentalis	western yellow-billed cuckoo	**FSC**, **SE**, FSS, BLMS	**High** Suitable habitat present Occurrence within 0.7 mile
Corynorhinus townsendii	Townsend's big-eared bat	CSC, FSS, BLMS	**High** Suitable habitat present Occurrence within 2 miles
Cyprinodon radiosus	Owens pupfish	**FE**, **SE**, BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Elgaria panamintina	Panamint alligator lizard	CSC, FSS	**High** Suitable habitat present Occurrence within 3 miles
Empidonax traillii extimus	southwestern willow flycatcher	**FE**, **SE**, BLMS	**High** Suitable habitat present Occurrence within less than 0.2 mile
Empidonax trailii brewsterii and adastus	willow flycatcher	FSS	**High** Suitable habitat present
Euderma maculatum	Spotted bat	CSC, FSS, BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Falco mexicanus	prairie falcon	n/a	**Moderate** Suitable habitat present No reported occurrences within 5 miles
Gila bicolor snyderi	Owens tui chub	**FE**, **SE**, BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Gopherus agassizii	desert tortoise	**FT**, **ST** BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Gulo gulo	California wolverine	**ST**, FSS	**Absent** No suitable habitat present
Haliaeetus leucocephalus	bald eagle	FD, **SE**, FSS, BLMS	**High** Suitable habitat present Occurrence within 1 mile

Table 22: Inyo County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Hydromantes sp. 1	Owens Valley web-toed salamander (AKA Oak Creek salamander)	CSC	**Moderate** Minimal suitable habitat present Occurrence within 1 mile
Icteria virens	yellow-breasted chat	CSC	**High** Suitable habitat present Occurrence within less than 0.1 mile
Ixobrychus exilis	least bittern	CSC	**Low** Minimal suitable habitat present No reported occurrences
Lepus townsendii townsendii	western white-tailed jackrabbit	CSC	**High** Suitable habitat present Occurrence within 1 mile
Lithobates pipiens	northern leopard frog	CSC	**High** Suitable habitat present Occurrence within 1 mile
Microtus californicus vallicola	Owens Valley vole	CSC, BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Myotis ciliolabru	western small-footed myotis	BLMS	**High** Suitable habitat present Occurrence within 2 miles
Myotis yumanensis	Yuma myotis	BLMS	**Moderate** Minimal suitable habitat present Occurrence within 4 miles
Ovis canadensis sierrae	Sierra Nevada bighorn sheep	**FE**, **SE**, BLMS	**Moderate** Suitable habitat present No reported occurrences
Piranga rubra	summer tanager	CSC	**High** Suitable habitat present Occurrence within 2 miles
Pyrgulopsis wongi	Wong's springsnail	FSC, FSS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Rana sierrae	Sierra Nevada yellow-legged frog	FC, CSC, FSS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Rhinichthys osculus ssp. 2	Owens speckled dace	CSC, BLMS	**Moderate** Minimal suitable habitat present Occurrence within 1 mile
Riparia riparia	bank swallow	**ST,** BLMS	**High** Suitable habitat present Occurrence within 0.8 mile

Table 22: Inyo County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Sceloporus graciosus graciosus	northern sagebrush lizard	BLMS	**High** Suitable habitat present Occurrence within 1 mile
Vireo bellii pusillus	least Bell's vireo	**FE**, **SE,** BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Vulpes vulpes necator	Sierra Nevada red fox	**ST, FSS**	**High** Suitable habitat present Occurrence within less than 0.1 mile
Xerospermophilus mohavensis	Mohave ground squirrel	**ST,** BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile

Mono County

According to the literature review, Mono County has 76 special status plant species that have been reported to have occurred within the vicinity of the Proposed Project route. One of these 76 plant species, Fish Slough milk-vetch (*Astragalus lentiginosus* var. *piscinensis*) is federal-listed as Endangered but is assumed absent because the Proposed Project ROW is outside the elevation range for this species. In addition, one species, Mono milk-vetch (*Astragalus monoensis*) is listed as Rare by the State of California. An additional 11 species are listed as BLM and/ or FS Sensitive species. These species are Bodie Hills rock-cress (*Arabis (Boechera) bodiensis)*, Long Valley milk-vetch (*Astragalus johannis-howellii*), Lemmon's milk-vetch (*A. lemmonii*), Inyo County star-tulip, Bodie Hills cusickiella (*Cusickiella quadricostata*), July gold, alkali ivesia, Mono Lake lupine (*Lupinus duranii*), Shevock's bristle moss (*Orthotrichum shevockii*), Mono County phacelia (*Phacelia monoensis*), and Masonic Mountain jewel-flower (*Strepanthus oliganthus).* July gold is presumed absent because suitable habitat does not exist on the Proposed Project site. An additional 10 species, not state, federal, or BLM listed, are listed as USFS Sensitive. These species are Tiehm's rock-cress (*Arabis (Boechera) tiehmii*), Lavin's milk-vetch (*Astragalus oophorus* var. *lavinii*), upswept moonwort (*Botrychium ascendens*), scalloped moonwort (*Botrychium lunaria*), Tahoe draba (*Draba asterophora* var. *asterophora*), Blandow's bog moss (*Helodium blandowii)*, Spjut's bristle moss (*Orthotrichum spjutii),* Inyo phacelia (*Phacelia inyoensis*), and Mount Patterson senecio (*Senecio pattersonensis*). A complete list of special status plant species and their potential to occur on the Proposed Project route is provided in Table 23. Special status plant species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table 23: Mono County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential

Table 23: Mono County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Agrostis humilis	mountain bent grass	CNPS 2.3	**Low** Limited suitable habitat No historic occurrence within 5 miles
Aliciella triodon	coyote gilia	CNPS 2.2	**Moderate** Suitable habitat present No historic occurrence within 5 miles
Allium atrorubens var. *atrorubens*	Great Basin onion	CNPS 2.3	**High** Suitable habitat present Historic occurrence within 5 miles
Arabis (*Boechera*) *bodiensis*	Bodie Hills rock-cress	CNPS 1B.3, BLMS, FSS	**High** Suitable habitat present Historic occurrence within 4 miles
Arabis (*Boechera*) *cobrensis*	Masonic rock-cress	CNPS 2.3	**High** Suitable habitat present Historic occurrence within 4 miles
Arabis (*Boechera*) *dispar*	Pinyon rock-cress	CNPS 2.3	**High** Suitable habitat present Historic occurrence within 3 miles
Arabis (*Boechera*) *tiehmii*	Tiehm's rock-cress	FSC, CNPS 1B.3, FSS	**Low** Limited suitable habitat No Historic occurrence within 5 miles
Astragalus argophyllus var. *argophyllus*	silver-leaved milk-vetch	CNPS 2.2	**High** Suitable habitat present Occurrence within 2 miles
Astragalus johannis-howellii	Long Valley milk-vetch	CNPS 1B.2, FSS, BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Astragalus lemmonii	Lemmon's milk-vetch	CNPS 1B.2, FSS, BLMS	**High** Suitable habitat present Occurrence within less than 0.5 mile
Astragalus lentiginosus var. *piscinensis*	Fish Slough milk-vetch	**FT**, CNPS 1B.1,	**Absent** Project site is outside the species elevation range
Astragalus monoensis	Mono milk-vetch	**RARE**, CNPS 1B.2, FSS, BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Astragalus oophorus var. *lavinii*	Lavin's milk-vetch	CNPS 1B.2, FSS	**High** Suitable habitat present Occurrence within 4 miles

Table 23: Mono County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Astragalus platytropis	broad-keeled milk-vetch	CNPS 2.2	**Moderate** Suitable habitat present No Historic Occurrence within 5 miles
Atriplex pusilla	smooth saltbush	CNPS 2	**High** Suitable habitat present Occurrence within 4 miles
Botrychium ascendens	upswept moonwort	CNPS 2.3, FSS	**High** Suitable habitat present Occurrence within 4 miles
Botrychium crenulatum	scalloped moonwort	CNPS 2.2, FSS	**High** Suitable habitat present Occurrence within 4 miles
Botrychium lunaria	common moonwort	CNPS 2.3, FSS	**High** Suitable habitat present Occurrence within 0.4 mile
Calochortus excavatus	Inyo County star-tulip	CNPS 1B.1, FSS, BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Camissonia boothii ssp. *boothii*	Booth's evening-primrose	CNPS 2.3	**High** Suitable habitat present Occurrence within less than 1 mile
Camissonia boothii ssp. *intermedia*	Booth's hairy evening-primrose	CNPS 2.3	**High** Suitable habitat present Occurrence within 4 miles
Carex eleocharis	spikerush sedge	CNPS 2.3	**Absent** Project site is outside the species elevation range No historical occurrence within 5 miles
Carex occidentalis	western sedge	CNPS 2.3	**High** Suitable habitat present Occurrence within 0.4 miles
Carex scirpoidea ssp. *pseudoscirpoidea*	western single-spiked sedge	CNPS 2.2	**High** Suitable habitat present Occurrence within less than 0.1 mile
Carex vallicola	western valley sedge	CNPS 2.3	**High** Suitable habitat present Occurrence within 3 miles
Chaetadelpha wheeleri	Wheeler's dune-broom	CNPS 2.2	**Absent** Lack of suitable habitat

Table 23: Mono County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Claytonia megarhiza	fell-fields claytonia	CNPS 2.3	**Moderate** Suitable habitat present No historical occurrences within 5 miles
Crepis runcinata ssp. *hallii*	Hall's meadow hawksbeard	CNPS 2.1, INF Watch List	**High** Suitable habitat present Occurrence within less than 0.1 mile
Cryptantha fendleri	sand dune cryptantha	CNPS 2.3	**Absent** Lack of suitable habitat
Cusickiella quadricostata	Bodie Hills cusickiella	CNPS 1B.2, FSS, BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Cymopterus globosus	globose cymopterus	CNPS 2.2	**High** Suitable habitat present Occurrence within less than 1 mile
Dedeckera eurekensis	July gold	CNPS 1B.3, FSS, BLMS	**Absent** Lack of suitable habitat No historical occurrences within 5 miles
Draba asterophora var. *asterophora*	Tahoe draba	CNPS 1B.2, FSS	**Moderate** Suitable habitat present No historical occurrences within 5 miles
Draba breweri var. *cana*	canescent draba	CNPS 2.3	**Absent** Lack of suitable habitat No historical occurrences within 5 miles
Draba incrassata	Sweetwater Mountains draba	CNPS 1B.3	**Absent** Lack of suitable habitat No historical occurrences within 5 miles
Draba lonchocarpa var. *lonchocarpa*	spear-fruited draba	CNPS 2.3	**Absent** Lack of suitable habitat No historical occurrences within 5 miles
Draba praealta	tall draba	CNPS 2.3	**Low** Limited suitable habitat No historical occurrences within 5 miles
Elymus scribneri	Scribner's wheat grass	CNPS 2.3	**Absent** Lack of suitable habitat No historical occurrences within 5 miles

Table 23: Mono County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Festuca minutiflora	small-flowered fescue	CNPS 2.3	**Absent** Lack of suitable habitat No historical occurrences within 5 miles
Fimbristylis thermalis	Hot Springs fimbristylis	CNPS 2.2	**Absent** Project site is outside the species elevation range
Glyceria grandis	American manna grass	CNPS 2.3	**High** Suitable habitat present Occurrence within less than 0.1 mile
Helodium blandowii	Blandow's bog moss	CNPS 2.3, FSS	**High** Suitable habitat present Occurrence within 3 miles
Hulsea vestita ssp. *inyoensis*	Inyo hulsea	CNPS 2.2, INF Watch list	**High** Suitable habitat present Occurrence within 4 miles
Hymenopappus filifolius var. *nanus*	little cutleaf	CNPS 2.3	**High** Suitable habitat present Occurrence within 3 miles
Ivesia kingii var. *kingii*	alkali ivesia	CNPS 2.2, BLMS, INF Watch list	**High** Suitable habitat present Occurrence within less than 1 mile
Kobresia (*bellardii*) *myosuroides*	seep kobresia	CNPS 2.3, INF Watch list	**High** Suitable habitat present Occurrence within 5 miles
Lupinus duranii	Mono Lake lupine	CNPS 1B.2, FSS, BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Mentzelia torreyi	Torrey's blazing star	CNPS 2.2	**High** Suitable habitat present Occurrence within less than 0.1 mile
Micromonolepis pusilla	dwarf monolepis	CNPS 2.3	**Absent** Lack of suitable habitat No historical occurrences within 5 miles
Mimulus glabratus ssp. *utahensis*	Utah monkeyflower	CNPS 2.1	**High** Suitable habitat present Occurrence within less than 1 mile
Orthotrichum shevockii	Shevock's bristle moss	CNPS 1B.3, BLMS	**High** Suitable habitat present Occurrence within less than 0.1 mile

Table 23: Mono County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Orthotrichum spjutii	Spjut's bristle moss	CNPS 1B.3, FSS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Parnassia parviflora	small-flowered grass-of-Parnassus	CNPS 2.2	**High** Suitable habitat present Occurrence within less than 0.1 mile
Pedicularis crenulata	scalloped-leaved lousewort	CNPS 2.2	**High** Suitable habitat present Occurrence within less than 0.1 mile
Phacelia gymnoclada	naked-stemmed phacelia	CNPS 2.3	**High** Suitable habitat present Occurrence within 3 miles
Phacelia inyoensis	Inyo phacelia	CNPS 1B.2, FSS	**High** Suitable habitat present Occurrence within 2 miles
Phacelia monoensis	Mono County phacelia	CNPS 1B.1, FSS, BLMS	**High** Suitable habitat present Occurrence within 5 miles
Plagiobothrys parishii	Parish's popcorn-flower	CNPS 1B.1	**High** Suitable habitat present Occurrence less than 0.1 mile
Poa lettermanii	Letterman's blue grass	CNPS 2.3	**Absent** Lack of suitable habitat No historical occurrences within 5 miles
Polygala intermontana	intermountain milkwort	CNPS 2.3, INF Watch list	**High** Suitable habitat present Occurrence less than 5 miles
Polygala subspinosa	spiny milkwort	CNPS 2.2	**High** Suitable habitat present Occurrence less than 5 miles
Potamogeton filiformis	slender-leaved pondweed	CNPS 2.2	**High** Suitable habitat present Occurrence less than 0.1 mile
Ranunculus hydrocharoides	frog's-bit buttercup	CNPS 2.1, INF Watch list	**High** Suitable habitat present Occurrence within 1 mile
Salix brachycarpa ssp. *brachycarpa*	short-fruited willow	CNPS 2.3, INF Watch list	**High** Suitable habitat present Occurrence within 4 miles
Salix nivalis	snow willow	CNPS 2.3, INF Watch list	**Absent** Lack of suitable habitat Project site is outside the species elevation range

Table 23: Mono County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Senecio pattersonensis	Mount Patterson senecio	CNPS 1B.3, FSS	**Moderate** Suitable habitat present No historical occurrence within 5 miles
Sidalcea multifida	cut-leaf checkerbloom	CNPS 2.3	**High** Suitable habitat present Occurrence within 2 miles
Silene oregana	Oregon campion	CNPS 2.3	**Moderate** Suitable habitat present No historical occurrence within 5 miles
Sphaeromeria potentilloides var. *nitrophila*	alkali tansy-sage	CNPS 2.2	**High** Suitable habitat present Occurrence within 0.1 mile
Sphenopholis obtusata	prairie wedge grass	CNPS 2.2	**Moderate** Suitable habitat present No historical occurrence within 5 miles
Streptanthus oliganthus	Masonic Mountain jewel-flower	CNPS 1B.2, FSS, BLMS	**High** Suitable habitat present Occurrence within 0.4 mile
Thelypodium integrifolium ssp. *complanatum*	foxtail thelypodium	CNPS 2.2	**High** Suitable habitat present Occurrence within 0.3 mile
Thelypodium milleflorum	many-flowered thelypodium	CNPS 2.2	**Moderate** Suitable habitat present No historical occurrence within 5 miles
Townsendia condensata	cushion townsendia	CNPS 2.3, INF Watch list	**Low** Minimal suitable habitat present No historical occurrence within 5 miles
Townsendia leptotes	slender townsendia	CNPS 2.3	**Absent** Lack of suitable habitat No historical occurrences within 5 miles
Trichophorum pumilum	little bulrush	CNPS 2.2	**High** Suitable habitat present Occurrence within 4 miles
Viola aurea	golden violet	CNPS 2.2	**Low** Minimal suitable habitat present No historical occurrences within 5 miles

According to the literature review, Mono County has 32 special status wildlife species that have been reported to occur within the vicinity of the Proposed Project route. Of these 32 species, 10 are federal- and/or state-listed Endangered or Threatened, and include; Swainson's hawk (*Buteo swainsoni*), Owens pupfish (*Cyprinodon radiosus*), willow flycatcher (*Empidonax traillii and E. traillii adastus and E. traillii brewsteri*), Owens tui chub (*Gila bicolor snyderi*), California wolverine (*Gulo gulo*), bald eagle (*Haliaeetus leucocephalus*), Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), bank swallow (*Riparia riparia*), great gray owl (*Strix nebulosa*), and Sierra Nevada red fox (*Vulpes vulpes necator*). An additional 18 species are listed as Sensitive by the BLM or FS , and include; northern goshawk (*Accipiter gentilis),* pallid bat, golden eagle (*Aquila chrysaetos*), pygmy rabbit (*Brachylagus idahoensis*), greater sage-grouse (*Centrocerus urophasianus*), Townsend's big-eared bat, spotted bat, western mastiff bat (*Eumops perotis californicus*), Pacific fisher (*Martes pennanti (pacifica)* DPS), Owens valley vole, western small-footed myotis, long-eared myotis (*Myotis evotis*), fringed myotis (*Myotis thysanodes*), Yuma myotis, Nelson's bighorn sheep (*Ovis canadensis nelsoni*), and Owens speckled dace (*Rhinichthys osculus* ssp. 2)., Wong's springsnail (*Pyrgulopsis wongi)* and Owens Valley springsnail (*P. owensensis*).. Mule deer (*Odocoileus hemionus)* are a Species of Concern in Mono County. A complete list of these special status species and their potential to occur on the Proposed Project route are provided in Table 24. Special status wildlife species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table 24: Mono County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Accipiter gentilis	northern goshawk	CSC, BLMS, FSS	**High** Suitable habitat present Occurrence within 1 mile
Anaxyrus canorus	Yosemite toad	FC, CSC, FSS	**Moderate** Suitable habitat present No reported occurrences
Antrozous pallidus	pallid bat	CSC, FSS, BLMS	**High** Suitable habitat present Occurrence within 1 mile
Aplodontia rufa californica	Mono Basin mountain beaver	CSC	**High** Suitable habitat present Occurrence within less than 0.1 mile
Aquila chrysaetos	golden eagle	BLMS	**Present** Observed during surveys
Brachylagus idahoensis	Pygmy rabbit	CSC, BLMS, FSS	**High** Suitable habitat present Occurrence within 1 mile
Buteo swainsoni	Swainson's hawk	**ST**, FSS, BLMS	**High** Suitable habitat present Occurrence within 2 miles
Catostomus fumeiventris	Owens sucker	CSC	**High** Suitable habitat present Occurrence within 1 mile
Centrocercus urophasianus	greater sage-grouse	CSC, FSS, BLMS, FC	**High** Suitable habitat present Occurrence within 2 miles

Table 24: Mono County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Circus cyaneus	northern harrier	CSC	**High** Suitable habitat present Occurrence within 1 mile
Corynorhinus townsendii	Townsend's big-eared bat	CSC, FSS, BLMS	**High** Suitable habitat present Occurrence within 2 miles
Cyprinodon radiosus	Owens pupfish	**FE**, **SE**, BLMS	**Moderate** Minimal suitable habitat present Occurrence within 3 miles
Dendroica petechia brewsteri	yellow warbler	CSC,	**High** Suitable habitat present Occurrence within 1 mile
Empidonax traillii	willow flycatcher	**SE**, FSS	**High** Suitable habitat present Occurrence within 1 mile
Empidonax trailii brewsterii and adastus	willow flycatcher	**FSS**	**High** Suitable habitat present
Euderma maculatum	spotted bat	CSC, BLMS, FSS	**High** Suitable habitat present Occurrence within 1 mile
Eumops perotis californicus	western mastiff bat	CSC, BLMS	**High** Suitable habitat present Occurrence within 1 mile
Falco peregrinus	peregrine falcon	FD, SD, SFP	**Moderate** Suitable habitat present No reported occurrences
Gila bicolor snyderi	Owens tui chub	**FE**, **SE**	**High** Suitable habitat present Occurrence within 1 mile
Gulo gulo	California wolverine	**ST**, FSS	**High** Suitable habitat present Occurrence within less than 0.1 mile
Haliaeetus leucocephalus	bald eagle	FD, **SE**, FSS, BLMS	**High** Suitable habitat present Occurrence within 1 mile
Hydromantes platycephalus	Mount Lyell salamander	CSC	**Absent** No suitable habitat present
Lepus townsendii townsendii	western white-tailed jackrabbit	CSC	**High** Suitable habitat present Occurrence within 1 mile
Lithobates pipiens	northern leopard frog	CSC, FSS	**Moderate** Suitable habitat present No reported occurrences

Table 24: Mono County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Martes pennanti (pacifica) DPS	Pacific fisher	FC, CSC, FSS, BLMS	**High** Suitable habitat present Occurrence within 1 mile
Microtus californicus vallicola	Owens Valley vole	CSC, BLMS	**High** Suitable habitat present Occurrence within 1 mile
Myotis ciliolabrum	western small-footed myotis	BLMS	**High** Suitable habitat present Occurrence within 1 mile
Myotis evotis	long-eared myotis	BLMS	**High** Suitable habitat present Occurrence within 1 mile
Myotis thysanodes	fringed myotis	BLMS, FSS	**High** Suitable habitat present Occurrence within 2 miles
Myotis yumanensis	Yuma myotis	BLMS	**High** Suitable habitat present Occurrence within 1 mile
Odocoileus hemionus	mule deer	Mono County Species of Concern	**Present** Observed during surveys
Oncorhynchus clarkii henshawi	Lahontan cutthroat trout	**FT**	**High** Suitable habitat present Occurrence within 2 miles
Oreorytx pictus	mountain quail	FSS*, BLMS*	**Moderate** Suitable habitat present No reported occurrences
Otus flammeolus	flammulated owl	FSS*, BLMS*	**Moderate** Suitable habitat present No reported occurrences
Ovis canadensis nelsoni	Nelson's bighorn sheep	FSS, BLMS	**Moderate** Suitable habitat present No reported occurrences
Ovis canadensis sierrae	Sierra Nevada bighorn sheep	**FE**, **SE**, BLMS	**Moderate** Suitable habitat present No reported occurrences
Picoides albolarvatus	white-headed woodpecker	FSS*	**Moderate** Suitable habitat present No reported occurrences
Pyrgulopsis owensensis	Owens Valley springsnail	FSS	**Moderate** Minimal suitable habitat present Occurrence within 3 miles
Pyrgulopsis wongi	Wong's springsnail	FSC, FSS	**High** Suitable habitat present Occurrence within less than 0.1 mile

Table 24: Mono County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Rana sierrae	Sierra Nevada yellow-legged frog	FC, CSC, FSS	**High** Suitable habitat present Occurrence within 1 mile
Rhinichthys osculus ssp. 2	Owens speckled dace	CSC, BLMS	**High** Suitable habitat present Occurrence within 1 mile
Riparia riparia	bank swallow	**ST,** BLMS	**High** Suitable habitat present Occurrence within 3 miles
Sorex lyelli	Mount Lyell shrew	CSC	**High** Suitable habitat present Occurrence within 1 mile
Strix nebulosa	great gray owl	**SE**, FSS	**High** Suitable habitat present Occurrence within 1 mile
Strix occidentalis ssp. occidentalis	California spotted owl	CSC, FSS	**Moderate** Suitable habitat present No reported occurrences
Taxidea taxus	American badger	CSC	**High** Suitable habitat present Occurrence within less than 0.1 mile
Vulpes vulpes necator	Sierra Nevada red fox	**ST, FSS**	**High** Suitable habitat present Occurrence within less than 0.1 mile
Xanthocephalus xanthocephalus	yellow-headed blackbird	CSC	**High** Suitable habitat present Occurrence within 1 mile

3.6.3.2 Nevada

The following information is a list of abbreviations used to help determine the significance of biological resources potentially occurring in the Survey Area within Nevada.

Federal

FE = Federally listed; Endangered

FT = Federally listed; Threatened

FC = Federal Candidate for listing

FSC = Federal Species of Special Concern

FUR = Federal Under Review

FSS = Forest Service Sensitive

BLMS = Bureau of Land Management Sensitive

State (Nevada)

SE = State listed; Endangered

ST = State listed; Threatened

SCE = State Critically Endangered

SFP = State Fully Protected

NSC = Nevada State Species of Special Concern

SC = State Candidate

SHR = State Harvest Regulated

Northern Nevada Native Plant Society (NNNPS)

-E = Endangered, believed to meet the ESA definition of Endangered.

-T = Threatened, believed to meet the ESA definition of Threatened.

-W = Watch-list species, potentially vulnerable to becoming Threatened or Endangered.

Nevada Natural Heritage Program (NNHP)

G = Global rank indicator, based on worldwide distribution at the species level.

T = Global trinomial rank indicator, based on worldwide distribution at the infraspecific level.

S = State rank indicator, based on distribution within the state at the lowest taxonomic level.

NNHP Extensions

1 = Critically imperiled due to extreme rarity, imminent threats, or biological factors.

2 = Imperiled due to rarity and/or other demonstrable factors.

3 = Rare and local throughout its range, or with very restricted range, or otherwise vulnerable to extinction.

4 = Apparently secure, though frequently quite rare in parts of its range, especially at its periphery.

5 = Demonstrably secure, though frequently quite rare in parts of its range, especially at its periphery.

= (Example: G2G4) Range of uncertainty in a numeric rank.

A = Accidental (casual or stray) within the state, usually far outside its normal range, seen infrequently or irregularly.

H = Historical occurrence(s) only, presumed still extant and could be rediscovered.

P = Potential in the state, but not yet reported or documented.

R = Reported from the state, awaiting firm documentation.

U = Unrankable; present and possibly in peril, but not enough data yet to estimate rank.

X = Extirpated from the state (SX) or extinct (GX or TX).

Z = Zero definable occurrences in the state, and therefore not of practical conservation concern, although native and regularly found there (usually long-distance migrants without regular and repeating breeding sites).

? = Not yet ranked at the scale indicated (G, T, or S).

NNHP Sub-extensions

B = Breeding status within the state; rank for breeding occurrences only.

C = Only in Captivity or Cultivation with the state.

N = Non-breeding status within the state; rank for non-breeding occurrences only.

Q = Taxonomic status Questionable or uncertain.

? = Assigned rank inexact or uncertain.

<u>Douglas County</u>

According to the literature review, Douglas County has 12 special status plant species that have been reported to occur within the vicinity of the Proposed Project route. None of these 12 plant species are federal-listed as Endangered; however, one species, Webber ivesia (*Ivesia webberi)* is listed as Critically Endangered by the State of Nevada. Four additional species are listed as Sensitive by BLM, and include; Lavin milk-vetch (*Astragalus oophorus* var. *lavinii*), Bodie Hills draba (*Cusickiella quadricostata*), Pine Nut Mountains ivesia (*Ivesia pityocharis*), and Williams combleaf (*Polyctenium williamsiae*). Pine Nut Mountains ivesia is assumed absent because the Proposed Project route is outside its elevation range. The potential for Bodie Hills draba to occur on the Proposed Project site is low because of minimal suitable habitat and no known occurrences in the Proposed Project vicinity. In addition, three USFS sensitive species have historically occurred in the vicinity of the Proposed Project ROW. These species are Washoe tall rockcress (*Arabis rectissima* var. *simulans)*, Tahoe draba (*Draba asterophora* var. *asterophora*), and Wassuk beardtongue (*Penstemon rubicundus*). Tahoe draba is presemed absent

because the Proposed Project is outside its elevation range. Washoe tall rockcress is presumed absent because of a lack of suitable habitat. A complete list of the special status plant species and their potential to occur on the Proposed Project ROW are provided in Table 25. Special status plant species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table 25: Douglas County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Arabis rectissima var. *simulans*	Washoe tall rockcress	NNNPS-T, NNHP G4G5T1QS1, FSS	**Absent** Lack of suitable habitat
Astragalus convallarius var. *margaretiae*	Margaret rushy milkvetch	NNHP G5T2S2	**High** Suitable habitat present Known occurrences within Project vicinity
Astragalus oophorus var. *lavinii*	Lavin milk-vetch	FSC, NNNPS-W, NNHP G4T2S2, BLMS, FSS	**High** Suitable habitat present Known occurrences within Project vicinity
Cusickiella quadricostata	Bodie Hills draba	NNNPS-W, NNHP G2S2, FSS, BLMS	**Low** Minimal suitable habitat present No known occurrences within Project vicinity
Draba asterophora var. *asterophora*	Tahoe draba	NNNPS-W, NNHP G4 T2S1, FSS	**Absent** Project site outside species elevation range
Ivesia pityocharis	Pine Nut Mountains ivesia	FSC, NNNPS-W, NNHP G2 S2, BLMS	**Assumed Absent** Project site outside species elevation range
Ivesia webberi	Webber ivesia	FC, **SCE,** NNNPS-T, NNHP G2S1, FSS, BLMS, FSS	**Moderate** Minimal suitable habitat present Known occurrences within Project vicinity
Mimulus ovatus	Steamboat monkeyflower	NNNPS-T, NNHP G1G3QS1S3	**Assumed Absent** Lack of suitable habitat
Opuntia pulchella (Grusonia pulchella)	sand cholla	SHR, NNHP G4S2S3	**Absent** Lack of suitable habitat
Penstemon rubicundus	Wassuk beardtongue	NNHP G2G3S2S3, FSS	**Moderate** Minimal suitable habitat present Known occurrences within Project vicinity
Polyctenium williamsiae	Williams combleaf	**SCE**, FSS, NNNPS-T, NNHP G2QS2, BLMS	**Moderate** Minimal suitable habitat present Known occurrences within Project vicinity

Table 25: Douglas County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Rorippa subumbellata	Tahoe yellowcress	FC, **SCE**, FSS, NNNPS-T, NNHP G2S1	**Absent** Lack of suitable habitat

According to the literature review, Douglas County has 26 special status wildlife species that have been reported to occur within the vicinity of the Proposed Project route. Two of these species, Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), and mountain yellow-legged frog (*Rana muscosa*), are federal- and/or state-listed Endangered or Threatened. Both of these species are assumed absent because of a lack of suitable habitat in the Proposed Project ROW. An additional 18 species are BLM sensitive species , and include; western burrowing owl (*Athene cunicularia hypugaea)*, ferruginous hawk (*Buteo regalis*), Swainson's hawk, greater sage-grouse, Carson Valley wood nymph (*Ceryonis pegala carsonensis*), Sierra alligator lizard (*Elgaria coerulea palmeri*), spotted bat, Mono checkerspot (*Euhydras editha monoensis*), peregrine falcon (*Falco peregrines*), river otter (*Lontra canadensis*), California myotis (*Myotis californicus*), western small-footed myotis, little brown myotis (*Myotis lucifugus*), fringed myotis, mountain quail (*Oreortyx pictus*), flammulated owl (*Otus flammeolus),* Wongs pyrg (*Pyrgulopsis wongi*), and Carson Valley silverspot (*Speyeria nokomis carsonensis*). Sierra alligator lizard, river otter, and flammulated owl are assumed absent because of a lack of suitable habitat. Carson Valley wood nymph, spotted bat, Mono checkerspot, California myotis, western small-footed myotis, and mountain quail have a low potential to occur because of minimal habitat. A complete list of the special status species and their potential to occur is provided in Table 26. Special status wildlife species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table 26: Douglas County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Athene cunicularia hypugaea	western burrowing owl	SFP, NNHP G4TUS3B, BLMS	**High** Suitable habitat present Known historic occurrences within Project vicinity
Buteo regalis	ferruginous hawk	SFP, NNHP G4S2, FSS, BLMS	**High** Suitable habitat present Known historic occurrences within Project vicinity
Buteo swainsoni	Swainson's hawk	SFP, NNHP G4 S3B, FSS, BLMS	**High** Suitable habitat present Known historic occurrences within Project vicinity

Table 26: Douglas County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Capnia lacustra	Tahoe benthic stonefly	FSC, NNHP G1S1	**Absent** Lack of suitable habitat
Centrocercus urophasianus	greater sage-grouse	FC, SFP, NNHP G4S3S4B, FSS, BLMS	**High** Suitable habitat present Known historic occurrences within Project vicinity
Cercyonis pegala carsonensis	Carson Valley wood nymph	FUR, NNHP G5T2S2, BLMS	**Low** Minimal disturbed suitable habitat No known occurrences within Project vicinity
Elgaria coerulea palmeri	Sierra alligator lizard	SFP, NNHP G5T4S2S3, BLMS	**Absent** Lack of suitable habitat
Euderma maculatum	spotted bat	SFP, NNHP G4S2, FSS, BLMS	**Low** Minimal disturbed suitable habitat Known occurrence within 3 miles
Euphydryas editha monoensis	Mono checkerspot	FSC, NNHP G5T2T3S1, BLMS	**Low** Minimal disturbed suitable habitat No known occurrences within Project vicinity
Falco peregrines	peregrine falcon	SFP, NNHP G4S2, BLMS	**Moderate** Suitable habitat present No known occurrences within Project vicinity
Formica microphthalma	Northern Sierra endemic ant	NNHP G2?S1	**Absent** Lack of suitable habitat
Lontra canadensis	river otter	SFP, NNHP G5TNRQS2, FSS, BLMS	**Absent** Lack of suitable habitat Known occurrence within 3 miles
Martes californicus	American marten	SFP, NNHP G5S2S3	**Absent** Lack of suitable habitat
Myotis californicus	California myotis	FSC, NNHP G5S3B, BLMS	**Low** Minimal disturbed suitable habitat No known occurrences within Project vicinity
Myotis ciliolabrum	western small-footed myotis	NNHP G5S3B, BLMS	**Low** Minimal disturbed suitable habitat No known occurrences within Project vicinity

Table 26: Douglas County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Myotis lucifugus	little brown myotis	NNHP G5S1S2, BLMS	**Moderate** Suitable habitat present No known occurrences within Project vicinity
Myotis thysanodes	fringed myotis	SFP, NNHP G4G5S2, FSS, BLMS	**Moderate** Suitable habitat present No known occurrences within Project vicinity
Oncorhynchus clarkii henshawi	Lahontan cutthroat trout	**FT**, SFP, NNHP G4T1S1, FSS	**Assumed Absent** Lack of suitable habitat Known occurrence within 3 miles
Oreortyx pictus	mountain quail	SFP, NNHP G5S3, FSS, BLMS	**Low** Minimal disturbed suitable habitat No known occurrences within Project vicinity
Otus flammeolus	flammulated owl	SFP, NNHP G4S4?B, FSS, BLMS	**Absent** Lack of suitable habitat
Polites sabuleti genoa	Carson Valley sandhill skipper	NNHP G5T3T4S1	**High** Suitable habitat present Known historic occurrences within Project vicinity
Pyrgulopsis longiglans	Western Lahontan springsnail	NNHP G2G3S2S3	**High** Suitable habitat present onsite Known historic occurrences within Project vicinity
Pyrgulopsis wongi	Wongs pyrg	FSC, NNHP G1G2S1, FSS, BLMS	**High** Suitable habitat present Known historic occurrences within Project vicinity
Rana muscosa	mountain yellow-legged frog	**FE**, FC, NNHP G2G3SH, FSS	**Absent** Lack of suitable habitat
Speyeria nokomis apacheana	Apache silverspot butterfly	NNHP G3T2S2	**High** Suitable habitat present Known historic occurrences within Project vicinity

Table 26: Douglas County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Speyeria nokomis carsonensis	Carson Valley silverspot	FUR, NNHP G3T1S1, BLMS	**High** Suitable habitat present Known historic occurrences within Project vicinity

Carson City

According to the literature review, Carson City has six special status plant species that have been reported to have occurred within the vicinity of the Proposed Project ROW. No plant species are federal- or state-listed. Records exist for Washoe tall rockcress (*Arabis rectissima* var. *simulans),* a USFS Sensitive species, but it is presumed absent because of a lack of suitable habitat on the Proposed Project route. A complete list of special status plant species and their potential to occur on the Proposed Project site is provided in Table27. Special status plant species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table27: Carson City Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Arabis rectissima var. *simulans*	Washoe tall rockcress	NNNPS-T, NNHP G4G5T1QS1, FSS	**Assumed Absent** Lack of suitable habitat
Astragalus convallarius var. *margaretiae*	Margaret rushy milkvetch	NNHP G5T2S2	**Moderate** Suitable habitat present Known occurrences within Project vicinity
Mimulus ovatus	Steamboat monkeyflower	SR, NNPS-T, NNHP G1G3QS1S3	**High** Minimal suitable habitat present Known occurrences within Project vicinity
Rorippa subumbellata	Tahoe yellowcress	FC, **SCE**, NNNPS-T, NNHP G2S1, FSS	**Absent** Lack of suitable habitat
Silene nuda ssp. *nuda*	Naked catchfly	NNNPS-W, NNHP G4G5T1T2QS1S2	**Absent** Lack of suitable habitat

According to the literature review, Carson City has 26 special status wildlife species that have been documented to have occurred within the vicinity of the Proposed Project ROW. Of these 26 species, 3 are federal- and/or state-listed Endangered or Threatened, and these include; Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), Carson wandering skipper (*Pseudocopaeodes eunus obscures*), and mountain yellow-legged frog (*Rana muscosa*). The Lahontan cutthroat trout and mountain yellow-

legged frog are assumed absent because no suitable habitat exists on the Proposed Project ROW. Eighteen BLM Sensitive species have been reported in the vicinity of the Proposed Project ROW. These are western burrowing owl, ferruginous hawk, Swainson's hawk, greater sage-grouse, Carson Valley wood nymph, black tern (*Chilidonias niger*), Townsend's big-eared bat, Sierra alligator lizard, spotted bat, Mono checkerspot, river otter, California myotis, western small-footed myotis, little brown myotis, fringed myotis, mountain quail, flammulated owl, and Carson Valley silverspot. Of these 18 species, 11 are either absent or have a low potential to occur because of poor habitat or lack of habitat. The 11 species presumed to be absent or have a low potential for occurrence include; ferruginous hawk, Swainson's hawk, greater sage-grouse, Carson Valley wood nymph, spotted bat, Mono checkerspot, river otter, western small-footed myotis, mountain quail, flammulated owl, and Carson Valley silverspot. Three additional species on the USFS Sensitive species list are assumed absent because of a lack of suitable habitat. These species are northern goshawk (*Accipiter gentilis*), common loon (*Gavia immer*), and California spotted owl (S*trix occidentalis occidentalis).* A complete list of these special status species and their potential to occur on the Proposed Project ROW is provided in Table 27. Special status wildlife species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table 27: Carson City Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Accipiter gentilis	northern goshawk	SFP, NNHP G5S2, BLMS, FSS	**Absent** Lack of suitable nesting habitat
Aplodontia rufa californica	Mono Basin mountain beaver	SFP, NNHP G5T3T4S1	**Low** Minimal disturbed suitable habitat Known occurrence within Project vicinity
Athene cunicularia hypugaea	western burrowing owl	SFP, NNHP G4TUS3B, BLMS	**High** Suitable habitat present Known occurrence within Project vicinity
Buteo regalis	ferruginous hawk	SFP, NNHP G4S3, FSS, BLMS	**Low** Minimal disturbed suitable habitat Known occurrence within Project vicinity
Buteo swainsoni	Swainson's hawk	SFP, NNHP G4S3B, FSS, BLMS	**Low** Minimal disturbed suitable habitat Known occurrence within 3 miles
Centrocercus urophasianus	greater sage-grouse	FC, SFP, NNHP G4S3S4B, FSS, BLMS	**Low** Minimal disturbed suitable habitat Known occurrence within Project vicinity

Table 27: Carson City Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Cercyonis pegala carsonensis	Carson Valley wood nymph	FUR, NNHP G5T2S2, BLMS	**Low** Minimal disturbed suitable habitat Known occurrence within Project vicinity
Chlidonias niger	black tern	SFP, NNHP G4S2S3B, FSS, BLMS	**Moderate** Minimal suitable habitat present Known occurrence within Project vicinity
Corynorhinus townsendii	Townsend's big-eared bat	SFP, NNHP G4S3, FSS, BLMS	**High** Suitable habitat present Known occurrence within Project vicinity
Elgaria coerulea palmeri	Sierra alligator lizard	SFP, NNHP G5T4S2S3, BLMS	**Moderate** Minimal suitable habitat present Known occurrence within Project vicinity
Euderma maculatum	spotted bat	SFP, NNHP G4S2, FSS, BLMS	**Low** Minimal disturbed suitable habitat Known occurrence within 3 miles
Euphydryas editha monoensis	Mono checkerspot	FSC, NNHP G5T2T3S1, BLMS	**Low** Minimal disturbed suitable habitat Known occurrence within Project vicinity
Gavia immer	common loon	SFP, NNHP G5S2S3B, FSS	**Absent** Lack of suitable nesting habitat Known occurrence within 3 miles
Lontra canadensis	river otter	SFP, NNHP G5S2, FSS, BLMS	**Absent** Lack of suitable habitat Known occurrence within 3 miles
Martes californicus	American marten	SFP, NNHP G5S2S3	**Assumed Absent** Lack of suitable habitat
Myotis californicus	California myotis	FSC, NNHP G5S3B, BLMS	**Moderate** Minimal suitable habitat present Known occurrence within Project vicinity
Myotis ciliolabrum	western small-footed myotis	NNHP G5S3B, BLMS	**Absent** Lack of suitable habitat

Table 27: Carson City Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Myotis lucifugus	little brown myotis	NNHP G5S1S2, BLMS	**High** Suitable habitat present Known occurrence within Project vicinity
Myotis thysanodes	fringed myotis	SFP, NNHP G4G5S2, FSS, BLMS	**High** Suitable habitat present Known occurrence within Project vicinity
Oncorhynchus clarkii henshawi	Lahontan cutthroat trout	**FT**, SFP, NNHP G4T1S1	**Absent** Lack of suitable habitat Known occurrence within 3 miles
Oreortyx pictus	mountain quail	SFP, NNHP G5S3, FSS, BLMS	**Absent** Lack of suitable habitat
Otus flammeolus	flammulated owl	SFP, NNHP G4S4?B, FSS, BLMS	**Absent** Lack of suitable habitat
Pseudocopaeodes eunus obscures	Carson wandering skipper	**FE**, NNHP G3G4T1S1	**Moderate** Minimal suitable habitat present Known occurrence within Project vicinity
Rana muscosa	mountain yellow-legged frog	**FE**, FC, NNHP G2G3SH, FSS	**Absent** Lack of suitable habitat
Speyeria nokomis carsonensis	Carson Valley silverspot	FUR, NNHP G3T1S1, BLMS	**Low** Minimal disturbed suitable habitat Known occurrence within Project vicinity
Strix occidentalis occidentalis	California spotted owl	SFP, FSS, NNHP G3T3S1N	**Absent** Lack of suitable habitat

Washoe County

According to the literature review, Washoe County has 33 special status plant species that have documented to have occurred within the vicinity of the Proposed Project route. One of these 33 plant species, Steamboat buckwheat *(Eriogonum ovalifolium* var. *williamsiae*), is federal-listed as Endangered. Fifteen species listed as USFS sensitive have historically occurred in the vicinity of the site. Of these, eight are assumed absent or have a low potential to occur. USFS Sensitive species with a moderate to high potential to occur on the Proposed Project ROW are Ram's Horn Spring milkvetch (*Astragalus pulsiferae* var. *corensis*), Pulsifer's milkvetch (*Astragalus* var. *pulsiferae*), altered andesite buckwheat (*Eriogonum robustum*), Webber ivesia, Sierra Valley ivesia (*Ivesia aperta* var. *aperta*), altered andesite popcornflower (*Plagiobothrys glomeratus*), and Williams combleaf (*Polyctenium williamsiae*). A complete list of special status plant species and their potential to occur on the Proposed Project site is provided in Table 28. Special status plant species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table 28: Washoe County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Arabis rectissima var. *simulans*	Washoe tall rockcress	NNNPS-T, NNHP G3T2QS1, FSS	**Absent** Lack of suitable habitat
Arabis rigidissima var. *demote*	Galena Creek rockcress	NNNPS-W, NNHP G3T2QS2, FSS	**Absent** Project site outside species elevation range
Arabis tiehmii	Tiehm rockcress	NNNPS-W, NNHP G2S1, FSS	**Absent** Project site outside species elevation range
Aspicilia fruticulosa	rim lichen	NNHP G3 S1	**Low** Minimal disturbed suitable habitat Known occurrences within Project vicinity
Astragalus lemmonii	Lemmon milkvetch	NNNPS-W, NNHP G3? S1, FSS	**Absent** Project site outside species elevation range
Astragalus porrectus	Lahontan milkvetch	NNHP G3? S3?	**High** Suitable habitat present Known occurrences within Project vicinity
Astragalus pulsiferae var. *coronensis*	Ram's Horn Spring milkvetch	NNNPS-W, NNHP G4 T2 S1, FSS	**High** Suitable habitat present Known occurrences within Project vicinity
Astragalus pulsiferae var. *pulsiferae*	Pulsifer's milkvetch	NNNPS-W, NNHP G4 T2 S1, FSS	**High** Suitable habitat present Known occurrences within Project vicinity
Astragalus tiehmii	Tiehm's milkvetch	NNNPS-W, NNHP G4 T2 S1, BLMS, FSS	**Low** Minimal disturbed suitable habitat Known occurrences within Project vicinity
Cryptantha schoolcraftii	Schoolcraft catseye	NNNPS-W, NNHP G3Q S3, BLMS	**Low** Minimal disturbed suitable habitat Known occurrences within Project vicinity
Draba asterophora var. *asterophora*	Tahoe draba	NNNPS-W, NNHP G4 T2 S1, FSS	**Absent** Project site outside species elevation range

Table 28: Washoe County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Eriogonum crosbyae	Crosby buckwheat	NNNPS-W, NNHP G3 S3, BLMS	**Low** Minimal disturbed suitable habitat Known occurrences within Project vicinity
Eriogonum lemmonii	Lemmon buckwheat	NNHP G3? S3?	**High** Suitable habitat present Known occurrences within Project vicinity
Eriogonum microthecum var. (unnamed)	Schoolcraft wild buckwheat	NNHP G5 T2 S1	**High** Suitable habitat present Known occurrences within Project vicinity
Eriogonum ovalifolium var. *williamsiae*	Steamboat buckwheat	**FE**, SFP, NNNPS-E, NNHP G5 T1 S1	**High** Suitable habitat present Known occurrences within Project vicinity
Eriogonum procidum	prostrate buckwheat	NNNPS-W, NNHP G3 S1	**Absent** Project site outside species elevation range
Eriogonum robustum	altered andesite buckwheat	FSC, NNNPS-W, NNHP G2G3Q S2S3, BLMS, FSS	**High** Suitable habitat present Known occurrences within Project vicinity
Ivesia aperta var. *aperta*	Sierra Valley ivesia	FSC, NNNPS-T, NNHP G2 T2 S1, FSS, BLMS	**Absent** Project site outside species elevation range
Ivesia webberi	Webber ivesia	FSC, **SR**, NNNPS-T, NNHP G2 S1, FSS, BLMS	**Moderate** Minimal suitable habitat present Known occurrences within Project vicinity
Lomatium packardiae	Succor Creek parsley	NNNPS-W, NNHP G2? S1?	**High** Suitable habitat present Known occurrences within Project vicinity
Lomatium roseanum	adobe parsley	NNNPS-W, NNHP G2G3 S2S3	**Absent** Lack of suitable habitat
Meesia triquetra	three-ranked humpmoss	NNHP G5 S1, FSS	**Absent** Project site outside species elevation range
Mimulus ovatus	Steamboat monkeyflower	NNNPS-T, NNHP G1G3Q S1S3	**High** Suitable habitat present Known occurrences within Project vicinity
Oryctes nevadensis	oryctes	FSC, NNHP G2G3 S2S3, BLMS	**Absent** Lack of suitable habitat

Table 28: Washoe County Special Status Plant Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Opuntia pulchella	sand cholla	SHR, NNHP G4 S2S3	**Low** Minimal disturbed habitat present Known occurrences within Project vicinity
Phacelia inundata	playa phacelia	NNNPS-W, FSS, NNHP G2 S2, BLMS	**Moderate** Minimal suitable habitat present Known occurrences within Project vicinity
Pinus washoensis	Washoe pine	SHR, NNNPS-W, NNHP G3Q S1, BLMS	**Absent** Project site outside species elevation range
Plagiobothrys glomeratus	altered andesite popcornflower	NNNPS-W, NNHP G2G3 S2S3, BLMS, FSS	**High** Suitable habitat present Known occurrences within Project vicinity
Polyctenium williamsiae	Williams combleaf	FSC, SFP, NNNPS-T, NNHP G2Q S2, FSS	**Moderate** Minimal suitable habitat present Known occurrences within Project vicinity
Rorippa subumbellata	Tahoe yellowcress	FC, SFP, NNNPS-T, NNHP G2 S1S2, FSS, BLMS	**Absent** Lack of suitable habitat
Silene nuda ssp. *nuda*	naked catchfly	NNNPS-W, NNHP G4G5 T1T2Q S1S2	**Absent** Lack of suitable habitat

According to the literature review, Washoe County has 51 special status wildlife species that have historically occurred within the vicinity of the Proposed Project route. Of these 51 species, seven are federal- and/or state-listed Endangered or Threatened, and include; pygmy rabbit *(Brachylagus idahoensis*), Warner sucker (*Catostomus warnerensis*), western snowy plover (*Charadrius alexandrinus nivosus*), cui-ui (*Chasmistes cujus*), Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), Carson wandering skipper (*Pseudocopaeodes eunus obscures*), and mountain yellow-legged frog (*Rana muscosa*). Four of the listed species – Warner sucker, western snowy plover, cui-ui, and Lahontan cutthroat trout – are presumed absent because of a lack of suitable habitat. An additional 17 species that are documented to have occurred in the Proposed Project vicinity are listed as USFS Sensitive. USFS Sensitive species with moderate to high potential to occur on the Proposed Project ROW are northern goshawk, California floater, ferruginous hawk, Swainson's hawk, greater sage-grouse, black tern, western yellow-billed cuckoo, Townsend's big-eared bat, spotted bat, western red bat, mountain quail, flammulated owl, white-headed woodpecker (*Picoides albolarvatus),* great grey owl, and California spotted owl. Common loon and Warner Valley redband trout (*Oncorhynchus mykiss pop*) are assumed absent because of a lack of suitable habitat. A list of these special status species and their potential to occur is provided in Table 29. Special status wildlife species descriptions can be found in Appendix I (Biological Resources Descriptions).

Table 29: Washoe County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Accipiter gentilis	northern goshawk	SFP, BLMS, FSS, NNHP G5S3	**Moderate** Minimal suitable habitat Known occurrence within Project vicinity
Anodonta californiensis	California floater	FSS, BLMS, NNHP G3S1	**Moderate** Minimal suitable habitat Known occurrence within Project vicinity
Aplodontia rufa californica	Mono Basin mountain beaver	SFP, NNHP G5T3T4S1	**Moderate** Minimal suitable habitat Known occurrence within Project vicinity
Athene cunicularia hypugaea	western burrowing owl	SFP, BLMS, NNHP G4TUS3B	**Moderate** Minimal suitable habitat Known occurrence within the vicinity of the project site
Brachylagus idahoensis	pygmy rabbit	**FE**, SFP, FSS, BLMS, NNHP G4S3	**High** Suitable habitat present Known occurrence within Project vicinity
Buteo regalis	ferruginous hawk	SFP, FSS, BLMS, NNHP G4S3	**High** Suitable habitat present Known occurrence within Project vicinity
Buteo swainsoni	Swainson's hawk	SFP, FSS, BLMS, NNHP G4S3B	**High** Suitable habitat present Known occurrence within Project vicinity
Catostomus sp. (unnamed)	Wall Canyon sucker	SFP, NNHP G1S1, BLMS	**Absent** Lack of suitable habitat
Catostomus warnerensis	Warner sucker	**FT**, SFP, NNHP G1S1	**Absent** Lack of suitable habitat
Centrocercus urophasianus	greater sage-grouse	FC, SFP, FSS, BLMS, NNHP G4S3S4B	**High** Suitable habitat present Known occurrence within Project vicinity
Charadrius alexandrinus nivosus	western snowy plover	**FT**, SFP, FSS, BLMS, NNHP G4T3S1B	**Absent** Lack of suitable habitat
Chasmistes cujus	cui-ui	**FE**, SFP, NNHP G1S1	**Absent** Lack of suitable habitat
Chlidonias niger	black tern	SFP, FSS, BLMS, NNHP G4S2S3B	**Moderate** Minimal suitable habitat present Known occurrence within Project vicinity

Table 29: Washoe County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Coccyzus americanus occidentalis	western yellow-billed cuckoo	FSC, SFP, FSS, NNHP G5T3S1B	**Moderate** Minimal suitable habitat present Known occurrence within Project vicinity
Corynorhinus townsendii	Townsend's big-eared bat	SFP, FSS, BLMS, NNHP G4S3	**High** Suitable habitat present Known occurrence within Project vicinity
Elgaria coerulea palmeri	Sierra alligator lizard	SFP, BLMS, NNHP G5T4S2S3	**Moderate** Minimal suitable habitat present Known occurrence within Project vicinity
Euderma maculatum	spotted bat	SFP, FSS, BLMS, NNHP G4S2	**High** Suitable habitat present Known occurrence within Project vicinity
Euphilotes enoptes aridorum	Peavine blue	NNHP G5T1S1	**Moderate** Minimal suitable habitat present Known occurrence within Project vicinity
Euphydryas editha monoensis	Mono checkerspot	FSC, BLMS, NNHP G5T2T3S1	**Moderate** Minimal suitable habitat present Known occurrence within Project vicinity
Fluminicola dalli	Pyramid Lake pebblesnail	NNHP G1SNR	**Absent** Lack of suitable habitat
Fluminicola virginius	Virginia Mountains pebblesnail	NNHP G1S1	**Absent** Lack of suitable habitat
Formica microphthalma	Northern Sierra endemic ant	NNHP G2?S1	**Absent** Lack of suitable habitat
Gavia immer	common loon	SFP, FSS, NNHP G5S2S3B	**Absent** Lack of suitable nesting habitat
Gila bicolor eurysoma	Sheldon tui chub	FSC, SFP, NNHP G4T1S1	**Absent** Lack of suitable habitat
Gila bicolor vaccaceps	Cowhead Lake tui chub	NNHP G4T1S1	**Absent** Lack of suitable habitat
Juga interioris	smooth juga	NNHP G1S1	**Low** Known occurrence in this county [Based solely on NNHP Occurrence status (OCC) info]

Table 29: Washoe County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Juga laurae	Oasis juga	NNHP G1S1	**Low** Known occurrence in this county [Based solely on NNHP Occurrence status (OCC) info]
Lasiurus blossevillii	western red bat	FSC, SFP, FSS, NNHP G5S1	**Moderate** Minimal suitable habitat present Known occurrence within Project vicinity
Limenitis archippus lahontani	Nevada viceroy	NNHP G5T1T2S1S2	**High** Suitable habitat present Known occurrence within Project vicinity
Martes californicus	American marten	SFP, NNHP G5S2S3	**Moderate** Minimal suitable habitat present Known occurrence within Project vicinity
Myotis californicus	California myotis	FSC, BLMS, NNHP G5S3B	**High** Suitable habitat present Known occurrence within Project vicinity
Myotis ciliolabrum	western small-footed myotis	BLMS, NNHP G5S3B	**High** Suitable habitat present Known occurrence within Project vicinity
Myotis lucifugus	little brown myotis	BLMS, NNHP G5S1S2	**High** Suitable habitat present Known occurrence within Project vicinity
Myotis thysanodes	fringed myotis	FSS, BLMS, NNHP G4G5S2B	**High** Suitable habitat present Known occurrence within Project vicinity
Myrmecocystus arenarius	dune honey ant	NNHP G2?S2?	**Low** Known occurrence in this county [Based solely on NNHP Occurrence status (OCC) info]
Oncorhynchus clarkii henshawi	Lahontan cutthroat trout	**FT**, SFP, NNHP G4T1S1	**Absent** Lack of suitable habitat
Oncorhynchus mykiss pop	Warner Valley redband trout	FSS, NNHP G4T2QS1	**Absent** Lack of suitable habitat
Oreortyx pictus	mountain quail	SFP, FSS, BLMS, NNHP G5S3	**High** Suitable habitat present Known occurrence within Project vicinity

Table 29: Washoe County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Otus flammeolus	flammulated owl	SFP, FSS, BLMS, NNHP G4S4?B	**Moderate** Minimal suitable nesting habitat present Known occurrence within Project vicinity
Picoides albolarvatus	white-headed woodpecker	SFP, FSS, NNHP G4S3?	**Moderate** Minimal suitable nesting habitat present Known occurrence within Project vicinity
Plegadis chihi	white-faced ibis	FSC, SFP, NNHP G5S3B	**Moderate** Minimal suitable nesting habitat present Known occurrence within Project vicinity
Polites sabuleti alkaliensis	alkaline sandhill skipper	NNHP G5T3T4SNR	**High** Suitable habitat present Known occurrence within Project vicinity
Pseudocopaeodes eunus obscurus	Carson wandering skipper	**FE**, NNHP G3G4T1S1	**High** Suitable habitat present Known occurrence within Project vicinity
Pyrgulopsis bruesi	Fly Ranch pyrg	BLMS, NNHP G1S1	**Absent** Lack of suitable habitat
Pyrgulopsis longiglans	western Lahontan springsnail	NNHP G2G3S2S3	**Low** Known occurrence in this county [Based solely on NNHP Occurrence status (OCC)]
Rana muscosa	mountain yellow-legged frog	**FE**, FC, FSS, NNHP G2G3SH	**Moderate** Minimal suitable habitat present Known occurrence within Project vicinity
Sorex preblei	Preble's shrew	BLMS, NNHP G4S1S2	**Moderate** Suitable habitat, but not within the vicinity of known occurrences.
Speyeria nokomis carsonensis	Carson Valley silverspot	FUR, BLMS, NNHP G3T1S1	**High** Suitable habitat present Known occurrence within Project vicinity
Stenamma wheelerorum	endemic ant	NNHP G1?S1	**High** Known occurrence within Project vicinity

Table 29: Washoe County Special Status Wildlife Species and their Potential to Occur Within the CBC Digital 395 Project Site

Scientific Name	Common Name	Listing Status	Potential
Strix nebulosa	great gray owl	SFP, FSS, NNHP G5SAN	**Moderate** Minimal suitable nesting habitat present Known occurrence within Project vicinity
Strix occidentalis occidentalis	California spotted owl	SFP, FSS, NNHP G3T3S1N	**Moderate** Minimal suitable nesting habitat present Known occurrence within Project vicinity

3.7. CULTURAL RESOURCES

Between October and December 2010 and January, February, April and June 2011, records searches were conducted for the Proposed Project's area of potential effect (APE) at the appropriate Information Centers and other relevant curational institutions. Additionally as part of the Class III cultural resource inventory of the APE, an intensive-level pedestrian survey has been conducted along the APE of the Proposed Project route with the exception of approximately 15 miles. The remaining 15 miles of the APE to be surveyed are located within Humbolt-Toiyabe National Forest lands in Nevada and on seven Native American tribal reservations in Nevada and California. The permitting process to conduct cultural resource surveys on these final segments is presently underway.

3.7.1 Regulatory Framework

A number of laws and regulations require federal, state, and local agencies to protect cultural resources from potential adverse effects of project actions. The laws and regulations presented below are pertinent to this Proposed Project and provide processes for compliance and outline the responsibilities and relationships of involved agencies.

3.7.1.1 Federal Level

Federal laws and regulations include the National Historic Preservation Act (NHPA) of 1966 (16 USC 470f) with Protection of Historic Properties (36 CR Part 800) implemented by the Archaeological and Historic Preservation Act (AHPA) as amended of 1974, and the Archaeological Resources Protection Act (ARPA) of 1979 (16 USC Sections 470). The National Register of Historic Places (NRHP) was established by NHPA to provide a list of cultural resources to be preserved and the process by which the resource would be added to the list.

Section 106 of the NHPA, as amended, provides the framework through which cultural resources are identified and assessed for listing on the NRHP and through which appropriate management through mitigation, alternative, or avoidance measures is applied. A cultural resource (herein historic property) is defined as "any prehistoric or historic district, site, building, structure or object included in or eligible for inclusion in the NRHP maintained by the Secretary of Interior. This term includes artifacts, records, and

remains that are related to and located within such properties (and includes) properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization that meet the NRHP criteria" [36 CFR Section 800.16(1)].

Identified historic properties eligible for NRHP listing are assessed for significance by meeting at least one of four certain criteria, and/or be 50 years old (unless of exceptional significance) and retain integrity that provides the historic property with its ability to convey its significance and includes integrity of location, design, setting, materials, workmanship, feeling, and association.

Established criteria to be met are:

A. Associated with events that have made a significant contribution to the broad patterns of our history

B. Associated with the lives of persons significant in our past:

C. Embodies the distinctive characteristics of type, period, or method of construction that represent the work of a master or that possesses high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded or likely to yield, important information in prehistory or history.

Laws and regulations regarding Native American concerns include the Native American Graves Protection and Repatriation Act (NAGPRA, 25 USC 3001), the Historic Sites Act of 1935 (Pub. L. 73-292), the Antiquities Act of 1906 (16 USC 431-433), the American Indian Religious Freedom Act (AIRFA, Pub. L. 95-341), and Executive Order 13007 ("Sacred Sites," 61 FR 105).

Several federal regulations have been passes that protect paleontological resources. Some of these regulations such as Title VI, Subtitle D of the recent Omnibus Public Land Management Act of 2009 afford protection of paleontological resources while other legislation found in the Antiquities Act of 1906 and the National Environmental Policy Act of 1969 by invoking "important historic or scientific resources" language which imply protection. These laws only protect paleontological resources on public land.

<u>Federal Antiquities Act</u>

Paleontological resources are protected from vandalism, unauthorized collection, and impacts related to construction or related project impacts on federally owned or managed lands by the Federal Antiquities Act of 1906 (PL 59-209, 16 United States Code section 431 *et seq*.; 34 Stat. 25).

<u>National Environmental Policy Act</u>

The National Environmental Policy Act of 1969, as amended, requires analysis of potential environmental impacts to important historic, cultural, and natural aspects of our national heritage (United State Code, section 4321, *et seq*.; 40 Code of Federal Regulations, section 1502.25).

U. S. Bureau of Land Management (BLM)

The BLM uses the PFYC to classify geological formations or rock units by their potential to yield important fossils (U.S. Bureau of Land Management, 2007). The lowest sensitivity is PFYC Class 1 and the highest is PFYC Class 5. In addition, the Society of Vertebrate Paleontology (SVP) has set up professional standards for the assessment and management of impacts on fossil vertebrate resources (SVP 1996).

3.7.1.2 State Level

The California Environmental Quality Act (CEQA) provides protections and guidelines for effects on the environment under which historical resources are considered part of the environment. A project that may cause a substantial adverse effect on the significance of a historical resource is a project that may have a significant effect on the environment. The definition of "historical resources" is contained in Section 15064.5 of the CEQA Guidelines and includes, but is not limited to, "any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California". More specifically, CEQA guidelines state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing in the California Register of Historic Resources, included in a local register of historical resources, or determined to be historically significant by the Lead Agency (Title 14 CCR§15064.5(a)(1)-(3)). Determinations of CEQA significance are made in the IS Checklist (Appendix A).

California Public Resources Code - Section 5020-5029.5: Article 2. Historical Resources provides a vehicle for and establishes the California Register of Historic Resources and the procedures and requirements for historical resources to be eligible for or on the list. A historical resource is a resource (historic or prehistoric) that meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852).

The listing criteria for the California Register of Historic Resources requires that the resource:

1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or

2) Is associated with the lives of persons important in our past; or

3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4) Has yielded, or may be likely to yield, information important in prehistory or history.

In addition Public Code Section 21083.2 provides that a unique archaeological resource is an archaeological artifact, object, or site which 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.

Under CEQA, the historical or archaeological resource must meet requirements for significance or uniqueness to determine whether a project has a significant effect on the environment.

California Public Resources Code (PRC), Chapter 1.7, Sections 5097.5, 5097.9 and 30244

This section of the PRC regulates the removal of paleontological resources from state lands, defines unauthorized removal of fossil resources as a misdemeanor, and requires mitigation of disturbed sites.

Nevada Revised Statutes (NRS)

The Nevada Revised Statutes (NRS) are the Nevada State laws that apply to a project's impacts on cultural resources. As used in the forgoing NRS Sections 381.195 to 381.227, and Sections 383.400 to 383.440 a "Prehistoric site" applies to paleontological sites (including fossilized footprints and other impressions) as well as archaeological sites, ruins, deposits, petroglyphs, pictographs, habitation caves, rock shelters, natural caves, burial ground or sites of religious or cultural importance to an Indian tribe.

3.7.1.3 Regional and Local

San Bernardino County General Plan

The Safety Element of the San Bernardino County General Plan (2007) provides for mitigation of impacts to paleontologic resources.

San Bernardino County 2007 Development Code, Chapter 82.20

The County of San Bernardino (Development Code §82.20.030) requires that paleontological mitigation programs include site evaluation for paleontological resources in the county including not limited to preliminary field surveys; monitoring during construction; specimens recovery; preparation, identification, and curation of specimens; and report of findings. Also defines qualifications for professional paleontologists.

Kern County General Plan

The 2004 Kern County General Plan (KCGP), as a planning document, protects significant fossiliferous areas and requires that land use plans address impacts on areas of paleontologic importance.

Mono County General Plan

The 2010 Mono County General Plan-Conservation and Open Space Element under Objective C, Policy 1, states "Future development projects shall avoid potential significant impacts to cultural resources or mitigate impacts to a level of non-significance, unless a statement of overriding considerations is made through the EIR process". Action 1.1 states "Future development projects with the potential to significantly impact cultural resources shall provide an analysis of the potential impact(s) prior to project approval. Examples of potential impacts include:

- Disrupting or adversely affecting a prehistoric or historic archaeological site or property of historic or cultural significance to a community or ethnic or social group, or a paleontological sites except as part of a scientific study; and/or

- Conflicting with established recreational, educational, religious or scientific uses of the area.

3.7.1.4 SECTION 106 PROGRAMMATIC AGREEMENT

A Section 106 Programmatic Agreement (PA) is a document that spells out the terms of a formal, legally binding agreement among Federal agencies, states agencies, and Native American tribes. The PA establishes a process for consultation, review, and compliance with those federal laws concerning historic preservation. The ACHP regulation implementing Section 106 of the NHPA provides for a PA alternative mechanism for compliance with the law. Section 800.14(b) of the regulation encourages use of a PA for large complex projects or programs wherefore other reasons the effects of the project cannot be fully determined prior to approval of the project.

During early project coordination with the parties involved with Section 106 review, considering the project timeline and the number of parties involved, it was determined that the effects on historic properties would not be fully determined prior to approval of the undertaking. Two state SHPOs, three Federal agencies, the Advisory Council on Historic Preservation, three state agencies and seven Native American tribes are affected by the Proposed Project.

In an effort to meet the ARRA requirement to complete the Proposed Project within three years, and in light of on-going project design and engineering, per 36 CFR 800.14(b), NTIA and CBC have decided to pursue a PA in order to streamline Section 106 compliance. The CBC is authorized by NTIA to gather information to identify and evaluate historic properties and work with consulting parties to assess effects. NTIA remains the lead agency and is working cooperatively with other state and federal agencies and Native American tribes associated with the Proposed Project.

The PA recipients are federal and state agencies, and Native American tribes affected by the Proposed Project. The signatories include:

- The National Telecommunications and Information Administration
- California State Historic Preservation Officer
- Nevada State Historic Preservation Officer
- The California Broadband Cooperative, Inc
- The Big Pine Band of Owens Valley - Owens Valley Paiute
- The Bishop Paiute Tribe - Paiute, Shoshone
- The Washoe Tribe of Nevada and California
- The Advisory Council on Historic Preservation

The invited signatories include:

- The Benton Paiute Reservation
- The Bridgeport Paiute Indian Colony
- The Fort Independence Community of Paiute
- The Lone Pine Paiute -Shoshone Reservation
- The U.S. Forest Service

- The Bureau of Land Management
- The California Public Utilities Commission
- The California Department of Transportation
- The Nevada Department of Transportation

The concurring tribes include:

- Kern Valley Indian Council - Tubatulabal/Kawaiisu/Koso/Yokuts
- Kutzadika Indian Community Cultural Preservation – Paiute
- Ramona Band of Cahuilla
- Serrano Nation of Indians
- Shoshone-Bannock Tribes
- Summit Lake Paiute Tribe
- Tehachapi Indian Tribe – Kawaiisu
- Tubatulabal/Kawaiisu/Koso/Yokuts

The PA is currently in revision after a 30-day review period with the listed parties. Signatories and invited signatories received a copy of the PA the week of June 13, 2011. The review period ended the week of July 18, 2011. Comments will be incorporated into the PA, and the PA will be returned to listed parties for reading and signatures.

3.7.2 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 (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 the policies of the various federal agencies involved with the project

In October 2010, CBC contacted the Native American Heritage Commission (NAHC) to request a review of their Sacred Lands Inventory to determine if sacred lands or other resources of significance to the Native American community were known to exist in proximity to the proposed undertaking. NAHC provided numerous regions and local areas of known significance to many of the tribes affiliated with the project area. NAHC also provided a list of tribes affiliated with the project area, which included all of the tribes within the project area in California and the southernmost portion of the project area in Nevada. In late October 2010, NTIA notified the affiliated tribes of the undertaking, provided project descriptions and maps, and invited the tribes to comment on the undertaking, particularly regarding any questions or concerns about the project in general and Native American interests specifically. Chambers Group recorded the Native American responses (Chambers Group Inc. 2011). Native American comments regarding the Proposed Project generally favored the expansion of broadband into the Owens Valley.

- AhaMakav Cultural Society, Fort Mojave Indian
- Benton Paiute Reservation

- Big Pine Band of Owens Valley – Owens Valley Paiute
- Bishop Paiute Tribe
- Bridgeport Paiute Indian Colony
- Chemehuevi Reservation
- Fort Independence Community of Paiute
- Fort Mojave Indian Tribe
- Kern Valley Indian Council
- Kutzadika Indian Community Cultural Preservation
- Lone Pine Paiute – Shoshone Reservation
- Mono Lake Indian Community – Mono Northern Paiute
- Morongo Band of Mission Indians
- San Fernando Band of Mission Indians
- San Manuel Band of Mission Indians – Serrano
- San Miguel Band of Mission Indians
- Serrano Nation of Indians
- Tehachapi Indian Tribe
- Timbisha Shoshone Tribe
- Tubatulabal/Kawaiisu/Koso/Yokuts
- Walker River Reservation
- Washoe Tribe of Nevada and California

The following tribes were contacted by the NTIA in June 2011 and requested to review and participate in the PA:

Signatories:

- Big Pine Band of Owens Valley – Owens Valley Paiute
- Bishop Paiute Tribe – Paiute, Shoshone
- Washoe Tribe of Nevada and California

Invited Signatories:

- Benton Paiute Reservation
- Bridgeport Paiute Indian Colony
- Fort Independence Community of Paiute
- Lone Pine Paiute – Shoshone Reservation

Concurring Tribes:

- Kern Valley Indian Council - Tubatulabal/Kawaiisu/Koso/Yokuts
- Kutzadika Indian Community Cultural Preservation – Paiute
- Ramona Band of Cahuilla
- Serrano Nation of Indians
- Shoshone-Bannock Tribes
- Summit Lake Paiute Tribe
- Tehachapi Indian Tribe – Kawaiisu

- Tubatulabal/Kawaiisu/Koso/Yokuts

3.7.3 Area of Potential Effect

The area of potential effect (APE) for the Proposed Project was defined by Chambers Group, in conjunction with NTIA and with guidance from Leach-Palm et al. (2010), as **1)** the area within the California Department of Transportation (Caltrans) right-of-way (ROW)/easement and Nevada Department of Transportation (NDOT) ROW/easement, as identified by either the fence line, the pole line, or in the absence of those features, an arbitrary distance of 100 feet (approximately 30 m) from the pavement's edge; **2)** 50 feet (approximately 15 m) on either side of the fiber-optic approximate centerline when it is to be installed within unimproved roads within County ROW/easement; and **3)** a 100-foot radius around staging/laydown areas and other Proposed Project-associated components.

3.7.4 Cultural Resources Records Search

3.7.4.1 Methods

The Class III inventory was conducted for the Proposed Project and included a records search and literature review at the following CHRIS offices: the SSJVIC, California State University, Bakersfield; the SBAIC, San Bernardino County Museum, San Bernardino; and the EIC, University of California, Riverside. A records search at the EIC for Mono and Inyo counties took place between October 4 and 27, 2010, with an additional visit to the EIC between December 16 and 20, 2010. A review of the records on file at the SBAIC for San Bernardino County occurred between October 16 and 22, 2010; and a search of the records on file at the SSJVIC for Kern County took place between October 1 and 20, 2010. Additionally, a review of records on file for Mono and Inyo counties took place at the Caltrans District 9 office in Bishop, between January 10 and 11, 2011. Additional visits and requests for record searches were conducted at the EIC between April 1 and 2 and between April 11 and 13; at the SBAIC between April 28 and 29; and at the SSJVIC on February 4, 14, and April 29, 2011. A record search was conducted at the Inyo National Forest Office in Bishop, California by Chambers Group personnel on June 24, 2011. For the portion of the FOC route within Nevada, a search of the records on file at the Nevada Cultural Resource Information System (NCRIS) online database was conducted on November 3, 2010; at Humboldt-Toiyabe National Forest Office in Sparks, Nevada, between October 21 and 22, 2010; at the Nevada BLM Carson City Office on November 8 and 10, 2010; and at the Nevada State Museum between December 1, 2010, through January 8, 2011. The record search and literature review conducted to date provided Chambers Group staff information regarding nearby recorded cultural resources that would be a useful guide for determining the types of sites that might exist in the Survey Area. In addition, previously recorded sites were identified within the Proposed Project area that may be potentially adversely impacted by the Proposed Project.

The historical/archaeological resources records search and literature review began with an examination of existing technical reports, site records, documents, and maps on file at the previously mentioned information centers to identify previous positive cultural studies and known cultural resources within one-half mile on both sides of the centerline of the proposed FOC route, i.e. the Study Area. Previously identified historical/archaeological resources include properties designated as California Historical Landmarks; Points of Historical Interest; Mono, Inyo, Kern, and San Bernardino County Landmarks; as well as those listed or are eligible for listing to the NHRP, the California Register of Historical Resources, or the California Historical Resources Inventory. In addition, early U.S. Geological Survey (USGS) 7.5-

minute and 15-minute topographic maps, U.S. General Land Office's (GLO) land survey plat maps, Ritch maps, and other available literature and information were reviewed.

During the records search, Chambers Group personnel reviewed each of the 80 USGS 7.5-minute quadrangles that cover the entire Study Area for the CBC Digital 395 Middle Mile Project within Nevada and California to identify any previous cultural resource studies and known cultural resources. Cultural resource surveys, archaeological, and historic-period sites within the Study Area, including the APE, were identified from the maps on file at the information centers and state and federal agencies; and their locations were reproduced onto clean, corresponding USGS 7.5-minute quadrangles. Photocopies of technical reports, site records, documents, and historic maps pertinent to the research were prepared and digitally scanned as PDF files to be incorporated into a GIS geodatabase.

Summary information entered into the database for previously recorded sites included resource identifiers (primary numbers), location attributes (county, USGS quad, UTM coordinates, elevation, Section, Township and Range and quarter-section designations), a brief description of the resource(s), NRHP eligibility status, California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest listings, Nevada State Register Listing, Nevada State Historical Markers, and bibliographic references of technical reports within the APE with positive survey results. Chambers Group entered all the information obtained from the record searches into the geodatabase and organized it from north to south by county and by USGS quadrangle. Site locations were digitized, and the corresponding PDF site record was electronically linked to the database.

The primary objective of the records search was to identify any previously documented resources within the Record Search Study Area, to determine the nature and type of the resources, and to inquire about their most recent known condition within the APE. The second objective of the records search was to determine the previously recorded sites that may be directly in the route of cable installation construction within the APE. The final objective was to determine those are areas within the APE that had been surveyed within the past 5 years.

The Records Search Study Area covered an area measuring 0.5-mile wide by approximately 593 linear miles, in addition to 172 separate staging areas.

3.7.4.2 Results

Results of the records search conducted to date at the information centers and state and federal agencies for both California and Nevada indicate that at least 822 technical studies have been performed within the Record Search Study Area between the 1950s and 2010; 424 studies include a portion or portions of the APE (Chambers Group Inc. 2011). Of the 424 studies within the APE, 38 have been conducted within the last 5 years.

At least 84 technical studies have previously been performed in the Record Search Study Area within Nevada between 1956 and 2009. Of those studies, 27 include a portion or portions of the APE; and only 1 of those studies was conducted within the last 5 years.

In California, no fewer than 735 technical studies have previously been conducted within the Record Search Study Area between 1969 and 2010; 397 of which include a portion or portions of the APE, with 37 of those studies having been performed within the past 5 years (Table 10).

The results of the record search identified 1,549 sites in the Record Search Study Area in both California and Nevada (Chambers Group Inc. 2011). In California, 1,515 sites were previously identified within the Record Search Study Area. Of these 1,515 sites, 202 are located within the APE in California: 78 are from the historic-period; 95 are prehistoric; 13 are multi-component sites; 13 represent isolates, and 3 sites have an undetermined temporal status (Chambers Group Inc. 2011). Additionally, of the 202 sites in the APE for California, 1 site is listed on the National Register of Historic Places (NRHP), 2 remain unevaluated, 6 are eligible for listing to the NRHP, 24 are ineligible for listing to the NRHP, none are listed on the California Register of Historic Places, none are designated as a California Historical Landmark, and the eligibility status of the remaining 169 sites is currently undetermined or unevaluated.

Results of the record search for Nevada indicate that 34 sites were previously identified within the Record Search Study Area, and 27 are located within the APE in Nevada (Chambers Group Inc. 2011). Of the 27 previously recorded sites located within the APE, 19 are prehistoric, five date to the historic-period, and 3 are multi-component. Additionally, of the 27 sites within the APE, 1 is ineligible for listing to the NRHP and the status of the remaining 26 sites is currently undetermined or unevaluated.

3.7.5 Paleontological Resources Records and Literature Search

A paleontological records and literature search for the Proposed Project APE was conducted. Pertinent published literature and unpublished manuscripts on the geology and paleontology of western Mojave Desert, Owens Valley, eastern Sierra, and western Nevada were reviewed. These included published articles on late Pleistocene vertebrate localities of California (Jefferson 1991a and b) and Nevada (Jefferson, McDonald and Livingston 2004). Also, persons with knowledge of the geology and paleontological resources of the proposed project area were consulted. Available published resources including books, journals, and maps, and information available via the internet on government websites were reviewed. This information was evaluated within the context of the applicable federal, state and local regulations. In addition, published geologic maps and reports provided the basis from which the regional and project-specific geology was derived. Geologic maps include quadrangles at various scales from 1:24,000 to 1:250,000.

3.7.5.1 General Prehistory-Western Great Basin/California

The earliest accepted cultural tradition in North America is represented by the Paleo-Indian Period, exemplified by large spear points used to hunt migratory large game; however, some researchers believe an Early Man Period existed in North and South America. Although disputed and lacking in statistically significant hard data, some researchers suggest early man may have occupied the desert beginning 24,000 years ago or earlier. The Calico Canyon Site, located in the Mojave Desert near Barstow, is one theoretical location and is discussed briefly in the Desert Section.

The first occupants of North America, however, were thought to have been in California. Initial migration down the western coast of North America, including coastal California, appears to be the likely scenario. One of the earliest radiocarbon dates comes from the Arlington Springs Woman site on Santa Rosa Island, California. The human remains have been dated to approximately 13,000 B.P. Native American groups however, believe their ancestors to have always occupied their respective areas.

Many early sites are thought to be located near pluvial desert valley lakes that were formed by glacial melt waters throughout the Great Basin. During the Paleo-Indian Period, highly mobile groups consisted of hunting and gathering of megafauna throughout the Great Basin region. Archaeological data in the western Great Basin identifies time-sensitive artifact types. Five basic cultural periods have been

identified in the western Great Basin. These cultural periods represent broad trends based on general cultural trajectories from less complex, more mobile occupation traits to more complex, less mobile cultural traits, based on adaptations of technological advances as well as environmental changes.

3.7.5.2 Paleo-Indian/Pre Archaic to Early Archaic (12,000-8,000 B.P.)

Early Holocene human occupation is represented in the region by only a few, scattered sites. The Paleo-Indian Tradition (or Big Game Hunting Tradition), based on long distant migration and signified by the spear point technology, is the earliest statistically recognized manifestation of human activity in North America. The Pre-Archaic Period is expressed variably in the western Great Basin regions as the Western Great Basin Tradition or the Western Pluvial Lakes Tradition. It should be noted that studies on some sites indicate some overlap may have occurred between the Paleo-Indian (represented generally by fluted points) and Early Archaic Period (represented generally by non-fluted points). It has been suggested however, that the shift from fluted to non-fluted point type represents a shift in the faunal hunting regime, which later focused on smaller fauna such as bison, antelope, and deer, which were becoming more abundant. Meltzer and Holliday (2010) suggests that, while the changes were occurring, dramatic shifts were not as abrupt as originally thought and that, for example, the shift from caribou hunting to moose and deer in the Northeast does not account for the need to change point type technology. In addition, work by Elston and Zeanah (2002) on western Nevada suggests that plants provided a backstop to more dominant hunting to supplement diet and reduce risk.

The earliest manifestations of the tradition can be divided into three subgroups: Clovis or Llano (11,800-11,000 B.P.), Folsom (11,000-10,000 B.P.), and Plano (10,000-7,000 B.P.). Some sites associated with the Paleo-Indian Tradition are thought to have contemporaneous Pleistocene mammals and man-made artifacts. Animals that were hunted likely consisted of mostly large species still alive today. Bones of extinct species have been found that cannot definitely be associated with human artifacts in the Proposed Project area, but Clovis points and mammoth bone have been found in mutual association near Dent, Colorado. The Fluted-Point Tradition (a subtradition of the Paleo-Indian Tradition) is represented by these “fluted” type points of this time period. This tradition is apparent throughout the United States, including the Mojave region and north along the Proposed Project alignment. Fluted and non-fluted, often edge-ground, concave-base points sharing affinities with Clovis points have been reported from some localities (Antevs 1937; Basgall 1987a and 1987b, 1988; Davis 1963; and Hall 1990). The age of these materials is uncertain; however, obsidian hydration measurements on artifacts from the Komodo site in Long Valley suggest they are at least 8,000 years old (Basgall 1988).

It is generally believed that human occupation of southern California began at least 10,000 years B.P. The archaeological record indicates that between approximately 10,000 and 7,000/6,000 years B.P. a predominantly hunting economy existed, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. In all areas of southern California, Paleo-Indian sites are extremely rare and generally consist of unstratified lithic scatters found on desert pavements, near major drainage areas, or along the shorelines of Pleistocene lakes such as Ancient Lake Cahuilla and Lake Mojave and remnant lakes such as Silver Lake (Apple et al. 1997).

The Great Basin Archaic period is represented by “Desert Culture” subsistence adaptations and archaeological remains in the Great Basin dating between approximately 10,000 to 7,000 B.P. Early assemblages in the Great Basin are primarily associated with pluvial lake shores. The Western Pluvial Lakes Tradition has been defined as a way of life directed toward the exploitation of a lake environment (Bedwell 1970:231). The general absence of milling equipment and the dominance of heavy point types,

percussion flaked tools, leaf-like blades, drills, crescentric stones, knives, scrapers, choppers, hammerstones, unifacial, and bifacial tools characterize this period. Point types are typified by Mojave Lake and Silver Lake, which are wide-spread. The desert Lake Mojave Complex is defined as having a subsistence pattern that focused less on gathering and fishing but more on hunting. A technological shift, perhaps, from heavier, larger projectile points to smaller spear points and lighter atlatl dart points may be evident (Hutchings 1997). The Western Pluvial Lakes Tradition in the southwestern and western Great Basin region was represented by the Lake Mojave Complex in Owens Valley, Mojave Desert, and Mono Lake areas (Busby et al. 1979:199). Although small animal bones and plant grinding tools are rarely found within archaeological sites of this period, small game and vegetal foods were probably exploited on a limited basis. A lack of deep cultural deposits from this period suggests that groups included only small numbers of individuals who did not often stay in one place for extended periods (Wallace 1978).

3.7.5.3 Early Archaic (8,000-3,000 B.P.)

Around 8,000 years B.P., particularly in the coastal and valley areas of California, focus shifted from hunting towards a greater reliance on vegetal resources. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter. This period, which extended to around 3,000 years B.P. is sometimes referred to as the "Millingstone Horizon" (Wallace 1978). This technology seemed to have occurred earlier in coastal valley regions than desert regions, beginning in a more intensive way there about 6,000 B.P. An increase in the size of groups and the stability of settlements is indicated by deep, extensive middens at some sites from this period (Wallace 1978).

Complexes assigned for the Great Basin Archaic in the western Great Basin for the eastern Sierra Front around Tahoe are the Tahoe Reach and the Spooner Complex (both expanding into the Proposed Project area at the east central Sierra Nevada). These are represented in eastern Sierra Nevada by the Spooner Complex; in Owens Valley region the Little Lake, Newberry, and Early Rose Springs phases; and in the desert by the late Lake Mojave, Pinto, and early Gypsum periods.

A possible occupational hiatus from 8,000 to 6,000 B.P. in some areas was proposed by Hester et al. (1973). This time span is between the Western Pluvial Lakes Tradition (11,000 to 8,000 B.P.) and the Great Basin Archaic (7,000/6,000 to 1,750 B.P.). Climate change has been cited as the reason for this gap in the archaeological record. This climate change has been termed the Altithermal (7,500 to 4,000 B.P.), a dry and hot period which had an effect on man and land relationship. This issue has been debated between archaeologists (Busby et al. 1979:201).

3.7.5.4 Middle Archaic (5,000 B.P.-1,300 B.P.)

Beginning between 5,000 and 3,000 years B.P., archaeological evidence indicates that reliance on both plant gathering and hunting continued as in the previous period, with more specialized adaptation to particular environments. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material. Chipped-stone tools became more refined and specialized, and bone tools were more common. During this period, new peoples from the Great Basin began entering southern California. At this time, it appears that the shift to Uto-Aztecan (Numic) linguistic speaking culture from the Great Basin migrated into the desert area. The cultural change seems to have displaced or been absorbed by the earlier population of Hokan-speaking peoples. Many late period prehistoric culture patterns in southern California and the Mojave Desert region were shared with neighboring groups in

Nevada and northwestern Arizona; the Colorado and Sonora deserts of southern Arizona and Sonora, Mexico; and Baja California's Peninsular Range and littoral strips.

The sites are represented by the Martis period in the Eastern Sierra Nevada, Haiwee, and Early Rose Springs phases in Owens Valley and in the desert, the Gypsum to early Saratoga Springs Phase. Artifacts attributable to the Anasazi, Mogollon, and Hohokam cultures of the Four Corners region have been identified in late-phase Early Period and early-phase Late Archaic assemblages within the Mojave Desert.

3.7.5.5 Late Archaic 1,500-150 B.P.

The exact time of culture shift from migration in the region is not known; however, the Numic speakers were present in southern California during the final phases of prehistory. The introduction of the bow and arrow into the region sometime around 1,500 to 1,000 years B.P. is indicated by the presence of small projectile points (Moratto 1984). During this period, population densities were higher than earlier periods; and settlement became more concentrated in villages and communities along the coast and interior valleys (Erlandson 1994; McCawley 1996). Regional subcultures also started to develop, each with its own geographical territory and language or dialect (Kroeber 1925; McCawley 1996; Moratto 1984). These were most likely the basis for the groups encountered by the first Europeans during the eighteenth century (Wallace 1978). Despite the regional differences, many material culture traits were shared among groups, indicating a great deal of interaction (Erlandson 1994). Phases for this period are the late Martis and Kings Beach/Washoe phases in the Eastern Sierra; Late Rose Spring and Cottonwood phases in Owens Valley; and the desert phase represented by the late Saratoga Springs and Shoshone phases.

3.7.5.6 Proto-historic to Present (150 B.P. to Present)

A Proto-historic Period occurred throughout the western Great Basin. Proto-history has been defined as "a distinct span of time during which native cultures were modified by the introduction of Euro-American diseases, materials, and/or practices prior to intensive, face-to-face contact with whites" (Arkush 1995:1). The introduction of the horse and Old World diseases to the local cultures helped define the Proto-historic Period. Euro-American material culture was acquired by local groups. Interactions between Euro-American explorers became more frequent (Arkush 1995). Various sites that were recorded by early travelers were subsequently abandoned.

3.7.5.7 Ethnohistorical Setting

From north to south, the Proposed Project alignment passes through the traditional Native American tribal territories of the Washo, the Northern Paiute, the Owens Valley Paiute, the Western (Panamint) (Coso) Shoshone, the Kawaiisu, Vanyume, and the Chemehuevi. Surrounding tribes include Miwok, Monache, Tubatulabe, and the Serrano, along with the Serrano subgroup, Kitanumik. The Mojave were trading within the area and had a wide influence in the desert region.

The Washoe territory centered on Lake Tahoe and extended south to Mono Lake, north to Susanville, west to the western slopes of the Sierra Nevada Mountains, and east to Walker Lake. The Northern Paiute territory extended from south of Mono Lake, north into southeastern Oregon, and into Idaho. The Kuzedika are the southernmost group of the Northern Paiute and are also known as the Mono Lake Paiute. Kuzedika territory extended from the crest of the Sierra Nevada in the west to the foothills and basin around Mono Lake. The Owens Valley Paiute were centered in Owens Valley, accessing the foothills and alpine reaches of the Eastern Sierra and western White Mountains.

The Southern Paiute had various groups, including the Owens Valley Paiute, whose territory extended from the crest of the Sierra Nevada range across Owens Valley, east to the Nevada border and north to Bishop.

The desert Shoshone tribes had territories that ranged from the playa lakes and local rivers system to the foothills and alpine areas of the surrounding mountains. The Coso territory extended across the Panamints; the Chemehuevi occupied the central desert region south of the Colorado River; and the Vanyume lived to their west, south of the Sierra Nevada.

Tribal Territories

Several Native American tribes occupied the region surrounding the Proposed Project area at the time of European contact. Most of these tribes are considered part of the Shoshonean branch of the Uto-Aztecan language group. This language group occupied portions of the Americas from Montana to as far south as Panama. The Shoshonean language group apparently has four branches: the Plateau branch of the Great Basin, the Kern River branch, the Southern California branch, and the Pueblo branch. The Southern California branches are made up of the Numic and the Takic language subdivisions. The Takic group includes the Serrano/Vanyume tribes, and the Numic group includes Southern Paiute or Chemehuevi and Kawaiisu tribes (Kroeber 1925; Moratto 1984). Additionally, the Yuman Mojave tribe had influence within the Proposed Project area. The Washo, who occupied the area at the north end of the alignment, were of Hokan language stock as are the (Yuman branch) Mojave.

Territories for these groups may have overlapped, while the boundaries for other groups have not been defined; and still other territories have shifted and shrunken in various versions sinceEuropean contact. Language groupings can and have generally been used to indicate territorial boundaries; and several territorial maps are referenced including Kroeber (1925); Bennyhoff (1977); Shipley (1978); Whistler (1977); and Heizer (1978). Moratto (1984) used these maps to compile his classification of the California Indians language map. The archaeology may indicate differently.

The Northern Paiute (Mono/Kutzadika'a/Kuzedika) territory occupied primarily the Mono Lake area. Once grouped with the Kuzedika and sharing territory, the Owens Valley Paiute territory is located in Owens Valley and the eastern Sierra Nevada. The Panamint and Coso territory was around Little Lake, Saline Valley, and the Panamint Mountains, the China Lake area, and south into the Mojave Desert. The Kawaiisu inhabited the southwest foothills of the Sierra Nevada and northern Mojave; and the Vanyume were located to the southwest of the Proposed Project area in the San Bernardino Mountains and into the southwest Mojave Desert. The Chemehuevi territory was south and east of the Kawaiisu and south to the San Bernardino Mountains, then east to the Colorado River in later prehistory. The Serrano territory extends south of the Proposed Project area, with the Mojave to the south along the Colorado River.

3.7.5.8 Historical Setting

General History of California

The first significant European settlement of California began during the Spanish Period (1769 to 1821) when 21 missions and 4 presidios were established in the state between San Diego and Sonoma. Although located primarily along the coast, the missions dominated economic and political life over the majority of the California region during this period. The purpose of the missions was primarily Indian

control, along with economic support to the presidios, forced assimilation of the Indians to Hispanic society, and conversion of the native population to Spanish Catholicism (Castillo 1978; Cleland 1941)

The Mexican Period (1821 to 1848) began with the success of the Mexican Revolution in 1821, but changes to the mission system were slow to follow. When secularization of the missions occurred in the 1830s, the vast land holdings of the missions in California were divided into large land grants called ranchos. The Mexican government granted ranchos throughout California to Spanish and Hispanic soldiers and settlers (Castillo 1978).

In 1848, the Treaty of Guadalupe Hidalgo ended the Mexican-American War and marked the beginning of the American Period (1848 to present). The discovery of gold the same year initiated the 1849 California Gold Rush, bringing thousands of miners and settlers to California, most of whom settled in the northern portion of the state as well as all along the Sierra Nevada Range. For those settlers who chose to come to southern California and stay, much of their economic prosperity was fueled by cattle ranching and agriculture rather than by gold (Castillo 1978; Cleland 1941).

Prior to the gold rush, settlers and explorers that were attracted by the idea of wealth bombarded the Great Plains and Sierra Nevada Mountain area in California and Nevada in search of furs and hides in the early 1800s. Fur trappers invaded the area and essentially devastated the territory's population of beaver, deer, and buffalo leaving very little resources for the Native American populations that inhabited the area. Further discussion of fur trapping and other activities related to the eastern Sierra Nevada are discussed below in the general history of Nevada.

<u>General History of Nevada</u>

European exploration and settlement of what is now known as the state of Nevada began in the late 1770s led by Fray Francisco Garces who set out to create a west coast route that later became the western section of the Old Spanish Trail. Other Spaniards continued attempts to create passages through the area but were often met by such obstacles as rugged terrain and Native Americans.

Attracted by the idea of wealth, explorers bombarded the Great Plains and Sierra Nevada Mountain area in search of furs and hides in the early 1800s. Fur trappers invaded the area and essentially devastated the territory's population of beaver, deer, and buffalo leaving very little resources for the Native American populations that inhabited the area.

Euro-Americans first entered west-central Nevada in the form of trappers (Peter Skene Ogden) and explorers (Joseph Walker) as early as 1828. Once gold was discovered in California in 1848, a steady flow of emigrants began to traverse the region along established routes. By the mid-1850s, thousands of travelers along the Walker River-Sonora Route had passed very near the current project area en route to California. This onslaught of emigrants through the region, along with the success and growth of the nearby Comstock Mining District, brought about the need for the establishment of farms and ranches in Mason and Smith Valleys. Initially, these farms and ranches provided goods and services to the constant flow of travelers along the emigrant route and the communities of the Comstock.

Many parties attempted to cross through the Mexican territory known as Nevada and into what is now known as California along the California Trail. In 1845, about fifty wagons made it across and along the Humboldt without any major trouble or problems (Shown 2011); however, success was not always the case. The infamous Donner Party illustrates just how dangerous traveling through Nevada's difficult terrain can be.

In the mid to late 1800s, miners also were drawn to the area of Nevada. Although other minerals were sought after and exist in the state, Nevada is renowned for possessing extensive mineral deposits of gold and silver. The state is well known for the Comstock Lode, the greatest discovery of gold-silver ore ever made (Shown 2011). The success of mining ventures, both in California and the nearby Comstock District, brought speculators to the immediate region. By the mid-1860s, the Yerington Mining District had been established, which included all of the Singatse Range, part of the Wassuk Range, and much of both Mason and Smith Valleys. By the 1870s, these localized mining ventures, along with the continued growth of farming and ranching in the fertile valleys, led to the establishment of Yerington, Wabuska, and other nearby communities.

Formally a Mexican Territory, what is now known as Nevada became part of the Utah Territory in 1851 as a result of the Compromise of 1850. On March 2, 1861, the Nevada Territory separated from the Utah Territory and adopted its current name from the Sierra Nevada Mountains. In 1864, Nevada became the 36th state in the union and is known today for its mining and gaming as the primary sources of revenue for the state.

3.7.5.9 Highway Development

Mining, cattle ranching, agriculture, fur trapping, introduction of water conveyance systems, all contributed to the growth and success of the States of California and Nevada. However, the development of roadways and highway systems further contributed to the growth of these states. Highway development within the State of California began in the late nineteenth century. In 1895, the California Bureau of Highways Commission, consisting of two men, recommended a state highway network of approximately 14,000 miles of roads. In 1909, funding was approved by the California Legislature for pursuit of construction of a state highway system (Kaiser 2008). The progress made under the State Highway Act of 1909 was followed by the Federal Aid Road Act of January 11, 1916, which provided matching funds up to 50 percent of the expense of road construction for states participating in the program. The Federal Aid Road Act of 1916 would form the basis of what would later become the Interstate Highway System, established by the Act of 1956.

<u>Highway 58</u>

Highway (or Route) 58 (formerly Highway 466) is 241 miles in length, extends from Barstow to San Luis Obispo, and is an east-west artery across the south-central portion of the state. The highway cuts diagonally, (roughly east-west) against the grain of the state, intersecting Interstate 5, the state's transportation aorta, as well as Highways 101, 99, 14, 395, and other major linear elements such as the California and Los Angeles aqueducts, the San Andreas Fault, and the Sierra Nevada Mountains. The Highway 58 route was defined in 1933 and shares historical alignments with various highways and roadways as indicated, in part, above. The highway is known by many local colloquialisms: the Blue Star Memorial Highway; the Carissa Highway (to Route 33), the Bakersfield-McKittrick Highway (to Route 43), the Rosedale Highway (in association with Route 178), the Rosa Parks Highway (between Routes 99 and 184); as well as the Mojave Bypass; the Edison Highway (business loop near Bakersfield); and the Tehachapi Business Loop through downtown Tehachapi. Today, portions of Highway 58 are currently under construction for realignment and improvements (Faigan 2011).

<u>Highway 6</u>

As indicated above, Highway 6 was developed along the Midland Trail, a former transcontinental emigrant wagon trail from Massachusetts to California, across the Inyo Mountains into the Owens Valley

and southward into the Los Angeles Basin. Within California, Highway 6 was known as the Grand Army of the Republic Highway, in honor of Civil War Veterans (Caltrans 2009). This trail eventually was utilized as a freighting corridor by Remi Nadeau, and then became known as the Bullion Road; it also was known as the Los Angeles-Inyo Road. The Carson and Colorado Railroad paralleled the Bullion Road along the eventual corridor of Highway 6. The Southern Pacific Railroad (owner of the Carson and Colorado Railroad), eventually abandoned its rail line and deeded its ROW acreage to the LADWP for the construction of the California Aqueduct, as well as to the BLM and the State of California for the purposes of road construction, such as that of Highway 6 (Caltrans 2009). Originally, Highway 6 followed the present route north of Bishop to Benton through the Range and Basin Region, as well as southward along Highway 14 to Santa Clarita and Interstate 5 to Los Angeles, and southward along Highway 110, terminating at the Pacific Ocean along Highway 1. In 1931, Highway 6 was paved from Los Angeles to Bishop, although portions were re-routed and/or abandoned later during the engineering of Highway 14 in the 1960s (Gagnon n.d.).

Highway 395

U.S. 395, also known as the Three Flags Highway, was one of the earliest transportation arteries established within the State of California. The route extends from near the Mexico border in San Diego and traverses northward, paralleling and conjoining at times, and realigned historically to a point at Victorville. Between Victorville and Inyokern, U.S. 395 remains as it was aligned, following the Old Bullion Road (the same alignment utilized in part for the construction of the California Aqueduct), extending from Cerro Gordo to Olancha, and then along the Los Angeles-Inyo Road, southward to Los Angeles (Westbrook n.d.). This road network was an important freighting corridor during the historic mining era of California. Additionally, portions of this highway were established along the transcontinental Midland Trail, an emigrant and freighting wagon trail.

Locally, within the Proposed Project area, the portion of the Midland Trail associated with U.S. 395 was a wagon trail, circa 1860s-1900, for the freighting of silver and gold from the Tonopah and Goldfield mine camps (Field and Nitzman 2007-2011). Construction on U.S. 395 was begun in 1909, and the routes between Riverside and Moreno Valley, as well as between Inyokern and the Nevada State Line, were established. The Midland Trail portions were incorporated circa 1913-1920. The Federal Highways Administration officially designated the Three Flags Highway as Highway 395, and by 1934 the route was complete from the Canadian border to near the Mexican border in San Diego (Kaiser 2004-2008).

3.7.6 Paleontological Resources

Paleontological resources are generally defined as fossil remains, fossil localities, and formations that have produced fossil material in other nearby areas. The paleontological resource of a rock unit encompasses any preserved evidence of once living organisms. As recognized here, this pertains to fossils preserved either as impressions of soft or hard parts; mineralized remains of hard parts; tracks, burrows, or other trace fossils, coprolites, seeds, or pollen; and other microfossils.

3.7.6.1 Geological Setting

The Proposed Project crosses over a number of geologic rock units. The BLM Potential Fossil Yield Classification (PFYC) system is used to classify the geologic units. The BLM established the PFYC system to quantify the occurrence of paleontological resources on public lands and risk of impacting them (BLM 2007). Geologic units are assigned a sensitivity classification level of one (very low) two (low), three

(moderate), four (high) and five (very high). The PFYC System is used by BLM and other governmental agencies to assess impacts to paleontological resources and suggest appropriate mitigation measures.

Quaternary alluvium (Qa, Qal). Quaternary alluvium (late Pleistocene and Holocene age) has been mapped in the western Mojave (Dibblee 1967; Bortugno and Spitter 1986; Jennings, Burnett, and Troxel 1962), in Owens Valley (Jennings 1958; Matthews and Burnett 1965; Strand 1967), in Long Valley and Mono Lake (Strand 1967) and in Nevada (USGS Open File Report 2005-1305). These sediments consist of alluvial clay, sand, and gravel. Jefferson (1991a and b) and Reynolds and Reynolds (1991b) have reported late Pleistocene faunas from the western Mojave Desert and elsewhere in eastern California.

Throughout southern California these sediments have been repeatedly demonstrated to be highly fossiliferous, yielding the remains of large extinct Ice-Age (Pleistocene) mammals such as mammoths, mastodons, camels, sabertoothed-cats, tapirs, sloths and horses as well as amphibians (salamanders, frogs, toads), reptiles, birds and small mammals (Jefferson 1991a, 1991b). These sediments would have a high potential to contain significant paleontological resources and so would be assigned high paleontological sensitivity. Under the BLM PFYC system, these rock units would be rated Class 4 (high potential) (BLM 2007).

Quaternary lake deposits (Ql). Quaternary lake deposits are present in major lake basins like China, Owens, Long Valley, and Mono (Jennings 1958; Jennings, Burnett and Troxel 1962: Matthews and Burnett 1965; Strand 1967). Because of the fine grained nature of lake sediments, silts and clays, often fossils are preserved. Fossil fish and birds have been recovered from recent grading of the surface of Owen Lake (dry) (Smith, Reynolds, and Serranoet 2009). Where present at the surface or at depth within the study area, these sediments would have high potential to contain significant paleontological resources, and so would be assigned high paleontological sensitivity. Under the BLM PFYC system, these rock units would be rated Class 4 (high potential) (BLM 2007).

Quaternary dune sands (Qs). Quaternary dune sands are present along the eastern shore of Owens Lake (Jennings 1958). These dunes have been mapped as recent in age, but stabilized dunes near Edwards Air Force base at the northern shore of Pleistocene Lake Thompson have yielded a Late Pleistocene fauna (Reynolds and Reynolds 1991). At depth within the study area, these sediments would have high potential to contain significant paleontological resources, and so would be assigned high paleontologic sensitivity. Under the BLM PFYC system, these rock units would be rated Class 4 (high potential) (BLM 2007).

Quaternary older alluvium (Qol). Quaternary older alluvium (mid to late Pleistocene age) has been mapped in the western Mojave (Dibblee 1967; Bortugno and Spitter 1986) in vicinity of Hawes and Kramer Junction. These sediments consist of alluvial clay, sand, and gravel.

In Kramer Junction, Hawes, and Edwards Air Force Base, these sediments have been repeatedly demonstrated to be highly fossiliferous, yielding the remains of large extinct Ice-Age (Pleistocene) mammals such as mammoths, mastodons, camels, and horses as well as amphibians (salamanders, frogs, toads), reptiles, and small mammals (Jefferson 1989, 1991a 1991b; Reynolds 1989, 1991). The Quaternary older alluvium may be from 450,000 to 800,000 years in age (Reynolds 1989). These sediments would have a high potential to contain significant paleontological resources and so would be assigned high paleontological sensitivity. Under the BLM PFYC system, these rock units would be rated Class 4 (high potential) (BLM 2007).

Quaternary nonmarine deposits (Qc). Quaternary nonmarine deposits are present in a few areas of the proposed project area. Often these sediments are alluvial derived from adjacent mountains and hills. Because of this, they are often very coarse, such as fanglomerates. Under the BLM PFYC system, these rock units would be rated Class 3 (moderate potential) (BLM 2007).

3.7.6.2 San Bernardino County

Barstow-Hinkley Segment

This segment follows SR 58 and was mapped by Bortugno and Spittler (1986). Most of the segment is underlain by Quaternary alluvium.

Hinkley-Kramer Junction

The first two miles west of Hinkley, the route is in Quaternary alluvium. Two miles to nine miles west of Hinkley, and from the vicinity of Hawes to Jimgrey, the route is in Quaternary older alluvium (Bortugno and Spittler 1986). During construction monitoring of similar aged rocks north of Kramer Junction and at Hawes, fossil vertebrates such as fish, desert tortoise, rabbits, gopher, squirrel, mice, rats, kit fox,, camel (extinct), wapiti, horse (extinct) were recovered (Jefferson 1989; Reynolds 1989, 1991) which may be 500,000 years in age (Irvingtonian Land Mammal Age) at the surface. There is a potential to recover similar types of fossils during earth disturbing activities.

Kramer Junction to Boron

This segment is mapped as Quaternary alluvium.

Kramer Junction to Atolia

Although this segment from Kramer Junction north about 3 miles is mapped as Quaternary alluvium (Jennings et al. 1962), recent paleontological monitoring has recovered 500,000 years old vertebrate fossils (see Hinkly-Kramer Junction section) and the rocks are probably Quaternary older alluvium. A segment north of Saddleback Mountain is in Quaternary nonmarine sediments which are Pleistocene in age. Near the San Bernardino-Kern County line, the route crosses Quaternary alluvium, granitic rocks, Quaternary nonmarine sediments, granitics, and Quaternary alluvium. The Quaternary nonmarine have a potential to yield fossil resources during ground-disturbing activities associated with construction.

Atolia-Johannesburg

According to Jennings, et al. (1962), this segment is in granitics and Quaternary alluvium.

Johannesberg to Searles

The rock unit present along the Proposed Project route as it leaves US 395 and follows Trona Road, is Precambrian rocks, granitics, Quaternary nonmarine deposits, and Quaternary alluvium.

3.7.6.3 Kern County

Searles to Ridgecrest

The southern portion of the route is in granitics and Quaternary alluvium.

Where the route enters the Ridgecrest Valley, the underlying geology is Quaternary alluvium. The Ridgecrest area during the last Ice-Age received waters via the Owen River from the overflow of Owens Lake (Gath 1984, 1986, 1987) and a much larger lake which was shallow (25 feet) occupied the broad Indian Wells Valley (Blanc and Cleveland 1961). There is an area of Quaternary lake deposits near Ridgecrest. Near China Lake just north of Ridgecrest, Late Pleistocene large extinct mammals such as mammoth, horse (two species), camel, llama, bison (two types), saber-tooth cat, and sloth as well as fish, frog, turtle, birds (several kinds) dog or coyote, large sized cat, deer and rodents have been recovered (Jefferson 1991a).

Ridgecrest to Inyokern

As with the Searles to Ridgecrest segment, there is a potential during construction to recover Late Pleistocene vertebrates from Quaternary lake deposits and Quaternary alluvium.

3.7.6.4 Kern-Inyo County

Inyokern to Little Lake

Quaternary alluvium and Quaternary nonmarine deposits are present along the route.

3.7.6.5 Inyo County

Little Lake to Olancha

Although now dry, Owen Lake is an artifact of the Los Angeles Department of Water and Power (DWP) drawing water resources from the Owens Valley and Mono Basin. During the Pleistocene, a much larger lake occupied this basin (Blanc and Cleveland 1961; Gath 1987, 1988). In the Olancha area, sediments of Owens Lake may be encountered during construction.

At Haiwee Reservior, a remains of a mammoth (*Mammuthus*) were recovered (Jefferson 1991a).

Olancha to Keeler

Here the route follows State Highways 190 and 136.

In Pleistocene times, the Owens River from the headwaters in northwestern Long Valley near Mammoth and flowed past its current terminus Owens Lake south to China Lake and east to Searles Lake and Panamint Valley (Blanc and Cleveland 1961; Smith, Reynolds and Serrano 2009). During the recent Owen Lake Project to level the current surface of Owens Lake to allow Owen River water to flood the desiccated surface and to re-establish grass vegetation, partially articulated and disarticulated fossil fish skeletal material, teeth, and scales representing several species were recovered during paleontological monitoring (Smith, Reynolds and Serrano 2009). These finds were south of Keeler and west of the

junction of State Highways 190 and 136. The route follows these highways and there is a potential for similar finds at higher elevations.

During the high stand of Pleistocene (Ice-Age) Owens Lake, the lake surface elevation was at 3881 feet as evidenced by visible prominent shorelines, and at least 328 feet above the present lake level (Gath 1987, 1988). In addition to the fish fossils, fossil mammals including a cat (medium-sized), elephant (mastodon or mammoth), horse, camel and bison were collected from several sites around Owen Lake (Jefferson 1991a). There is a potential for similar finds during construction.

Lone Pine Segment

This segment (Lone Pine Narrow Gauge Road) actually crosses Owen Lake sediments (Quaternary lake deposits). There is a record of fossil mammoth remains that were collected at Lone Pine (Hay 1927; Jefferson 1991a). As discussed in the Olancha to Keeler section, there is a high potential to recover significant fossils in these sediments in ground-disturbing activities associated with construction.

Keeler to Owenyo

Like the Long Pine Segment, a portion of route (Owenyo-Lone Pine Road) is in Owen Lake sediments) Quaternary lake deposits). And as discussed in the Olancha to Keeler segment, there is a high potential for the recovery of significant fossils during ground-disturbing activities during construction.

Owenyo to Independence

Ancient Owens Lake extended north of the Owen Valley to an area half way between Independence and Big Pine (Blackwelder 1954; Blanc and Cleveland 1961). These lake sediments may be present where the Owenyo-Lone Pine Road crosses the Owens River drainage near Independence. Most of the route is in Quaternary alluvium.

Independence to Big Pine

The route leaves the US 395 corridor in several areas. Most of the route is Quaternary alluvium.

Big Pine to Bishop

This segment leaves the US 395 corridor and takes surface roads to Bishop. Most of the route in Quaternary alluvium

3.7.6.6 Inyo and Mono Counties

East of Bishop to Benton Hot Spring

The route follows the US 6 corridor. Most of the route is Quaternary alluvium.

Laws to Tom's Place

Most of the route is in Quaternary volcanics. There is Quaternary alluvium north and east of Laws. There are also Quaternary terrace deposits of Pleistocene Long Valley Lake near Tom's Place (see Tom's Place to Lee Vining segment below).

3.7.6.7 Mono County

Tom's Place to Lee Vining

During the Pleistocene, Long Valley caldera, a large depression formed from the eruption of the Bishop Tuff and subsequent collapse of the roof above the magma chamber some 740,000 years ago (Ruff 1984). This topographic low was filled by a lake in which lake sediments were deposited which consisted of diatomaceous earth and clay which are approximately 200 feet thick. This Pleistocene lake has been called Long Valley Lake (Blanc and Cleveland 1961). The highest lake terrace is at 7600 feet. Other than the fossil diatoms (microscopic silica shells of green algae), no other types of preserved fossils have been found (Ruff 1984).

In the middle portion of the segment, the route crosses several areas of volcanic rocks and glacial till.

At the northern end of the segment, the route enters the Mono Lake Basin. The current Mono Lake is saline. The Mono Lake Basin was first studied in detail by Russell (1889). During the Late Pleistocene, the Mono Lake Basin was filled from 10-15,000 years BP (before present) and again at 25,000 years BP (Gath 1984). This Pleistocene lake was called Lake Russell (Payne, et al., 1984). A series of ancient terraces in the basin chronicles the geomorphic history of Lake Russell which when was full was 672 feet above the current level of Mono Lake (Stout 1984). Except for the shells of microscopic diatoms and ostracods, no fossils of mollusks (clams and snails), fish or any other vertebrates have been found from surface outcrops around the basin (Russell 1889). Shells of three kinds of freshwater mollusks were obtained from the bottom of a well about 100 feet deep on the northern margin of the basin indicating the Pleistocene Lake Russell was freshwater at its higher stages (Russell 1889). Recovery of any additional fossils from deposits of Pleistocene Lake Russell would be considered significant.

Lee Vining to Bridgeport

As discussed in the Tom's Place to Lee Vining segment, the southern portion of route crosses the Mono Lake Basin. The central portion of the segment, the route leaves in US 395 APE and follows a dirt road in Quaternary glacial deposits. In the Bridgeport Valley at the northern end of the segment, the route joins US 395 APE and is in Quaternary alluvium.

Bridgeport to Coleville

With this segment is a wide variety of rock types. The valleys are underlain with Quaternary alluvium. There are several areas with Quaternary glacial deposits. Also there are metamorphic and granitic rocks

Coleville to Minden, Nevada

Within this segment, there are Mesozoic metamorphic rocks and, volcanic rocks as well as Quaternary alluvium in the valleys. There is a record of extinct mammoth and horse remains recovered from Wellington Station, Walker River and Aurora Railroad (Hay 1927; Jefferson, McDonald, and Livingston 2004)

Minden to Carson City Nevada (short segments)

Most of the route is Quaternary alluvium. From the Nevada State Prison, Carson City (Jefferson, McDonald and Livingston 2004), there are records of an extinct sloth, mammoth, horse, camel and bison as well as dog or coyote, cat, and deer

As shown in Table 30, the proposed project area contains some areas of high sensitivity (4) for potential paleontological resources based on BLM PFYC (BLM 2007).

Table 30: Paleontological Sensitivity of the Lithologic Units Underlying the Proposed Project Area

Lithologic Unit	BLM*
Quaternary Alluvium	4 (high)
Quaternary Nonmarine Deposits	4 (high)
Quaternary dunes	4 (high)
Quaternary Lake Deposits	4 (high)
Quaternary Older Alluvium	4 (high)
Quaternary volcanics	2 (low)
Granitics	1 (very low)
Precambrian rocks	2 (low)

* U. S. Bureau of Land Management Potential Fossil Yield Classification (BLM 2007)

3.7.7 Cultural Resources Field Survey

3.7.7.1 Methods

Chambers Group archaeologists conducted Class III cultural resources inventory of a 434-mile portion of the APE; during October 25, 2010 through October 30, 2010 in the Lee Vining area on Inyo and Humbolt-Toiyabe National Forest lands, Bishop BLM managed lands, City, County, and Regional Lands, and unclassified lands; October 26, 2010 through October 31, 2010 from Topaz Lake to Bridgeport on Humbolt-Toiyabe National Forest lands; November 1, 2010 through November 4, 2010 from Bridgeport to Lee Vining on Humbolt-Toiyabe National Forest Lands; November 6, 2010 through November 20, 2010 in the area south of Lee Vining on City, County, and Regional lands and unclassified lands; November 17, 2010 through November 19, 2010 from Carson City to Topaz Lake on Humbolt-Toiyabe lands; May 9, 2011 through May 13, 2011 in the Fish Springs area south to Aberdeen and Lone Pine area and around the backside of Owens Lake of Los Angeles Department of Water and Power (LADWP) lands; May 23, 2011 thorugh May 25, 2011 from Ridgecrest to Inyokern on Naval Air Weapons Station China Lake; June 20, 2011 through June 24, 2011 from Barstow area to Boron and then north from Kramer Junction to Ridgecrest, the Laws area south to Bishop, and south to Little Lake and to Haiwee Reservoirs, and around the backside of Owens Lake to Olancha on Barstow, Ridgecrest, and Bishop BLM managed lands; July 2, 2011 through July 16, 2011 on Inyo National Forest lands; July 5, 2011 through July 8, 2011 on unclassified lands from Carson City to Topaz Lake; and July 11, 2011 through July 14, 2011 from Bishop to Benton Hot Springs on Bishop BLM managed lands. The 434 miles of the APE which was surveyed was inventoried to BLM Class III standards, as defined in the BLM Manual 8110.21C4 and according to Section 15064.5 of the CEQA Guidelines. Surveys conducted to date for the portion of the APE that was surveyed was confined to the Caltrans ROW as defined by Leach-Palm et al (2010) as either

the fence line, the pole line, or, in the absence of those features, an arbitrary distance of 100 feet from the pavement's edge or 50 feet on either side of the center line of unimproved roads. These areas were examined by means of an Intensive-level pedestrian survey, with transects no more than 15 meters apart.

Various permits or rights-of-entry were required by the DOD, BLM, NFS, Caltrans, LADWP, and Native American tribes prior to conducting surveys. The surveys were conducted in October and November of 2010 and between May and July of 2011. Timing of these surveys was related to the issuance of the specific permits.

In addition to the record searches and the Class III cultural resource inventory to date, cooperating federal agencies have identified the need for record searches and/or pedestrian surveys of the portions of the Proposed Project Survey Area that have not been previously surveyed within the last five years. Initially, based on a prior agreement between the Inyo National Forest and BLM Bishop Resource Area, only the portions of the Proposed Project Survey Area that have not been surveyed or have not been surveyed within the last seven years would require a pedestrian survey (Jim Shearer, BLM, personal communication, October 2010). Subsequently, BLM decreased the time limit to five years (pers. comm., Harold Brewer, email, January 4, 2011), and USFS concurred with the five years time frame (pers. comm., Sarah Johnston to Harold Brewer, email, January 4, 2011).

Ground visibility for various portions of the surveyed area ranged from fair (>50%) to excellent (90%<), with minor areas of dense vegetation in arroyos or drainage ditches. Where poor ground visibility or steep changes in topography occurred such as areas where the slope exceeded 30 percent, crew members ceased walking linear transects and observed the APE from the pavement of the highway and/or from only a short distance away from the APE but where it was still safe to traverse the landscape. When cultural resources were encountered, the crew transected the immediate area at closer intervals to identify the extent of the discovery and locate any associated artifacts or features. Archaeological sites were defined as any three or more archaeological items within 30 meters of one another. Any item more than 50 meters from another was recorded as an isolated find. Single features, such as rock cairns and prospect pits, were also recorded as sites.

After identifying a site, it was marked with flagging tape, and the artifacts and/or features were individually pin flagged. Site boundaries and artifacts were then mapped using the *Trimble* units, which also provided information to generate an accurate sketch map. Very small prehistoric sites, generally those composed of less than ten flakes, had the majority of their debitage point provenienced by the *Trimble* unit to document the distribution pattern of artifacts across the site. In the case of much larger and more complex sites, diagnostic artifacts were point provenienced, and debitage/ refuse concentrations were provenienced in clusters where they occurred and a written description of the type and quantity of items present was produced.

Each site was digitally photographed with geotagged images using a Motorola XOOM™ tablet with a 5-megapixel camera, with at least one overview of the site's setting in relation to a recognizable landmark for reference purposes. Diagnostic artifacts were photographed in addition to a written description. In some cases, artifacts such as bottle bases were illustrated on paper to show their makers mark. A Department of Parks and Recreation (DPR Form 523) primary record and archaeological site form were completed for each site.

A visual inspection of the soil deposition was evaluated against the surface artifacts observed at the site and the initial assessment of site integrity in order to make a reasonable evaluation regarding the potential for intact subsurface deposits. Areas with bedrock outcroppings, ridge tops, or on eroding slopes were assumed to have limited potential for subsurface deposits.

Only the sites that were newly discovered within the APE were evaluated for their ability to meet the four NRHP criteria, based on surface manifestations within the APE. No subsurface investigations were implemented during the survey. The majority of sites were not associated with important events (Criterion A) or with important individuals (Criterion B) and did not demonstrate unique construction methods or were an unusual type (Criterion C). Therefore, most of the sites were evaluated based only on their potential to provide additional information important to prehistory or history (Criterion D). Sites with a large diversity of artifacts, including temporally diagnostic indicators, were usually recommended eligible for inclusion in the NRHP. Simple lithic reduction sites or historic-period refuse scatters with little or no integrity remaining were usually recommended not eligible. These evaluations are discussed further in Chambers Group Inc. 2011.

No materials or artifacts were collected during the survey at anytime within the APE. GPS data, digital photographs, site records, location and site sketch maps are on file and curated at Chambers Group, Inc. corporate headquarters in Santa Ana, California. Additionally, the Department of Parks and Recreation site records are included in Chambers Group Inc. 2011 and will be submitted to the appropriate CHRIS institutions, the appropriate Nevada information centers, as well as the SHPO for archival purposes.

3.7.7.2 Results

The Class III cultural resource inventory resulted in the documentation of 185 newly recorded sites and the updating of 223 previously recorded sites. The inventory to date resulted in the identification of a total of 414 previous and newly recorded sites within the APE that may potentially be adversely impacted by the Proposed Project. The remaining portions of the APE that intersect with Native American tribal lands in California and the approximate seven miles of the APE in Nevada that lay within Humbolt-Toiyabe National Forest lands will require additional surveys.

Of the 229 sites that were previously recorded within the APE, 223 were re-located and subsequently updated. Six of the sites were not able to be re-located due to missing records from the information centers. Chambers Group archaeologists revisited the area where the 223 resources should lie according to the locational information provided by each site record. If Chambers Group was unsuccessful in re-locating the resource, then the proper DPR form (continuation sheet or primary record) was completed stating so. It is possible that the resources that were not re-located have been disturbed or that there is a discrepancy in the locational data provided by the site record.

A total of 32 sites were located in the APE on BLM Lands (Ridgecrest, Bishop, and Barstow BLM). Of those 32 sites, 25 were not re-located and seven were re-located and their condition updated. Of the seven sites that were updated, six are recommended by Chambers Group as ineligible for listing to the NRHP, and one site is recommended as eligible for listing.

A total of 13 sites were located in the APE on LADWP Lands. Of those 13 sites, seven were not re-located and six were re-located and updated. Of the six sites that were updated, three are recommended by Chambers Group as ineligible, two are unevaluated, and one is undetermined for listing to the NRHP.

A total of ten sites were located in the APE on Toiyabe-Humbolt National Forest Lands. Of those ten sites, seven were not re-located and three were re-located and updated. The three sites that were re-located and updated it are recommended by Chambers Group as ineligible for listing to the NRHP.

A total of 35 sites were located in the APE on Inyo National Forest Lands. Of those 35 sites, 17 were not re-located and 15 were re-located and updated. Of the 15 sites that were updated, 12 are recommended by Chambers Group as ineligible, and two are eligible for listing to the NRHP. The fifteenth site remains unevaluated.

A total of 11 sites were located in the APE on Department of Defense Lands. Of those 11 sites, 9 were not re-located and 2 were re-located and updated. Of the two sites that were updated, both are recommended by Chambers Group as ineligible for listing to the NRHP.

A total of 40 sites were located in the APE on City, County, and Regional Lands. Of those 40 sites, 36 were not re-located and four were re-located and updated. Of the four sites that were updated, three are recommended by Chambers Group as ineligible for listing to the NRHP. The fourth site is recommended as having an undetermined eligibility.

A total of 61 sites were located in the APE on Unclassified Lands. Of those 61 sites, 41 were not re-located and 16 were re-located and updated, and 4 were not re-located. Of the 16 sites that were updated, 12 are recommended by Chambers Group as ineligible, 1 is eligible, and 3 remain unevaluated.

A total of 26 sites were located in the APE on Private Lands. Of those 26 sites, 25 were not re-located and 1 was re-located and updated. This site is recommended by Chambers Group as ineligible for listing to the NRHP.

One site in the APE falls within Bureau of Indian Affairs (BIA) Lands; however, this particular portion of the fiber optic backbone corresponds to a existing or proposed fiber optic cable that is designated to be leased and so no survey or site update was necessary.

A total of 34 newly discovered sites are located in the APE on BLM lands (Ridgecrest, Bishop, and Barstow BLM). Of those 34 sites, all are recommended by Chambers Group as ineligible for listing to the NRHP.

A total of 69 newly discovered sites are located in the APE on LADWP lands. Of those 69 sites, 67 are recommended by Chambers Group as ineligible for listing to the NRHP, and two are unevaluated.

A total of 29 newly discovered sites are located in the APE on Unclassified lands. Of those 29 sites, 28 are recommended by Chambers Group as ineligible for listing to the NRHP, and one is unevaluated.

A total of two newly discovered sites are located in the APE on Humbolt-Toiyabe National Forest lands and both sites are recommended by Chambers Group as ineligible for listing to the NRHP.

A total of 20 newly discovered sites are located in the APE on Inyo National Forest Lands. Of those 20 sites, 18 are recommended by Chambers Group as ineligible for listing to the NRHP, and two are unevaluated.

A total of eight newly discovered sites are located within the APE on Department of Defense Lands, all of which Chambers Group recommends as ineligible for listing to the NRHP.

A total of 23 newly discovered sites are located in the APE on City, County, and Regional Lands. Of those 23 sites, 21 are recommended by Chambers Group as ineligible for listing to the NRHP, and two are unevaluated.

Of the 185 newly recorded sites, 178 are recommended ineligible for NRHP listing and 7 are unevaluated.

3.7.7.3 Discussion/Interpretation

The current inventory resulted in the recording of 185 previously unrecorded sites. Several general themes or domains can be briefly addressed based on the research questions presented in Chambers Group Inc. 2011. Archaeological sites identified in the survey area were primarily historic-period trash scatters perhaps relating to travel along the highway corridors and prehistoric lithic scatters. The historic sites are limited to sparse artifacts scatters within disturbed contexts that render the site integrity as poor. These sites consist primarily of crushed cans, fragmented glass and ceramic items, and automobile parts. The majority of these refuse items appear to be trash from single-episode deposits. These sites can address only minor inferences in regard to early travel along the highway corridor, suggesting that travelers pulled alongside the road with possible activities being simply to dump trash but also possibly to consume food, perform vehicle repairs or maintenance, and stop for other temporary activities.

The prehistoric sites are limited to both sparse and moderately dense lithic scatters, mostly of obsidian flakes and tools. The majority of these scatters lay within disturbed contexts that render the site integrity as poor. Some of the larger lithic scatters appear to be in their primary contexts based on field observations regarding their size, density and diversity of artifacts. These sites may represent possible habitation sites which could contain information that can contribute to an understanding of the local area or regional archaeology; and others may be a portion of nearby sites, now severed by U.S. 395. These lithic sites exhibit primarily Late-stage reduction flakes of a number of obsidian types suggestive of production of fine tool (e.g., projectile points or sharpening scraper tools or other flaked tool types). These sites require further investigation that falls outside the scope of the present Proposed Project survey. The sites provide information regarding chronology due to the projectile point types present. Lithic studies with initial counts for flake type would suggest Late phase reduction in all cases. Generally, the sites suggest a preference for the use of obsidian lithic materials over other lithic resource material types such as chert or basalt. Additionally, site' locations near various water sources could suggest possible settlement and subsistence patterns similar to the overall distribution of sites in the area.

As a result of the records search conducted to date, 229 previously recorded sites were identified within the APE. Of the 229 sites, ten are eligibile for listing to the NRHP, 23 are ineligible, 195 are unevaluated, and one site is already listed on the NRHP. A cultural resource pedestrian survey was conducted along a series of segments totaling 434 miles within the APE and resulted in the documentation of 185 newly recorded sites and 223 previously recorded sites. The inventory to date resulted in the identification of a total of 414 previous and newly recorded sites within the APE of the Proposed Project. The remaining portions of the APE that intersect with Native American Tribal lands in California and the approximate seven miles of the APE in Nevada will require further survey.

3.8. AESTHETIC AND VISUAL RESOURCES

3.8.1 Overview

The Proposed Project will involve construction near a number of different surroundings, including Caltrans and NDOT ROWs/easements adjacent to agricultural fields, natural areas, and urban and suburban streetscapes.

Although traversing some areas of outstanding landscape, the Proposed Project would be located within existing Caltrans and NDOT ROWs/easements, which are previously disturbed and lacking major vegetative growth.

3.8.2 State and National Scenic Byways

The Proposed Project would be located adjacent to or would intersect with California Scenic Highways, Nevada Scenic Highways, and National Scenic Byways (Figure 44 through Figure 8).

The California Department of Transportation designates California Scenic Highways; the Nevada Department of Transportation designates Nevada Scenic Byways; and the United States Department of Transportation (USDOT) designates National Scenic Byways. Designation of Scenic Highways and Byways is based on natural, recreational, historical, cultural, archaeological, and scenic qualities of less-traveled roads.

3.8.2.1 California

San Bernardino County

Interstate Freeway 40 (I-40), SR 247, and SR 58 in San Bernardino County are defined as Eligible State Scenic Highway – Not Officially Designated.

Kern County

SR 58 in Kern County is defined as Eligible State Scenic Highway – Not Officially Designated.

Inyo County

SR 168 is a U.S. Forest Service Scenic Byway and a California Officially Designated State Scenic Highway for approximately 16 miles from Camp Sabrina to Brockman Lane at Paiute Shoshone Indian Reservation near Bishop. The Proposed Project intersects this portion of SR 168 east of Bishop. This U.S. Forest Service Scenic Byway and State Scenic Highway climbs through pinyon-juniper woodlands to the world's oldest living trees in the Bristlecone Pine Forest.

US 395 is a California Officially Designated State Scenic Highway in Inyo County for approximately 20 miles from Fort Independence to Fish Springs Road. The route cuts through the Owens River Valley, with the high mountain ranges of the eastern Sierra Nevada as a backdrop.

The remainder of US 395 in Inyo County is defined as Eligible State Scenic Highway – Not Officially Designated. The Proposed Project also intersects with SR 190 and SR 168 (west of US 395), which are also both defined as Eligible State Scenic Highway – Not Officially Designated.

Mono County

US 395 is a California Officially Designated State Scenic Highway in Mono County for approximately 101 miles, from the Inyo County line to south of the town of Walker. Scenery here is typical of high desert meadows, with peaks of the Sierra Nevada range to the west.

3.8.2.2 Nevada

Douglas County

US 50 is a U.S. Forest Service and State Scenic Byway for approximately 21.5 miles from the California/ Nevada state line to Milepost 6 in Carson City. The Proposed Project intersects US 50 in Carson City.

Washoe County

SR 431, Mt. Rose Highway, is a U.S. Forest Service and State Scenic Byway for approximately 22.2 miles beginning at the junction of SR 28 in Incline Village and ending at Washoe County Milepost 18.8. The Proposed Project intersects SR 431 near the Douglas/Washoe county line.

3.8.3 Wild and Scenic Rivers

The National Wild and Scenic Rivers System was created by Congress in 1968 to preserve in a free-flowing condition certain rivers or river reaches that have outstanding natural, cultural, and recreational values. The Owens River Headwaters in Mono County is designated as a Wild and Scenic River and includes the upper Owens River, Deadman Creek, and Glass Creek. The Owens River Headwaters cross the Proposed Project route approximately 15.7 miles south of Lee Vining. Approximately 19 miles of the Owens River Headwaters are designated (Figure 6). Portions of the upper Owens River closest to the Proposed Project route, Deadman Creek, and Glass Creek are designated as wild, scenic, and recreational. The Proposed Project route does not cross these portions of designated as wild and scenic rivers.

Figure 4: State and National Scenic Byways, Inyo County, California

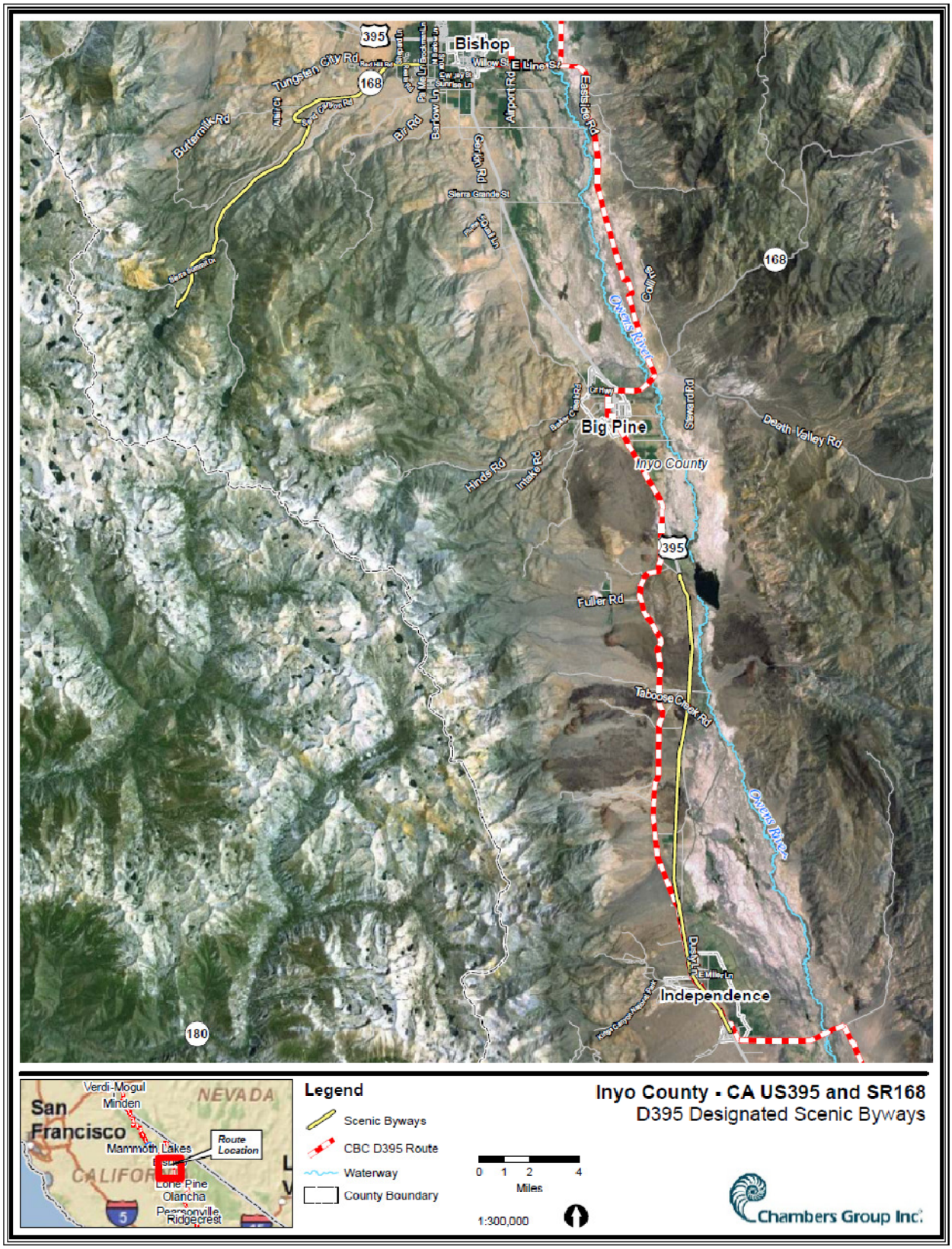


Figure 5: State and National Scenic Byways, Mono County, California

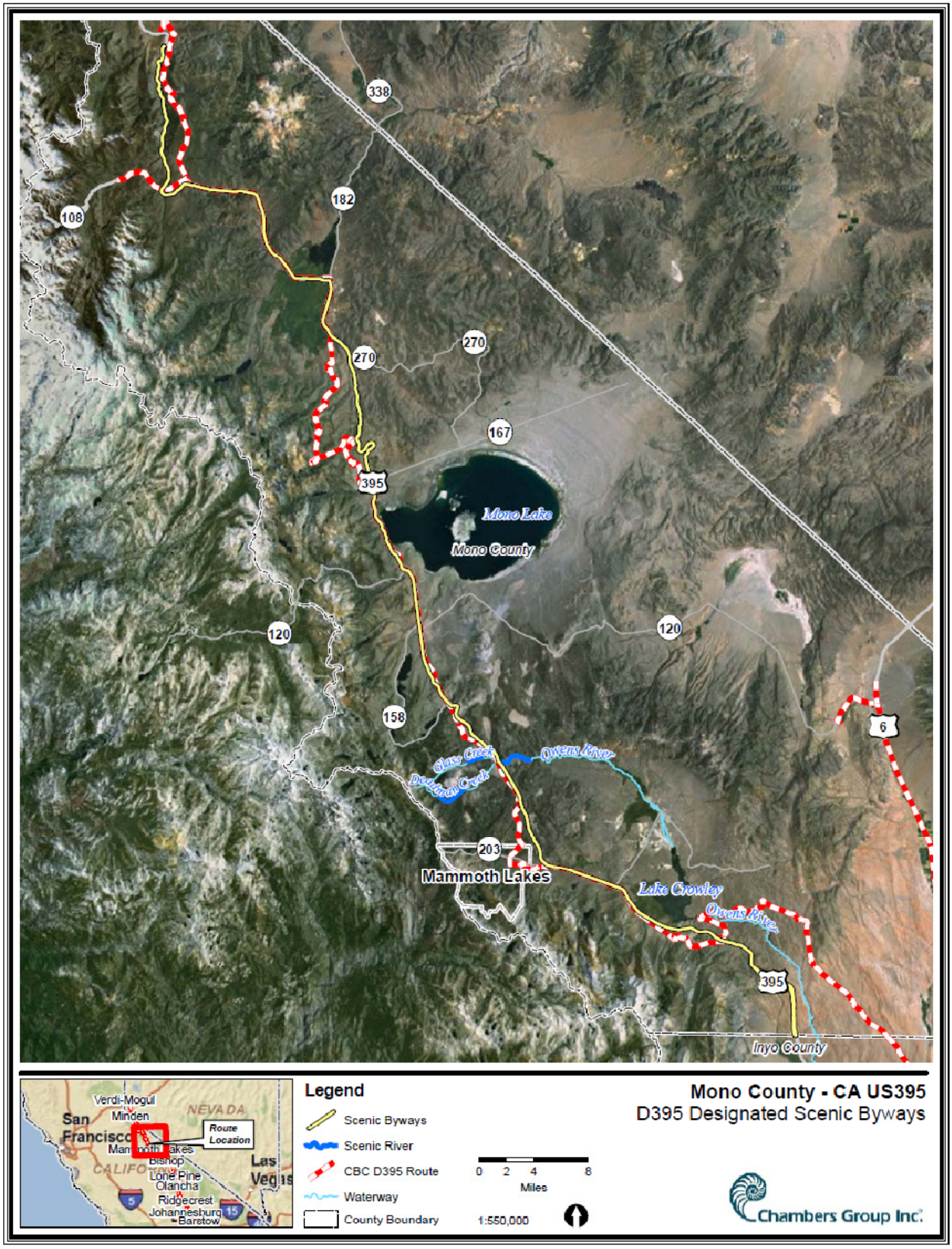


Figure 6: Designated Scenic Byways, Mono County – Upper Owens River, California

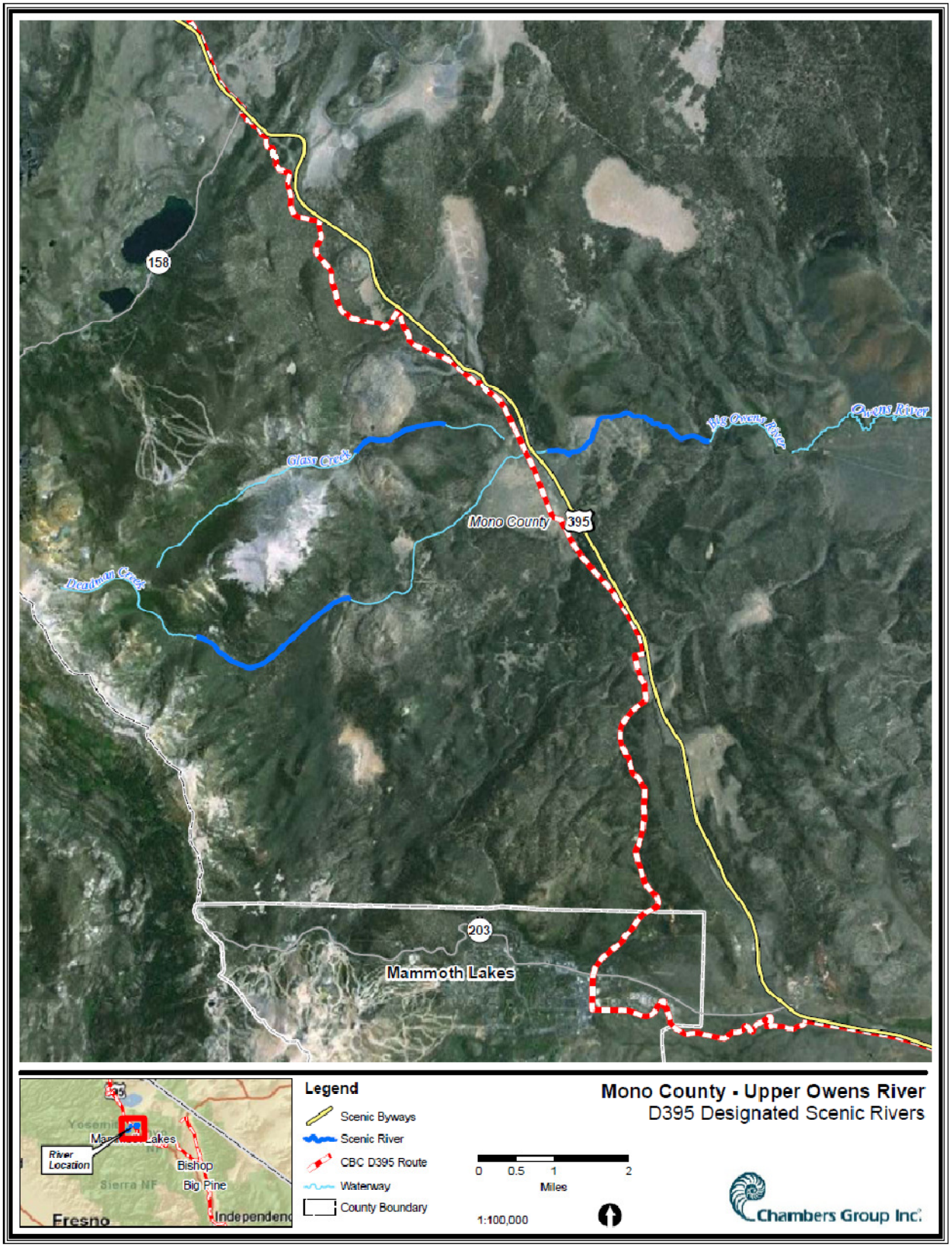


Figure 7: Designated Scenic Byways, Carson City, Douglas, and Lyon Counties, Nevada

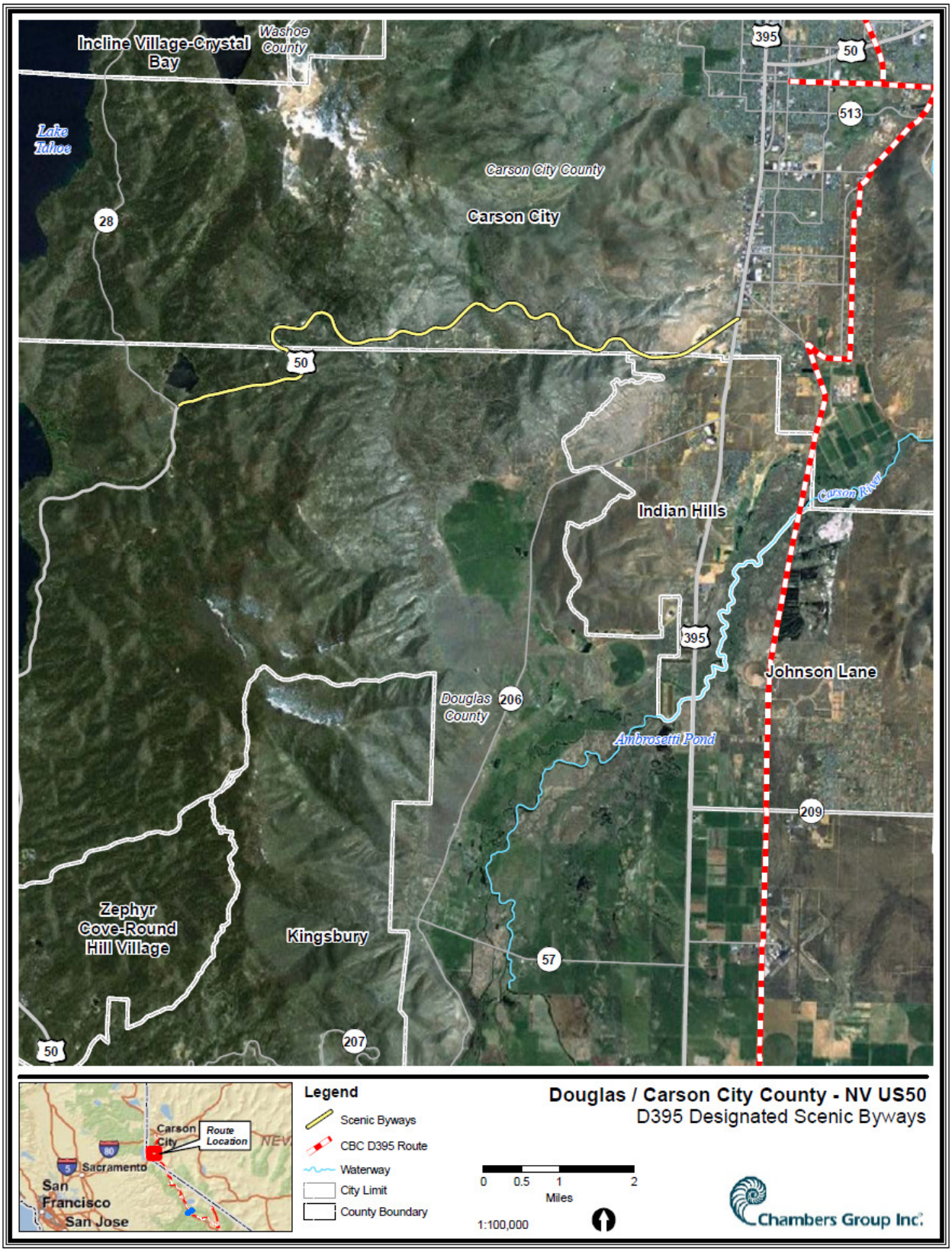
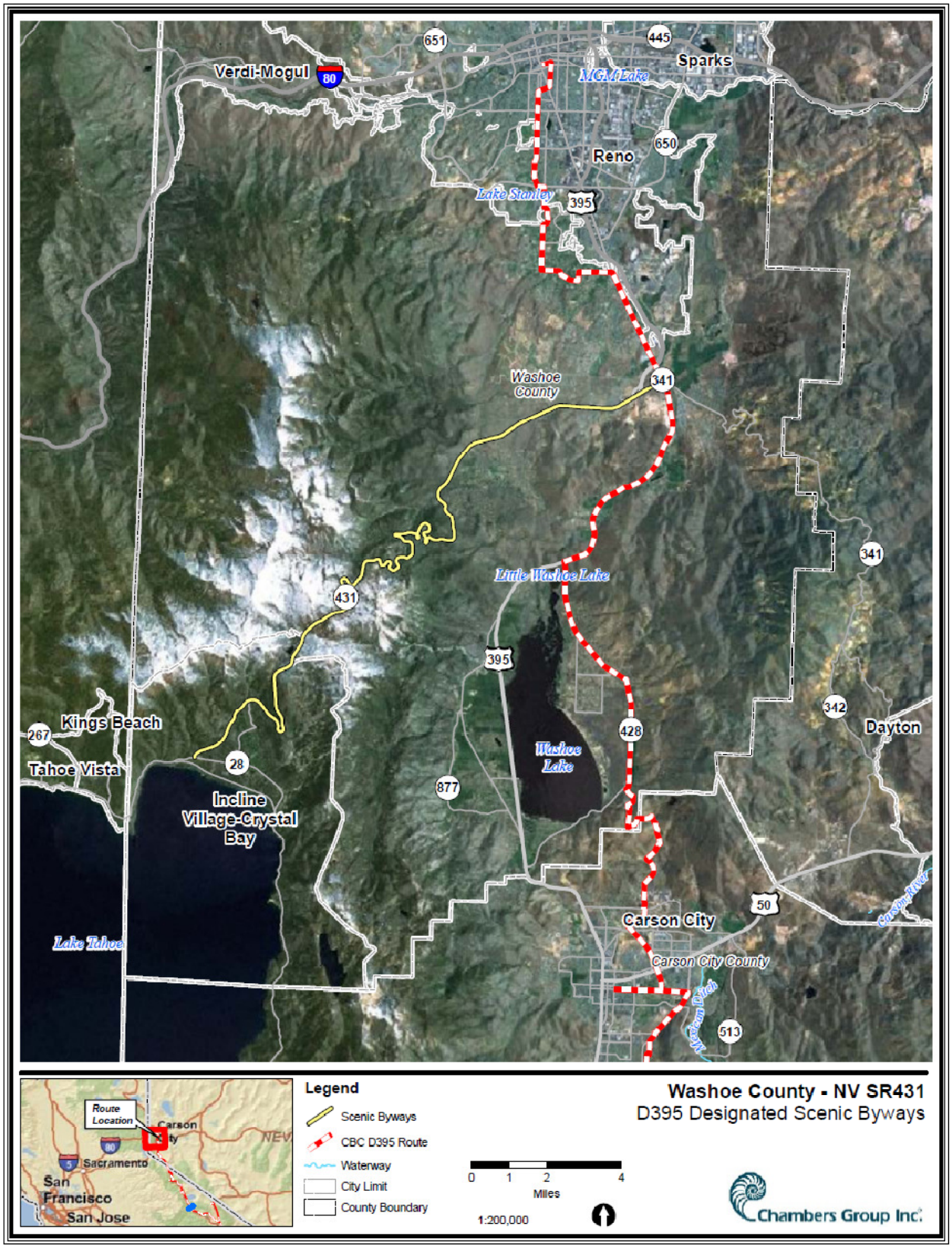


Figure 8: Designated Scenic Byways, Washoe County, Nevada



3.8.4 National Forests

The Eastern Sierra is home to federally designated national parks, national forests, and wilderness areas. These lands are generally open to the public, provide outdoor recreation opportunities, and contribute to the various scenic vistas for which the area is known. The Digital 395 Proposed Project route runs through two national forests, Toiyabe National Forest and Inyo National Forest. Scenic resources in these areas include mountains, meadows, streams, lakes, forested areas, and rock outcrops. The route runs through the Mono Basin National Forest Scenic Area, where the landscape consists of mountainside to the west and Mono Lake to the east.

Viewed from the highways and roads the Proposed Project route follows, the visual quality of national forest lands ranges from high to low quality. An example of high quality is the Mono Basin area. Lower visual quality occurs where development and cut and fill from roadways are visible along the transportation corridors.

The US Forest Service (US Forest Service, 2011) has Visual Quality Objectives (VQOs) for managing visual resources. Levels of VOQs are defined as:

- Preservation (Very High Quality): only ecological changes, except for very low recreational visual impacts
- Retention (High Quality): activities are not visually evident
- Partial Retention (Moderate Quality): activities remain visual subordinate to the landscape character
- Modification (Low Quality): activities dominate but borrow from the landscape character
- Maximum Modification (Very Low Quality): activities dominate

The 1986 Toiyabe National Forest Land and Resource Management Plan (INFLRMP) goals and standards for the visual resources includes:

- The Forest landscape will be managed with a sensitivity for visual quality.
- Utility lines generally will be buried if necessary to meet visual quality objectives. Exceptions to underground utility lines will be allowed where technological, economic, or resource protection requirements indicate that such lines should be overhead.

Management practices include:

- Maintain the “seen” area as viewed form US 395 and other major highways along the Sierra as partial retention.
- Manage the US 395 corridor (Walker River Management Area) to meet a VQO of retention.

The 1988 Inyo National Forest Land and Resource Management Plan (INFLRMP) goal for the visual resources includes maintaining or enhancing the quality of scenic resource and viewing opportunities.

The INFLRMP visual resources standards and guidelines include:

Maintain foregrounds and middlegrounds of the scenic corridors of the following travel routes to Retention and/or Partial Retention VQOs as inventoried, but not less than Partial Retention:

1. Highways officially designated by the state as California State and County Scenic Highways.
2. California State Scenic Highway System routes as designated in the September 1970 Master Plan. These highways include:
    - State Highway 120, west of US 395 to Tioga Pass
    - US 395
    - State Highway 158
    - State Highway 203
    - State Highway 168

The Mono Basin National Forest Scenic Area is subject to the provisions in the Mono Basin National Forest Scenic Area (MBNFSA) Comprehensive Management Plan (1989). A goal of the MBNFSA Plan is to:

- Manage the Scenic Area to maintain and enhance the visual resource.

The MBNFSA Plan identified VQOs which establish minimum acceptable levels of natural landscape character for the Mono Basin National Forest Scenic Area. The MBNFSA Plan identified "Retention/Partial Retention" VQOs for the Proposed Project area. Retention and Partial Retention levels of visual quality are defined as:

- Retention: activities are not visual evident
- Partial Retention: activity remain visual subordinate to the landscape character

MBNFSA Plan Standards and Guidelines include:

- Do not allow new overhead lines outside of existing utility corridors, which are visible from sensitivity level 1 roads and trails. Sensitivity level 1 observation points include US 395.
- Maintain foregrounds and middlegrounds of the scenic corridors of the following travel routes to retention and/or partial retention VQO as inventoried but not less than partial retention:
    - - Highways officially designated by the State as California State and County Scenic Highways.

Sensitivity levels are a measure of the degree of importance the public places on a landscape being viewed from a particular travelway or use area. Sensitivity level is a function of both the number of visitors as well as their intent. Level 1 is the most important and is associated with major state and

interstate highways, areas of concentration such as recreation facilities, special designations such as scenic byways or national recreation/historic trails and cultural sites. Users have a high level of concern for scenery. These can be roads, trails or waterways.

3.8.5 BLM Lands

Lands managed by the BLM are distributed throughout the Proposed Project route area. Together, BLM lands provide vast areas of mostly undeveloped and rural settings. The Proposed Project route extends through, past, or nearby BLM lands as shown in Appendix C.

The Digital 395 Proposed Project route also runs through various wilderness study areas including Independence Creek Wilderness Study Area, Symmes Creek Wilderness Study Area, Crater Mountain Wilderness Study Area, Paiute Wilderness Study Area, Coyote Southeast Wilderness Study Area, Black Canyon Wilderness Study Area, Volcanic Tablelands Wilderness Study Area, Fish Slough Wilderness Study Area, Casa Benton Range Wilderness Study Area, Diablo Wilderness Study Area, Chidago Canyon Wilderness Study Area, and Slinkard Wilderness Study Area.

In addition to these study areas, the route runs adjacent to, but not through, additional wilderness study areas including Waldorf Springs Wilderness Study Area, Mormon Meadows Wilderness Study Area, Mount Biedman Wilderness Study Area, Bodie Mountain Wilderness Study Area, Bodie Wilderness Study Area, Masonic Mountain Wilderness Study Area, and Sweetwater Wilderness Study Area.

The Digital 395 Proposed Project route runs adjacent to, but not through, multiple wilderness areas including Golden Valley Wilderness, El Paso Mountains Wilderness, Owens Peak Wilderness, Chimney Peak Wilderness, Sactar Trail Wilderness, South Sierra Wilderness, Coso Range Wilderness, Golden Trout Wilderness, John Muir Wilderness, Inyo Mountains Wilderness, Hoover Wilderness, Carson-Iceberg Wilderness, and Mount Rose Wilderness. These designated areas are shown in Appendix C .

3.8.6 State Parks and Lands

The Digital 395 Proposed Project route runs past California's Mono Lake Tufa State Natural Reserve, near the town of Lee Vining. This reserve is known for spectacular "tufa towers," calcium-carbonate spires and knobs formed by interaction of freshwater springs and alkaline lake water. The Proposed Project route also runs adjacent to Nevada's Washoe Lake State Park. This park, made up of the Washoe and Little Washoe Lakes, is located in the heart of scenic Washoe Valley, between Carson City and Reno. Views of the Sierra Nevada and the Carson Range are available from this location.

3.8.7 Military Lands

The Digital 395 Proposed Project route is locasted on lands managed by the U.S. military. Specifically, the Proposed Project is located on NAWSCL and the United States Marine Corps Mountain Warfare Training Center.

3.8.8 Native American Lands and Indian Reservation Lands

The Proposed Project would extend past and/or through Native lands including:

- Reservation Lone Pine Paiute Reservation

- Fort Independence Paiute Reservation
- Big Pine Paiute Reservation
- Bishop Paiute Reservation
- Benton Paiute Reservation
- Bridgeport Paiute Indian Colony
- Washoe Tribal Land

3.8.9 County Lands

3.8.9.1 San Bernardino County

The San Bernardino Land Use Plan Open Space Element lists SR 247, south of Barstow, as a County Designated Scenic Highway. The County's General Plan states as a goal that "The County will maintain and enhance the visual character of scenic routes in the County."

3.8.9.2 Kern County

A Kern County General Plan Circulation Element policy states that "Standards for corridor protection should parallel those established by State Scenic Highway Law (1963) and outlined in State guidelines."

3.8.9.3 Inyo County

The Inyo County General Plan Visual Resource Goal is to preserve and protect resources throughout the county that contribute to a unique visual experience for visitors and quality of life for County residents.

3.8.9.4 Mono County

Mono County General Plan states that Mono County participates in the State Scenic Highways Program. Policies and Actions pertaining to scenic highways include:

- Enforcing required regulations for protection of roadways designated as state scenic highways;
- Working with appropriate agencies to protect visual resources within existing designated scenic highway corridors; and,
- Designing and siting proposed transmission and distribution lines to minimize impacts to natural and visual resources.

3.8.9.5 Douglas County

The Douglas County Master Plan defines US 395 as a large view corridor and states that "most residents of Douglas County perceive open space and scenic views as among their most valuable resources." Master Plan Policy 5.02.05 states that "Douglas County shall establish regulations and design guidelines to ensure that buildings and structures do not alter the scenic views of significant hilltops and ridgelines."

3.8.9.6 Carson City

The Proposed Project crosses the Carson River south of Carson City. The Carson City Master Plan, Guiding Principle 3 states that "The City will identify and strive to conserve its natural, scenic, and environmentally sensitive areas including important wildlife habitat, the floodplains of the Carson River and other significant watercourses, and visually sensitive areas, such as prominent hillsides surrounding the community. In addition, the City will plan for future development to minimize the impacts of potential natural disaster events, such as wildfire and flooding, on the community."

3.8.9.7 Washoe County

The Washoe County Master Plan, South Valleys Area Plan states that "U.S. Highway 395, which winds through these verdant valleys, is a scenic corridor offering peaceful bucolic scenery, pastoral respite and magnificent mountain vistas." Plan Goals related to US 395 include Goal Thirteen: Maintain and enhance the scenic value of the US 395 corridor and other local transportation corridors through the planning area.

3.8.10 <u>Municipal Lands</u>

3.8.10.1 Barstow

I-15, I-40, SR 58 and SR 247 are designated "Scenic Highways" in the City of Barstow's General Plan, Community Development Element. These highways afford especially scenic views of the surrounding desert, the Mojave Valley, and the city.

*Policy I.14.8: "*The following highways, due to the views they afford of the community, the Mojave Valley, and the surrounding desert, are identified by the City as scenic highways: I-15, I-40, and SR 58."

3.8.11 <u>Proposed Node Sites</u>

Proposed Node sites, described in Table 6, are located within existing industrial and commercial areas.

The proposed Barstow node site is flat, consisting of mostly bare ground with small amounts of ruderal vegetation. Lands uses immediately adjacent to the proposed node site include: paved roads (Main Street and Sand Stone Road), commercial and light industrial land uses, utility poles and lines, and vacant land. There are no scenic resources on the proposed node site. The proposed node site is not located adjacent to any scenic highways or any scenic resource areas.

The proposed Boron node site is flat, consisting on mostly bare ground with some vegetation. Land uses immediately adjacent to the proposed node site include dirt and paved roads, solar farm facilities, and vacant land. There are no scenic resources on the proposed node site. The proposed node site is not located adjacent to any scenic highways or any scenic resource areas.

The proposed Ridgecrest node site is flat, consisting of bare ground with some vegetation. Land uses immediately adjacent to the proposed node site include: paved roads (N Inyo Street), light industrial land uses, and vacant land. There are no scenic resources on the proposed node site. The proposed node site is not located adjacent to any scenic highways or scenic resource areas.

The proposed Lone Pine node site is flat, consisting of bare ground with some vegetation. Land uses immediately adjacent to the proposed node site include: a cell tower, paved roads (Lone Pine Narrow Gauge Road), light industrial land uses, and vacant land. There are no scenic resources on the proposed node site. The proposed node site is not located adjacent to any scenic highways or scenic resource areas.

The proposed south Olancha node site is flat, consisting of sparse ruderal vegetation. Land uses immediately adjacent to the proposed node site include: paved roads (US 395), existing utilities, and vacant land. There are no scenic resources on the proposed node site. The proposed node site is not located adjacent to any scenic highways or scenic resource areas.

The proposed Olancha node site is flat, consisting of sparse ruderal vegetation. Land uses immediately adjacent to the proposed node site include: paved roads (School Street, Shop Street), an existing elementary school, and vacant land. There are no scenic resources on the proposed node site. The proposed node site is not located adjacent to any scenic highways or scenic resource areas.

The proposed Independence node site is flat, consisting of bare ground with no vegetation. Land uses immediately adjacent to the proposed node site include: existing paved roads (S Clay Street, Mazourke Canyon Road), existing commercial uses, and vacant land. There are no scenic resources on the proposed node site. The proposed node site is located approximately two miles south from the 395 Scenic Highway. The proposed node site is not located adjacent to any scenic resource areas.

The proposed Big Pine node site is flat, consisting of bare ground with small amounts of ruderal vegetation. Land uses immediately adjacent to the proposed node site include: existing paved roads (Hall Street and Dewey Street), light industrial uses, and some vacant land. There are no scenic resources on the proposed node site. The proposed node site is not located adjacent to any scenic highways or scenic resource areas.

The proposed east Bishop node site is flat, consisting of bare ground. Land uses immediately adjacent to the proposed node site include: existing paved roads (Line Street), Owens Valley Research facilities, and vacant land. There are no scenic resources on the proposed node site. The proposed node is not located adjacent to any scenic highways or scenic resource areas.

The proposed central Bishop node site is flat, consisting of bare ground with some ruderal vegetation. Land uses immediately adjacent to the proposed node site include: existing paved roads (Airport Road), light industrial land uses, and vacant land. There are no scenic resources on the proposed node site. The proposed node is not located adjacent to any scenic highways or scenic resource areas.

The proposed Benton node site is flat, consisting of bare ground with no vegetation. Land uses immediately adjacent to the proposed node site include: an existing dirt road, light industrial land uses, and vacant land. There are no scenic resources on the proposed node site. The proposed node is not located adjacent to any scenic highways or scenic resource areas.

The proposed Crowley Lake node site is flat, consisting of bare ground with some vegetation. Land uses immediately adjacent to the proposed node site include: paved roads (Pierce Road, S Landing Road), community center facilities, and vacant land. There are no scenic resources on the proposed node site. The proposed node is not located adjacent to any scenic highways; however the site is located approximately one mile south of Crowley Lake.

The proposed Mammoth Lakes node site is flat, undeveloped, with some vegetation. Land uses immediately adjacent to the proposed node site include: paved roads (Meridian Blvd and Highway 203), paved park lots, commercial and industrial land uses, and vacant land. The proposed node is located approximately 1.5 miles from a portion of US 395 that is a designated Scenic Highway.

The proposed alternative Mammoth Lakes node site is flat, undeveloped, with some vegetation. Land uses immediately adjacent to the proposed node site include: paved roads (Old 395 and Sherwin Creek Road), paved park lots, commercial and industrial land uses, and vacant land. The proposed node is located near a portion of US 395 that is a designated Scenic Highway.

The proposed June Lake node site is flat, consisting of sparse vegetation. Land uses immediately adjacent to the proposed node site include: paved roads (Granite Avenue), community center facilities, commercial and residential uses. There are no scenic resources on the proposed node site. However, the proposed node located in the of Gull Lake and June Lake.

The proposed Lee Vining node site is flat, consisting of vegetated ground. Land uses immediately adjacent to the proposed node site include: paved roads (Mattly Avenue), an existing school with associated buildings, fields, and play areas, and vacant land. There are no scenic resources on the proposed node site. However, the proposed node located approximately 0.1 mile from a portion of US 395 that is a designated Scenic Highway. The proposed node site is located in the vicinity of Inyo National Forest, and is located approximately 1.5 miles west of Mono Lake.

The proposed Bridgeport node site is flat, consisting of bare ground with no vegetation. Land uses immediately adjacent to the proposed node site include: paved parking areas, grassy fields, and municipal buildings. There are no scenic resources on the proposed node site. The proposed node is not located adjacent to any scenic highways or scenic resource areas.

The proposed Antelope Valley node site is flat, consisting of bare ground with some ruderal vegetation. Land uses immediately adjacent to the proposed node site include: an existing fire station and vacant land. There are no scenic resources on the proposed node site. The proposed node is not located adjacent to any scenic highways or scenic resource areas.

The proposed Carson City node site is flat, consisting of bare ground with no vegetation. Land uses immediately adjacent to the proposed node site include: paved roads (Arrowhead Drive) and light industrial land uses. There are no scenic resources on the proposed node site. The proposed node site is 5.5 miles north of the nearest scenic byway, US 50. The proposed node site is not located adjacent to any scenic resource areas.

The proposed Reno node site is flat, consisting of bare ground with some vegetation. Land uses immediately adjacent to the proposed node site include: paved roads (Gardner Street, 2nd Street), train tracks, and commercial land uses. There are no scenic resources on the proposed node site. The proposed node site is not located adjacent to any scenic highways or scenic resource areas.

3.9. LAND USE AND AGRICULTURE

3.9.1 Land Use

The NTIA and the CPUC have preemptive jurisdiction over the construction, maintenance, and operation of the Proposed Project; therefore, no local discretionary permits (e.g., conditional use permits) or local

plan consistency evaluations are required for the Proposed Project. However, the CBC would be required to obtain all ministerial building and encroachment permits from local jurisdictions. As such, the analysis does not require a comprehensive review of compliance with all applicable plans and policies, and the following is a brief overview of the existing general plan land use designations along the Proposed Project route.

The land uses in the Proposed Project vicinity are designated by individual County General Plans, City General Plans, or Master Plans when located on private land. The land uses in the Proposed Project vicinity that are on Forest Service and BLM lands are guided by the agency's resource management plans. The Proposed Project route will be located entirely within Caltrans and NDOT ROW/easement; however, the route is adjacent to many land use types. A majority of the land uses include Open Space, Resource Conservation, Agriculture, Forest and Range, and Rural Living. Many of these areas include the expanses between the cities and communities along the Digital 395 Proposed Project route. Within the cities and communities, various developed land uses are present; a breakdown by county is described below. In addition, land use by jurisdiction is shown in Appendix C.

San Bernardino County utilizes the "one-map approach," which permits the use of a single map showing both general plan land use designations and zoning classifications. According to the San Bernardino County General Plan Land Use Zoning District maps, identified land use designations within one mile of the Proposed Project route include Resource Conservation, Rural Living, Residential, Mixed Use, Public Facility, General Commercial, Highway Commercial, Rural Commercial, Office Professional, General Industrial, Military Zone, Desert Living, Agriculture, Regional Industrial, and Institutional. While the Proposed Project route is adjacent to all these land use designations, the majority of land uses found along the Proposed Project route in this county include Resource Conservation and Rural Living (County of San Bernardino 2007).

According to the Kern County General Plan Land Use Maps, identified land use designations within one mile of the Proposed Project route include Residential, Resource Management, Public Facilities, Industrial, Commercial, Extensive Agriculture, State or Federal Land, and Mineral and Petroleum. While the Proposed Project route is adjacent to all these land use designations, the majority of land uses found along the Proposed Project route in this county include Resource Management, State or Federal Land, and Residential (County of Kern 1982).

According to the Inyo County General Plan Land Use Element, identified land use designations within one mile of the Proposed Project route include State and Federal Lands, Natural Resources, Tribal Land, Open Space and Recreation, Residential Estate, Residential Rural Medium Density, Residential Rural High Density, Retail Commercial, Agriculture, Light Industrial, General Industrial, Residential Ranch, Public Services Facilities, Heavy Commercial, Natural Hazards, Central Business District, Resort/Recreational, Residential Medium-High Density, Residential High Density, Residential Medium Density, Residential Very Low Density, and Residential Low Density. While the Proposed Project route is adjacent to all these land use designations, the majority of land uses found along the Proposed Project route in this county include Open Space and Recreation, Residential Estate, and Agriculture (Inyo County 2002).

According to the Mono County General Plan Land Use Maps, identified land use designations within one mile of the Proposed Project route include Open Space, Agriculture, Rural Mobile Home, Estate Residential, Service Commercial, Resource Management, Rural Residential, Mixed Use, Industrial, Commercial, Public and Quasi-Public Facilities, Single Family Residential, Commercial Lodging-High, Multi-Family Residential-High, Multi-Family Residential-Low, Commercial Lodging Medium, Scenic Area

Agriculture, and Specific Plan. While the Proposed Project route is adjacent to all these land use designations, the majority of land uses found along the Proposed Project route in this county include Open Space, Agriculture, and Resource Management (Mono County 2009).

According to the Douglas County Master Plan, identified land use designations within one mile of the Proposed Project route include Commercial, Single Family Residential, Rural Residential, Single Family Estates, Forest and Range, Community Facilities, Industrial, Multi-Family Residential, Future Development and Receiving Area, Irrigated Agriculture, and Recreation. While the Proposed Project route is adjacent to all these land use designations, the main designation within the county is Forest and Range (Douglas County 2007).

According to the Carson City Master Plan Land Use Map, identified land use designations within one mile of the Proposed Project route include Community/Regional Commercial, Washoe Tribe land, Medium Density Residential, Parks and Recreation, High Density Residential, Public/Quasi-Public, Low Density Residential, Mixed Use Commercial, Mixed Use Employment, Public Conservation, Open Space, Downtown Mixed-Use, Mixed-Use Residential, Neighborhood Commercial, Conservation Reserve (private), Industrial, and Rural Residential. The main land uses found within this county along the Proposed Project route include Open Space, Low Density Residential, and Public/Quasi-Public (Carson City 2006).

According to the Washoe County Master Plan, identified land use designations within one mile of the Proposed Project route include Rural, Rural Residential, Open Space, Suburban Residential, Commercial, Single Family Residential, Urban Residential/Commercial, Special Planning Area, Public Facility, Parks/Recreation/Open Space, Mixed Residential, Industrial, and Unincorporated Transition. A majority of the areas along the Proposed Project route are designated as Rural, Rural Living, and Open Space except when the route passes through developed communities or cities, where land uses change to primarily Suburban Residential and Mixed Residential (Washoe County 2010).

3.9.2 Agriculture and Forestry Resources

The Proposed Project route runs adjacent to many land use types considered for agricultural use, as well as lands designated as important farmland. In addition, the Proposed Project route runs adjacent to some lands that are within Williamson Act Contracts. All counties have some form of policy that protects agriculture land use types from becoming developed.

Within San Bernardino County, a majority of the land is designated by the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) as Grazing Land with some areas of Urban and Built-Up Land and Other Land. The Proposed Project route runs adjacent to a few small areas designated as Unique Farmland, Farmland of State Importance, and Prime Farmland (FMMP 2008). West of Barstow, the Proposed Project route runs adjacent to a few small parcels that are within Williamson Act contracts (DLRP 2004). There is no land zoned as forest land or timberland in the vicinity of the Proposed Project route in San Bernardino County (County of San Bernardino 2007).

Within Kern County, a majority of the land is designated by the FMMP as Non-Agricultural and Natural Vegetation, with some Rural Residential Land, Urban and Built-Up Land, and Vacant or Disturbed Land. The Proposed Project route does run adjacent to a few small areas designated as Unique Farmland, as well as Semi-Agricultural and Rural Land (FMMP 2008). There are no Williamson Act contracts in the vicinity of the Proposed Project route in Kern County (DLRP 2004). There is no land zoned as forest land or timberland in the vicinity of the Proposed Project route in Kern County (Kern County GIS 2011).

Within Inyo County, according to the Inyo County General Plan, the Proposed Project route does run adjacent to some Irrigated Agriculture lands, as well as adjacent to large expanses of lands designated as Agriculture lands; however, a large amount of lands have also been designated as Open Space Reserve (Inyo County 2002). There are no Williamson Act contracts in the vicinity of the Proposed Project route in Inyo County (DLRP 2004). There is no land zoned as forest land or timberland in the vicinity of the Proposed Project route in Inyo County.

Within Mono County, according to the Mono County General Plan, land use designated as Agriculture is adjacent to some large expanses of the Proposed Project route; however, most land along the Proposed Project route is designated as Resource Management (Mono County 2009). There are no Williamson Act contracts in the vicinity of the Proposed Project route in Mono County (DLRP). The Proposed Project route runs through portions of the Inyo National Forest within Mono County.

Within Douglas County, according to the Master Plan, a majority of the land is designated as Forest and Range; however, the Proposed Project route does run through some moderate-length expanses of designated Agriculture land (Douglas County 2007). The Proposed Project route runs through the Humbolt-Toiyabe National Forest, portions of which are located within Douglas County.

Within Carson City, according to the Master Plan, the Conservation Reserve land use designation could include agricultural lands; however, the Proposed Project route passes through few areas within the county (Carson City 2006). The Proposed Project route runs through the Humboldt-Toiyabe National Forest, portions of which are located within Carson City.

Within Washoe County, according to the Master Plan, lands designated as Rural Lands or Unincorporated Transition could include agricultural uses. The Proposed Project route passes through long expanses in the southern portion of the county; however, as the route approaches Reno, fewer rural land uses and more occurrences of developed land uses occur (Washoe County 2010). The Proposed Project route runs through the Humboldt-Toiyabe National Forest, portions of which are located in Washoe County.

3.10. INFRASTRUCTURE

The Digital 395 Proposed Project route encompasses a wide variety of topography and demographics. Various levels of infrastructure service are in place throughout the Proposed Project area. Generally, areas along the Proposed Project route are served by a network of local roadways, telephone lines, natural gas lines, and electrical lines. The Proposed Project route comprises a diverse area ranging from fully urban to fully rural locations, with a wide range of infrastructure services from full-range to very rustic or non-existent.

Developed portions along the Proposed Project route have landfills or recycling centers; undeveloped portions do not, and waste disposal may require longer trucking distances.

The Digital 395 Proposed Project route generally follows US 395 but also includes county roads on some portions of the route.

3.11. SOCIOECONOMIC RESOURCES

The Digital 395 Proposed Project route encompasses four California counties and three Nevada counties; these include San Bernardino, Kern, Inyo, and Mono counties in California and Douglas, Carson

City, and Washoe counties in Nevada. The service area contains 36 communities, as well as 7 Indian reservations, and 2 military bases.

3.11.1 Demographics and Population

California's population in 2009 was estimated at 36,961,664 people; while Nevada's population in 2009 was estimated at 2,643,085 people (U.S. Census 2010). According to year 2000 data, the counties within the Proposed Project area with the greatest population densities are Carson City, Kern, and San Bernardino counties, ranging from 81.3 to 366.8 people per square mile (Table 31). The least dense and most rural counties include Inyo and Mono counties, which both have fewer than five people per square mile. The remaining counties have estimated densities between 53 and 59 people per square mile. By and large, the Digital 395 Proposed Project route is home predominantly to residents classified as white; however, many of the counties have large percentages of residents that identify themselves as Hispanic or Latino (Table 33). Inyo County has the greatest percentage of residents classified as American Indian (11.9 percent).

Table 31: 2000 Population Estimates by County

County	Population	Persons per square mile	Total Area (square miles)
San Bernardino	1,709,434	85.2	20,052.50
Kern	661,645	81.3	8,140.96
Inyo	17,949	1.8	10,203.10
Mono	12,927	4.2	3,044.40
Douglas	41,259	58.1	709.85
Carson City	52,457	366.8	143.35
Washoe	339,486	53.5	6,342.27
Source: US Census, 2000			

Table 32: Population by Age and County

County	14 or younger	15-24	25-44	45-64	65+
San Bernardino	499,505	380,401	606,354	497,446	193,890
Kern	216,730	151,642	239,886	188,230	75,240
Inyo	3,078	2,763	3,525	6,312	3,805
Mono	2,484	2,072	4,147	4,397	1,733
Douglas	7,390	6,214	12,186	17,907	9,935
Carson City	11,383	8,074	14,708	16,857	9,535
Washoe	91,548	67,976	125,476	112,714	47,947
Source: California Dept. of Finance Population Projections 2010; State of Nevada Demographer's Office					

Table 33: Race and Ethnicity of Affected Counties

County	White	Black	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Two or more races	Hispanic or Latino	White persons not Hispanic
San Bernardino	80.1%	9.5%	1.5%	6.0%	0.4%	2.6%	48.1%	35.1%
Kern	85.3%	6.5%	1.8%	4.1%	0.2%	2.2%	47.9%	40.3%
Inyo	83.4%	0.4%	11.9%	1.4%	0.1%	2.8%	19.4%	65.5%
Mono	92.5%	1.0%	2.9%	1.5%	0.1%	2.0%	24.4%	69.3%
Douglas	93.2%	0.7%	1.8%	2.0%	0.2%	2.0%	9.4%	84.5%
Carson City	90.9%	2.1%	2.5%	2.5%	0.2%	1.8%	21.2%	70.9%
Washoe	86.9%	2.7%	2.1%	5.5%	0.5%	2.4%	21.8%	66.6%

Source: US Census, 2009(a)

3.11.2 Employment and Income

The median annual income per household for the State of California was $58,925 in 2009; and the median annual income per household for the State of Nevada was $53,310 in 2009 (US Census 2009(b)). The median annual income for each of the affected counties varies widely above and below the national median. The median annual income for each of the affected counties is detailed in Table 34.

Poverty rates and unemployment rates varied between counties, with no specific pattern. The percent of individuals living below the poverty level in 2009 ranged between 9.4 percent (Douglas) and 22.2 percent (Kern) (US Census 2009(b)). Unemployment in the counties included in the Proposed Project route ranged from a low of 9 percent in Mono to a high of 14.4 percent in Kern in 2009. In 2009, service occupations were the economic sectors employing the most people among the affected counties (Table 35).

Table 34: Median Annual Income, Poverty Rates, and Unemployment by County

Region	Median Annual Income per household 2008	Percent below Poverty Level 2008	Unemployment Rates 2009
US	$52,029	14.3%	9.3
California	$58,925	14.2%	11.4
Nevada	$53,310	12.4%	11.8
Counties			
San Bernardino	$52,137	17.0%	13.0
Kern	$46,938	22.2%	14.4
Inyo	$44,090	12.5%	9.1
Mono	$53,973	11.7%	9.0
Douglas	$60,578	9.4%	12.1
Carson City	$52,548	14.1%	11.5
Washoe	$53,036	13.2%	11.6
US Census 2009(b) & Bureau of Labor Statistics, Local Area Unemployment Statistics			

Table 35: Percent of Residents Employed by Industry, 2009

Region	Total Employed	Natural Resources and Mining	Construction and Manufacturing	Trade, Transportation and Utilities	Information, Financial Activities, Professional and Business Services	Education and Health Services, Leisure and Hospitality, Other Services	Unclassified
US	106,947,104	1.67%	16.6%	23.05%	25.15%	33.38%	0.16%
California	12,206,122	3.26%	15.51%	21.45%	26.89%	32.36%	0.53%
Nevada	985,611	1.14%	12.28%	21.63%	20.73%	43.88%	0.07%
Counties							
San Bernardino	491,991	0.63%	15.51%	30.47%	21.36%	31.83%	0.21%
Kern	210,395	24.41%	12.49%	20.07%	16.83%	25.98%	0.22%
Inyo	4,450	1.28%	10.56%	29.42%	10.52%	48.07%	0.16%
Mono	5,408	0.67%	7.05%	13.55%	12.97%	65.75%	0.02%
Douglas	15,859	0.86%	18.01%	15.27%	15.05%	50.76%	0.06%
Carson City	17,927	-	14.27%	22.35%	19.16%	36.72%	0.07%
Washoe	161,138	0.22%	13.82%	25.99%	22.22%	37.69%	0.05%

Bureau of Labor Statistics, Quarterly Census of Employment and Wages

3.12. HUMAN HEALTH AND SAFETY

A records search was conducted for potential hazardous soil or groundwater conditions on the properties along the Proposed Project route. For data search purposes, the Proposed Project route was separated into four segments; (1) Barstow, California to Inyokern, California, (2) Lone Pine, California, to Bridgeport, California, (3) Gardnerville, Nevada, to Carson City, Nevada, and (4) Reno, Nevada.

The review included known public Federal, California and Nevada state and local database records along the corridor (within a one-quarter mile radius) of the subject route segments, identifying sites that may have environmental conditions of concern. This information is presented in the Hazardous Waste Conditions Record Seach Report for the Digital 395 Middle Mile Project (Chambers Group, 2011).

Because of the variety of purposes for the various public databases, only database records identifying sites that may have conditions meaningful to the safety of workers performing the installation of the fiber-optic cable were searched. These included databases of sites with documented hazardous waste conditions from spills, incidents, accidents, and cleanups.

After reviewing the details from the databases with those sites, those with information noting "completed-case closed," "no further action required," "no further action planned," "cleanup completed," or similar notations were eliminated as sites that may be of concern during the fiber-optic cable installation. The remainder of the database sites listed were further analyzed for proximity to the cable installation route, the description of contamination issues and actions taken, the media (soil or groundwater) affected, the current status of incident conditions pursuant to the most recent data recorded, whether the site is up or down gradient from the Proposed Project route, and, where groundwater contamination had been involved, whether groundwater at the site was hydrologically up gradient or down gradient from the Proposed Project route and the depth to groundwater from the ground surface.

From this further analysis, sites were eliminated from concern where no contamination impacts to the site were currently present, or the site was too far away to impact the Proposed Project route, or the contamination issues were related to groundwater and the sites were down gradient (groundwater flowing away) from the Proposed Project route. Based on this analysis, 70 sites were identified with open cases of soil or groundwater contamination in close proximity to the Proposed Project route.

For these sites, accessible information from the applicable California Regional Water Quality Control Boards, Nevada Department of Environmental Protection, and other United States Environmental Protection Agency (U.S. EPA) records were reviewed for more detailed information. In addition, two government websites were consulted; www.Geotracker.waterboards.ca.gov, www.envirostor.dtsc.ca.gov, and www.ndep.nv.gov, which includes a link to a U.S. EPA Enforcement and Compliance History Online (ECHO) Database.

Based on this final literature and Internet research, none of the 70 sites of concern with soil conditions only were found to potentially impact the Proposed Project route. Only three sites of concern were found, all located in Bishop, California, with groundwater contamination that may pose a potential hazard to the safety of workers during Proposed Project construction. The sites of concern are the following:

- Mohawk Service Station, 794 North Main Street, Bishop, California 93514, EDR Map ID 14, active leaking underground storage tank (LUST) site: open - remediation since April 27, 2005, gasoline impacted ground water above cleanup levels, historical minimum depth to groundwater is 3.85 feet (ft) below ground surface (bgs), very close to the cable excavation depth. This hazardous waste site is in close proximity to the Proposed Project route, and the groundwater flow direction is toward the Proposed Project route.

- Bishop Shell Station, 487 North Main Street, Bishop, California 93514, EDR Map ID 14, active LUST site: open – post-remedial action monitoring, gasoline impacted groundwater above cleanup levels, historical minimum depth to groundwater was 1.71 ft bgs on February 4, 1997, and the 2010 depth to groundwater measurements ranged from 3 to 8 ft bgs, with groundwater flowing toward the Proposed Project route.

- David K. Roberts Automotive, 292 Main Street, Bishop, California 93514, EDR Map ID 14, active LUST site: open - verification monitoring, gasoline impacted groundwater above cleanup levels, 2010 minimum depth to groundwater is 3.04 ft bgs, and groundwater flow is toward the Proposed Project route.

Other Health and Safety Considerations: No known health issues are associated with a distribution system for fiber-optic cable. It does not give off any electromagnetic field, and collocated fiber-optic lines do not interfere with each other. Fiber-optic cable does not interfere with other utility transmission lines, such as telephone, cable, and electric distribution.

It is expected that all workers installing the cable would adhere to construction safety procedures and that appropriate traffic and roadside safety practices would be implemented. Safety standards and procedures mandated by OSHA and the California Department of Transportation and Nevada Department of Transportation would be applied to this work. These standards include mandatory incident reporting, tailgate meetings, and monthly safety meetings with the contractor to discuss potential health and safety issues.

Table 36 portrays the sensitive land uses types in the vicinity of the Proposed Project ROW.

Table 36: Sensitive Land Uses

Community	Existing Land Uses That May Be Affected by Project Noise
City of Barstow	Single family residential, multiple family residential, school, commercial, industrial, office park, transient lodging/motel, Barstow Community College
San Bernardino County, CA	
Red Mountain	Single family residential, commercial
Atolia	Single family residential, office/professional
Kramer Junction	Commercial
Hinkley	Single family residential, school
Lenwood	Single family residential, industrial, commercial
Kern County, CA	
China Lake Acres	Single family residential, commercial
Inyokern	Single family residential
Ridgecrest	Single family, commercial, Cerro Coso Community College, school
Johannesburg	Single family residential, commercial

Table 36: Sensitive Land Uses

Community	Existing Land Uses That May Be Affected by Project Noise
Mojave, Alternative Alignment	Single family residential, commercial, airport, industrial
Desert Lake, Alternative Alignment	Single family residential, school
Boron, Alternative Alignment	Single family residential, commercial, transient residential/motel
City of Bishop, CA	Single family residential, park, school, church, office park, commercial
Inyo County, CA	
Laws	Single family residential, commercial/tourist
Poleta	Single family residential, research/educational
West Bishop	Single family residential, County park, school, church
Big Pine	Single family residential, commercial, transient residential/motel, school, park
Independence	Single family residential, commercial, transient residential/motel
Manzanar , Detention Camp Historical Site	Detention Camp Historical site, commercial
Lone Pine	Single family residential, school, park, commercial
Cartago	Single family residential
Olancha	Single family residential, school, commercial, transient residential/motel
Grant	Single family residential, commercial
Dunmovin	Single family residential further from US 395
Pearsonville	Single family residential, commercial
Town of Mammoth Lakes	Single family residential, office park, school, commercial
Mono County, CA	
Benton Hot Springs	Single family residential, resort commercial
Benton	Single family residential, school
Hammil	Single family residential
Chalfant Valley	Single family residential, commercial
Topaz	Single family residential, commercial
Coleville	Single family residential, school
Walker	Single family residential, church, commercial, transient lodging
Fales Hot Springs	Resort commercial, single family residential
Bridgeport	Single family residential, school, park, commercial, lodging/motel
Mono City	Single family residential
Lee Vining	Single family residential, park, transient lodging, commercial
June Lake	Single family residential, commercial, transient lodging, library
Crestview	Single family residential, warehouse
Lake Crowley	Single family residential, park
Aspen Springs	Single family residential
Tom's Place, Crowley Lake	Resort, commercial
Douglas County, NV	
Indian Hills, Alternative Alignment	Single family residential, commercial
Johnson Lane	Single family residential, commercial
Minden/Gardnerville	Single family residential, multiple family, schools, commercial industrial
Washoe County, NV	

Table 36: Sensitive Land Uses

Community	Existing Land Uses That May Be Affected by Project Noise
New Washoe City	Single family residential
Carson City, NV	Single family residential, multiple family residential, commercial, industrial, recreation/park, school.
City of Reno, NV	Single family residential, multiple family residential, park/recreation, commercial

Public Health and Safety Services: Within each state, and for each county, different entities provide public health and safety services, including the fire departments, police departments, sheriff's departments, and other emergency services. The California Highway Patrol (CHP) provides services along California highways; the Nevada Highway Patrol (NHP), operating under the Nevada Department of Public Safety, provides services along Nevada highways. Table 37 provides a list of public health and safety service locations in the area of the Proposed Project route.

Table 37: Public Health and Safety Service Locations

County	Service	Address	Distance
San Bernardino			
	CHP	300 E. Mt. View, Barstow, CA 92311	Within 0.5 mile
	San Bernardino County Sherriff – Coroner's Department	225 E. Mt. View, Barstow, CA 92311	Within 0.5 mile
	City of Barstow Police Department	220 E. Mt. View Suite B, Barstow, CA 92311	Within 0.5 mile
	San Bernardino County Fire Department	3725 Flower, P.O. Box 218, Hinkley, CA 92347	Within 0.5 mile
	Barstow Fire Protection District	861 Barstow Rd, Barstow, CA 92311	Within 1 mile
Kern			
	Kern County Sheriff	128 E. Coso, Ridgecrest, CA 93555	<0.1 mile
	City of Ridgecrest Police Department	100 California Ave, Ridgecrest, CA 93555	Within 0.5 mile
	Kern County Fire Department	26965 Cote St, Boron, CA 93516	Within 0.5 mile
		26804 Butte Ave, Randsburg, CA 93554	Within 0.5 mile
		815 W. Dolphin Ave, Ridgecrest, CA 93555	Within 0.5 mile
		139 E. Las Flores, Ridgecrest, CA 93555	Within 0.5 mile
		6919 Monache Mountain Ave, Inyokern, CA 93527	Within 1.5 miles
Inyo County			

Table 37: Public Health and Safety Service Locations

County	Service	Address	Distance
	CHP	469 S. Main St, Bishop, CA 93514	<0.1 mile
	Inyo County Sheriff	726 North Main St, P.O. Box 31, Lone Pine, CA 93545	<0.1 mile
		301 West Line St, Suite "F", Bishop, CA 93514	Within 0.5 mile
	City of Bishop Police Department	207 W. Line St, Bishop, CA 93514	<0.1 mile
	Lone Pine Fire Department	130 Jackson St, Lone Pine, CA 93545	<0.1 mile
	Cal Fire BDU (San Bernardino)	103 Clay St, Independence, CA	<0.1 mile
	City of Bishop Fire Department	209 W. Line St, Bishop, CA 93514	<0.1 mile
Mono County			
	CHP	125 Main St, Bridgeport, CA 93517	<0.1 mile
	Mono County Sheriff's Department	100 Bryant St, Bridgeport, CA 93517	<0.1 mile
	Mono County Paramedic Fire Rescue	3150 Main St, Mammoth Lakes, CA	<0.1 mile
		2380 Hwy 158, June Lake, CA	Within 0.5 mile
		193 Twin Lakes Rd, Bridgeport, CA	Within 1.5 miles
Douglas County			
	Douglas County Sheriff	1625 8th Street, Minden, NV 89425	Within 0.5 mile
	East Fork Fire and Paramedic District	1694 County Road, Minden, NV 89423	Within 1 mile
Carson City			
	NHP	555 Wright Way, Carson City, NV 89711	Within 1.5 miles
	Carson City Sheriff	911 East Musser St, Carson City, NV 89701	Within 1.5 miles
	Carson City Fire Department	777 South Stewart St, Carson City, NV 89701	Within 1.5 miles
		2400 East College Parkway, Carson City, NV 89706	Within 0.5 mile
		4649 Snyder Ave, Carson City, NV 89701	Within 1 mile
Washoe County			
	NHP	357 Hammill Lane, Reno, NV 89511	Within 1 mile
	Washoe County Sheriff	911 Parr Blvd, Reno, NV 89512	Within 4 miles

Table 37: Public Health and Safety Service Locations

County	Service	Address	Distance
	Sierra Fire Protection District	3905 Old Hwy 395, Washoe Valley, NV 89704	Within 4 miles
		16255 Mt. Rose Hwy, Reno, NV 89511	Within 4 miles
		4000 Joy Lake Road, Reno, NV 89511	Within 3 miles

SECTION 4.0 – ENVIRONMENTAL CONSEQUENCES

4.1. NOISE

4.1.1 Preferred Alternative

4.1.1.1 Construction Noise

Construction noise associated with the Preferred Alternative will generate noise that may impact sensitive receptors. The total duration of construction activity of the approximately 593-mile network is estimated at up to 24 months. Proposed Project construction is estimated to begin in Fall 2011. Construction crews generally will work 8-10-hour days five days a week during daylight hours. Saturday work may be required in some areas, as needed, and the appropriate permissions would be obtained prior to construction on weekends. No work is anticipated to occur on major holidays.

Because of the variety of equipment that may be employed to accomplish installation of the fiber-optic cable in both newly constructed and existing conduit segments, and because each contractor has a slightly different equipment inventory, equipment may include D-8 Caterpillar, backhoe, 10-wheeler truck, semi-trailer truck, ¾-ton pickup truck, excavator, trencher, dozer/plow, loader, cable reel trailer, air blower device, mechanical pusher/puller, and water truck. All equipment will stay within the confines of the Caltrans and NDOT ROW/easement identified for the Proposed Project.

The conduit will be installed by cable plowing, horizontal directional drilling (HDD), and trenching and back-hoeing depending on the nature of the terrain, geology, and environmental conditions. Cable will be installed utilizing either pulling or blowing techniques. Cable installation would be within existing Caltrans and NDOT ROWs/easements, generally in previously disturbed areas.

Cable will be installed along approximately 46 percent of the Proposed Project route by plowing. Noise levels associated with equipment utilized with this method are presented in Table 38.

Table 38: Plowing Equipment and Associated Noise Levels

Equipment	Maximum Noise Level (Lmax) at 50 Feet (dBA)	Acoustical Usage Factor (%)
D-8 Caterpillar (2) (Dozer)	82	40
Backhoe	78	40
Cable Reel Trailer (2)	No engine, occasional impulse noise	50
Trench Roller	80	20
Equip. Trailer (4)	No engine, occasional impulse noise	40
F350 Flat Bed	84	40
F550	70	40
F750 (4)	70	40
F250 4x4 Pick-up	70	50
Sources: Caltrans 1992 and 1998, FHA 2006, FTA 2006, Harris 1991		

Conduit will be installed in locations not amenable to plowing, using trenching machines, excavators, or back-hoes. Noise levels associated with equipment utilized with this method are presented in Table 39.

Table 39: Trenching Equipment and Associated Noise Levels

Equipment	Maximum Noise Level (Lmax) at 50 Feet (dBA)	Acoustical Usage Factor (%)
Cable Reel Trailer	No engine, occasional impulse noise	50
JT220 Trencher	90	40
Trench Roller	80	20
Backhoe	78	40
Equip. Trailer (2)	No engine, occasional impulse noise	40
F350 Flat Bed	84	40
F550	70	40
F750 (2)	70	40
F650 2K gal. Water Truck (shared)	80	50
Sources: Caltrans 1992 and 1998, FHA 2006, FTA 2006, Harris 1991		

HDD minimizes environmental disruption and will be used for solid rock conditions and for locations where roadways, rivers, and environmentally sensitive areas must be crossed. Conduit will be installed in about 27 percent of the cable route using a surface launched drilling rig. Noise levels associated with equipment utilized with this method are presented in Table 40.

Table 40: HDD Equipment and Associated Noise Levels

Equipment	Maximum Noise Level (Lmax) at 50 Feet (dBA)	Acoustical Usage Factor (%)
Cable Reel Trailer	No engine, occasional impulse noise	50
FX60 Suction Excavator	81	40
Backhoe	78	40
JT922 Borer	83	50
Slurry Pump	81	50
F750 (3)	70	40
F550	70	40
F350 Flatbed	84	40
F650 2K gal. Water Truck (shared)	80	50
Sources: Caltrans 1992 and 1998, FHA 2006, FTA 2006, Harris 1991		

Within the new construction portions of the route only, new vaults will be placed approximately every 4,500 feet to enable access to the underground conduits. Approximately 1,180 vaults in total are proposed for installation. The vaults will be installed with backhoes and vacuum excavation methods.

The cable installation will be conducted utilizing either “cable pulling” or “cable blowing” methods. Noise levels associated with equipment associated with vault placement, cable pulling and cable blowing are presented in Table 41.

Table 41: Cable Pulling, Blowing and Vault Placement Equipment and Noise Levels

Equipment	Maximum Noise Level (Lmax) at 50 Feet (dBA)	Acoustical Usage Factor (%)
Backhoe	78	40
FX30 Suction Excavator	81	40
Equipment Trailer	No engine, occasional impulse noise	40
Cable Reel Trailer	No engine, occasional impulse noise	40
Cable Blower	78	40
Figure 8 Machine	N/A	40
Airman 375 Compressor	78	40
Splicing Trailer	No engine, occasional impulse noise	40
Backhoe/Tractor	78	40
Sources: Caltrans 1992 and 1998, FHA 2006, FTA 2006, Harris 1991		

In order to support the wireless systems, 17 new prefabricated buildings will be installed along the route within existing industrial parks and commercial areas. The buildings will be hooked up to existing electrical service. Each building's power system will be backed up by battery (eight-hour capacity) and generator (Generac Modular Power System®). Some light grading may be required to prepare the pads for these buildings. Construction equipment that may be utilized to deliver and install these buildings includes a grader, roller, flat bed truck, and pneumatic tools for finishing. Noise levels associated with equipment utilized for building construction are presented in Table 42.

Table 42: Building Delivery and Finishing Equipment and Noise Levels

Equipment	Maximum Noise Level (Lmax) at 50 Feet (dBA)	Acoustical Usage Factor (%)
Grader	85	40
Roller	80	20
Flatbed	84	40
Pneumatic Finishing Tools	93	50
Sources: Caltrans 1992 and 1998, FHA 2006, FTA 2006, Harris 1991		

As indicated in Section 3.1.3, the Proposed Project will be constructed within the vicinity of several land uses that may be noise sensitive. Many of these land uses are located immediately adjacent to the Caltrans and NDOT ROW/easement and Proposed Project alignment. Noise levels at a distance of 50 feet will reach up to 84 dBA during plowing activities, 90 dBA during trenching activities, and 84 dBA during HDD activities, vault installation, cable pulling and cable blowing, and prefabricated building site preparation and finishing. With compliance with the applicable noise ordinances and policies presented in Table 43, the Preferred Alternative would be in conformance with applicable General Plan policies and Noise Ordinances.

Table 43: Project Consistency with Local Ordinances, Goals, and Policies

COMMUNITY	APPLICABLE ORDINANCES, GOALS AND POLICIES
City of Barstow	No applicable local noise standards are presented in the City of Barstow General Plan or Municipal Ordinance.
San Bernardino County Red Mountain, Atolia, Kramer Junction, Hinkley, Lenwood	Project construction will occur in the vicinity of single and multiple family residential units, schools, commercial, industrial, office park, and transient lodging/motel land uses. Section 83.01.080(c) of the County's Development Code allows temporary construction and repair or demolition activities that take place between the hours of 7 a.m. and 7 p.m. Monday through Saturday, excluding federal holidays. Project construction is proposed to occur over 10-hour work days, 4 days a week or 8-hour work days, 5 days a week, during daylight hours. Saturday work may be required in some areas, as needed, and the appropriate permissions would be obtained prior to construction on weekends. No work is anticipated to occur on major holidays. The Project will be consistent with San Bernardino County Ordinance 83.01.080(c) as long as Project construction occurs within 7 a.m. to 7 p.m., which may vary slightly from "Daylight Hours." Otherwise, appropriate permits will be required in order to be in conformance with the County Ordinance. Motor vehicles not under the control of the subject use and temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays Section are exempt from the County's Vibration Ordinance (83.01.090(a) per County Ordinance 83.01.090(c). Again, the proposed Project will be in conformance with County Ordinance regarding construction vibration as long as construction activities occur only between the hours of 7 a.m. and 7 p.m.. Monday through Saturday or the appropriate permits are acquired.
Kern County, CA China Lake Acres; Inyokern; Ridgecrest; Johannesburg; Mojave, Alternative Alignment; Desert Lake, Alternative Alignment; Boron, Alternative Alignment	Kern County Ordinance 8.36.020 prohibits the creation of construction related noise between the hours of 9:00 p.m. and 6:00 a.m. on weekdays and 9:00 p.m. and 8:00 a.m. on weekends, which is audible to a person with average hearing faculties or capacity at a distance of 150 feet from the construction site, if the construction site is within 1,000 feet of an occupied residential dwelling except as allowed by the development services agency director or his designated representative. The Proposed Project will be in conformance with Kern County Ordinance 8.36.020 as long as construction does not (1) occur within 1,000 feet of an occupied residential dwelling; or (2) occur between the hours of 9 p.m. and 6 a.m. weekdays or between 9 p.m. and 8 a.m. on weekends, unless otherwise permitted by the development services agency director or his designated representative.

Table 43: Project Consistency with Local Ordinances, Goals, and Policies

COMMUNITY	APPLICABLE ORDINANCES, GOALS AND POLICIES
City of Bishop, CA	Section 8.12.010 of the City of Bishop Municipal code prohibits loud, unnecessary, or unusual noise, which injures or endangers the health, peace, or safety of others. Construction activities between the hours of 7 a.m. and 10 p.m. are exempt. The Proposed Project will be consistent with City of Bishop Ordinance 8.12.010 as long as construction activities do not occur between 10 p.m. and 7 a.m.
Inyo County, CA West Bishop, Big Pine, Independence, Manzanar Detention Camp Historical Site, Lone Pine, Cartago, Olancha, Grant, Dunmovin, Pearsonville	The Proposed Project will be consistent with the County of Inyo General Plan.
Town of Mammoth Lakes	Town Ordinance 8.16.090 states that maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment: daily, including Sundays and legal holidays, all hours; is 85 dB(A). The ordinance also requires that all mobile or stationary internal combustion engine-powered equipment or machinery be equipped with suitable exhaust and air intake silencers in proper working order. The Town Ordinance also prohibits the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at 150 feet (46 meters) from the source if on a public space or public right-of-way. The Proposed Project will be in conformance with Town of Mammoth Lakes Ordinance 8.16.090 with the exception of pneumatic tools that may be utilized during installation of proposed buildings. The operation of pneumatic tools, however, is expected to occur only during building installation within existing industrial areas. The Project may not be consistent with Town of Mammoth Lakes Ordinance regarding vibration from a vibratory roller. Of all the equipment proposed to be utilized during Project construction, the vibration associated with a vibratory roller will be perceptible within 100 feet.

Table 43: Project Consistency with Local Ordinances, Goals, and Policies

COMMUNITY	APPLICABLE ORDINANCES, GOALS AND POLICIES
Mono County, CA Topaz, Coleville, Walker, Fales Hot Springs, Bridgeport, Mono City, Lee Vining, June Lake, Crestview, Lake Crowley, Aspen Springs, Tom's Place, Benton Hot Springs, Benton, Hammil, Chalfant Valley, Laws, Poleta	The County has established that maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment are not to exceed 85 dB(A) L_{max}. The County also requires that all mobile or stationary internal combustion engine-powered equipment or machinery shall be equipped with suitable exhaust and air intake silencers in proper working order. County Code also prohibits the operation of any device that creates a vibration above the perception threshold of an individual at or beyond the property boundary of the source if on private property or at 150 feet (46 meters) from the source if on a public space or public right-of-way. The Proposed Project will be in conformance with Mono County Code 8.16.090 with the exception of pneumatic tools that may be utilized during installation of proposed buildings. The operation of pneumatic tools, however, is expected to occur only during building installation within existing industrial areas. The Project may not be consistent with Mono County Code regarding vibration from a vibratory roller. Of all the equipment proposed to be utilized during Project construction, the vibration associated with a vibratory roller will be perceptible within 100 feet.
Douglas County, NV Indian Hills, Alt Alignment, Johnson Lane, Minden/Gardnerville	The Douglas County Master Plan Conservation Element recommends that the following standards be utilized: Industrial 70 dB(A) $L_{eq(24)}$, Commercial 64 dB(A) Ldn, and Residential 55 dB(A) Ldn. $L_{eq\ (24)}$ represents an all day, 24-hour average noise level. Ldn is an averaged 24-hour noise level with 10 dB(A) added during night-time hours. The Proposed Project will be consistent with these standards as long as construction activities are limited to daytime hours.
Washoe County, NV New Washoe City	Washoe County Code Section 110.414.20 exempts from the noise level limits temporary construction, repair, or demolition activities that occur between 7:00 a.m. and 7:00 p.m. on any day except Sunday. The Proposed Project will be consistent with Washoe County Code as long as construction activities do not occur on Sundays or between the hours of 7:00 a.m. and 7:00 pm Monday through Saturday.

Table 43: Project Consistency with Local Ordinances, Goals, and Policies

COMMUNITY	APPLICABLE ORDINANCES, GOALS AND POLICIES
Carson City, NV	General Plan Policy N-2.1 "Limit truck traffic to specific routes and designated hours of travel, where necessary, as defined in the Transportation and Infrastructure Element and by the City's Development Services Group" may apply to truck trips associated with construction of the Proposed Project. The majority of the Proposed Project will occur within the right-of-way of truck routes. To maintain Project consistency with this policy, Project-related truck traffic should be limited where the Project extends along roadways that are not designated truck routes in the vicinity of sensitive receptors.
City of Reno, NV	The City of Reno has codified its policy of requiring conditions of approval prior to construction and/or disturbance on streets, highways, and public rights-of-way that are considered by the city council to be an integral part of the city. Section 12.08.030 of the City of Reno Administrative Code establishes conditions that may be required, including conditions for the purpose of preventing noise. Proposed Project construction activities will be required to adhere to the appropriate permits, including conditions of approval that may be required.

4.1.1.2 Ground-borne Vibration

Ground-borne vibration is an oscillatory motion that is often described by the average amplitude of its velocity in inches per second or more specifically, peak particle velocity. Ground-borne vibration is much less common than airborne noise; the ambient peak particle velocity of a residential area is commonly .0003 inches per second or less, well below the threshold of human perception of .0059 inches per second. Nonetheless, human reactions to vibration are highly subjective, and even levels below the threshold can cause minor annoyances like rattling of dishes, doors, or fixtures.

The only sources of vibration produced by the Proposed Project will be experienced during the construction phase. Human response to vibration is given in Table 44.

Table 44: Human Reaction to Typical Vibration Levels

Peak Particle Velocity in inches/second	Human Reaction
0.0059-0.0188	Threshold of perception, possibly of intrusion
0.0787	Vibrations readily perceptible
0.0984	Continuous vibration begins to annoy people
0.1968	Vibrations annoying to people in buildings
0.3937-0.5905	Vibrations considered unpleasant when continuously subjected and unacceptable by some walking on bridges.

Source: California Department of Transportation: Traffic Noise Analysis Protocol for New Highway and Reconstruction Projects, 1992

Table 45 shows the peak particle velocities of some common construction equipment. The most vibration-causing piece of equipment that will likely be used during Proposed Project construction is the vibratory roller.

Table 45: Typical Construction Equipment Vibration Emissions

Equipment	Peak Partical Velocity in inches per second[1]		
	at 25 ft.	at 50 ft.	at 100 ft.
Clam Shovel Drop (slurry wall)	**0.202**	**0.143**	**0.101**
Vibratory Roller	**0.210**	**0.0148**	**0.105**
Hoe Ram	**0.089**	0.063	0.045
Large Bulldozer	**0.089**	0.063	0.045
Caisson Drilling	**0.089**	0.063	0.045
Loaded Trucks	0.076	0.054	0.038
Jackhammer	0.035	0.025	0.018
Small Bulldozer	0.003	0.002	0.002

Source: Federal Transit Administration: Transit Noise and Vibration Impact Assessment, 2006
[1] Bold values are considered annoying to people.

All land uses immediately adjacent to the Preferred Alternative route may be affected by temporary ground-borne vibration associated with installation of the transmission lines. Mono County and the Town of Mammoth Lakes have ordinances protecting sensitive land uses from the effects of ground-borne vibration. The Mono County and Town of Mammoth Lakes ordinances prohibit the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at 150 feet from the source if on a public space or public right-of-way. With the implementation of mitigation measures, described in Appendix B Noise Mitigation Measure N-1, impacts associated with ground-bourne vibration will be reduced.

4.1.1.3 Operation Noise

Operation and maintenance activities will be implemented along the fiber-optic cable ROW over the life of the Proposed Project. No new access roads will be constructed for operation and maintenance activities. Surveyors may drive along the existing roads to inspect the line after rainstorm events and may stop and open the hatch to ground vaults and manholes. Ground-disturbing activities associated with ongoing operation and maintenance procedures are normally minor, if any. These activities will result mainly for repair of erosion control devices or cable conduits in the event of storm damage, landslides, or other emergencies. In most emergency situations, review of damaged areas will be accessed via public roads, transmission ROWs, and route access roads. Noise impacts associated with Proposed Project operation and maintenance will be negligible

4.1.2 No Action Alternative

Selection of the No Action Alternative would not result in construction or operation of the Proposed Project, and potential effects associated with noise would not occur.

4.2. AIR QUALITY

4.2.1 Preferred Alternative

For the purposes of meeting Caltrans requirements, the Proposed Project falls under the category of Exempt Projects listed in Table 2 of 40 CFR 93.126 (Table 1 of the CO Protocol) because it is listed under the category "Mass Transit" under the category Communication Systems; this Project is therefore exempt from all emissions analysis.

4.2.1.1 Applicable Air Quality Plans

Typically, assessments for consistency with air quality requirements use four criteria for determining project consistency with the current Air Quality Management Plan (AQMP) in the Proposed Project area. The Preferred Alternative traverses three California air quality districts and the State of Nevada and the Washoe County district in Nevada. Typically, AQMP consistency consists of whether the Proposed Project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP. The AQMPs described in Section 3.2 that are in the Great Basin area are all focused on PM_{10} and the area's concern with reaching and maintaining the standards. The nonattainment PM_{10} pollution in the entire Owen Valley is dominated by PM_{10} emissions from wind erosion on the exposed Owens Lake playa. The Best Available Control Measure (BACM) methods proposed in the 2008 Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan (GBUAPCD 2008) are directly related to controlling that playa.The Mono Basin's latest Reasonable Further Progress Report (GBUAPCD 2010) shows that PM_{10} violations continue to occur and that Mono Lake has not yet reached the 6,391 foot target as established in the original Mono Basin Planning Area PM-10 State Implementation Plan – Final (GBUAPCD 1995).

Since the Preferred Alternative will produce primarily temporary construction activity and will not directly disturb the Owens Valley Planning Area and construction activity was not identified as a source that required mitigation in any of the AQMPs.

Air Quality Standards

Air quality impacts associated with the Preferred Alternative will primarily be short-term, occurring during construction activities. Long-term operational emissions will be minimal. Short-term impacts will include fugitive dust and other particulate matter, as well as exhaust emissions generated by earthmoving activities and operation of boring devices. Construction emissions are caused by onsite or offsite activities. Onsite emissions principally consist of exhaust emissions (NO_X, CO, ROG, PM_{10}, and $PM_{2.5}$) from heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Offsite emissions are caused by motor vehicle exhaust from worker traffic but also include road dust (PM_{10}).

In addition, CARB regulated fuel sulfur content and exhaust emissions from in-use off-road equipment through the In-Use Off-Road Diesel Vehicle Regulation Program and emissions from smaller portable equipment through the Portable Equipment Registration Program (PERP). SOx emissions estimates are not provided because fuel sulfur content has been reduced to levels that create minimal SOx emissions for the types of emissions sources for this project.

Construction equipment to be used at various locations along the Preferred Alternative route will be backhoes, boring machines, compressors, plows, slurry pumps, suction excavators, trenchers, and water trucks, which will result in exhaust emissions. Some repaving operations will occur that will release ROG emissions, and a roller will result in exhaust emissions. For this Project, all off-road construction equipment used in California will fully comply with CARB's In-Use Off-Road Diesel Vehicle Regulation Program (http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm) and, unless specifically permitted with a local air district, all portable equipment, (air compressors, welders, generators, light towers, vacuums, etc.), will be required to comply with CARB's Portable Equipment Registration Program (http://www.arb.ca.gov/portable/portable.htm). The contractor will be liable for insuring all required registration and monthly reporting/recordkeeping are in place, following all CARB requirements and any penalties or fines incurred will be the sole responsibility of the end user/contractor.

Exhaust emissions were estimated by applying emissions factors, usage information, and equipment descriptions for the off-road sources and emission factors from CARB's EMFAC model and estimated usage data for on-road sources. In addition, construction dust emissions were estimated on the staging areas and on-road emissions associated with the heavy-duty diesel vehicles bringing the prefabricated buildings and construction employees. Specific detailed calculations are supplied in Appendix F, and a summary is provided in Table 46. Since the Preferred Alternative traverses many air quality and political jurisdictions, whenever the data permitted, emissions were assigned to specific counties when comparing to appropriate thresholds.

Table 46: Estimated Criteria Emissions

Activity	Pounds per Day					Tons per Year				
	ROG	CO	NO_X	PM_{10}	$PM_{2.5}$	ROG	CO	NO_X	PM_{10}	$PM_{2.5}$
Off-road construction	61	221	300	24	22	12.9	44.3	59.2	5.0	4.7
Construction Employees	0.4	16.8	1.8	0.2	0.2	0.09	4.0	0.41	0.05	0.05
Construction Dust	—	—	—	49.0	29.4	—	—	—	8.94	5.37
Pre-Fab Building Delivery	28	76	277	9.5	8.8	0.01	0.04	0.14	0.01	0.00
TOTAL	**89**	**314**	**579**	**83**	**60**	**13.0**	**48.3**	**59.8**	**14.0**	**10.1**

Source: CGI 2011

Emissions shown in Table 46 are distributed throughout the region, in seven counties in California and Nevada. The EKAPCDhas a significance threshold of 135 pounds per day of either NO_X or ROG and the MDAQMD has significance thresholds for all pollutants in both tons per year and pounds per day. MDAQMD's daily threshold for NO_X, VOC, and SO_X are 137 pounds per day, for PM_{10} and $PM_{2.5}$ are 82 pounds per day and CO is 549 pounds per day. Even though the project total NO_X and PM_{10} exceeds these thresholds, the portions of NO_X and PM_{10} occurring within the individual district's jurisdiction are less than the thresholds.

Cumulative Criteria Pollutants

The Preferred Alternative traverses several air districts and regions. The Existing Conditions Section (Section 3.2) relates that the western portion of San Bernardino County is nonattainment for federal ozone. The same area is also nonattainment for federal PM_{10}, as are the Trona, Mono Basin, Owens Valley, and Mammoth Lakes planning areas, as well as eastern Kern County. Since the air quality standards were set to protect the health of sensitive individuals (i.e., elderly, children, and the sick), when the concentration of those pollutants exceeds the standard, it is likely that some of the sensitive individuals of the population experience adverse health effects.

Diesel Particulate Matter (DPM)

During construction activities, diesel equipment will be operating, and DPM is known to the State of California as a toxic air contaminant (TAC). The risks associated with exposure to substances with carcinogenic effects are typically evaluated based on a lifetime of chronic exposure, which is defined in the California Air Pollution Control Officers' Association Air Toxics "Hot Spots" Program Risk Assessment Guidelines as 24 hours per day, 7 days per week, 365 days per year, for 70 years. DPM would be emitted during the construction of the Preferred Alternative from heavy equipment used in the construction process and would be emitted over a large area, effectively diluting concentrations. Because diesel exhaust particulate matter is considered carcinogenic, long-term exposure to diesel exhaust emissions have the potential to result in adverse health impacts; but due to the widely dispersed and temporary nature of Proposed Project construction, exposure to diesel exhaust emissions during construction of the Preferred Alternativeis not expected to result in adverse health impacts.

Objectionable Odors

Diesel exhaust and ROGs, which are objectionable to some, will be emitted during construction of the Preferred Alternative; however, emissions will disperse rapidly from the Proposed Project site, and the activity would be temporary; therefore, impacts should not be at a level to induce a negative response.

4.2.2 No Action Alternative

Selection of the No-Action Alternative would not result in construction or operation of the Proposed Project, and potential effects associated with air quality would not occur.

4.3. GREENHOUSE GAS EMISSIONS

4.3.1 Overview

A project's effects on global climate change are a cumulative impact; the Proposed Project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases in the world.

In 2006, the State Legislature signed AB 32, which charged the California Air Resources Board (CARB) to develop regulations on how the state would address global climate change (also known as "global warming"). CARB, the California Environmental Protection Agency (Cal EPA), the U.S. EPA, or other appropriate governmental organizations have not yet developed guidelines or thresholds on how to

prepare a California Environmental Quality Act (CEQA) or National Environmental Policy Act (NEPA) assessment for global climate change.

In 2009, the California Natural Resources Agency (CNRA) adopted CEQA Guidelines Amendments in response to SB 97, which passed in 2007. In the new Amendments, a section has been added that addresses how to determine the significance of impacts from GHG emissions. It calls for Lead Agencies to use "careful judgment" based on a "good-faith effort" based "to the extent possible" on scientific and factual data to "describe, calculate, or estimate" the amount of GHGs from a project. It allows Lead Agencies to decide whether to require a quantitative or qualitative analysis and how to assess significance.

In 2010, the Council on Environmental Quality (CEQ) published a Memorandum for heads of federal departments or agencies (CEQ 2010) to help explain how agencies of the Federal government should analyze the environmental effects of GHG emissions and climate change when they describe the environmental effects of a proposed agency action. The Memorandum stated that all environmental analyses and documents produced in the NEPA process should provide the decision maker with relevant and timely information about the environmental effects of his or her decision and reasonable alternatives to mitigate those impacts. CEQ advises agencies to consider whether analysis of the direct and indirect GHG emissions from their proposed actions may provide meaningful information to decision makers and the public. CEQ does not provide a specific significance threshold but does suggest a level of 25,000 tonnes of CO_2e as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs.

4.3.2 Preferred Alternative

The Preferred Alternative will not approach the 25,000 tonne indicator suggested by the CEQ as the minimum level of GHG emissions to warrant a NEPA analysis. In addition, the CEQ Memorandum suggests that in addressing GHG emissions, "CEQ expects agencies to ensure that such description is commensurate with the importance of the GHG emissions of the proposed action, avoiding useless bulk and boilerplate documentation, so that the NEPA document may concentrate attention on important issues" (CEQ 2010).

Through CEQA, California typically requires come "good faith" effort to describe, calculate, or estimate the amount of GHGs from a project. The California Climate Action Registry (CCAR) includes the following six categories of emissions when determining GHG estimates for the purpose of carbon credits.

1. Indirect Emissions from Grid-Delivered Electricity Use
2. Direct Emissions from Mobile Combustion
3. Direct Emissions from Stationary Combustion
4. Indirect Emissions from Imported Steam, District Heating or Cooling, and Electricity from a Co-Generation Plant
5. Direct Emissions from Manufacturing Processes
6. Direct Fugitive Emissions

1) The CCAR methodology was used to give a reasonable effort to describe the amount of GHGs from the Project,Indirect Emissions from Grid-Delivered Electricity Use

Nearly all companies are likely to have some indirect emissions associated with the purchase and use of electricity. In some cases, indirect emissions from electricity use may be the only GHG emissions that a company will have to report. The generation of electricity through the combustion of fossil fuels typically yields CO_2 and, to a much smaller extent, N_2O and CH_4. However, the Preferred Alternative is primarily a construction project and does not need or use much, if at all, electricity from the grid.

2) Direct Emissions from Mobile Combustion

Mobile combustion sources are non-stationary emitters of GHGs such as automobiles, motorcycles, trucks, off-road vehicles such as forklifts and construction equipment, boats, and airplanes. On-road mobile sources include vehicles authorized by the California Department of Motor Vehicles to operate on public roads. Non-road mobile sources include, among other things, trains, ocean-going vessels, and commercial airplanes. Mobile emissions from the Preferred Alternative can come from the vehicles used during short-term installation activities and from the long-term maintenance activities.

a) Construction Mobile

Construction emissions are caused by onsite or offsite activities. Onsite GHG emissions principally come from exhaust of heavy-duty construction equipment and motor vehicle operations. Offsite GHG emissions are caused by motor vehicle exhaust from worker traffic.

Construction equipment to be used at various locations along the Proposed Project route will be backhoes, boring machines, compressors, plows, slurry pumps, suction excavators, trenchers, and water trucks, which will result in exhaust emissions.

Exhaust emissions were estimated by applying GHG emissions factors, usage information, and equipment descriptions for the off-road sources and GHG emission factors from CARB's EMFAC model and estimated usage data for on-road sources. Specific detailed calculations are supplied in Appendix F, and a summary is provided in Table 47.

Table 47: Summary of Construction GHG Emissions

Source	CO2e (tonnes per year)
Construction	5,521
Employee Commute	1,110
Pre-Fab Building Deliveries	18
Total Project Emissions	**6,649**
Source: CGI 2011	

b) Operational Mobile

Once the project is constructed, the human activity of maintenance will be minimal. The buildings proposed will not be manned and will not have permanent occupancy. It is estimated

that the buildings may be visited on a monthly basis as needed. Operation and maintenance activities will be implemented over the life of the Proposed Project. Surveyors would drive along the existing roads to inspect the line after rainstorm events and may stop and open the hatches to ground vaults and manholes. There would be activities related to repair of erosion control devices or cable conduits in the event of storm damage, landslides, or other emergencies. These activities are highly unpredictable and would overall produce minimal GHG emissions. Therefore, the Preferred Alternative's operational GHGs would be minimal since long-term operations would be very limited.

3) Direct Emissions from Stationary Combustion

Stationary combustion sources are non-mobile sources emitting GHGs from fuel combustion. Typical large stationary sources include power plants, refineries, and manufacturing facilities. Smaller stationary sources include commercial and residential furnaces. The Preferred Alternative does not have any large stationary sources.

4) Indirect Emissions from Imported Steam, District Heating or Cooling, and Electricity from a Co-Generation Plant

This applies to projects that purchase steam, district heat, cooling, or electricity from a co-generation or conventional boiler plant that they do not own or operate. Emissions associated with these sources are considered to be labeled indirect. The Preferred Alternative will not purchase power steam, district heat, cooling, or electricity from a co-generation or conventional boiler plant.

5) Direct Emissions from Manufacturing Processes

This applies to calculating direct emissions from sector-specific processes, such as cement plants, power companies, pulp and paper production, semiconductor manufacturing, ammonia production, etc. The Preferred Alternative does not have any sector-specific processes.

Table 48: GHG Emissions Summary

Category	Emissions in tonnes of CO_2e
Direct – Mobile (Construction)	9,206
Direct – Mobile (Operational)	0
Direct – Stationary	0
Indirect – Purchased Electricity	0
Indirect – Cogeneration	0
Direct – Manufacturing	0
Direct – Fugitive	0
TOTAL	**9,206**
Source: CGI 2011	

6) Direct Fugitive Emissions

The majority of fugitive GHG emissions are specific to various industrial sectors or processes; including manufacturing, natural gas transport and distribution, coal mining, waste management, and wastewater treatment. The Preferred Alternative does not have any sector-specific processes.

4.3.3 No Action Alternative

Selection of the No Action Alternative would not result in construction or operation of the Proposed Project, and potential effects associated with GHGs would not occur.

4.4. GEOLOGY AND SOILS

The conduit will be installed by cable plowing, horizontal directional drilling (HDD), and trenching and back-hoeing, depending on the nature of the terrain, geology, and environmental conditions. None of these methods causes substantial ground disturbance. Cable installation would be within existing Caltrans and NDOT ROWs/easements, generally in previously disturbed areas.

Cable will be installed along approximately 46 percent of the Proposed Project route by plowing. Soil disturbance from the plowing blade is expected to occur within a 4- to 6-inch width but could be up to 12 inches wide. After the conduits are installed, the furrow will be compacted back in place by the back end of the plow or a following compaction vehicle. The disturbed soil surface will be restored to its original condition.

Conduit will be installed in locations not amenable to plowing using trenching machines, excavators, or back-hoes. Conduit will be installed in approximately 27 percent of the Proposed Project route using this method. Soil disturbance by trenching generally occurs within a 1-foot width but may be up to 4 feet in width, depending on terrain type. As soon as the conduits are installed, the trench will be refilled, compacted, and restored to its original condition.

HDD minimizes environmental disruption and will be used for solid rock conditions and for locations where roadways, rivers, and environmentally sensitive areas must be crossed. Conduit will be installed in about 27 percent of the cable route using directional drilling.

In order to support the wireless systems, 17 new prefabricated buildings will be installed along the Proposed Project route within existing industrial parks and commercial areas. Installation of the buildings may require minor grading to prepare the pads for these buildings. Ground disturbance is expected to be minor, if any.

The Proposed Project would not result in substantial erosion or loss of topsoil. Ground disturbance would be temporary and confined to a narrow trench in previously disturbed areas. Disturbed soils would be restored to their original condition following conduit installation. No unique geologic features would be altered by installation of cable and supporting facilities. Construction would be in Caltrans and NDOT ROWs/easements or previously disturbed areas. The installation of cable within a narrow band of previously disturbed areas would not cause soils to become unstable, because of the small amount of area affected and because trenches would be filled in and restored to their original condition when the conduit has been installed. The potential for erosion during construction would be minimized by adherence to Applicant Proposed Measures identified in Appendix B, especially the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP). Specific measures to control erosion in the SWPPP will include:

- Preserving existing vegetation in the construction areas to the extent feasible;
- Installing BMPs , such as weed-free mulch, geotextiles and mats, earthdikes and drainage swales, to stabilize sediments and control erosion during construction;

- Installing BMPs, such as silt fences, check dams, fiber rolls and sand bag berms, to control sediment runoff during rain events; and
- Applying water or dust control to loose sediments to reduce wind erosion during construction

Although the Proposed Project route passes through a seismically active area, it would not expose people or structures to substantial adverse effects (including rupture of a known earthquake fault, strong seismic ground shaking, seismic related ground failure and/or landslides) from seismic events beyond that which exists already in the Proposed Project area. None of the project structures would be manned. In the event of a severe seismic event, cable or node structures might be damaged but the breakage of cable or the collapse of an unmanned structure would not harm persons or other buildings. Broadband service could be temporarily interrupted although the network has redundant routing to avoid service disruptions. There may be portions of the project route, especially in Nevada, that pass through expansive soils. Shrinking and swelling of these soils potentially could damage project infrastructure. Damage to cable, poles, or unmanned buildings would not pose a threat to humans or other buildings. Reduntant routing would minimize disruption to broadband service until damaged infrastructure could be repaired.

No Action Alternative

Under the No Action alternative, the Proposed Project would not be constructed. No temporary ground disturbance would occur.

4.5. WATER RESOURCES

4.5.1 Preferred Alternative

The Proposed Project route crosses or runs adjacent to numerous streams, as identified in the Preliminary Jurisdictional Delineation Report for the Digital 395 Middle Mile Project (Chambers Group, 2011). To avoid impacts to streams, the conduit will be installed using HDD at stream crossings r by bridge attachments. There is some potential that stream water quality could be degraded, beneficial uses impaired, and/or a water quality standard violated if Project construction resulted in excessive erosion that caused siltation/sedimentation in an adjacent stream or if a leak or accident caused fuels, lubricants or other pollutants to enter a stream. In addition, an accidental release of drilling fluid during HDD could degrade stream water quality and impair beneficial uses. To avoid violating water quality standards, degrading water quality and/or impairing beneficial uses, construction activities would comply with all requirements of the Regional Water Quality Control Board, Lahontan Region, and the Nevada Division of Environmental Protection. No storage of fuels and other toxic materials within RCAs and CARs except at designated administrative sites and sites covered by a Special Use Authorization will occur. No refueling within RCAs and CARs will occur unless there are no other alternatives. Spill plans will be reviewed and kept up-to-date. In addition, construction activities would comply with all county ordinances and grading permit requirements that relate to erosion control and water quality. Water used during construction for dust suppression and other construction needs would come from municipal or private land owner sources. No water would be drawn from local streams or lakes.

To minimize the potential for waterbodies crossed by or adjacent to the Proposed Project route to be degraded by leaks and spills from fuels and lubricants used in construction equipment, a Spill Prevention and Pollution Plan (SPPP) will be prepared and implemented. The SPPP is not a specific requirement of the Regional Water Quality Control Board Lahontan Region or the Nevada Division of Environmental

Protection, but would be applicable as a BMP included in the application for Section 401 Water Quality Certification. Measures to be contained in the SPPP may include:

- Spill prevention measures, including
    - Maintenance and inspection of all construction vehicles,
    - Restriction of all equipment refueling, servicing and maintenance supplies to a site distant from waterbodies, and/or
    - Parking of equipment away from waterbodies;
- Specification of spill containment equipment to be kept on-site;
- Designation of responsibilities and reporting procedures in the event of a spill; and/or
- Specific response procedures in the event of a spill.

HDD would be used at stream crossings to avoid direct disturbance to waterbodies. To minimize the potential for waterbodies crossed by the Proposed Project route to be degraded by an accidental release of drilling materials caused by a fracture in the rock (frac-out) during HDD, an HDD Contingency and Resource Protection Plan will be prepared and implemented. Measures to be included in the HDD Contingency and Resource Protection Plan may include:

- During drilling operations, visual inspection along the bore path of the alignment shall take place at all times;
- At stream crossings with flowing water the stream shall be monitored upstream and downstream of the crossing;
- Specification of on-site equipment required to clean up and contain a drilling fluid release;
- Designation of responsibilities and reporting procedures in the event of a drilling fluid release; and/or
- Specific personnel responsible and specific response procedures in the event of a drilling fluid release.

The potential for erosion during construction as well as the washing of pollutants into streams during rain events would be minimized by adherence to a Storm Water Pollution Prevention Plan (SWPPP). An SWPPP will be required as part of the CalTrans encroachment permit. Specific measures to control erosion and prevent pollution of waterbodies in the SWPPP may include:

- Preserving existing vegetation in the construction areas to the extent feasible;
- Installing BMPs, such as weed-free mulch, geotextiles and mats, earthdikes and drainage swales, to stabilize sediments and control erosion during construction;

- Installing BMPs, such as silt fences, check dams, fiber rolls and sand bag berms, to control sediment runoff during rain events;
- Applying water or dust control to loose sediments to reduce wind erosion during construction; and/or
- Procedures for waste management and the storage of toxic materials and waste-related pollutants.

By avoiding direct disturbance to waterbodies through the use of HDD at stream crossings, the implementation of a HDD Contingency and Resource Protection Plan, adherence to a SPPP, and adherence to the SWPPP, the potential for the Proposed Project to violate water quality standards, impair beneficial uses, or otherwise substantially degrade water quality would be minimal.No groundwater would be pumped during Project construction. Project structures would be installed in previously disturbed locations, and new impervious surface areas would not be constructed except for the buildings associated with the nodes. In addition, compaction of the ground surface during construction might slightly alter permeability in localized areas. The Proposed Project would not interfere substantially with groundwater recharge.

The Proposed Project would not alter the course of any stream or river. Construction activities, such as trenching, would temporarily cause minor, site-specific alterations in drainage patterns. Project construction has the potential to result in erosion and off-site siltation. The potential for erosion and siltation of waterbodies during construction would be minimized by adherence to a Storm Water Pollution Prevention Plan (SWPPP). When the cable has been installed, all trenches will be filled, and the ground restored to pre-construction conditions. The Proposed Project would not contribute substantially to existing run off because the Proposed Project would not construct new areas of impervious surfaces except for the buildings associated with the nodes. Proposed Project infrastructure would be placed in previously disturbed areas. Compaction of soils as a result of project construction might cause site specific increases in run-off rates. Because of the localized nature of the soil compaction, any changes in run-off rates would be minor. Therefore, the Proposed Project would not cause flooding on or offsite, or exceed the capacity of stormwater drainage systems.

As discussed in Section 3.5, much of the Proposed Project route, especially the northern portion, passes through FEMA –designated Flood Hazard Areas. The structures that would be placed in Flood Hazard Areas include buried cable and small above-ground support structures including pre-fabricated buildings. The buried cable would not impede flood flows. Ten of the nodes that include pre-fabricated buildings are in Flood Hazard Areas. These nodes are in Ridgecrest, Benton, Crowley Lake, Mammoth Lakes, June Lake, Lee Vining, Bridgeport, Coleville, Carson City, and Reno. Each of these nodes is in an industrial or commercial area and would be surrounded by existing buildings. The addition of a new small structure to these areas would not change flood flows compared to the existing condition. The project would construct no housing. None of the project structures would be manned, and thus would not put people in substantial danger. The Proposed Project would not expose people or structures to inundation by seiche or tsunami. Tsunamis are seismically induced ocean waves that would not reach the project area on the east side of the Sierra Nevada mountain range. Seiches are earthquake-generated waves within enclosed or restricted bodies of water such as lakes and reservoirs. The only large, enclosed waterbody near the Proposed Project route is Mono Lake. There are no observations or records of any seiches that have occurred in Mono County lakes and reservoirs (Mono County 2010). Mudflows involve very rapid downslope movement of saturated soil, sub-soil, and weathered bedrock.

Mudflows could occur in the mountainous portions of the Proposed Project route. Because none of the Proposed Project structures would be manned, the Proposed Project would not expose people to substantial risk of inundation by mudflows. Mudflows potentially could damage buried cable, which would need to be repaired. Project nodes are in the developed portions of towns where major mudflows are unlikely to occur. Because major mudflows are an infrequent event, the potential for the Project to degrade water quality would be minimal with the implementation of Applicant Proposed Measures identified in Appendix B. These measures would greatly reduce the potential for erosion and degradation of water quality from leaks and spills, accidental releases of drilling fluid, and siltation/sedimentation.

4.5.2 No Action Alternative

Under the No Action alternative, the Proposed Project would not be constructed. Conduit or supporting facilities would not be installed, and Project-related construction would have no potential to affect water resources.

4.6. BIOLOGICAL RESOURCES

4.6.1 Preferred Alternative

A total of 36 different types of vegetation communities were mapped within or adjacent to the Proposed Project ROW. One of these communities, transmontane alkali marsh is considered sensitive by the California Department of Fish and Game. The Proposed Project ROW transects areas that are jurisdictional wetlands, as well as waterbodies and drainages that are under the jurisdiction of the USACE, RWQCB and CDFG. These various habitats have the potential to support special status plant, fish and wildlife species. Impacts to biological resources from Proposed Project construction will be minimized because a route was selected to pass through habitats that are currently disturbed and influenced by existing roads, traffic, and noise. In addition, specific Applicant Proposed Measures (APM) and Mitigation Measures (MM) have been developed to avoid and minimize impacts to biological resources. These measures are described in detail in Appendix B. Potential impacts from the Proposed Project to federally-listed species can be found in the Draft Biological Assessment for the California Broadband Cooperative Digital 395 Middle Mile Project, as prepared by Chambers Group dated August 2011.

4.6.1.1 Wetlands, Riparian Habitat, and Other Waters

The Proposed Project ROW includes wetlands and riparian habitats, and waters protected under, and potentially subject to, sections 404 and 401 of the Clean Water Act and Section 1600 of the California Fish and Game Code. A potential exists for these habitats to be affected by the Proposed Project activities. Potential Proposed Project effects could include disturbance of vegetation due to construction equipment and personnel, soil disturbance from trenching and HDD activities, disruptions of hydrologic patterns from potential frac-outs, and potential leaks and spills from equipment. The Proposed Project would avoid and minimize potential impacts to these areas through the implementation of APMs and MMs. There will be no in-stream work conducted. In areas of the Proposed Project where the route cannot avoid state- or federally-jurisdictional waters, streambeds, wetlands and waterbodies by routing the line to avoid these areas, conduit would be installed by utilizing HDD technologies that would be outside of the riparian and wetland habitat or conduit would be installed on bridges if present. A biological monitor would be present during active construction within 100 feet of aquatic resources to

observe for and assist in avoiding impacts to those resources. A SWPPP would developed and the biological monitor would perform daily inspects of BMPs at those sites. A SPPP would be developed for the Proposed Project. HDD or bridge attachments will be utilized where the Proposed Project crosses waterbodies. CBC staff, contractor, and appropriate Caltrans personnel will attend an environmental awareness training. Lastly, trash abatement shall be practiced. See Appendix B for detailed descriptions of these APMs and MMs. The measures specific to wetlands, riparian habitat and other waters include: APM-W-1, APM-W-2, APM-W-3, APM-Bio-8, APM-Bio-9, APM-Bio-10, MM-W-1, and MM-W-2.

4.6.1.2 Native Vegetation and Habitat

The majority of the Proposed Project would be constructed along disturbed roadsides, or other unvegetated areas or areas dominated by weedy and non-native plants species. However, for the portions of the Proposed Project alignment within native vegetation or habitats, the Proposed Project has the potential to temporarily or permanently impact those habitats. Vegetation may be subject to crushing, disturbance of root systems, removal, and introduction of invasive vegetation species. In order to minimize this impact, selected portions of the Proposed Project will be constructed using HDD technology and a monitoring biologist would be present during construction activities within these habitats. Additionally, CBC staff, contractors and appropriate Caltrans personnel will complete environmental awareness training. A detailed description of these measures can be found in Appendix B, APM-Bio-7, APM Bio-12, and MM-Bio-1 and MM-Bio 2.

<u>Special Status Plants</u>

State or federally listed threatened or endangered plants, and plants listed by BLM or USFS as sensitive plant species have a potential to occur onsite. The special status plants are under the same potential for impacts as other native vegetation as previously described in the Native Plant and Habitat section. A complete list of these special status plant species potentially occurring on the alignment are listed in Section 3.6. A pre-construction survey for special status plant species shall be conducted and the locations of identified plants documented. Construction activities will either avoid special status plant species occurrences by minor re-routing of the cable alignment, or by using HDD methods to prevent surface disturbance. CBC staff, contractors and appropriate Caltrans personnel will complete environmental awareness training. A detailed description of these APMs and MMs are provided in Appendix B, APM-Bio-7, APM-Bio-13, and MM-Bio-2.

<u>Invasive Plants</u>

Project construction has the potential to spread seeds or propagules (e.g., rhizomes or rootstocks) of invasive plants into new geographic areas or to facilitate their spread into native habitats. These invasive species could degrade native habitats by outcompeting native plants for resources and removing the habitat needs of species that depend on those resources. In an effort to avoid and minimize the spread of invasive plants and their parts, contractor vehicles and equipment, and personnel, will be cleaned prior to the arrival at constructions sites. Both the exterior and interior of contractor vehicle and equipment shall be cleaned, personnel shall clean their clothing and boots, and oversight of these efforts will be provided by a monitoring biologist. Invasive plants and plant parts from cleaning efforts shall be collected, bagged, and disposed of at an approved offsite location. Off-road driving will be avoided to the extent possible, and equipment staging areas shall be chosen that are, or at least primarily, unvegetated. Ground disturbance will be minimized to the extent required to safely perform construction activities. Biological monitors will identify areas of native vegetation to be protected. BMPs

often require the use of straw and/or hay bales, and those resources shall be purchased from State-cleared sources that are primarily free of primary noxious weeds. If the Contractor suspects invasive plants to have been brought to the construction sites, the biological monitor shall be notified in an effort to minimize the potential impacts. The appropriate Agencies shall be consulted regarding invasive plant species measures. Lastly, CBC staff, contractors and appropriate Caltrans personnel will complete environmental awareness training. A detailed description of these APMs and MMs are provided in Appendix B, APM-Bio-7, APM-Bio-12, and MM-Bio-1.

4.6.1.3 Birds

The typical bird nesting season is between February 15 and August 31, with most nesting activities occurring between March and July. Construction on the Proposed Project is scheduled throughout the year. Nesting birds can be vulnerable to disturbance during the breeding and nesting season as new breeding territories are established, eggs are laid, hatchlings are being fed, and the young fledge. Construction activities will be temporary in duration. When construction activities occur during the nesting season, steps are provided to minimize adverse affects to nesting birds. The presence of construction vehicles, equipment, and crews may result in temporary noise and visual impacts to avian species. Construction will be performed over many segments of the Proposed Project, therefore not resulting in a continuous disruption to migratory, foraging, or breeding pathways. Since the alteration of habitat resulting from this Proposed Project is expected to be insignificant, birds affected by the presence of construction will have the opportunity to temporarily flush and seek cover while construction is being performed. In an effort to minimize adverse impacts to nesting birds the Applicant established APMs and MMs. Pre-construction surveys of the Proposed Project ROW and buffer zone are included in the APMs, and would be conducted to identify active and potentially active nests, and provide recommendations for protective measures. Should active bird nests be identified, a biological monitor would be present during times of construction in areas containing active bird nests, and a protective buffer would be established around the nest. Additionally, CBC staff, contractors and appropriate Caltrans personnel will complete environmental awareness training. A detailed description of these APMs and MMs are provided in Appendix B, APM-Bio-7, APM-Bio-14, and MM-Bio-3.

The following 31 special status bird species have a potential to occur in the Proposed Project corridor. A specific nesting season period is given if it differs from the general February 15 to August 31 nesting season. Species noted with an asterisk are known to nest in riparian habitat.

- Cooper's Hawk
- Northern Goshawk
- Golden Eagle (January – June)
- Long-eared Owl (February – July)
- Burrowing Owl (February 1 – August 31)
- Ferruginous Hawk
- Swainson's Hawk
- Greater Sage-Grouse (start mid-March)
- Western Snowy Plover (March – September)
- Black Tern (late May – late July)
- Northern Harrier
- Western Yellow-billed Cuckoo*
- Yellow Warbler*
- Willow Flycatcher* (late May – late June)

- Southwestern Willow Flycatcher*
- Peregrine Falcon
- Bald Eagle (January – August)
- Yellow-breasted Chat*
- Least Bittern (May – August)
- Loggerhead Shrike
- Mountain Quail (Late March – Early April/June)
- Flammulated Owl (May – September)
- White-headed Woodpecker
- Summer Tanager*
- White-faced Ibis
- Bank Swallow
- Great Gray Owl
- California Spotted Owl
- Le Conte's Thrasher (March – May)
- Least Bell's Vireo*
- Yellow-headed Blackbird

Additional measures are recommended for potential impacts to greater sage grouse, burrowing owl, least Bell's vireo, and southwestern willow flycatcher.

Greater Sage-Grouse

In order to avoid or minimize disturbance to greater sage grouse or to lekking or breeding habitat, APMs would be implemented. For complete details regarding the following APMs and MMs, please see APM-Bio-15 and MM-Bio-4.in Appendix B.

- USFWS and CDFG biologists will be informed of lekking or breeding areas within the Project alignment that are identified during pre-construction surveys, and coordination with those agencies will occur to schedule and implement construction to minimize impacts to the birds and their habitat.

- Speed limits for all construction vehicles within greater sage grouse habitat will be established.

- Construction activities shall be temporarily halted should a greater sage-grouse enter a work site.

- Open trenches shall be covered at the end of each work day.

- A biological monitor will be present during vegetation removal between May and July.

- Greater sage-grouse will be protected under local, state, and federal laws.

- Construction would be halted and the appropriate Agency consulted should a greater sage-grouse be observed within 100 feet of an active construction site.

- No work or staging shall occur from May 1 to June 30 along the backbone from Conway Summit to the intersection of US-395 and Green Creek Road.

Burrowing Owl

Whereas many adult birds would flee from equipment during initial vegetation clearing for project construction, the burrowing owl is likely to take refuge within its burrow. If burrowing owls are present within or adjacent to a construction zone, project disturbance could destroy occupied burrows or cause the owls to abandon burrows. For complete details regarding measures specific to burrowing owls, please see APM-Bio-16, MM-Bio 5, MM-Bio-6, MM-Bio-7, and MM-Bio-8 in Appendix B.

- A pre-construction survey would be conducted within 30 days prior the start of construction activities.
- Protective buffers will be established around active burrowing owl burrows.
- Pipes and similar construction materials would be capped at the end of each day.
- Passive relocation of burrowing owls may be implemented through consultation and direction from CDFG and be performed only by a qualified biologist.

Least Bell's Vireo and Southwestern Willow Flycatcher

The following MM shall be implemented in least Bell's vireo and southwestern willow flycatcher habitat, and a detailed description can be found in MM-Bio-9 of Appendix B.

- During the breeding season (March 15 through September 15), surveys in appropriate habitat for the least Bell's vireo and southwestern willow flycatcher shall be conducted within 10 days prior to the start of construction activities within 500 feet of suitable habitat.

4.6.1.4 Mammals

The Proposed Project may result in potential impacts to mammalian species as it crossing through migration routes, breeding areas, and other habitat. Construction is anticipated to be ongoing throughout the year; however will occur in many segments throughout the Proposed Project ROW; therefore disruption to migratory paths, breeding grounds, and foraging habitat is expected to be minimal and temporary. The presence of construction vehicles, equipment, and crews may result in temporary noise and visual impacts to mammals in the vicinity of the Proposed Project. Since the alteration of habitat resulting from this Proposed Project is expected to be insignificant, and the Proposed Project would be situated primarily along major roadways already providing disturbance to these species, mammals affected by the short term presence of construction will have the opportunity to temporarily flush and seek cover while construction is being performed. APMs and MMs will be implemented in an effort to minimize adverse Proposed Project impacts to mammals that may occur in or within the vicinity of the Proposed Project. A biological monitor would be present during construction, and the presence of a special status mammal within 100 feet of active construction sites would result in construction temporarily halted. Surveys for special status mammal species will be performed prior to the commencement of construction activities. Trash abatement shall be practiced so as to not attract wildlife to the site. CBC staff, contractor, and appropriate Caltrans personnel will attend and environmental awareness training. Pets will not be permitted at construction sites. A detailed description of these APMs and MMs are provided in Appendix B, APM-Bio-5, APM-Bio-6, APM-Bio-7, and MM-Bio-10. The following 26 species have the potential to occur along the Proposed Project route.

- American Marten
- Pallid Bat
- Mono Basin Mountain Beaver
- Pygmy Rabbit
- Townsend's Big-eared Bat
- Panamint Kangaroo Rat
- Spotted Bat
- Western Mastiff Bat
- California Wolverine
- Western Red Bat
- Pacific Fisher
- Owens Valley Vole
- California Myotis
- Western Small-footed Myotis
- Long-eared Myotis
- Little Brown Myotis
- Fringed Myotis
- Yuma Myotis
- Mule Deer
- Nelson's Bighorn Sheep
- Sierra Nevada Bighorn Sheep
- Mount Lyell Shrew
- Preble's Shrew
- American Badger
- Sierra Nevada Red Fox
- Mohave Ground Squirrel

Mitigation Measure APM-Bio-16 requires pre-construction surveys for special status mammal species, and follow-up measures to prevent adverse impacts to those species. Additional measures are recommended for Sierra Nevada bighorn sheep, mule deer, Mohave ground-squirrel, special status bats, American badger, and pygmy rabbit as outlined below.

Sierra Nevada Bighorn Sheep

The following APMs and MMs would be implemented to minimize potential impacts to the Sierra Nevada bighorn sheep resulting from the Proposed Project. A detailed description of these MMs are presented in Appendix B, APM-Bio-17 and MM-Bio-11.

- Speed limits for all construction vehicles within known Sierra Nevada bighorn sheep breeding areas will be established.

- Construction activities in the vicinity of bighorn sheep herds during the lambing season (defined here as 15 April through 30 August; birthing generally takes place between mid-April and mid-July; lambs remain vulnerable for a period of several weeks following birth [USFWS 2007 and Shackleton *et. al.* 1999]) will be postponed until after the lambing season.

- Temporarily halting construction activities should a Sierra Nevada bighorn sheep enter the Proposed Project so as to not disturb or harass the animal.
- Open trenches will be covered at the end of each work day.
- Halting construction and consulting the appropriate Agency would be necessary should a Sierra Nevada bighorn sheep is observed within 100 feet of an active construction site.

Mule Deer

Mule deer are a Species of Concern in Mono County. APMs and MMs identified for the mule deer include the following, and are described in detail in APM-Bio-18 and MM-Bio-12 and presented in Appendix B. Speed limits for all construction vehicles within mule deer breeding areas and migration routes will be established.

- Temporarily halting construction activities should a mule deer enter the Proposed Project so as to not disturb or harass the animal.
- Open trenches will be covered at the end of each work day.
- Halting of construction and consulting the appropriate Agency would be necessary should a mule deer be observed within 100 feet of an active construction site.

Mohave Ground-Squirrel

The Mojave ground squirrel is a state-listed threatened species and a candidate for federal listing as threatened or endangered. The Proposed Project crosses portions of the Mojave ground squirrel geographic range, and desert vegetation along the alignment may be suitable or occupied habitat. Please see MM-Bio-13, MM-Bio-14, and MM-Bio-15 in Appendix B for a detailed description of the measures toavoid adverse project impacts to Mohave ground squirrel outlined below.

- A Mohave ground-squirrel specialist under contract to the Applicant shall perform a pre-construction survey of potential Mohave ground-squirrel habitat along the Project alignment.
- Mohave ground squirrels may be relocated in consultation with CDFG.
- Burrows for relocation will be prepared to prescribed measures.
- A monitoring biologist will notify the Contractor, and the Contractor will notify CDFG of Mohave ground squirrel encounters.
- Towers and similar structures in and adjacent to Mohave ground squirrel habitat shall be outfitted with appropriate anti-perching measures to deter the presence of avian predators.

Special Status Bats

Several special-status bats may use the Proposed Project alignment for foraging or roosting. Conduit installation on bridges above washes and water bodies is the Proposed Project component with the

greatest potential to impact special status bats. APM-Bio-19 MM-Bio-16, and MM-Bio-17, as described in detail in Appendix B, would minimize the potential impacts to bats.

- Surveys will be conducted by a biologist for the presence of special status bat species at bridges requiring conduit, prior to the start of those activities.
- The appropriate Agency would be consulted if it appears a bridge serves as a bat roost.

American Badger

The following MMs would be implemented to minimize potential impacts to the American badger resulting from the Proposed Project. A detailed description of these MMs is presented in Appendix B, MM-Bio-18, MM-Bio-19, and MM-Bio-20.

- Pre-construction surveys for American badger dens within 100 feet of the Proposed Project ROW shall be conducted.
- Potential den sites shall be monitored by a biologist to determine the status of the den (active or inactive). Exclusion zones shall be established for active American badger dens.
- Speed limits for all construction vehicles within 200 feet of an active American badger den will be established.
- Temporarily halting construction activities should an American badger enter the Proposed Project so as to not disturb or harass the animal.
- Open trenches and steep-walled holes will be covered at the end of each work day, and surveyed by a biologist each morning prior to the start of construction work activities.

Pygmy Rabbit

The following MMs would be implemented to minimize potential impacts to the pygmy rabbit resulting from the Proposed Project. A detailed description of these MMs is presented in Appendix B, MM-Bio-21.

- Pre-construction surveys for within the Proposed Project ROW shall be conducted according to protocols defined by the appropriate authority over the lands affected.
- In consultation with USFWS, pygmy rabbits may be relocated.
- Construction activities shall be restricted to the road in pygmy rabbit habitat.

4.6.1.5 Amphibians and Reptiles

Amphibians and reptiles are highly mobile during activity seasons specific to each species or group of species. Most amphibians are active during the wet season, whereas most reptiles are active during warm seasons. The species are subject to environmental changes and may be impacted during breeding and egg-laying seasons. Potential impacts to aquatic resources are a particular threat to the amphibian species due to their water-dependence during various stages of their life cycles. Seasonal avoidance within certain areas may help to minimize impacts to these species. Construction activities will be

temporary in duration; however, the short term presence of construction vehicles, equipment, and crews may result in temporary noise and visual impacts to amphibian and reptilian species. Construction will be performed over many segments of the Proposed Project, therefore not resulting in a continuous disruption to migratory, foraging, or breeding pathways. Since the alteration of habitat resulting from this Proposed Project is expected to be insignificant, amphibians and reptiles affected by the presence of construction will have the opportunity to temporarily flush and seek cover while construction is being performed. To avoid and minimize potential Proposed Project impacts to these species, there are APMs and MMs to be implemented during construction. Pre-construction surveys would be performed prior to the start of construction activities in habitats suitable for special status amphibian and reptilian species. A biological monitor would be present during active construction within 100 feet of aquatic resources containing special status amphibian and/or reptilian species. A SWPPP would developed and the biological monitor would perform daily inspects of BMPs at those sites. A SPPP would be developed for the Proposed Project. HDD or bridge attachments will be utilized where the Proposed Project crosses water bodies. CBC staff, contractor, and appropriate Caltrans personnel will attend and environmental awareness training. Trash abatement shall be practiced so as to not attract wildlife to the site. Pets will not be permitted at construction sites. A detailed description of the APMs and MMs to be implemented for the protection of special status amphibians and reptiles are provided in APM-Bio-4, APM-Bio-5, APM-Bio-6, APM-Bio-7, APM-Bio-8, APM-Bio-9 APM-Bio-10, MM-Bio-29, and MM-Bio-30 in Appendix B. Suitable habitat for the following 12 amphibian and reptilian species is found along the Proposed Project route.

- Northern Sagebrush Lizard
- Silvery Legless Lizard
- Sierra Alligator Lizard
- Panamint Alligator Lizard
- Desert Tortoise
- Yosemite Toad
- Kern Plateau Salamander
- Mount Lyell Salamander
- Owens Valley Web-toed Salamander (AKA Oak Creek Salamander)
- Northern Leopard Frog
- Mountain Yellow-legged Frog
- Sierra Nevada yellow-legged Frog

Desert Tortoise

Mitigation Measure MM-Bio-23 requires pre-construction surveys for special status amphibian and reptilian species, and follow-up measures to prevent adverse impacts to those species. The Proposed Project crosses through approximately 115 acres of designated desert tortoise critical habitat in San Bernardino and Inyo Counties Additional measures are recommended for desert tortoise as outlined below. Detailed descriptions of desert tortoise APMs and MMs are provided in Appendix B, APM-Bio-20, MM-Bio-24 and MM-Bio-25.

- Speed limits for all construction vehicles within desert tortoise will be established.

- Pre-construction surveys within the Proposed Project ROW and buffer areas shall be performed by USFWS-authorized biologists.

- Special habitat features identified during pre-construction surveys will be marked and avoided.
- Desert tortoise encounters shall be reported to the Authorized Biologist, who will maintain records of desert tortoise encounters.
- Open trenches and holes shall be covered at the end of each work day. If they cannot be closed or covered, silt fencing will be installed to prevent the desert tortoise from entering that area.
- A biologist will perform daily inspections of areas where silt fence has been installed to exclude the desert tortoise prior to the start of construction activities in those areas.
- A desert tortoise status report will be submitted to USFWS and CDFG every 30 days that construction in ongoing in desert tortoise habitat.
- A summary report shall be prepared after construction to analyze the effectiveness of the mitigation measures and to summarize desert tortoise encounters.
- Prior to moving vehicles and equipment in desert tortoise habitat, operators shall visually check for desert tortoise under vehicles and equipment.
- Towers and similar structures in and adjacent to desert tortoise habitat shall be outfitted with appropriate anti-perching measures to deter the presence of avian predators.
- Halting of construction and consulting the appropriate Agency would be necessary should a desert tortoise be observed within 100 feet of an active construction site.
- USFWS-authorized biologists may move a desert tortoise from harm's way following the procedures set forth in the 1999 Desert Tortoise Council publication, "Guidelines for Handling Desert Tortoises During Construction Projects."
- CBC shall immediately notify USFWS of a dead or injured desert tortoise, and provide a written notification of the event within 72 hours.

4.6.1.6 Fishes

Impacts to aquatic resources pose the greatest risk to fishes that may occur in those habitats within the Proposed Project. Streams and associated riparian habitat where it exists, and wetlands are areas of greatest threat to fish species should those resources be impacted by construction of the Proposed Project. Proposed impacts to these species could include contamination of aquatic resources due to vehicle and/or equipment spills, release of sediments, the removal or introduction of shade producing habitat features, and the removal of habitat features used for foraging or cover. To avoid or minimize impacts to aquatic habitat and special status fish species potentially present in those habitats, APMs and MMs shall be implemented. A biological monitor would be present during active construction within 100 feet of aquatic resources potentially containing special status fish species. A SWPPP would developed and the biological monitor would perform daily inspects of BMPs at those sites. A SPPP would be developed for the Proposed Project. HDD or bridge attachments will be utilized where the Proposed Project crosses water bodies. CBC staff, contractor, and appropriate Caltrans personnel will attend and environmental awareness training. Trash abatement shall be practiced so as to not attract wildlife to the

site. Pets will not be permitted at construction sites. Detailed descriptions of these measures are presented in APM-Bio-5, APM-Bio-6, APM-Bio-7, APM-Bio-8, APM-Bio-9, APM-Bio-10, APM-Bio-11 and in Mitigation Measure MM-Bio-26 (Appendix B). The following species have the potential to occur in streams identified as suitable habitat along the Proposed Project route.

- Owens Sucker
- Owens Pupfish
- Owens Tui Chub
- Lahontan Cutthroat Trout
- Owens Speckled Dace

4.6.1.7 Mollusks and Crustaceans

Impacts to aquatic resources pose the greatest risk to mollusks and crustaceans that may occur in those habitats within the Proposed Project. Streams and associated riparian habitat where it exists, and wetlands are areas of greatest threat to mollusk and crustacean species should those resources be impacted by construction of the Proposed Project. Proposed impacts to these species could include contamination of aquatic resources due to vehicle and/or equipment spills, release of sediments, and the removal of habitat features used for foraging or cover. To avoid or minimize impacts to aquatic habitat containing protected mollusk and crustacean species, measures to be implemented during Proposed Project construction are outlined in APM-Bio-5, APM-Bio-6, APM-Bio-7, APM-Bio-8, APM-Bio-9, APM-Bio-10, APM-Bio-11, and in Mitigation Measure MM-Bio-26 (Appendix B). A biological monitor would be present during active construction within 100 feet of aquatic resources potentially containing special status mollusks and/or crustacean species. A SWPPP would developed and the biological monitor would perform daily inspects of BMPs at those sites. A SPPP would be developed for the Proposed Project. HDD or bridge attachments will be utilized where the Proposed Project crosses water bodies. CBC staff, contractor, and appropriate Caltrans personnel will attend and environmental awareness training. Trash abatement shall be practiced so as to not attract wildlife to the site. Pets will not be permitted at construction sites. Six species of special status mollusks and crustaceans have the potential to occur along the Proposed Project corridor. These species include:

- California Floater
- Smooth Juga
- Oasis Juga
- Western Lahontan Springsnail
- Owens Valley Springsnail
- Wong's Springsnail

The Proposed Project is not expected impact water courses that may contain protected species or habitat for those species within or adjacent to watercourses.

4.6.1.8 Insects

Special status insect species would most likely occur within their specific suitable habitat, especially when host and/or food plants are present. Disruption to various stages of insect life cycles could result from the construction of the Proposed Project. Construction activities will be temporary in duration. Construction will be performed over many segments of the Proposed Project, therefore not resulting in a continuous disruption to foraging or breeding pathways. Since the alteration of habitat resulting from

this Proposed Project is expected to be insignificant, insects affected by the presence of construction will have the opportunity to temporarily flush and seek cover while construction is being performed. Measures to protect and minimize impacts to plants and habitats are discussed above. APMs and MMs include the surveys of suitable habitat for special status insects prior to construction activities to determine the presence of special status species. If a special status insect species is detected, the appropriate Agency would be consulted prior to the start of construction activities within that habitat. A detailed description of this measure can be found in MM-Bio-27 of Appendix B. The following 10 species of special status insects have the potential to occur along the Proposed Project corridor:

- Peavine Blue
- Mono Checkerspot
- Nevada Viceroy
- Dune Honey Ant
- Alkaline Sandhill Skipper
- Carson Valley Sandhill Skipper
- Carson Wandering Skipper
- Apache Silverspot Butterfly
- Carson Valley Silverspot
- Endemic Ant

In summary, installation of conduit and associated facilities will temporarily disturb the area within and immediately adjacent to the footprint of Proposed Project activities; however it is not expected to interfere substantially with the movement or breeding of resident or migratory fish or wildlife, or substantially impact native habitats and plants. The conduit would be installed within Caltrans and NDOT ROWs/easements and other developed or previously disturbed areas and will occur for a relatively short period of time. Wildlife migration would not be completely obstructed during construction. Installation of the conduit by HDD or bridge attachments at waterbodies would avoid interference with fish migration and reproduction. The APMs and MMs described in detail in Appendix B provide the Proposed Project with means to avoid and/or minimize impacts to biological resources during construction. Additionally, specific measures have been developed to minimize impacts to special status plants and animals, and habitats. Table 49 shows ordinacnces policies and habitat plans that relate to biological resources. Because of the Applicant Proposed Measures and the Mitigation Measures (Appendix B) that would be implimented to avoid and minimize impacts to biological resources, the Proposed Project would not conflict with any local policies or ordinances protecting biological resources. Appendix B incorporates measures from the West Mojave Plan to protect desert tortoises, Mohave ground squirrels, and other sensitive desert species.

Table 49: Applicable Biological Resources Local Policies, Ordinances, Habitat Conservation Plans

Community	Applicable Local Ordinances, Goals, and Policies
City of Barstow	*Policy II.5.1* Perform site-specific studies prior to development activities to determine the precise mitigation necessary to preserve and enhance biological resources, with particular attention given to the preservation of areas identified as having a high biological significance and sensitivity. Use information and recommendations presented in Biology Technical Report II.5 for the evaluation of biological resources. *Policy II.5.2* Whenever possible, conserve suitable habitat for threatened and endangered species found in the region. *Policy II.5.3* Establish corridors for the movement of wildlife between the established Desert Wildlife Management Areas (USFWS 1994a) and Desert Tortoise Critical Habitat (USFWS 1994b). *Policy II.5.4* Strive to maintain native riparian and associated natural habitats along the Mojave River. When applicable, a US Army Corps of Engineers 404 Permit is required. *Policy II.5.5* Maintain the Mojave River as a travel and watershed corridor, maintaining the link between natural areas to the north and south of Barstow.

Table 49: Applicable Biological Resources Local Policies, Ordinances, Habitat Conservation Plans

Community	Applicable Local Ordinances, Goals, and Policies
San Bernardino County The following are unincorporated communities: Red Mountain, Kramer Junction, Hinkley, and Lenwood.	The County of San Bernardino's General Plan list a Goal of maintaining and enhancing biological diversity and healthy ecosystem throughout the County. The only specific mitigation for utility lines is that any lines that are within identified wildlife corridors provide suitable wildlife crossings for the affected wildlife. It also requires any mitigation measures be monitored for compliance. The County of San Bernardino Ordinances, Chapter 82.11 Biotic Resources Overlay, is an overlay that designates areas that contain rare and endangered plants and animal resources and their habitat as listed in the General Plan. Any proposed new land use, or if an existing land use is increased by more than 25 percent of disturbed area, that occurs in an area specifically designated as containing a rare or endangered species will provide a biotic resources report. This report will identify all biotic resources on the site and adjacent parcels, and identify mitigation measures designed to reduce or eliminate impacts to the identified resources. The Highway 395 corridor passes through areas designated on the Biotic Overlay map as containing the Mojave Ground Squirrel and Desert Tortoise. The West Mojave Plan is a habitat conservation plan that includes the San Bernardino County portion of the western Mojave desert. The West Mojave Plan addresses conservation measures for the Desert Tortoise. Mojave Ground Squirrel and other sensitive desert species.
Kern County, CA The following communities are unincorporated. China Lake Acres; Inyokern; Johannesburg; Mojave; Desert Lake; and Boron	The Kern County General Plan Land Use Element requires protection of oak woodlands (Policy 1.10.10). The policy requests that development shall avoid the area beneath and within the trees unaltered drip line unless approved by a licensed or certified arborist or botanist. Specific tree removal may be granted if it is shown that a hardship exists based on substantial evidence. Two conservation areas are specifically outlined in the Kern County Municipal Code. Section 13.16.010 outlines the North Edwards Bird Sanctuary and Section 13.16.020 outlines the Kern River County Park Natural Preserve Area. The West Mojave Plan is a habitat conservation plan that includes the Kern County portion of the western Mojave desert. The West Mojave Plan addresses conservation measures for the Desert Tortoise. Mojave Ground Squirrel and other sensitive desert species.
Ridgecrest, CA	The City of Ridgecrest has no specific biological related ordinances or General Plan policies regarding open space, habitat protection, or similar policies.

Table 49: Applicable Biological Resources Local Policies, Ordinances, Habitat Conservation Plans

Community	Applicable Local Ordinances, Goals, and Policies
City of Bishop, CA	A City of Bishop General Plan's Goal is to preserve and protect the unique natural resources within and surrounding the city. The City has specific Polices requiring appropriate CEQA review and mitigation measures to protect rare, threatened, or endangered species. The City has policies that require natural vegetation and habitat along the existing canals and ditches should be maintained and preserved; a 50 foot buffer or setback from Bishop Creek (measured from the stream) be maintained; where possible existing overhead lines be placed underground; and trees along roadways be preserved or replaced if maintenance requires their removal. The City of Bishop's Municipal Code Section 17.72 addressed Open Space. Permitted uses of Open Space are discussed in Section 17.72.030. Although installation of fiber optic or other utility lines are not specifically listed, 17.72.030B states that the planning commission may grant a use permit for uses that it deems similar to those listed in this section, or not detrimental to the uses or conservation of Open Space. The planning commission can prescribe requirements as it deems necessary regarding development criteria to keep the development consistent with the Open Space designation. No specific habitat conservation plans or other such plans are noted.
Inyo County, CA The following communities are unincorporated: Laws, Poleta, West Bishop, Big Pine, Independence, Manzanar Detention Camp Historical Site, Lone Pine, Cartago, Olancha, Grant, Dunmovin, Pearsonville	Inyo County's goals outlined in the Master Plan calls for maintaining and enhancing the biological diversity and healthy ecosystems throughout the county, and maintaining a balanced approach to resource protection and recreational use. No conflicts with Inyo County's ordinances or policies were noted. The only Habitat Plan noted in the Inyo County Master Plan is the Restoration of Lower Owens River. There are no biological/wildlife specific ordnances in the Inyo County Code. The West Mojave Plan is a habitat conservation plan that includes the Inyo County portion of the western Mojave desert. The West Mojave Plan addresses conservation measures for the Desert Tortoise. Mojave Ground Squirrel and other sensitive desert species.

Table 49: Applicable Biological Resources Local Policies, Ordinances, Habitat Conservation Plans

Community	Applicable Local Ordinances, Goals, and Policies
Town of Mammoth Lakes	The Town of Mammoth Lakes General Plan includes specific policies to protect special status plant and animal species by requiring development to minimize the removal of native vegetation and natural habitat (R.1.B.1); minimize the removal of mature trees by having developers calculate the value of replacing a removed tree (R.1.B.2); identify and mitigate potential impacts to site –specific sensitive habitats, including special status plants, animals, and mature trees (R.1.C); require developments reduce possible denning sites and minimizing exterior lighting (R.1.J.1); avoid wetland disturbance to greatest extent possible by requiring all feasible project modifications (R.2.C); mapped intermittent streams should not be placed in culverts (R.2.D); prohibit development in the vicinity of Mammoth Creek that does not maintain minimum established setbacks and protect stream bank vegetation (R.3.A); and require the use of native and compatible non-native, drought resistant species for fulfilling landscaping requirement (R.4.D), The Town of Mammoth Lakes has a specific ordinance (17.16.050) that addresses the preservation of mature trees, require the preservation of vegetation to the extent feasible and may require the planting of replacement native trees. There are no Habitat Conservation Plans or Natural Community Conservation Plans within the Town of Mammoth Lakes or its Planning area. Because the Town is within the Inyo National forest, there are several habitat /species specific plans that are within the Planning area. ▪ Draft Owens Basin Wetland and Aquatic Species Recovery Plan and Management Guidelines ▪ Sherwin Grade Deer Herd Management Plan ▪ Draft Recovery Plan for the Sierra Nevada Bighorn Sheep (*Ovis canadensis californiana*) ▪ Riparian Bird Conservation Plan for 14 Priority Riparian-Dependant Species (Riparian Habitat Joint Venture 2000) ▪ Greater Sage-Grouse Conservation Plan for the Bi-State area of Nevada and Eastern California (Sage-Grouse Conservation Team 2004)

Table 49: Applicable Biological Resources Local Policies, Ordinances, Habitat Conservation Plans

Community	Applicable Local Ordinances, Goals, and Policies
Mono County, CA The following communities are unincorporated: Topaz, Coleville, Walker, Fales Hot Springs , Bridgeport, Mono City, Lee Vining, June Lake, Crestview, Crowley Lake, Aspen Springs, Tom's Place, Benton Hot Springs, Benton, Hammil, Chalfant.	Mono County's General Plan policy requires that future development projects avoid potential significant impacts to animal or plant habitats. One of the Actions taken under this policy is to limit or prevent projects being developed in the Hot Creek deer migration zone. The Hot Creek deer migration zone is found bordering United Stated Highway 395 in several areas of Mono County. Mono County's General Plan policy requires the protection and restoration of sensitive plants, native plants, and those species of exceptional scientific, scenic, or ecological value. No specific Habitat Conservation Plans or other type plans were noted. There are no biological/wildlife specific ordnances in the Mono County Code.
Douglas County, NV The following communities are unincorporated: Indian Hills and Johnson Lane.	The Douglas County Master Plan Land Use Element Policy 10.02.06 requires the underground installation of new utility lines. The Douglas County Master Plan Conservation Element requires the consideration of mule deer migration and habitat areas, riparian habitats, and sensitive species in all development plans. No specific Habitat Conservation Plans or other type plans were noted. There are no biological/wildlife specific ordnances in the Douglas Municipal Code.
Minden, NV	The Town of Minden's Prosper Plan, similar to a Master Plan, lists as an Image and Identity Policy the preservation of open space and wet lands that surround the center of the town. No specific Habitat Conservation Plans or other type plans were noted. Minden is part of Douglas County and has no municipal code of its own.
Gardnerville, NV	There are no specific Master Plan elements, Habitat Conservation Plans, or other ordnances regarding biological resources for the Town of Gardnerville.

Table 49: Applicable Biological Resources Local Policies, Ordinances, Habitat Conservation Plans

Community	Applicable Local Ordinances, Goals, and Policies
Washoe County, NV New Washoe City (unincorporated entity)	Washoe County fully encloses three National Conservation Areas that are managed by the BLM, as well as parts of others. Washoe County also has policies and goals for preserving the natural environment. These policies include the purchase of areas deemed vital for the preservation and restoration of the natural habitat. No ordinance or code was noted that would conflict with the project. It was noted in the Washoe County Comprehensive Plan, Conservation Element that the construction of deer-proof fencing, under-crossing structures, and one – way gates on dear migratory routes across U.S. Highway 395 has reduced highway deer mortality to near zero. Project construction along the U.S. Highway 395 corridor may conflict with some of these deer protection measures.
Carson City, NV	The Carson City Master Plan includes a goal to protect environmentally sensitive areas. Carson City's Municipal Code 13.06.100 specifies the setting aside of land for Open Space for low impact recreational use and quality of life uses. No known Habitat Conservation Plans are noted within Carson City.

Table 49: Applicable Biological Resources Local Policies, Ordinances, Habitat Conservation Plans

Community	Applicable Local Ordinances, Goals, and Policies
City of Reno, NV	The City of Reno's Master Plan supports the development of Open Spaces and Greenways connecting various areas inside and at the borders of the city. Reno's criteria for Open Space includes areas that are already designated as critical habitat, provide watershed protection, wildlife corridors, have existing constraints for development, and include areas that border the city that are under the jurisdiction of the BLM and USFS. The Master Plan contains a Conservation Element that provides guidelines for protection of various resources. Biological resources protected by this element include the Truckee River and its banks, wetland and stream environments, and drainageways. Drainageways are naturally occurring channels that drain stormwater from a land area of 100 acres or more, have biological and physical characteristics associated with the conveyance of water, connect neighborhoods or developments, schools or open spaces, or provide a continuous system which may provide pedestrian/bike or wildlife corridor opportunities. The only habitat restoration plan is the Steamboat Creek Restoration Plan which is designed to repair the creek habitat, control pollution in the creek, and provide public access to the creek for educational purposes. The Master Plan discusses protection of habitat and wildlife by use of Open Space and Greenways. There are no biological/wildlife specific ordnances in the Reno Municipal Code.

4.6.2 No Action Alternative

Under the No Action alternative, the Proposed Project would not be constructed. Conduit or supporting facilities would not be installed, and no potential for Proposed Project-related construction to affect biological resources would occur.

4.7. HISTORICAL AND CULTURAL RESOURCES

4.7.1 Preferred Alternative

4.7.1.1 Cultural Resources

During ground-disturbing activities for the construction of the Proposed Project, of the sites inventoried in the APE, 229 of the previously recorded sites and 185 newly recorded sites could potentially be adversely impacted by the Preferred Alternative. In addition, previously unidentified or buried cultural resources could potentially be impacted. The likelihood of encountering previously unidentified or buried cultural materials within the APE is low to high, depending upon the type of sediments present. Bedrock outcrops or eroding side slopes are examples of areas that are less likely to contain intact

subsurface deposits, whereas buried deposits of cultural material may lie at unknown depths within accumulated sediments such as areas of coarse sandy soil. In order to minimize these potential impacts, the avoidance and minimization measures described below, as well as in Appendix B, will be implemented; these measures will be required during ground-disturbing Project activities in the vicinity of any site recommended, determine to be eligible, or sites that are listed in the NRHP. In the event that unanticipated subsurface materials are encountered, a qualified archaeologist should be contacted immediately to assess the finds and provide management recommendations.

Sites that have been identified as having undetermined NRHP eligibility status, will require further review. For sites that are determined eligible for or are listed on the NRHP list the following avoidance and mitigation measures are recommended. These Cultural Resources avoidance and minimization measures will be implemented with guidance from and in compliance with all lead and jurisdictional agency requirements.

4.7.1.2 Paleontological Resouces

Most of the proposed project area is underlain by Quaternary alluvium and to a lesser extent Quaternary nonmarine deposits, Quaternary older alluvium, Quaternary lake deposits, and Quaternary dune deposits which may be Late Pleistocene to Holocene in age. These areas have a high sensitivity (4) for potential paleontological resources based on BLM PFYC (BLM 2007).

The Proposed Project APE consists of either an older, constructed two-lane roadbed or later built two lane divided (with median) or four lane road bed. Often the older two-lane road followed the contour of the land, while the later two-lane road (with median) and four-lane road bed was constructed by the cut and fill earthmoving methods and are heavily disturbed. In most areas, the two-lane (with median) and four-lane highway roadbeds were over excavated and filled with base below a depth of four feet.

Where the depth of construction excavation is under four feet or less, the underlying rock units may not be disturbed. Also, much of the Proposed Project APE has been heavily disturbed by prior highway construction. However, during ground-disturbing activities for the construction of the Preferred Alternative, previously unidentified or buried paleontological resources could potentially be impacted. The likelihood of encountering previously unidentified or buried cultural materials within the APE ranges from low to high, and these potential materials could be impacted by ground-disturbing activities. In order to minimize these potential impacts, the avoidance and minimization measures described below, as well as in Appendix B, will be implemented.

4.7.1.3 Applicant Proposed and Mitigation Measures

<u>Applicant Proposed Measure CR-1</u>

Construction only will occur in portions of the Project Area that have been surveyed or a record search has been completed in compliance with Section 106 of the National Historic Preservation Act.

<u>Applicant Proposed Measure CR-2</u>

Impacts to identified cultural resources within the Project Area shall be minimized through avoidance and minimization measures which include: re-routing of the fiber optic line and associated components

or directional boring beneath the site with an archaeological monitor present at the bore rig site, as feasible.

Applicant Proposed Measure CR-3

Site boundaries and a buffer zone, as defined and agreed upon by the lead or jurisdictional agency, will be provided for insuring avoidance of impacts to archaeological sites by designating these boundaries and buffer zones using flagging tape. Flagging will not occur too far in advance of construction activities; timing will be coordinate with the appropriate land managing agency. Monitoring will be conducted prior to construction to insure flagging has not been removed will be conducted by a qualified archaeologist.

Applicant Proposed Measure CR-4

A qualified archaeological monitor will be present during ground-disturbing activities within the Proposed Project APE in areas determined likely to contain cultural resources. The monitor will be empowered to temporarily halt or redirect construction activities until the deposit is recorded and evaluated by a qualified archaeologist and the appropriate avoidance and minimization measures have been agreed upon in conjunction with the lead agency and local agency jurisdiction.

Applicant Proposed Measure CR-5

The PA currently is in revision after a 30-day review period with the listed parties. Signatories and invited signatories received a copy of the PA the week of June 13, 2011. The review period ended the week of July 18, 2011. Comments will be incorporated into the PA, and the PA will be returned to listed parties for reading and signatures. Phased mitigation procedures to meet Section 106 review and compliance will be outlined in the finished PA.

Applicant Proposed Measure CR-6

Prior to construction, the Applicant shall designate a certified Project Paleontologist to supervise monitoring of construction excavations and to produce a Paleontological Resource Management Plan (PRMP) for the Proposed Project. This PRMP shall be prepared and implemented under the direction of the Project Paleontologist and would address and incorporate measures identified in this MMRP. Paleontological monitoring shall include inspection of exposed rock units and microscopic examination of matrix to determine if fossils are present. The monitor shall have authority to temporarily divert grading away from exposed fossils in order to recover the fossil specimens. The PRMP may require field surveys for specific areas along the project route based on the sensitivity of the area. The PRMP may require the Applicant to have a formal agreement with a recognized museum repository and the Project Paleontologist to curate any fossil collections, maintain appropriate field and laboratory documentation, and prepare the final Paleontological Resource Recovery Report in a timely manner following construction. More specific guidelines for paleontological resource monitoring will be identified in the Project PRMP. The Project Paleontologist shall document interim results of the construction monitoring program with monthly progress reports.

Applicant Proposed Measure CR-7

Workers Environmental Awareness Program training shall be provided to construction supervisors and crew for awareness of requirements regarding the protection of paleontological resources and procedures to be implemented in the event fossil remains are encountered by ground-disturbing activities.

Applicant Proposed Measure CR-8:

Ground-disturbing activities shall be monitored on a full-time basis by a paleontological construction monitor only in those parts of the Project area where these activities may disturb previously undisturbed strata in rock units of high sensitivity.

The areas that will require full-time monitoring:

- Segment Hinkley to Kramer Junction: older alluvium
- Segment Kramer Junction to Atolia-Quaternary: older alluvium north of Kramer Junction Quaternary nonmarine terrace deposits
- Segment Searles to Ridgecrest: Quaternary lake deposits and alluvium one mile on either side
- Segment Ridgecrest to Inyokern: Quaternary lake deposits and alluvium one mile on either side of Quaternary lake deposits
- Segment Inyokern to Little Lake: Quaternary nonmarine deposits
- Segment Little Lake to Olancha: Quaternary alluvium adjacent to Owens Lake
- Segment Olancha to Keeler: Quaternary alluvium adjacent to Owens Lake
- Segment Keeler to Owenyo: Quaternary lake deposits
- Quaternary alluvium adjacent to Owen Lake
- Segment Lone Pine Quaternary lake deposits
- Segment Owenyo to Independence: Quaternary alluvium where route crosses Owens River
- Segments in the Mono Basin-Quaternary lake deposits

The Project Paleontologist, upon conferring with the paleontological monitor(s), can reduce the amount of monitoring if it is determined that a large portion of a segment is in top soil or fill.

The areas that will require part-time or spot checking monitoring:

- All areas with Quaternary alluvium

The areas that will not require monitoring:

- Areas where volcanic, granitic, or metamorphic rocks are present

Mitigation Measure CR-1

In the event that any previously unidentified or buried cultural resource materials are encountered within any part of the Proposed Project area, all ground-disturbing construction activities will be suspended in the vicinity of the find until the deposit is recorded and evaluated by a qualified archaeologist and the appropriate avoidance and minimization measure is identified in accordance with APM CR-4.

Mitigation Measure CR-2

Sites that cannot be avoided, such as those that have already been determined eligible for NRHP or state listing, will require testing and data recovery measures upon approval of a data recovery plan. A recovery plan will be in place prior to construction activities. Testing of the site and data recovery can be conducted with agency approval.

Mitigation Measure CR-3

If potential human skeletal remains are discovered, all activity in the area of discovery would cease immediately. The protocol for the inadvertent discovery of human remains is found in State Health and Safety Code Division, Part 1, Chapter 2, Section 7050.5 and Public Resource Code 5097.98. Other applicable state and federal laws are the Archaeological Resources Protection Act (ARPA), the American Indian Religious Freedom Act (AIRFA), and the Native American Graves Protection & Repatriation Act (NAGPRA). The County Coroner would be notified immediately (within 24 hours) to make a determination as to human or nonhuman skeletal remains and the circumstances, manner, and cause of death. If the Coroner determines that the remains are Native American, he or she would contact the Native American Heritage Commission to identify a Most Likely Descendent, or, if in Nevada, the Office of Historic Preservation of the Department of Cultural Affairs. In California, the NAHC would notify the most likely descendant who would consult with the Project proponent and the lead agency in determining the final disposition of the remains. In Nevada, the Office of Historic Preservation would consult with the Project proponent and the lead agency in determining the final disposition of the remains.

Upon discovery of human remains, NAGPRA procedures will be followed. In brief, the contractor will immediately notify the responsible Federal or Tribal official by telephone and provide written confirmation to the responsible Federal or Tribal official. If the inadvertent discovery occurs in connection with an on-going activity, the contractor must cease the activity in the area of the inadvertent discovery and make a reasonable effort (halt all activity within a one hundred (100) foot radius) to protect the human remains and other cultural items. The Federal or Tribal agency official must certify receipt of the notification within three days. The Federal or Tribal official may take further action to secure and protect the human remains and other cultural items. The Federal or Tribal agency official must prepare, approve, and sign a written plan of action to treat the inadvertent discovery. The activity that resulted in the discovery may resume thirty days after the Federal or Tribal agency official certifies receipt of the notification. Custody must be determined in accordance with 25 USC 3002 (a), “Priority of Ownership,” and 43 CFR 10.6, “Priority of Custody.”

Mitigation Measure CR-4

If fossils are encountered during construction, construction activities shall be temporarily diverted from the discovery and the Paleontological Monitor shall notify the appropriate parties/agencies and collect matrix for testing and processing as directed by the Project Paleontologist. In order to expedite removal of fossil-bearing matrix, the Paleontological Monitor may request heavy machinery to assist in moving large quantities of matrix out of the path of construction to designated stockpile areas. Construction shall resume at the discovery location once the all necessary matrix was stockpiled, as determined by the Paleontological Monitor. Testing of stockpiles shall consist of screen washing small samples to determine if important fossils are present. If such fossils are present, the additional matrix from the stockpiles shall be water screened to ensure recovery of a scientifically significant sample. Samples collected would be limited to a maximum of 6,000 pounds per locality. At each fossil locality, field data forms shall record the locality, stratigraphic columns would be measured, and appropriate scientific samples submitted for analysis.

The Project Paleontologist shall direct identification, laboratory processing, cataloguing, analysis, and documentation of the fossil collections. When appropriate, and in consultation with CBC and the appropriate parties/agencies, splits of rock or sediment samples shall be submitted to commercial laboratories for microfossil, pollen, or radiometric dating analysis. After analysis, the collections shall be prepared for curation. A final technical report shall be prepared to summarize construction monitoring and present the results of the fossil recovery program. The report shall be prepared in accordance with CPUC, Society of Vertebrate Paleontology guidelines, and lead agency requirements. The final report shall be submitted to the Applicant, lead agencies, and the curation repository.

4.7.2 No Action Alternative

Under the No Action alternative, the Proposed Project would not be constructed. No temporary ground disturbance would occur. There would be no impact to cultural resources under the No Action alternative.

4.7.3 Mitigations Measures under Section 106 Programmatic Agreement

During early project coordination with the parties involved with Section 106 review, considering the project timeline and the number of parties involved, it was determined that the effects on historic properties would not be fully determined prior to approval of the undertaking. In an effort to meet the ARRA requirement to complete the Proposed Project within three years, and in light of on-going project design and engineering, per 36 CFR 800.14(b), NTIA and CBC have decided to pursue a PA in order to streamline Section 106 compliance. Phased mitigation procedures will be outlined in the Final PA.

4.8. AESTHETIC AND VISUAL RESOURCES

4.8.1 Preferred Alternative

4.8.1.1 Scenic Vistas

The Preferred Alternative route follows (Caltrans and NDOT) ROWs/easements that have been previously disturbed, and the construction footprint is limited to the immediately adjacent Caltrans and NDOT ROW/easement. The primary visual perspective evaluated for the Proposed Project is that of the

motorists traveling along US 395 or county roads. The secondary visual perspective would be from adjacent land uses, where the viewers are directing their attention toward the Proposed Project area.

The available vistas from the roadways or land uses involve a wide range of views including agricultural fields, natural areas, and urban and suburban streetscapes. The Caltrans/NDOT ROWs/easements, where Proposed Project activities will take place, are not primary focal points for motorist or adjacent land uses.

Backbone and distribution line construction impacts would be limited to the addition of construction activities to the view shed and disturbance of vegetation in the Proposed Project ROW and staging areas. Dust from construction activities could also present a minimal short-term impact to scenic vistas. However, these disturbances or additions to the available view sheds will be temporary in nature. In addition, these activities would be at grade and not affect background views. If any view of a vista is blocked, it will be to a limited area, compared to the available view sheds along US 395 and will be transitory in nature.

Staging and laydown areas will be located in commercial or industrial land use areas or areas previously disturbed that may contain sparsely scattered and disturbed vegetation, if any. Some of these areas will be visible from US 395 and adjacent land uses. The use of these areas during construction will be temporary and will not permanently change any scenic vista.

Due to the short-term and minimal effects of construction activity, no major adverse impacts to scenic vistas are expected to result from the Preferred Alternative during construction.

The Proposed Project requires the placement of approximately 2,500 new marker posts along the Proposed Project ROW. These marker posts will be similar to the existing marker posts present along the Caltrans and NDOT ROW/easement and would not block or add an unexpected element to any scenic vista.

Construction impacts associated with node sites would be limited to grading to create a level surface prior to installation of a concrete slab and for connection to the distribution lines. The prefabricated buildings will be manufactured offsite and will be transported via trailer. Construction activities will be temporary and will not permanently change views of the proposed node sites. Due to the short-term and minimal effects of construction activity, no major adverse impacts to scenic vistas are expected to result from the Preferred Alternative during node site construction.

The proposed node sites are planned to be placed in within industrial and commercial areas. These proposed node sites will add permanent visual elements to the viewshed that will be comparable to existing surrounding land uses. The nodes sites will be visually modified at specific sites to blend in with the surroundings, based on the requirements of the local jurisdictional agency. Due to the limited size, these project facilities will not result in significant view blockage. No major adverse impacts to scenic vistas are expected to result from placement of the Preferred Alternative node sites.

4.8.1.2 State Scenic Highways

As discussed in Section 3.8.2, the Proposed Project would be located adjacent to or would intersect with California Scenic Highways, Nevada Scenic Highways, and National Scenic Byways (Figure 4 through Figure 8). The Proposed Project will involve the temporary disturbance of Caltrans and NDOT

ROWs/easements and staging areas. The node sites will be placed in industrial parks and commercial areas and most are not located adjacent to any scenic highway Views of the four nodes within the Scenic US 395 viewshed (Independence, Mammoth Lakes, and Lee Vining node) would be limited and/or blocked by the adjacent existing buildings. In general these areas do not contain scenic resources. HDD, which minimizes environmental disruption, will be used for solid rock conditions and for locations where roadways, rivers, and environmentally sensitive areas must be crossed. Therefore, the Proposed Project will not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

The construction activities, which will take place in the foreground, will be a contrast in comparison to the existing natural landscape character found in the middle ground and distance views from US 395 and country roads. These activities will be visually evident but due to the limited area, will be visually subordinate to the landscaped character. As discussed above, the US 395 and county ROWs, where Proposed Project activities will take place, are not primary focal points for motorist or adjacent land uses. If any scenic view is blocked, it will be to a limited area in the foreground, compared to the available view sheds along US 395 and will be transitory in nature.

4.8.1.3 Visual Character

As discussed above, changes in the visual landscaped associated with construction activity will be short-term and minimal. However, while temporary in nature, the visible presence of construction equipment, vehicles, materials, and personnel in staging and laydown areas may be received as an adverse visual impact to the visual character of the area.

With the implementation of APM A-1 (Reduce Visibility of Construction Staging), these impacts would be reduced. In addition, more staging/laydown areas are identified than will probably be needed. This will allow for avoidance of locations where visibility of construction staging cannot be adequately reduced.

The new marker posts to be place along the Proposed Project ROW will be similar to the existing marker posts present along the Caltrans and NDOT ROW/easement and would not result in a major change in the overall visual character compared to existing conditions.

As discussed above, the node sites proposed for the Preferred Alternative are planned to be placed in developed areas on the outskirts of town within industrial parks and commercial areas. The nodes sites will be visually modified at specific sites to blend in with the surroundings, based on the requirements of the local jurisdictional agency. This will reduce any impacts to visual character.

4.8.1.4 Light and Glare

Existing lighting along the Proposed Project route varies from no artificial lighting to street lights, building outdoor and security lighting. The Proposed Project would add security lighting associated with the nodes. This lighting would be similar to that of existing surrounding properties. Nighttime lighting will be limited to low-wattage outdoor security lighting. All lighting will be shielded and directed onto the Proposed Project site.

4.8.1.5 Wild and Scenic Rivers

The Proposed Project route does not cross the portions of the Owens River Headwaters designated as wild, scenic, and recreational. No impacts associated with the visual resources of wild and scenic rivers would occur.

4.8.1.6 National Forests

As described in the Section 2, the Proposed Project backbone crosses the Humboldt-Toiyabe National Forest, Inyo National Forest, and the Mono Basin National Forest Scenic Area.

Construction of the backbone and distribution lines would result in short term minor adverse effects to the scenery resources, including scenic highways, associated with project construction. Immediately after all construction activities are finished the degree of deviation in landscape character would be evident but not dominate. It is expected that within a year the project area would meet Partial Retention level of visual quality and as minimal natural vegetation regenerates, the project area would meet the Forest Plan direction of a Retention VQO for the majority of sensitive viewing areas. The construction areas would not be evident to the casual observer from the majority of public use areas and travelways, and would have neutral long term effects to scenic resources in the Humboldt-Toiyabe National Forest, Inyo National Forest, and the Mono Basin National Forest Scenic Area.

4.8.1.7 BLM Lands

As described in the Section 2, the Proposed Project backbone crosses the BLM lands, including WSAs. Construction of the backbone and distribution lines would result in short term minor adverse effects to the scenery resources, including scenic highways, associated with project construction. Construction activities would result in a moderate level of change in a limited foreground area that may attract attention but should not dominate the view of the casual observer.

Immediately after all construction is finished the degree of change in foreground landscape features would be evident but not dominate. It is expected that, as minimal natural vegetation regenerates, the construction areas would not be evident to the casual observer from the majority of the scenic travel routes, and would have neutral long term effects to scenic features found on BLM lands.

4.8.1.8 State Parks and Lands

The Digital 395 Proposed Project route runs past California's Mono Lake Tufa State Natural Reserve, near the town of Lee Vining and Nevada's Washoe Lake State Park. Construction activities may be visible from viewsheds between the US 395 and Parks. Construction activities would be limited to adjacent areas outside of the Parks that may attract attention but should not adversely impact visitor opportunities for viewing or dominate visitor awareness.

The Preferred Alternative would not impact the scenic resources within the Parks. After construction is finished, it is expected that, as minimal natural vegetation regenerates, the construction areas would not be evident to the Parks' visitors or from views of the Parks from US 395.

4.8.1.9 Native American Lands and Indian Reservation Lands

As described previously, under Section 3.7.2, in late October 2010, NTIA notified the affiliated tribes of the undertaking, provided project descriptions and maps, and invited the tribes to comment on the undertaking, particularly regarding any questions or concerns about the project in general and Native American interests specifically. Chambers Group recorded the Native American responses (Chambers Group Inc. 2011). Native American comments regarding the Proposed Project generally indicate no interest in construction sites. However requests were made, that if the archaeological remains or resources are found during construction, the Applicant construction should immediately be stopped and the appropriate Federal Agency and Tribe notified.

4.8.1.10 County/Municipal Lands

As described above, the node sites proposed for the Preferred Alternative are planned to be placed in developed areas within industrial parks and commercial areas. The building exteriors will have a concrete or steel exterior, whichever is comparable to the existing surrounding land uses. The node sites will be visually modified at specific sites to blend in with the surroundings, based on the requirements of the local jurisdictional agency, reducing any visual impacts.

4.8.2 No Action Alternative

The No Action Alternative would not result in construction of the Proposed Project, and potential effects to the visual resources described for the Preferred Alternative would not occur.

4.9. LAND USE AND AGRICULTURE

4.9.1 Land Use

4.9.1.1 Preferred Alternative

Land Use Conflicts

Many types of land uses and land use designations are present along the Preferred Alternative route. Such land uses include open space, agricultural, forest, Native American Lands, residential, commercial, and industrial. A majority of the land uses include Open Space, Resource Conservation, Agriculture, Forest and Range, and Rural Living. The Preferred Alternative would be located on lands within several counties, cities, and other jurisdictions.

As previously noted, the NTIA and the CPUC are the Lead Agencies for the NEPA and CEQA review, respectively, of the Proposed Project and have authority for Project approval. Prior to approval, the NTIA and the CPUC will ensure that the Proposed Project would comply with applicable state and federal regulations and would require CBC's compliance with local regulations to the extent feasible, in accordance with its General Order No. 131D.

As the NTIA and the CPUC have preemptive jurisdiction over the construction, maintenance, and operation of the Proposed Project, no local discretionary permits (e.g., conditional use permits) or local plan consistency evaluations are required for the Proposed Project; however, the CBC would be required

to obtain all ministerial building and encroachment permits from local jurisdictions. Permits and regulatory requirements for the Proposed Project are listed in Section 6.0 of this document.

Land uses adjacent to the Preferred Alternative route would be temporarily disturbed by Proposed Project construction activities and the presence of work crews. Although construction activities would not prevent any existing land use activities, the noise, dust, and traffic associated with construction would have the potential to temporarily disturb these uses. In addition, the presence of construction equipment and personnel during construction activities could potentially temporarily restrict access to limited areas along the Proposed Project route. Compliance with aesthetic, noise, traffic, air quality, and other environmental mitigation measures described in this document, will reduce these temporary construction impacts. In addition, implementation of Mitigation Measure LU-1, which involves notification regarding construction activities and a procedure for responding to construction complaints or questions, will further reduce these temporary construction impacts.

Physically Divide an Established Community

The infrastructure necessary to complete this Proposed Project will be located within existing Caltrans and NDOT ROWs/easements and existing utility easements. These improvements are consistent with normal uses of rights-of-way and easements. The Proposed Project contains no conversion of existing land use or land use designation. Due to the location of construction, and the nature of the Proposed Project, the Preferred Alternative would not physically divide an established community or alter any existing land uses. Construction would be temporary in nature, and the pre-fabricated buildings will be placed on the outskirts of the communities, within existing industrial parks or commercial areas. In addition, the Preferred Alternative will provide the benefit of high-speed internet and communications connectivity to many of the existing land use types. Therefore, no adverse impacts based on land use are expected.

Recreation Impacts

The Proposed Project involves the installation of fiber-optic cable and associated infrastructure; it does not include any recreational facilities. Neither construction nor operation of the Proposed Project is expected to result in an increase in the local populations. Therefore, the Proposed Project will not require the construction or expansion of recreational facilities.

Population Growth and Community Impacts

As described previously, the Proposed Project's benefits align with key benefits of American Recovery and Reinvestment Act of 2009 (ARRA). It would make middle-mile fiber available for broadband service providers to bring cost-effective, high-speed broadband services to areas that do not have access to it today. This middle-mile infrastructure would provide: (1) access to unserved; (2) access to underserved; (3) access to schools, libraries, healthcare providers, community colleges, and other institutions of higher education; (4) access to public safety agencies; and would (5) stimulate demand for broadband, economic growth, and job creation, satisfying a wide range of the rural population's requirements. The Project empowers more people to start a home-based business or take a class. The goal of the Proposed Project is to make broadband capacity in the Eastern Sierra equal to that available in major metropolitan areas and more populated areas of California and Nevada so that these communities can participate in the global economy.

Unlike the provision of water or roads, broadband capacity would not be a defining growth factor for Eastern Sierra communities. The Preferred Alternative will not involve the extension of any other utility services or roads to underdeveloped areas, and no new or improved infrastructure facilities, including recreational facilities, are required for the Proposed Project. No direct growth-inducement would result from the extension of growth-defining utilities or service systems or roads.

The potential for stimulating economic growth and job creation could in turn stimulate local population growth. The availability of broadband capacity in the Eastern Sierra is not likely to serve as the catalyst for measureable population growth. However, it may indirectly stimulate a need for additional housing, in conjunction with potential job growth.

The Proposed Project would not remove development restrictions that would apply to business activity or residential development. In addition, if any employees for any new jobs come from the existing local labor pool, this would not create either a short-term or long-term demand for new housing..

With implementation of APM Measure LU-1, impacts would be reduced.

Habitat Conservation Plan Conflicts

The BLM's West Mojave Plan (WEMO) is an approved regional habitat conservation plan that applies to the Proposed Project route. The Proposed Project route also traverses through Desert Tortoise Critical Habitat; however, APM Bio-11 includes measures to protect desert tortoise within the designated critical habitat. The Preferred Alternative will not conflict with any applicable habitat conservation plan or natural community conservation plan.

4.9.1.2 No Action Alternative

The No Action Alternative would not result in any changes to land use. No impacts to land uses would occur under the No Action Alternative; however, the No Action Alternative would not provide the benefits of high-speed internet and communications connectivity.

4.9.2 Agriculture and Forestry Resources

4.9.2.1 Preferred Alternative

The Preferred Alternative will be located within existing Caltrans/NDOT ROWs/easements and existing utility easements. The Preferred Alternative would not convert Prime Farmland or Farmland of Statewide Importance (Farmland), conflict with existing zoning for agricultural use, or convert farmland to non-agricultural use. The Preferred Alternative would be consistent with the Williamson Act because Section 51238 states that the construction, operation, and maintenance of communication facilities are compatible uses on lands under Williamson Act contracts, unless otherwise specified by the local board or council. Therefore, no adverse impacts to agricultural uses are expected. In addition, the Preferred Alternative would not convert Farmland or forest land to non-forest use. Therefore, no adverse impacts to forestry resources are expected.

4.9.2.2 No Action Alternative

The No Action Alternative would not result in any changes to agricultural land uses. No impacts to agricultural land uses would occur under the No Action Alternative.

4.10. INFRASTRUCTURE

4.10.1 Preferred Alternative

The Proposed Project would bring high-speed internet and communications connectivity to areas of the two states that are populated and presently unserved or underserved. This Proposed Project would facilitate installation of middle-mile projects to enhance wireless coverage to areas with poor or unreliable coverage. This existing lack of communications infrastructure results in public health and safety concerns. In addition, schools, government agencies, and residential and business owners are without high-speed and/or reliable internet connectivity. The Preferred Alternative would therefore have the positive impact of providing this needed infrastructure.

Electricity Needs

The Proposed Project would connect to local electricity sources, both during construction and operation. During construction a backup generator would also be located onsite for any potential emergency electricity needs.

Waste Disposal Needs

Construction activities related to fiber installation would generate a certain amount of waste, including environmentally non-hazardous materials. Items such as cable trimmings, package materials, etc. would necessitate proper handling and disposal methods. The volume of waste generated is expected to be minimal for this Proposed Project, and waste materials would be properly disposed of in one of the landfills or recycling centers along the Proposed Project route.

Certain materials and resource staging areas would need to be created during the construction of the Preferred Alternative. It is anticipated that dumpsters for construction waste materials would need to be arranged at those staging areas. All waste generated by the Proposed Project would be disposed of at an appropriate solid waste transfer station or disposal facility. APM I-3 (Prepare Recycling Program) will be implemented to ensure that potentially significant impacts associated with short-term waste disposal during construction are reduced.

Transportation and Traffic

The Preferred Alternative will include roadside construction and some increased traffic due to trips to the construction site. However, construction activity will be temporary in nature, and is not expected to conflict with a congestion management program.

Construction work would be planned and scheduled such that the majority of construction occurs during fair weather seasons where transportation along the roads and roadside work will not be hindered by seasonal weather conditions. The existing roadway infrastructure is adequate for the types of vehicles and equipment that would be required to complete this Proposed Project.

During the construction of the Preferred Alternative, Caltrans and NDOT ROWs/easements and possibly lanes of roadways would be temporarily closed. These activities could temporarily increase hazards in the area, as well as conflict with emergency access due to temporary land closures. While any closures of roadways during construction activities would be temporary, such closures could increase traffic levels and constrain circulation in the area, resulting in potential impacts. APM I-1 (Roadway Capacity Maintenance) and APM I-2 (Prepare Transportation Management Plans), in addition to APM LU-1, will be implemented to ensure that potential impacts associated with short-term lane closures during construction are reduced.

4.10.2 No Action Alternative

The No Action Alternative would not result in additional demands on or impacts to infrastructure, and no impacts to infrastructure would occur; however, the No Action Alternative would not provide the high-speed internet and communications connectivity to areas of the two states that are populated and presently unserved or underserved.

4.11. SOCIOECONOMIC RESOURCES / ENVIRONMENTAL JUSTICE

4.11.1 Preferred Alternative

A number of positive effects can be experienced by introducing and enhancing high-speed broadband access to residences and business, government, and medical and educational organizations along the US 395 route. The Proposed Project would provide an indispensable communication path that would secure continuous telecommunications, support projected population growth, and would provide an improved and more reliable high-speed data access and Internet service to current and projected future government, residential, and business customers. The increased availability would help provide more reliable information access to education facilities, government facilities, and any industries in the vicinity of the Proposed Project route.

The Digital 395 Project is in support of the Broadband Technology Opportunities Program (BTOP) goal to enhance broadband capacity at public computer centers at unserved and underserved areas (BTOP 2010). The Digital 395 Project would bring broadband access to low-income rural areas of eastern California and western Nevada. The availability of broadband access in these underdeveloped areas would help to integrate existing community institutions such as hospitals, schools, and libraries.

Populations of individuals living below the poverty level occur at a greater rate in Carson City and Kern and San Bernardino counties than at the state levels. Unemployment occurs at a greater rate in Douglas, Kern, and San Bernardino counties than at the state levels. Therefore, populations living below the poverty level and the unemployed will receive the benefits of the Proposed Project at higher than state levels.

Short-term environmental effects including construction noise and air quality emissions from construction equipment will affect the area's population equally, without regard to nationality or income level. There will not be a disproportionate impact, either negative or positive, to any low-income minority.

The Proposed Action is expected to have no adverse socioeconomic impacts.

4.11.2 No Action Alternative

The No Action Alternative would not result in any socioeconomic impacts; however, the No Action Alternative would not gain the socioeconomic benefits through the provision of high-speed internet and communications connectivity to areas of the two states that are populated and presently unserved or underserved.

4.12. HUMAN HEALTH AND SAFETY

4.12.1 Preferred Alternative

Hazardous Materials, Emissions, and Sites

The operation of the Preferred Alternative does not involve the routine transport, use, or disposal of hazardous materials. Those hazardous materials utilized during construction would be in limited quantities and would only be in use or transported during the 30-month construction period. Furthermore, proper handling, storage, and disposal of all hazardous materials in accordance with applicable regulations would reduce impacts.

Based on the final literature and Internet research, none of the 70 sites of concern with soil conditions only were found to potentially impact the Proposed Project route. Only three sites of concern, all located in Bishop, California, were found with groundwater contamination that may pose a potential hazard to the safety of workers during Proposed Project construction. These three hazardous waste sites are in close proximity to each other. Depending upon the amount of rainfall in the season preceding cable installation, the construction workers may encounter gasoline impacted groundwater while trenching in the vicinity of these sites. Many gasoline constituents such as benzene and methyl tertiary butyl ether (MTBE) are known carcinogens. Exposure to gasoline impacted groundwater is a potential health and safety risk for the construction workers.

In order to minimize potential impacts to these areas, the Applicant Proposed Measure APM-HHS-1, as described in Appendix B, will be implemented for the Preferred Alternative.

The fiber-optic line itself does not generate any known adverse health issues. Providing all construction safety procedures are followed, the Digital 395 Project would not generate any safety issues.

Hazards and Safety

The CBC and construction superintendent will be subject to the Occupational Safety Health Administration (OSHA) which sets forth mandatory health and safety standards for construction sites. These standards include the measures mentioned in APM-HHS-2.

Prior to the start of construction, CBC would perform a “Project Kick-off” meeting with the installation contractor, and employees and would review the detailed work plan, safety requirements, and emergency contact numbers for police and rescue.

CBC would require that all installation companies perform documented daily safety “tailgate” meetings prior to any work being completed to review the hazards associated with the work scheduled for the day.

Traffic control, where applicable, would be provided by a certified flagging company or local law enforcement.

Government Facilities

The Preferred Alternative could potentially require fire and police protection during construction of the Proposed Project. Section 3.12 identifies CHP, local police, and local fire stations within the vicinity of the Proposed Project route. These stations are already equipped to serve the communities and surrounding areas within the vicinity of the Proposed Project. No new or physically altered fire or police protection facilities would be required.

4.12.2 No Action Alternative

The No Action Alternative would not result in any changes to human health and safety. No impacts to human health and safety would occur under the No Action Alternative.

4.13. CUMULATIVE EFFECTS

The regulations implementing NEPA require that the cumulative impacts of a proposed action be assessed (40 CFR Parts 1500-1508). A cumulative impact is an “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions” (40 CFR § 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR § 1508.7).

CEQA requires a discussion of cumulative impacts when they are significant and the project's incremental contribution is “cumulatively considerable.” (14 Cal Code Regs § 1513(a)). Cumulative impacts are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” (14 Cal Code Regs § 15355). A project's incremental contribution is cumulatively considerable if the incremental effects of the project are significant “when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects” (14 Cal Code Regs § 15065(a)(3)). Factors to consider in determining which projects to include in the list of past, present, and probable future projects include the nature of the resource in question, the location of the project, and the type of project (14 Cal Code Regs § 15130(b)(2)).

The area from which potential cumulative projects were drawn includes all lands in the vicinity of the Proposed Project route. In light of the short-term and temporary potential impacts associated with the Proposed Project, the reasonably foreseeable time frame for this cumulative analysis is approximately three years. The majority of the effects from the Proposed Project will be limited to construction activities.Long-term maintenance activities associated with the Project are expected to be nominal at best, possibly requiring inspections and emergency repair in the event of rarely occurring major storm events.

4.13.1 Past, Other Current, and Reasonably Foreseeable Future Projects

Coordination with the jurisdictional agencies along the Proposed Project route was conducted to identify current and planned future projects within the cumulative impact area in the vicinity of the Proposed Project. Past projects include the installation and maintenance of other underground utility

lines located within the Caltrans and NDOT ROW/easement. In order to understand the contribution of past actions to the cumulative effects of the proposed action and alternatives, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This is because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects.

This cumulative effects analysis does not attempt to quantify the effects of past human actions by adding up all prior actions on an action-by-action basis. There are several reasons for not taking this approach. First, a catalog and analysis of all past actions would be impractical to compile and unduly costly to obtain. Current conditions have been impacted by innumerable actions over the last century (and beyond), and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Second, providing the details of past actions on an individual basis would not be useful to predict the cumulative effects of the proposed action or alternatives. In fact, focusing on individual actions would be less accurate than looking at existing conditions, because there is limited information on the environmental impacts of individual past actions, and one can not reasonably identify each and every action over the last century that has contributed to current conditions. Additionally, focusing on the impacts of past human actions risks ignoring the important residual effects of past natural events, which may contribute to cumulative effects just as much as human actions. By looking at current conditions, we are sure to capture all the residual effects of past human actions and natural events, regardless of which particular action or event contributed those effects. Finally, the Council on Environmental Quality issued an interpretive memorandum on June 24, 2005 regarding analysis of past actions, which states, “agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.

Table 50: Current and Planned Future Projects

Project Name	Location	Description
San Bernardino County		
SR-58 via Hinkley	State Route 58 from Hidden River Road to Lenwood Road	Construct a four-lane divided freeway/expressway to reduce traffic congestion, improve pavement, improve safety features, and meet future traffic demands.
Proposed Old Highway 58 Land Sale	Immediately south of Old Highway 58, approximately 5 miles west of the city of Barstow	Sale of land
Kramer Junction Solar Energy Center	West side of US 395, approximately 2.5 miles north of Highway 58	Construct and operate a 20 Megawatt photovoltaic solar energy facility on 191-acre lot
Kern County		
Boron SRRA Rehab	Route 58, Mile Post R139.0	Construct New Buildings
Airport Road Rubberized Overlay	Route 58, Mile Post R118.0 to R143	Rubberized Hot Mix Asphalt Overlay
Kern 58 RAC Overlay	Route 58, Mile Post 77.3 to 107.6	Rubberized Hot Mix Asphalt Overlay

Table 50: Current and Planned Future Projects

Project Name	Location	Description
Cache Creek Median Barrier	Route 58, Mile Post R106.7 to R107	Install Concrete Median Barrier
Mojave Windscreen	Route 58 at exit SR 165 near Mohave	Install windscreen
Kenwater Overhead Revegetation	Route 58, Mile Post R111.8	Revegetation to restore ecological area
58/14 Separation Revegetation	Route 58, Mile Post R114.6	Install erosion control and fencing
Mojave East Material Site (#252)	Route 58, Mile Post 125.2	Material Site Reclamation
Searles Valley CAPM	Route 395, Mile Post 8.7 to 14.8	AC Overlay
Ridgecrest to China Lake Slurry Seal	Route 178, Mile Post 57.1 to 88.2	Slurry Seal
Inyokern 4-lane	Route 395, Mile Post 13.9 to 30.6	Convert to 4-lane Expressway
Ridgecrest Recycling and Sanitary Landfill Permit Revision Project	Approximately two miles west of the City of Ridgecrest, and approximately two miles southeast of the town of Inyokern	Increase permitted lifespan and capacity of current landfill
Inyo County		
Olancha/Cartago Four-Lane	US 395, Mile Post 30.8 to 41.8	Upgrade existing two-lane highway to a four-lane expressway
Ed Powers Rehab	US 395, Mile Post 117.9 to 122.4	Rehabilitate roadway, widen shoulders, and construct sidewalk
South Sherwin Summit Rehab	US 395, Mile Post R128.8/R129.5 ten miles north of Bishop to Mile Post R10.3 at Tom's Place	Rehabilitate roadway and widen shoulders
Coso Safety Roadside Rest Area Rehab	US 395, Mile Post 17.9, 17 miles south of SR-190	Upgrade and repair existing safety roadside rest area making it ADA compliant
North Little Lake Rehab	US 395, Mile Post R8.6 to R11.8	Rehabilitate roadway, widen shoulders, and realign curve
Lone Pine CAPM	US 395, Mile Post 57.0 to 57.9	Pavement rehabilitation
Caltrans Road Rehabilitation Project	US 395 near Little Lake, approximately 8.5 miles south of Little Lake Road	Road rehabilitation work on US 395
T37-1 Highway 395 Access Road approach widening	Owens Lake Westside, 2 miles north of Bartlett	Widening on an access road approaching US 395
Mono County		
High Point Curve Realignment	US 395, Mile Post 117.9 to 119.4	Realign curves
South Sherwin Summit Rehab	US 395, Mile Post R128.8/R129.5 ten miles north of Bishop to Mile Post R10.3 at Tom's Place	Rehabilitate roadway and widen shoulders

Table 50: Current and Planned Future Projects

Project Name	Location	Description
Casa Diablo IV Geothermal Development Project	Near the intersection of US 395 and SR 203, approximately 3 miles east of Mammoth Lakes	Construction of a 33-megawatt geothermal power plant and associated well field, internal access roads, pipelines, and a transmission line.
June Lake Hazardous Fuels Reduction	US 395 and June Lake Loop	Hazardous fuels reduction work on 4,578 acres within threat zones in June Lake Loop.
Crestview Safety Roadside Rest Area Rehab	US 395, Mile Post 32.4, six miles north of the junction of US 395 and SR 203	Upgrade and repair existing safety roadside rest area making it ADA compliant
Sonora Wildlife Crossing	US 395, Mile Post 91.7 to 96.8, near the junction of US 395 and SR 108	Construct deer fencing with undercrossings
Pickel Meadows CAPM	Route 108, Mile Post 9.8 to 15.1, west of US 395	Pavement rehabilitation
Mammoth Creek Bridge Deck and Rail Upgrade	US 395, Mile Post 23.6 to 27.1	Bridge deck rehabilitation and rail upgrade
Nevada		
Mt. Rose Tracts Hazardous Fuels Reduction Project	Carson Ranger District, 33 National Forest parcels on both sides of Mt. Rose Highway (State Route 431)	Fuels reduction on approximately 800 acres using mechanical equipment and chainsaws to thin small trees and shrubs to modify wildfire hazard near residences and other developments. Wet season prescribed burning is also being considered.
Arrowhawk Hazardous Fuels Reduction Project	Areas adjacent to south and west Reno, Nevada	Reduce wildfire hazard and restore open stands within Reno's Wildland Urban Interface, using equipment, crews, burns, vegetation removal, and livestock grazing

4.13.2 Cumulative Impacts

Cumulative effects are defined by the Council on Environmental Quality NEPA regulations 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 actions" (40 CFR 1508.7).

Cumulative impacts are defined by CEQA as "two or more individual effects which, when considered together, are considerable or…compound or increase other environmental impacts." (CEQA Guidelines, § 15355.) Such impacts may be relatively minor and incremental yet still be significant because of the existing environmental background, particularly when one considers other closely related past, present, and reasonably foreseeable future projects.

4.13.2.1 Noise

The Proposed Project will generate short-term construction noise and minimal long-term operational noise. The Proposed Project will not conflict with any applicable noise ordinance requirements. Construction noise associated with the Proposed Project may occur concurrently with construction noise from the above-referenced reasonably foreseeable area projects; however, the Proposed Project's contribution to future cumulative effects within the Proposed Project area would be relatively minor after implementation of the proposed APMs.

4.13.2.2 Air Quality

This analysis is concerned with criteria air pollutants. Such pollutants have impacts that are usually (though not always) cumulative by nature. Rarely would a project by itself cause a violation of a federal or state criteria pollutant standards; however, a new source of pollution may contribute to violations of criteria pollutant standards because of the existing background sources or foreseeable future projects. Air districts attempt to attain the criteria pollutant standards by adopting attainment plans, which comprise a multifaceted programmatic approach to such attainment. Depending on the air district, these plans typically include requirements for air offsets and the use of Best Available Control Technology (BACT) for new sources of emissions and restrictions of emissions from existing sources of air pollution. Thus, much of the discussion in Sections 3.2 and 4.2 is concerned with cumulative impacts. The Existing Environment section describes the air quality background in the various air basins in the Proposed Project area, including a discussion of historical ambient levels for each of the significant criteria pollutants. The Environmental Consequences section discusses the Proposed Project's contribution to the local existing background caused by Proposed Project construction and operation.

4.13.2.3 Greenhouse Gas Emissions

An individual project does not generate enough GHG emissions to significantly influence global climate change. A project's effects on global climate change are a cumulative impact; the Proposed Project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases in the world.

4.13.2.4 Geology and Soils

The conduit will be installed by cable plowing, HDD, and trenching and back-hoeing depending on the nature of the terrain, geology, and environmental conditions. None of these methods cause substantial ground disturbance. Cable installation would be within existing Caltrans and NDOT ROWs/easements generally in previously disturbed areas. With each type of installation, after the conduits are installed, the disturbed soil surface will be restored to its original condition. The incremental effect of this temporary impact is not cumulatively considerable when viewed in connection with any permanent alterations to soils and geology that may be caused by the reasonably foreseeable area projects.

4.13.2.5 Water Resources

The Proposed Project will avoid impacts to streams by installing conduit by HDD at stream crossings. Directional drilling eliminates disturbance to streams. Additional protection to stream resources will be achieved through a HDD Contingency and Resource Protection Plan and a Spill Prevention and Pollution

Plan (SPPP), reducing impacts to water resources. No impacts to water resources are expected after construction. Therefore, the incremental effect of the Proposed Project's impacts on surface and groundwater resources is not cumulatively considerable when viewed in connection with the same impacts that may be caused by the reasonably foreseeable area projects.

4.13.2.6 Biological Resources

Installation of conduit and associated facilities will temporarily disturb previously disturbed habitats and existing roads and the areas immediately adjacent to the footprint of Proposed Project activities. Measures will be implemented to avoid and/or minimize impacts to sensitive biological resources during construction. When construction is completed, disturbed areas would be expected to revegetate naturally. The Proposed Project would contribute incrementally but temporarily to overall impacts to sensitive habitat. The Proposed Project would contribute to future cumulative effects within the Proposed Project area; however, this contribution would be relatively minor after implementation of the proposed APMs and mitigation measures

4.13.2.7 Historical and Cultural Resources

Cultural resources in the Proposed Project area have likely been impacted or have the potential to be impacted by past and currently approved projects by virtue of extensive ground disturbance that is required for construction of buildings, facilities, roads, and other infrastructure. All ground disturbances have the potential for destroying known or unknown cultural resources. Thus, many resources have likely been destroyed by developments throughout the Eastern Sierra region. Impacts to previously known and unknown cultural resources have been reduced to by implementing mitigation measures requiring construction monitoring, evaluation of resources discovered during monitoring, and avoidance or data recovery for significant resources.

It is also likely that cultural resources have the potential to be affected by future projects. Cultural resources that could be destroyed through construction activities of future projects have a moderate to high potential to occur within the Proposed Project area. If potentially impacted resources can be fully recovered through data recovery or other recordation, there would be no cumulative impact of these future projects.

The Proposed Project would contribute to future cumulative effects within the Proposed Project area; however, this contribution would be relatively minor after implementation of the proposed APMs and mitigation measures.

4.13.2.8 Aesthetic and Visual Resources

No major adverse visual impacts are expected to result from the Proposed Project. Most of the visual impact would be limited to the construction activities. . After construction, changes to the Proposed Project area would be minimal, if not indistinguishable, to the viewers.

As discussed in Section 3.8.2, the Proposed Project would be located adjacent to or would intersect with California Scenic Highways, Nevada Scenic Highways, and National Scenic Byways (Figure 44 through Figure 8). Several projects in Inyo and Mono Counties involve improvements along US 395. These projects and the proposed project would involve the temporary disturbance of the US 395 ROW. In

general these areas do not contain significant scenic resources and cumulative project activities would not substantially damage scenic resources, within a state scenic highway.

The construction activities in the US 395 ROW, would not be primary focal points for motorist or adjacent land uses. If any scenic view is blocked, it will be to a limited area in the foreground, compared to the available view sheds along US 395 and will be transitory in nature.

Cumulative impacts to visual resources would occur if cumulative US 395 projects in Inyo and Mono Counties within close proximity and at the same time. This could increase the potential for substantial scenic view blockage. In addition, sequential construction activity in the approximately same area may give the impression that the activities are less transitory in nature. However, while cumulative visual impacts could be temporarily substantial, post construction the construction areas would likely not be evident to the casual observer and would have neutral long term effects to the US 395 scenic highway. In addition, the Proposed Project's contribution to future cumulative effects would be relatively minor after implementation of the proposed APMs and migration measures.

4.13.2.9 Land Use and Agriculture

Many of the cumulative projects will be located entirely within Caltrans and NDOT ROW/easement; however, the cumulative projects are adjacent to many land use types. In addition to the activities on Caltrans and NDOT ROW/easements, a number of other agencies and jurisdictions could be involved, including Bureau of Land Management (BLM), Native American tribal reservations, Inyo and Humbolt-Toiyabe National Forests, City of Los Angeles Department of Water and Power, Department of Defense (DoD), State-owned lands, and City, County, and Regional lands.

Many of the cumulative projects involve improvements to or adjacent to US 395 and other roadways along the Preferred Alternative route. These projects would individually have the potential to temporarily disturb adjacent land uses by construction activities and the presence of work crews. Although construction activities would not prevent any existing land use activities, the noise, dust, and traffic associated with construction would have the potential to temporarily disturb these uses. In addition, the presence of construction equipment and personnel during construction activities could potentially temporarily restrict access to limited areas along the Proposed Project route. This impact could be cumulative with these projects occurred within close proximity to each other and within a similar time span. Compliance with aesthetic, noise, traffic, air quality, and other environmental mitigation measures described in this document, will reduce the Preferred Alternative's contribution to these temporary cumulative construction impacts. In addition, implementation of Mitigation Measure LU-1, which involves notification regarding construction activities and a procedure for responding to construction complaints or questions, will further reduce these temporary cumulative construction impacts.

Most of the cumulative projects involve improvements to existing roadways. These projects and the Preferred Alternative would not result in direct growth-inducement but may indirectly stimulate growth through improvements to utilities, service systems or roads. All these projects, especially the two energy projects, one in San Bernardino County and one in Mono County, could indirectly stimulate a need for additional housing, in conjunction with potential job growth. These projects would not remove development restrictions that would apply to business activity or residential development. In addition, if employees for any new jobs come from the existing local labor pool, there would not be either a short-term or long-term demand for new housing.

Most of the cumulative projects will be located within existing Caltrans/NDOT ROWs/easements and existing utility easements. These projects, including the Preferred Alternative would not convert Prime Farmland or Farmland of Statewide Importance (Farmland), conflict with existing zoning for agricultural use, or convert farmland to non-agricultural use. The Preferred Alternative would be consistent with the Williamson Act because Section 51238 states that the construction, operation, and maintenance of communication facilities are compatible uses on lands under Williamson Act contracts, unless otherwise specified by the local board or council. Therefore, no adverse cumulative impacts to agricultural uses are expected. In addition, these projects would not convert Farmland or forest land to non-forest use. Therefore, no adverse cumulative impacts to forestry resources are expected.

4.13.2.10 Infrastructure

The Proposed Project would provide the positive impact to communication infrastructure by providing high-speed internet and communications connectivity to the Eastern Sierra.

Most of the cumulative projects would include roadside construction and some increased traffic due to trips to the construction site. This construction activity would be temporary in nature, and would not be expected to conflict with a congestion management program.

Construction work would be planned and scheduled such that the majority of construction occurs during fair weather seasons where transportation along the roads and roadside work will not be hindered by seasonal weather conditions. The existing roadway infrastructure is adequate for the types of vehicles and equipment that would be required to complete these projects. In addition, many of these projects would improve the roadways.

During the construction of the cumulative projects, Caltrans and NDOT ROWs/easements and possibly lanes of roadways could be temporarily closed. These activities could temporarily increase hazards in the area, as well as conflict with emergency access due to temporary land closures. While any closures of roadways during construction activities would be temporary, such closures could increase traffic levels and constrain circulation in the area, resulting in potential impacts. These impacts would increase cumulatively if these projects occurred within close proximity to each other and within a similar time span. Implementation of APM I-1 and APM I-2, in addition to APM LU-1, will reduce the Preferred Alternative's contribution to these cumulative impacts associated with short-term lane closures during construction.

The cumulative projects would generate a certain amount of waste, including environmentally non-hazardous materials. For most of the projects including the Preferred Alternative, the waste generation would be mostly limited to construction activities. The generation of volume is expected to be minimal and within the capacity of the landfills or recycling centers along the Proposed Project route. In addition, implementation of the Proposed Project's recycling program (APM I-3) would reduce the Preferred Alternatives contribution to any potential cumulative waste generation impacts.

4.13.2.11 Socioeconomic Resources / Environmental Justice

The cumulative projects will involve short-term environmental effects including construction noise and air quality emissions from construction equipment. These impacts will affect the area's population equally, without regard to nationality or income level. There will not be a disproportionate cumulative impact, either negative or positive, to any low-income minority.

4.13.2.12 Human Health and Safety

Most of the cumulative projects involve improvements to existing roadways and would not involve the routine transport, use, or disposal of hazardous materials. Those hazardous materials utilized during construction would be in limited quantities and would only be in use or transported during each project's construction period. This limited impact could be cumulative if these projects occur within close proximity to each other and within a similar time span. However, the proper handling, storage, and disposal of all hazardous materials in accordance with applicable regulations would reduce any impacts.

SECTION 5.0 – ENVIRONMENTAL COMMITMENTS

5.1. RELATIONSHIP OF SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

CEQA requires evaluation of adverse impacts which could not be avoided should the Proposed Project be implemented. Implementation of the Proposed Project would result in the installation of broadband fiber-optic cable between Barstow, California, and Carson City, Nevada, located within Caltrans ROW / easements and county roads. Public lands currently used for Caltrans ROW / easement uses would continue to be available to the public upon Project completion. Impacts generated or created by the Proposed Project are mitigated to *less than significant* levels through the applicant initiated environmental construction measures and BMPs identified in Section 2.8.7.

The Preferred Alternative involves the irreversible commitment of resources, including the energy required for construction operations. Energy will be expended in the form of diesel fuel, gasoline, lubricants for equipment and vehicles, and electricity for power. The commitment of materials during construction operations also includes water for dust control.

The Preferred Alternative would require the commitment of human and fiscal resources. The additional expenditure of labor required for the Preferred Alternative would mainly involve the efforts during construction, as maintenance efforts are expected to be minimal. Funding for the Proposed Project would not be available for other uses and would therefore be irretrievable.

5.2. GROWTH INDUCEMENT

CEQA requires that any growth-inducing effects of a proposed project be identified. CEQA Guidelines §15126.2(d) explains growth-inducing impacts as development that would directly or indirectly foster population growth or construction of additional housing in the surrounding environment.

As described previously, the Proposed Project's benefits align with key benefits of American Recovery and Reinvestment Act of 2009 (ARRA). It would make middle-mile fiber available for broadband service providers to bring cost-effective, high-speed broadband services to areas that do not have access to it today. This middle-mile infrastructure would provide: (1) access to unserved; (2) access to underserved; (3) access to schools, libraries, healthcare providers, community colleges and other institutions of higher education; (4) access to public safety agencies; and would (5) stimulate demand for broadband, economic growth, and job creation, satisfying a wide range of the rural population's requirements. The Proposed Project empowers more people to start a home-based business or take a class. The goal of the Proposed Project is to make broadband capacity in the Eastern Sierra equal to that available in major metropolitan areas and more populated areas of California and Nevada so that these communities can participate in the global economy.

Unlike the provision of water or roads, broadband capacity would not be a defining growth factor for Eastern Sierra communities. The Preferred Alternative will not involve the extension of any other utility services or roads to underdeveloped areas, and no new infrastructure facilities are required for the Proposed Project. No direct growth-inducement would result from the extension of growth defining utilities or service systems or roads.

The potential for stimulating economic growth and job creation could in turn stimulate local population growth. It would be speculative to estimate how much the development of homes in the Eastern Sierra

has been affected by the lack of broadband capacity or how quickly additional homes would be built once broadband capacity becomes available. The availability of broadband capacity in the Eastern Sierra is not likely to serve as the catalyst for measureable population growth; however, it may indirectly stimulate a need for additional housing, in conjunction with potential job growth.

The Proposed Project would not remove development restrictions that would apply to business activity or residential development. In addition, employees for any new jobs could come from the existing local labor pool and, as such, would not create either a short-term or long-term demand for new housing.

SECTION 6.0 – APPLICABLE ENVIRONMENTAL PERMITS AND REGULATORY REQUIREMENTS

The Proposed Project involves multiple Federal, State, and local agencies/entities that have decision making authority or jurisdiction. Table 51 briefly identifies the authorizing action of each agency or the permits required from the agency prior to construction. The CBC will continue to work with each agency to provide the necessary information to achieve the respective authorizations and/or permits.

Table 51: Regulatory Agencies and Requirements

Regulatory Agency	Authorizing Action/Permits
Federal	
Department of Commerce, National Telecommunication and Information Administration	Finding of No Significant Impacts, Environmental Assessment (National Environmental Policy Act)
U.S. Army Corps of Engineers	Individual/Nationwide Section 404 Permit (Clean Water Act)
Bureau of Land Management	ROW Grant, Temporary Use Permit, Cultural Resources Use Permit, Plan of Development, NEPA Decision Document
U.S. Forest Service	ROW Grant, Temporary Use Permit, Cultural Resources Use Permit, NEPA Decision Document
U.S. Fish & Wildlife Service	Formal Section 7 Consultation (Endangered Species Act, Migratory Bird Treaty Act, Fish and Wildlife Coordination Act)
U.S. Department of the Navy	Acquisition of easement for Naval Air Weapons Station China Lake
State	
California Public Utilities Commission	Mitigated Negative Declaration (California Environmental Quality Act)
California Department of Transportation	Encroachment Permit
Nevada Department of Transportation	Encroachment Permit
California State Lands Commission	Right of Way Easement
California Department of Fish and Game	Streambed Alteration 1601 Permit, Section 2081 Permit
California Regional Water Quality Control Board (Lahanton)	Section 401 Water Quality Certification, Waste Discharge Requirement, Stormwater Permit, SWPPP, National Pollutant Discharge and Elimination System Permit
Section 402 of Clean Water Act	Authorizes the NPDES program and allows coverage under a NPDES General Construction Permit with implementation of a SWPPP
Section 303(d) of Clean Water Act	Requires states to identify impaired water bodies and water quality standards, and develop Total Maximum Daily Load (TMDL) requirements
Porter Cologne Water Quality Control Act	Authorizes the SRWQCB and RWQCBs to implement regional Water Quality Control Plans, which identify Beneficial Uses for waters in the area
Nevada Division of Environmental Protection	Section 401 Water Quality Certification
Local	
County of San Bernardino	Encroachment Permit

Table 51: Regulatory Agencies and Requirements

Regulatory Agency	Authorizing Action/Permits
City of Barstow	Encroachment Permit
County of Kern	Encroachment Permit
City of Ridgecrest	Encroachment Permit
County of Inyo	Encroachment Permits, licensing, and/or planning permits, as necessary
City of Bishop	Encroachment Permit
County of Mono	Encroachment Permit
City of Mammoth Lakes	Encroachment Permit
County of Douglas	Encroachment Permit
Consolidated Municipality of Carson City	Encroachment Permit
County of Washoe	Encroachment Permit
City of Reno	Encroachment Permit
Los Angeles Department of Water and Power	Encroachment Permit
Burlington Northern Santa Fe Railway	Encroachment Permit

SECTION 7.0 – AGENCY COORDINATION

7.1. FEDERAL AGENCIES

7.1.1 U.S. Fish and Wildlife Service

7.1.1.1 California

The NTIA initiated informal Section 7 coordination with the U.S. Fish and Wildlife Service (USFWS), Sacramento Office, for the Project in a letter dated October 21, 2010. This letter requested cooperation in reviewing and responding to the analysis and conclusions regarding effects of the Proposed Action in coordination with the grant recipient. Chambers Group contacted the Sacramento Office for a point of contact and was directed to the Ventura Field Office. Chambers Group initiated contact with the Ventura Office on November 17, 2010, on behalf of the grant recipient to discuss potential areas and species of interest along the Proposed Project route. Coordination has been on-going via telephone and e-mail. The USFWS Ventura Office participated in a multi-agency biological resource teleconference on December 13, 2010, to introduce the affected State and Federal resource agencies to the Proposed Project and request input, assistance, and points of contact for continued coordination. Chambers Group sent a letter dated December 16, 2010, via e-mail to the Ventura Office requesting a list of federally Threatened and Endangered Species and designated critical habitat that may be present within the Proposed Project area. The Ventura Office responded in collaboration with the Reno Office to the request in a letter dated December 23, 2010, via e-mail (Appendix E). The Ventura Office also participated in a multi-agency meeting regarding agency involvement on this Proposed Project. A meeting to discuss species concerns, engineering and project design, and how to avoid or minimize these concerns to meet the needs of Section 7 was held on March 3, 2011 at the USFWS San Bernardino Suboffice. The primary species of concern to FWS is the desert tortoise. A Biological Assessment (BA) has been prepared. The NTIA initiated formal Section 7 consultation with the USFWS on August 4, 2011 (Appendix E). The NTIA will continue to formally consult with the USFWS. CBC shall continue to informally coordinate with the USFWS throughout the environmental process and construction activities.

7.1.1.2 Nevada

The NTIA initiated informal Section 7 coordination with the U.S. Fish and Wildlife Service, Reno Office, for the Project in a letter dated October 21, 2010. This letter requested cooperation in reviewing and responding to the analysis and conclusions regarding effects of the Proposed Action in coordination with the grant recipient. Chambers Group contacted the Nevada Office for a point of contact. Chambers Group initiated contact with the Reno Office on November 29, 2010, on behalf of the grant recipient to discuss potential areas and species of interest along the Proposed Project route. Coordination has been on-going via telephone and e-mail. The USFWS Reno Office participated in a multi-agency biological resource teleconference on December 13, 2010, to introduce the affected State and Federal resource agencies to the Proposed Project and request input, assistance, and points of contact for continued coordination. Chambers Group sent a letter dated December 16, 2010, via e-mail to the Reno Office requesting a list of federally Threatened and Endangered Species and designated critical habitat that may be present within the Proposed Project area. The Ventura Office responded in collaboration with the Reno Office to the request in a letter dated December 23, 2010, via e-mail (Appendix E). CBC shall continue to coordinate with the USFWS throughout the environmental process and construction activities.

7.1.2 U.S. Forest Service

7.1.2.1 Inyo National Forest

The NTIA initiated coordination with the U.S. Forest Service (USFS), Pacific Southwest Region, for the Proposed Project in a letter dated November 3, 2010. This letter requested cooperation in reviewing and responding to the analysis and conclusions regarding effects of the Proposed Action in coordination with the grant recipient. Chambers Group initiated contact with the Inyo National Forest on October 5, 2010, on behalf of the grant recipient for a point of contact and to discuss potential areas and species of interest along the Proposed Project route. Coordination has been on-going via telephone and e-mail regarding NEPA, biological resources, and cultural resources. The Inyo National Forest participated in a multi-agency biological resource teleconference on December 13, 2010, to introduce the affected State and Federal resource agencies to the Proposed Project and request input, assistance, and points of contact for continued coordination. On December 13, 2010, Chambers Group requested a list of Forest Service Sensitive Species and any species or habitat of interest that may be present within the Proposed Project area. The Inyo National Forest participated in a multi-agency meeting regarding agency involvement on this Proposed Project on January 26, 2011. Additionally, the Inyo National Forest participated in a meeting to discuss species concerns, project and engineering designs on March 16, 2011. A letter requesting review and participation in the Project Programmatic Agreement was sent to Inyo National Forest by the NTIA in June 2011. CBC shall continue to coordinate with the Inyo National Forest throughout the environmental process and construction activities.

7.1.2.2 Humboldt-Toiyabe National Forest

The NTIA initiated coordination with the U.S. Forest Service, Intermountain Region, for the Proposed Project in a letter dated November 3, 2010. This letter requested cooperation in reviewing and responding to the analysis and conclusions regarding effects of the Proposed Action in coordination with the grant recipient. Chambers Group initiated contact with the Humboldt-Toiyabe National Forest on October 22, 2010, on behalf of the grant recipient to request a point of contact and to discuss potential areas and species of interest along the Proposed Project route. Coordination has been on-going via telephone and e-mail regarding NEPA, biological resources, and cultural resources. The Humboldt-Toiyabe National Forest participated in a multi-agency biological resource teleconference on December 13, 2010, to introduce the affected State and Federal resource agencies to the Proposed Project and request input, assistance, and points of contact for continued coordination. On December 13, 2010, Chambers Group requested a list of Forest Sensitive Species and any species or habitat of interest that may be present within the Proposed Project area. A letter requesting review and participation in Project Programmatic Agreement was sent to Humbolt-Toiyabe National Forest by the NTIA in June 2011. CBC shall continue to coordinate with the Humboldt-Toiyabe National Forest throughout the environmental process and construction activities.

7.1.3 U.S. Bureau of Land Management

7.1.3.1 California

Chambers Group initiated contact with the BLM Sacramento Office on October 5, 2010, on behalf of the grant recipient to request a point of contact and to discuss potential areas and species of interest along the Proposed Project route. The Bishop, Barstow, and Ridgecrest field offices also have been contacted; however, the Sacramento Office has been identified as the lead office for the entire Proposed Project

line, except for cultural resources, in which the Bishop Office has been identified as the lead office. A letter requesting review and participation in programmatic agreement was sent to the Bishop Office by the NTIA in June 2011. Coordination has been on-going via telephone and e-mail regarding NEPA, biological resources, and cultural resources. The BLM Sacramento Office participated in a Proposed Project introduction, pre-application meeting on October 19, 2010; a multi-agency biological resource teleconference on December 13, 2010, to introduce the affected State and Federal resource agencies to the Proposed Project and request input, assistance, and points of contact for continued coordination; a teleconference meeting on December 14, 2010, regarding cultural resources; a multi-agency meeting regarding agency involvement on this Project on January 26, 2011; and a scoping meeting to discuss project concerns, engineering, design, and other sensitivities involving the Proposed Project on March 16, 2001. A letter requesting review and participation in Project Programmatic Agreement was sent to the BLM by the NTIA in June 2011. CBC shall continue to coordinate with the BLM throughout the environmental process and construction activities.

7.1.3.2 Nevada

Chambers Group initiated contact with the BLM Carson City Office on October 6, 2010, on behalf of the grant recipient to request a point of contact and to discuss potential areas and species of interest along the Proposed Project route. The Sacramento Office in California has been identified as the lead office for the entire Proposed Project line, except for cultural resources, in which the Bishop Office has been identified as the lead office. Coordination is detailed under the California BLM Section. A letter requesting review and participation in Project Programmatic Agreement was sent to the BLM by the NTIA in June 2011. CBC shall continue to coordinate with the BLM throughout the environmental process and construction activities.

7.1.4 U.S. Army Corps of Engineers

Chambers Group initiated contact with the Los Angeles District, Regulatory Division of the U.S. Army Corps of Engineers (USACE) on October 6, 2010, on behalf of the grant recipient to request a point of contact and to discuss potential areas and species of interest along the Proposed Project route. The Sacramento District, Regulatory Division was contacted on October 20, 2010; and the Reno Field Office was contacted on November 10, 2010. Coordination has been on-going via telephone and e-mail, focusing on jurisdictional waters. The Reno Field Office participated in a multi-agency biological resource teleconference on December 13, 2010, to introduce the affected State and Federal resource agencies to the Proposed Project and request input, assistance, and points of contact for continued coordination. On December 13, 2010, Chambers Group requested a list of any species or habitat of interest that may be present within the Proposed Project area. The Sacramento District designated the US Department of Commerce as the lead point of contact to act on behalf of the USACE for purposes of compliance with Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act in a letter dated June 17, 2011. CBC shall continue to coordinate with the USACE throughout the environmental process and construction activities.

7.1.5 U.S. Department of the Navy

CBC initiated contact with the U.S. Department of the Navy (Navy) to request a point of contact and to discuss potential areas and species of interest along the Proposed Project route. Coordination has been on-going via telephone and e-mail between the Navy and the NTIA. CBC shall continue to coordinate with the Navy throughout the environmental process and construction activities.

7.2. STATE AGENCIES

7.2.1 Office of Historic Preservation / Advisory Council on Historic Preservation

7.2.1.1 California

The NTIA initiated Section 106 consultation with the State Office of Historic Preservation (SHPO) for the Project in a letter dated October 22, 2010. This letter identified that the Proposed Project was considered as an "undertaking" with potential to affect historic resources, as defined in 36 CFR Part 800, and served as the notice that NTIA was initiating consultation and authorized the BTOP applicant "to gather information to identify and evaluate historic properties and work with consulting parties to assess effects." Chambers Group initiated contact with the Office of Historic Preservation on October 26, 2010, on behalf of the grant recipient to request a point of contact and to discuss potential areas of interest along the Proposed Project route. A letter requesting review and participation in the Project Programmatic Agreement was sent to the California SHPO by the NTIA in June 2011. Coordination has been on-going via telephone, mail, and e-mail, with data being sent to the SHPO as it is collected. CBC shall continue to coordinate with the SHPO throughout the environmental process and construction activities.

7.2.1.2 Nevada

The NTIA initiated Section 106 consultation with the State Office of Historic Preservation (SHPO) for the Project in a letter dated October 22, 2010. This letter identified that the Proposed Project was considered as an "undertaking" with potential to affect historic resources, as defined in 36 CFR Part 800, and served as the notice that NTIA was initiating consultation and authorized the BTOP applicant "to gather information to identify and evaluate historic properties and work with consulting parties to assess effects." Chambers Group initiated contact with the Office of Historic Preservation on November 18, 2010, on behalf of the grant recipient to request a point of contact and to discuss potential areas of interest along the Proposed Project route. A letter requesting review and participation in the Project Programmatic Agreement was sent to the Nevada SHPO by the NTIA in June 2011. Coordination has been on-going via telephone, mail, and e-mail, with data being sent to the SHPO as it is collected. CBC shall continue to coordinate with the SHPO throughout the environmental process and construction activities.

7.2.2 California Native American Heritage Commission

The CBC contacted the Native American Heritage Commission in September 2010; and the NAHC responded in a letter dated September 27, 2010, and provided a list of Native American tribes. Chambers Group initiated contact with the Native American Heritage Commission on October 5, 2010, on behalf of the grant recipient to discuss potential areas of interest or sensitive resources along the Proposed Project route. Chambers Group also has been contacting the Native American tribes, as identified in Appendix E. CBC shall continue to coordinate with the NAHC throughout the environmental process and construction activities.

7.2.3 Department of Transportation

7.2.3.1 California

Chambers Group initiated contact with the California Department of Transportation (Caltrans), Sacramento District on October 6, 2010, on behalf of the grant recipient to request a point of contact and to discuss potential areas of interest along the Proposed Project route. Caltrans Districts 8 and 9 also have been contacted. Coordination has been on-going via telephone and e-mail regarding Proposed Project design, permit requirements, biological resources, and cultural resources. Caltrans participated in a meeting March 17, 2011, to discuss species concerns and engineering and project design. A letter requesting review and participation in the Programmatic Agreement was sent to Caltrans Central Region, Division 8, and Environmental Management Office by the NTIA in June 2011. CBC shall continue to coordinate with Caltrans throughout the environmental process and construction activities.

7.2.3.2 Nevada

Chambers Group initiated contact with Nevada Department of Transportation (NDOT) on October 6, 2010, on behalf of the grant recipient to request a point of contact and to discuss potential areas of interest along the Proposed Project route. A letter requesting review and participation in the Project Programmatic Agreement was sent to NDOT by the NTIA in June 2011. Coordination has been on-going via telephone and e-mail regarding Proposed Project design, permit requirements, biological resources, and cultural resources. CBC shall continue to coordinate with NDOT throughout the environmental process and construction activities.

7.2.4 California Department of Fish and Game

Chambers Group initiated contact with California Department of Fish and Game (CDFG) on October 6, 2010, on behalf of the grant recipient to request a point of contact and to discuss potential areas and species of interest along the Proposed Project route. Coordination has been on-going via telephone and e-mail regarding biological and water resources. CDFG participated in a multi-agency biological resource teleconference on December 13, 2010, to introduce the affected State and Federal resource agencies to the Proposed Project and request input, assistance, and points of contact for continued coordination. On December 13, 2010, Chambers Group requested a list of any species or habitat of interest that may be present within the Proposed Project area. Coordination regarding an incidental take permit for desert tortoise and Mohave ground squirrel has been on-going and an application will be submitted for this project. CBC shall continue to coordinate with the CDFG throughout the environmental process and construction activities.

7.2.5 Nevada Department of Wildlife

Chambers Group initiated contact with Nevada Department of Wildlife (NDOW) on November 29, 2010, on behalf of the grant recipient to request a point of contact and to discuss potential areas and species of interest along the Proposed Project route. Coordination has been on-going via telephone and e-mail regarding biological and water resources. NDOW participated in a multi-agency biological resource teleconference on December 13, 2010, to introduce the affected State and Federal resource agencies to the Proposed Project and request input, assistance, and points of contact for continued coordination. On December 13, 2010, Chambers Group requested a list of any species or habitat of interest that may

be present within the Proposed Project area. CBC shall continue to coordinate with NDOW throughout the environmental process and construction activities.

7.2.6 California Regional Water Quality Control Board

Chambers Group initiated contact with California Regional Water Quality Control Board (RWQCB) on October 6, 2010, on behalf of the grant recipient to request a point of contact and to discuss potential areas of interest along the Proposed Project route. Coordination has been on-going via telephone and e-mail regarding jurisdictional waters. RWQCB participated in a multi-agency biological resource teleconference on December 13, 2010, to introduce the affected State and Federal resource agencies to the Proposed Project and request input, assistance, and points of contact for continued coordination. On December 13, 2010, Chambers Group requested a list of any area or habitat of interest that may be present within the Proposed Project area. CBC shall continue to coordinate with the RWQCB throughout the environmental process and construction activities.

7.2.7 Nevada Division of Environmental Protection

Chambers Group initiated contact with Nevada Department of Environmental Protection (NDEP) on October 7, 2010, on behalf of the grant recipient to request a point of contact and to discuss potential areas of interest along the Proposed Project route. Coordination has been on-going via telephone and e-mail regarding jurisdictional waters. CBC shall continue to coordinate with NDEP throughout the environmental process and construction activities.

7.2.8 California Public Utilities Commission

Chambers Group initiated contact with the California Public Utilities Commission (CPUC) on October 6, 2010, on behalf of the grant recipient to request a point of contact and to discuss Proposed Project procedures, with CPUC taking the role of the CEQA lead. A letter requesting review and participation in the Project Programmatic Agreement was sent to CPUC by the NTIA in June 2011. Coordination has been on-going via telephone, weekly teleconferences, mail, and e-mail regarding the CEQA process. CBC shall continue to coordinate with the CPUC throughout the environmental process and construction activities.

7.3. LOCAL AGENCIES AND OTHER ENTITIES

The CBC and Chambers Group have initiated contact with the counties of San Bernardino, Kern, Mono and Inyo, requesting input on potential areas of interest along the Proposed Project route and environmental document processes for areas where the Proposed Project follows county roads. The CBC has initiated contact with the counties of Carson City, Douglas, and Washoe. The Los Angeles Department of Water and Power and the Burlington Northern Santa Fe Railway also have been contacted regarding their requirements for areas where the Proposed Project route crosses their jurisdictions. CBC shall continue to coordinate with these various agencies and entities throughout the environmental process and construction activities.

7.4. TRIBES

In October 2010, NTIA contacted the Tribal Historic Preservation Office along with all other interested tribal entities and tribal nations during the initial consultation phase of the Proposed Project. Listed below are the tribes who were contacted in October 2010. CBC has participated in several in-person

meetings with tribes throughout the environmental process, including an intertribal meeting on May 4, 2011, and meetings with the NTIA and tribes on July 13 and 14, 2011. CBC shall continue to coordinate with these tribes throughout the environmental process and construction activities.

- AhaMakav Cultural Society, Fort Mojave Indian
- Benton Paiute Reservation
- Big Pine Band of Owens Valley – Owens Valley Paiute
- Bishop Paiute Tribe
- Bridgeport Paiute Indian Colony
- Chemehuevi Reservation
- Fort Independence Community of Paiute
- Fort Mojave Indian Tribe
- Kern Valley Indian Council
- Kutzadika Indian Community Cultural Preservation
- Lone Pine Paiute – Shoshone Reservation
- Mono Lake Indian Community – Mono Northern Paiute
- Morongo Band of Mission Indians
- San Fernando Band of Mission Indians
- San Manuel Band of Mission Indians – Serrano
- San Miguel Band of Mission Indians
- Serrano Nation of Indians
- Tehachapi Indian Tribe
- Timbisha Shoshone Tribe
- Tubatulabal/Kawaiisu/Koso/Yokuts
- Walker River Reservation
- Washoe Tribe of Nevada and California

The following tribes were contacted by the NTIA in June 2011 and requested to review and participate in programmatic agreement:

- Fort Independence Community of Paiute
- Bridgeport Paiute Indian Colony
- Benton Paiute Reservation
- Washoe Tribe of Nevada and California
- Big Pine Band of Owens Valley – Owens Valley Paiute
- Lone Pine Paiute – Shoshone Reservation
- Benton Paiute Reservation
- Bishop Paiute Tribe

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SECTION 8.0 – LIST OF PREPARERS

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