Exhibit H - FEIS

United States Department of Agriculture

Forest Service

March 2018

Final Environmental Impact Statement

Bordertown to California 120 kV Transmission Line Project

Humboldt-Toiyabe National Forest, Carson Ranger District
Sierra County, California, and Washoe County, Nevada

Title:	Bordertown to California 120 kV Transmission Line Project Final Environmental Impact Statement Sierra County, California and Washoe County, Nevada
Lead Agency:	USDA, Forest Service
Cooperating Agencies:	Bureau of Land Management, Nevada Department of Wildlife, Truckee Meadows Planning Agency, Washoe County, Sierra County, and City of Reno
Responsible Official:	William A. Dunkelberger, Forest Supervisor Humboldt-Toiyabe National Forest 1200 Franklin Way, Sparks, NV 89431
For information:	Marnie Bonesteel Humboldt-Toiyabe National Forest 1200 Franklin Way, Sparks, NV 89431 775-352-1240

Abstract: The U.S. Forest Service, Humboldt-Toiyabe National Forest proposes to issue a special use permit for the construction, operation, and maintenance of a new 120 kilovolt overhead transmission line connecting the Bordertown and California substations, west of Reno, Nevada. The Bureau of Land Management, Eagle Lake Field Office would issue a right-of-way grant to expand the Bordertown Substation to accommodate the new transmission line. Temporary improvements to existing roads and the construction of new temporary roads would allow for the installation and maintenance of the transmission line.

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EXECUTIVE SUMMARY

Introduction

The United States Forest Service (USFS), Humboldt-Toiyabe National Forest has prepared this Environmental Impact Statement (EIS) pursuant with the requirements of the National Environmental Policy Act (NEPA) and its implementing regulations issued by the Council on Environmental Quality (40 Code of Federal Regulations 1500-1508). The USFS is the lead agency for this EIS, and the Bureau of Land Management (BLM) Eagle Lake Field Office, City of Reno, Washoe County, Sierra County, Truckee Meadows Regional Planning Agency, and Nevada Department of Wildlife are cooperating agencies.

This EIS is intended to inform the public and disclose the direct, indirect, and cumulative environmental impacts that would result from the construction, operation and maintenance of a new electric transmission line proposed in Sierra County, California, and Washoe County, Nevada.

Summary of the Proposed Project

The proposal is to construct a new 120-kilovolt electric transmission line between the existing Bordertown and California substations. Depending on the alignment selected, the transmission line would be approximately 10.3 to 18.0 miles long. Expansion of the existing Bordertown Substation is proposed to accommodate the transmission line.

The proposed transmission line would require a Special Use Permit (SUP) from the USFS for a transmission line right-of-way (ROW) across National Forest System (NFS) land and a ROW Grant from the BLM for the substation expansion and section of transmission line across BLM-administered public land. Easements would be acquired on private land that would be crossed by the proposed transmission line. Private land would remain under ownership of the title holder, and private property owners would be compensated for the easement. NV Energy would own, operate, and maintain the proposed transmission line. The ROW and easements would measure 90 feet in width, with the transmission line generally in the center.

While the proposed transmission line would be constructed within the ROW/easements, temporary ground disturbance required for construction would occur within and outside of the ROW/easements. In general, ground disturbance outside of the ROW would consist of construction of access roads, widening existing roads, use of staging areas, and construction within transmission wire setup sites. The USFS would issue a temporary SUP for temporary roads and construction activity located outside of the transmission line ROW. Restoration would be required at the completion of construction to recontour and revegetate areas disturbed areas in the project area. Trees beneath the transmission line and within 21 feet of any direction of the transmission line conductors would be removed for safety reasons. Trees within the ROW would continue to be removed through the operational life of the transmission line.

Project construction would commence as soon as all necessary agency approvals and permits are obtained and all ROW authorizations and easements are secured. Construction of the project would take 8 to 12 months. NV Energy would inspect the transmission line annually to determine if maintenance is needed. An inspection that involves climbing pole structures is anticipated once every 10 years. Restoration would be implemented following any maintenance activities that result in or require ground disturbance.

Project Alternatives

The transmission line alternative originally proposed, referred to as the "Stateline Alternative", was eliminated from detailed analysis in this EIS and is not considered a viable alternative because it would be either environmentally unreasonable or technically infeasible to implement (see **Section 2.11.1**). Four action alternatives were developed and are evaluated in this EIS: the Mitchell Alternative, the Peavine Alternative, the Poeville Alternative, and the Peavine/Poeville Alternative (**Figure 2.1-1**). The Mitchell and Peavine alternatives, as well as the Stateline Alternative were initially developed from a Constraint Study prepared by JBR Environmental Consultants, Inc. (JBR) (2009a). The Mitchell Alternative was revised after dismissal of the Stateline Alternative to avoid routing on the portion of the Stateline Alternative that was no longer feasible. The Poeville Alternative was developed by the USFS interdisciplinary team in order to maximize compliance with management goals and directives of the *Land and Resource Management Plan* for the Toiyabe National Forest (1986). The Peavine/Poeville Alternative was developed in response to public scoping comments.

The NEPA requires that an EIS include analysis of the "No Action Alternative," against which the effects of the "action" alternatives can be evaluated and compared. Accordingly, the No Action Alternative is evaluated as an alternative in this EIS. Under the No Action Alternative, there would be no new transmission line, no substation expansion or temporary access roads constructed between the Bordertown and California substations.

A number of other alternatives were considered and eliminated from further analysis in this EIS. These alternatives and the reasons for their elimination from further analysis are summarized in **Chapter 2**.

Agency Selected Alternative

The Peavine/Poeville Alternative is the Agency Selected Alternative. This alternative would use a regionally designated utility corridor east of the California Substation and federally designated portions of the Section 368 Energy Corridor near Bordertown Substation. This alternative minimizes routing across private land and avoids a property listed on the National Register of Historic Places (NRHP). This route maximizes crossing land previously disturbed by wildland fire and minimizes crossing pine forest communities and avoids designated critical habitat for Webber ivesia (*Ivesia webberi*), a threatened plant species protected under the Endangered Species Act (ESA).

Environmentally Preferable Alternative

The No Action Alternative is the environmentally preferable alternative because it would not result in disturbance to vegetation, soils, or habitat loss. There would be no tree removal, and no road widening or restoration efforts needed to restore vegetation following construction. There would be no risk to new noxious weed establishment. There would be no effects to habitat that support pollinator habitat for sensitive plant species. There would be no effect to cultural resources. This alternative does not meet the purpose and need for the project (**Section 1.3**).

Issues Summary

Using the comments from the public and other agencies, the interdisciplinary team developed a list of issues to address. The following key issues were identified during scoping for this project:

Visual Resource Issue: Transmission line power poles and conductor wires may reduce the existing scenic quality in the proposed ROW/easement and interrupt the scenic integrity of the viewshed.

a. Issue measured by: Loss of the visual quality and scenic attributes of the characteristic landscape at key observation points (KOPs).

b. Issue measured by: Consistency with the goals and objectives of the existing visual quality objectives (VQOs) assigned to the NFS land and visual resource management (VRM) Class III designation assigned to BLM-administered public lands that would be crossed by an action alternative.

c. Issue measured by: Number of residences within 0.25 mile of the proposed transmission line.

d. Issue measured by: Acres of forest vegetation cleared for the proposed transmission line.

Private Property Value Issue: The presence of a new transmission line adjacent to or crossing private land may reduce private property values.

a. Issue measured by: Number of private property parcels crossed by the proposed transmission line ROW/easement.

b. Issue measured by: Estimated depreciation of property value.

c. Issue measured by: Consistency with local land use plans.

Public Health and Safety Issue: A new transmission line could increase electromagnetic fields that may affect the health and safety of children at Verdi Elementary School and the public living in rural communities of Verdi, Long Valley, and North Virginia Street.

a. Issue measured by: Measurement of maximum electric field during project operation.

b. Issue measured by: Measurement of maximum magnetic field during project operation.

c. Issue measured by: Risk to public health and safety.

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CHAPTER 1 PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

The United States Forest Service (USFS), Humboldt-Toiyabe National Forest, Carson Ranger District has prepared this Environmental Impact Statement (EIS) in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This EIS is intended to inform the public and discloses the direct, indirect, and cumulative impacts that would result from the Proposed Action and alternatives to the Proposed Action. Additional documentation, including the detailed analyses of project-area resources, may be found in the planning record located at the Humboldt-Toiyabe National Forest, 1200 Franklin Way, Sparks, Nevada 89431.

1.2 BACKGROUND

NV Energy filed an Application for Transportation and Utility System and Facilities on Federal Lands (Standard Form 299), seeking authorization to construct, operate, and maintain a transmission line across National Forest System (NFS) land managed by the Humboldt-Toiyabe National Forest and public land administered by the Bureau of Land Management (BLM). The application included the submittal of a Preliminary Plan of Development (JBR Environmental Consultants, Inc. [JBR] 2009b) describing the project facilities, right-of-way (ROW) requirements, construction methods, and operations and maintenance activities. If this project is approved, the USFS would issue a Special Use Permit (SUP) for a transmission line ROW, and the BLM would issue a ROW Grant. For temporary roads and construction access located outside of the transmission line ROW, the USFS would issue a temporary SUP. NV Energy would purchase easements from private landowners for construction and operation of the line across private property.

Prior to filing an application with the USFS, NV Energy conducted a Geographic Information System (GIS) analysis to identify locations where a transmission line would be undesirable (constraints), as well as locations where it would be more desirable (opportunities). The study is documented in the *NV Energy Bordertown Substation to California Substation 120 kV Transmission Line Constraint and Opportunity Study* (Constraint Study) (JBR 2009a).

1.2.1 Project Area

The project area is located in Washoe County, Nevada, and Sierra County, California, west and northwest of the city of Reno, Nevada (**Figure 1.2-1**). The northern boundary of the project area is near Bordertown, Nevada, and U.S. Highway 395 and the southern boundary is near Interstate 80 between Verdi, Nevada, and Mogul, Nevada. The western boundary is approximately three miles west of and roughly parallel with the California state line and the eastern boundary extends to the Peavine area generally east of Peavine Peak.

1.2.2 Electrical System Overview

Key components of an electrical system include generation, transmission, voltage regulation, and distribution to consumers. Electricity is generated at power plants and distributed via overhead transmission lines to substations. Substations regulate or reduce the electric voltage to levels that can be conveyed to the customer through distribution lines. A graphic representation of the electrical distribution system that provides customers in Verdi and west Reno with power is displayed on **Figure 1.2-2**.

As **Figure 1.2-2** shows, bulk power is generated at the Tracy Power Plant and from other sources transmitted from northern California. Bulk power is distributed to various substations in Reno as 345 kilovolt (kV) energy via overhead transmission lines, such as the Alturas 345 kV transmission line. Bulk power serving customers in west Reno is reduced to 120 kV energy at the North Valley Road Substation, which is located in north-central Reno. The #141 and #142 120 kV transmission lines are used to distribute the 120 kV energy between the North Valley Road Substation and the Northwest and Reno substations, respectively.

1.3 PURPOSE AND NEED FOR ACTION

Under the Council on Environmental Quality (CEQ) Code of Federal Regulations (CFR) for the NEPA (40 CFR Section 1502.13), an EIS must identify the underlying purpose and need to which the lead agency is responding to in proposing the action and alternative actions.

The purpose of the project is to provide a backup power line that would continue to serve the west side of Reno in the event that the existing power lines currently serving the area fail. Installing a power line between the Bordertown and California substations will allow NV Energy to provide the power needed to meet reliability requirements of their electrical system.

The North American Electric Reliability Corporation (NERC) requires NV Energy to provide reliable bulk transmission capacity consistent with Standard TPL-004-0. Currently, almost all of the bulk power serving the electric load in the West Reno/Verdi area is transmitted from the North Valley Road Substation on the 120 kV #141 line (turns into the #114 line) and #142 line (turns into the #106 line). Energy demand in the West Reno/Verdi area during peak load periods can push beyond the transmission capacity limits of these existing lines. Should concurrent failure of the #141 and #142 transmission lines occur, load growth in the West Reno/Verdi area will increase the risk of an overload of the remaining 120 kV lines in the system, which could trigger a cascading failure.

The NERC establishes reliability standards for bulk power systems and has the legal authority to enforce reliability standards with all users, owners, and operators[1]. Compliance with NERC standards are mandatory, and the Federal Energy Regulatory Commission (FERC) may assess substantial civil penalties for violations of NERC standards. NERC Standard TPL-004-0 (NERC 2005a) requires NV Energy to plan, operate, and maintain their bulk energy transmission system so that it can survive an event that causes concurrent failure of two system elements. The standard applicable to the Bordertown to California 120 kV Transmission Line Project is that the system must be able to survive an event that causes concurrent failure of two system elements with no loss of load, no overloads, and no voltage changes greater than five percent.

[1] NERC's mission is to ensure the reliability of the North American bulk power system. NERC is certified by the Federal Energy Regulatory Commission (FERC) to establish and enforce reliability standards for bulk power systems.

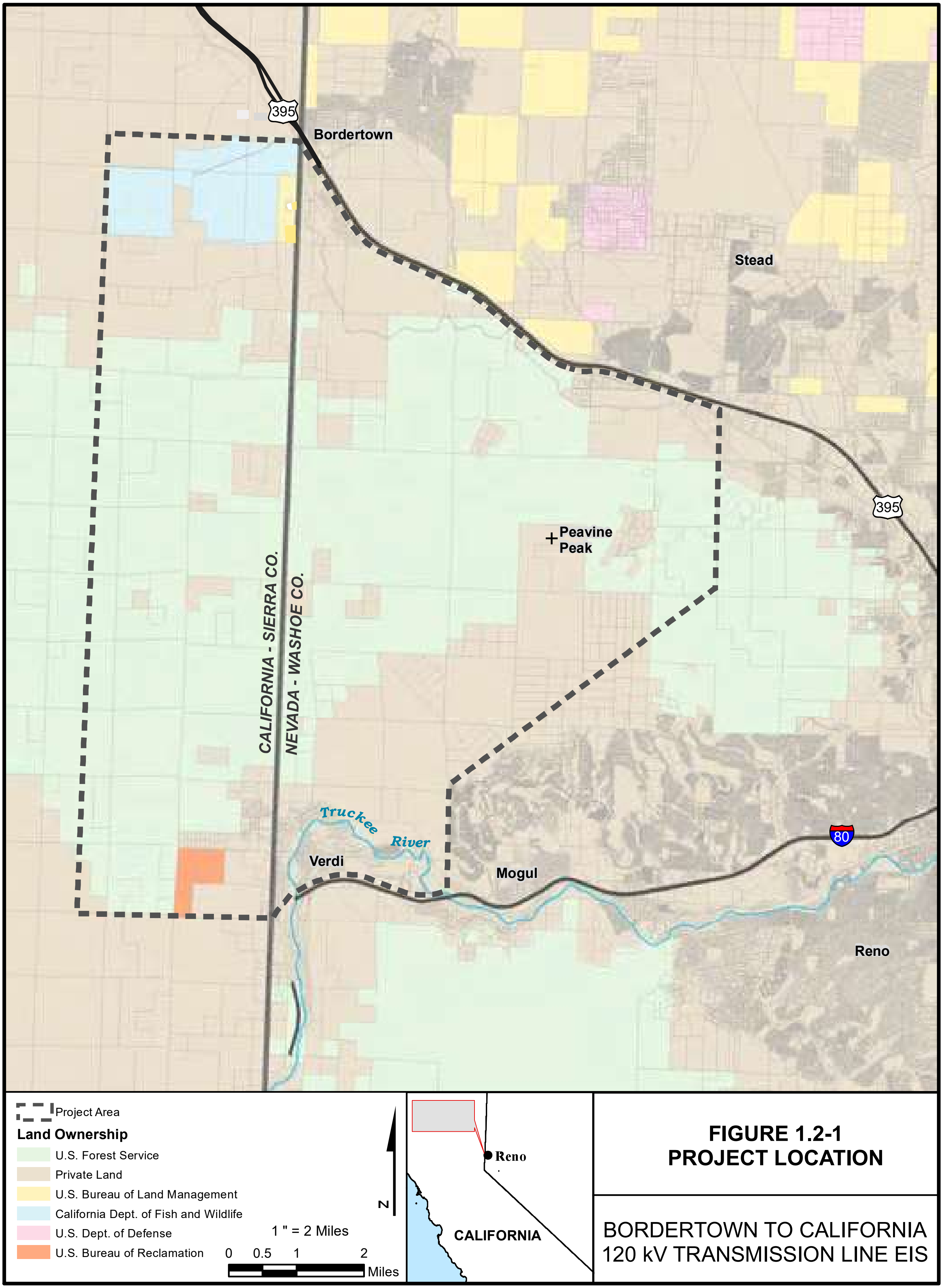

FIGURE 1.2-1
PROJECT LOCATION

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

To meet the NERC reliability standards, NV Energy needs redundancy in the 120 kV system that supplies bulk power to the West Reno/Verdi area. An alternate transmission route to the West Reno/Verdi area is needed that does not solely rely on the #141 and #142 transmission lines. The need for the project was illustrated during the summer of 2007 when the electric load for the area reached 141 megawatts (MW). During the same period, the electric load in North Tahoe was 57 MW, requiring a total of 198 MW of load. This load was served primarily by the #141 and #142 transmission lines because these were the only lines that supply bulk energy to the area. If these lines had failed, the remaining lines in the 120 kV system would have overloaded, resulting in an uncontrolled cascading failure, a clear violation of NERC Standard TPL-004-0. Every year since 2007, NV Energy has identified bulk electrical transmission reliability problems on the west side of Reno.

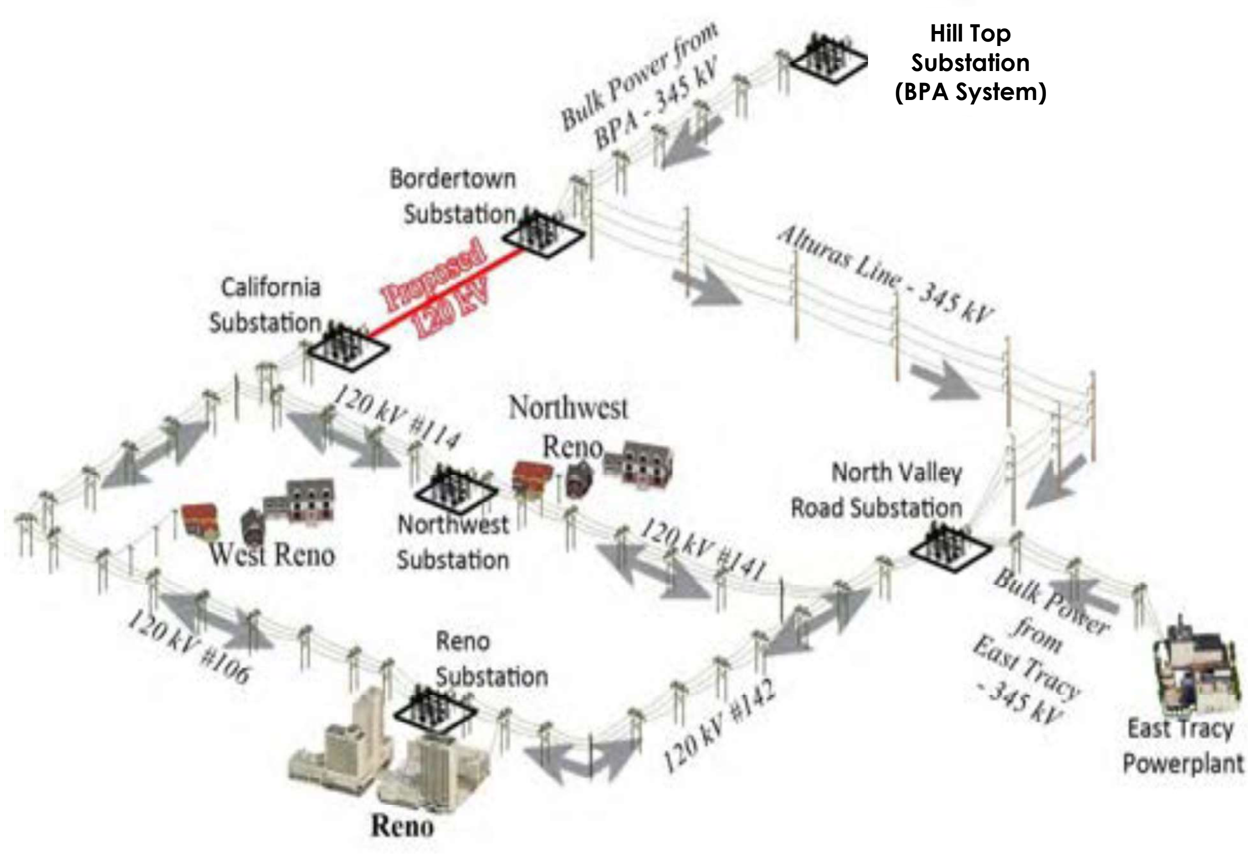

Figure 1.2-2 Transmission System Overview

In 2012, Electrical Consultants, Inc. an independent, third-party evaluated the purpose and need for the project to determine if the project is needed to address load growth in west Reno. The evaluation modeled load demand on the #141 and #142 transmission lines. Electrical Consultants, Inc. confirmed that the project is needed and also asserted that there is a greater need for the project today than when it was originally proposed. Electrical Consultants, Inc. identified potential violations of both NERC TPL-003-0 and TPL-002-0 for the existing system in Reno without the construction of the project. NERC Standard TPL-003-0 (NERC 2005c) requires NV Energy to plan, operate, and maintain their bulk energy transmission system so that it can survive an event that causes concurrent failure of two system elements. NERC Standard TPL-002-0 (NERC 2005b) required the bulk energy transmission system to survive the loss of a single system element. Since Electrical Consultants, Inc. completed the evaluation in 2012, NERC TPL-003-0 and TPL-002-0 have both been superseded by NERC TPL-004-0.

1.4 PROPOSED PROJECT

The primary components of the project include:

- Construction, operation, and maintenance of a 120 kV overhead transmission line between the existing Bordertown and California substations in Sierra County, California;
- Expansion of the Bordertown Substation facility;
- Widening existing roads and construction of new temporary access roads needed for installation of the transmission line; and
- Restoration activities associated with construction related disturbance.

1.5 DECISION FRAMEWORK

The project area contains NFS land, BLM-administered public land, and private land. The responsible official(s) will review the alternatives and environmental consequences in this EIS and make the following decisions only on NFS land and BLM-administered public land:

- To select a ROW and authorize the construction, operation, and maintenance of a 120 kV power transmission line across NFS land and across BLM-administered land, and authorize the expansion of the Bordertown Substation located on BLM-administered public land. Project design features, mitigation measures, and monitoring would be required to reduce effects to NFS land and BLM-administered public land and to restore areas disturbed during construction of the transmission line. A temporary SUP would be issued for temporary roads outside of the transmission line ROW that are needed for construction access on NFS land; or
- Not select a transmission line corridor and not issue a permit.

1.6 MANAGEMENT DIRECTION

1.6.1 U.S. Forest Service

Detailed direction for special uses proposal, application, and authorization process for occupancy and use of NFS land is provided in Chapter 10 of Forest Service Handbook (FSH) 2709.11. According to FSH 2709.11, "the objectives of the special uses application and authorization process are to:

- Provide timely responses to proponents and applicants requesting use of National Forest System lands.
- Provide a consistent decision making process for special use applications.

- Ensure that authorizations to use and occupy National Forest System lands are in the public interest (36 CFR part 251, Subpart B).
- Ensure that authorizations to use and occupy National Forest System lands comply with Forest land and resource management plans."

The National Forest Management Act of 1976 (NFMA), codified in Title 16 of the United States Code (USC) sections 1600 through 1614 (16 USC 1600 et seq.), is the primary statute governing the administration and planning of NFS land. The NFMA requires the USFS to prepare management plans for all NFS land using a systematic and interdisciplinary approach to resource management.

The Toiyabe Forest Plan, as amended (Forest Plan) (USFS 1986) provides forest-wide standards and guidelines for the management of NFS land within the project area. The standards and guidelines for Special Uses that are applicable to the project are listed below.

> 4- Manage all utility, road, and transmission corridors in accordance with plans and permits issued for their construction and use. When applications for utility ROW are received, the first priority will be to utilize existing corridors (page IV-62).
>
> 5- An environmental analysis will be required prior to adding new facilities to existing corridors. The integrity of visual quality for the corridor will be maintained to the highest standard to minimize adverse resource and environmental impacts. Any new utility corridor not identified in this Plan will be handled through the NEPA process (page IV-62).
>
> 6- National Forest System land will not be available for uses that can be accommodated on private land (page IV-62).
>
> 13- 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 (page IV-64).

1.6.2 Bureau of Land Management

Approximately 8.1 acres of the project would occur on BLM-administered public land and managed in accordance with the Eagle Lake Resource Management Plan (RMP) (BLM 2008b). The RMP has a stated goal for ROW management:

Manage public lands to support the goals and objectives of all resource programs and respond to public requests for land use authorizations. Conduct ROW transactions, decisions, and actions in a manner that would prevent adverse impacts to scenic, ecological, water, air, scientific, and archaeological or historical values.

Where the project occurs on BLM-administered public land, applicable management direction in the RMP includes the following:

- New ROWs would be located within or adjacent to existing ROWs, to the extent that is practicable, in order to minimize adverse environmental impacts;

- Future BLM-granted ROWs, including utility corridors would be consistent with U.S. Fish and Wildlife Service (USFWS) guidance to minimize effects to migratory birds; and
- Use of the Alturas transmission line route (along U.S. Highway 395) for future ROW development.

1.7 PUBLIC INVOLVEMENT

A Notice of Intent (NOI) to prepare an EIS was published in the *Federal Register* on November 21, 2011 (*Federal Register* Volume 76, Number 224). A scoping notice describing the project was mailed to residents and interested parties on November 14, 2011, and February 2, 2012. The second mailing was needed to inform residents near the California Substation who were inadvertently missed during the November mailing. To gain further participation from the public the USFS hosted three public meetings December 6, 2011, in Cold Springs, Nevada, and December 8, 2011, and February 23, 2012, in Verdi, Nevada. In total, 60 people attended the scoping meetings. In addition, presentations were made to the following groups: North Valleys Citizen Advisory Board (07/11/11 and 01/09/12), Verdi Township Citizen Advisory Board (07/21/11 and 01/05/12), Ward 5 Northwest Neighborhood Advisory Board (11/14/11), Ward 4 North Valleys and Northeast Neighborhood Advisory Board (11/11/11), Reno City Council (11/16/11), Washoe County Commission (12/13/11), and Sierra County Board of Supervisors (08/16/11).

A Notice of Availability (NOA) for the Draft EIS was published in the *Federal Register* on December 12, 2014 (Federal Register Volume 79, Number 239). The Draft EIS was available December 13, 2014, through January 26, 2015, for a 45-day public comment period. Interested and affected individuals were notified by email and regular mail. A public meeting was held January 13, 2015, at the Northwest Reno Public Library where 26 people attended. A presentation was made to the North Valleys Citizen Advisory Board on February 9, 2015.

Public notification of the Proposed Action was posted on the Humboldt-Toiyabe National Forest Schedule of Proposed Actions website, starting November 21, 2011, and continuing through the present at http://www.fs.usda.gov/goto/htnf/bordertownline.

Additional information on public involvement can be found in **Chapter 4**.

1.8 ISSUES ADDRESSED IN THE EIS

An interdisciplinary team of USFS resource specialists identified issues to address based on comments from the public and other agencies that were received from scoping and the Draft EIS comment period. Issues are defined as a point of disagreement, debate, or dispute about the Proposed Action based upon the effects of that action. Key issues were defined as those directly or indirectly caused by implementing the Proposed Action and are used to formulate alternatives, formulate design features, or prescribe mitigation measures or monitoring requirements. Issues that are not addressed are those that are: (1) outside the scope of the Proposed Action; (2) already decided by law, regulation, Forest Plan, or other higher level decision; (3) irrelevant to the decision to be made; or, (4) conjectural and not supported by scientific or factual evidence.

Key issues were addressed three ways: (1) developing an alternative to alter resource tradeoffs; (2) developing project design features or requiring mitigation to reduce impacts to a resource; and, (3) disclosing and comparing the relative difference in resource effects between alternatives. One or more of these methods may be used to address an issue.

The following key issues were identified during scoping for this project and are addressed in **Chapter 3**.

Visual Resource Issue: Transmission line power poles and conductor wires may reduce the existing scenic quality in the proposed ROW/easement and interrupt the scenic integrity of the viewshed.

a. Issue measured by: Loss of the visual quality and scenic attributes of the characteristic landscape at key observation points (KOPs).

b. Issue measured by: Consistency with the goals and objectives of the existing visual quality objectives (VQOs) assigned to the NFS land and visual resource management (VRM) Class III designation assigned to BLM-administered public lands that would be crossed by an action alternative.

c. Issue measured by: Number of residences within 0.25 mile of the proposed transmission line.

d. Issue measured by: Acres of forest vegetation cleared for the proposed transmission line.

Private Property Value Issue: The presence of a new transmission line adjacent to or crossing private land may reduce private property values.

a. Issue measured by: Number of private property parcels crossed by the proposed transmission line ROW/easement.

b. Issue measured by: Estimated depreciation of property value.

c. Issue measured by: Consistency with local land use plans.

Public Health and Safety Issue: A new transmission line could increase electromagnetic fields that may affect the health and safety of children at Verdi Elementary School and the public living in rural communities of Verdi, Long Valley, and North Virginia Street.

a. Issue measured by: Measurement of maximum electric field during project operation.

b. Issue measured by: Measurement of maximum magnetic field during project operation.

c. Issue measured by: Risk to public health and safety.

The Proposed Action has the potential to effect the following resources within the project area. Effects to these resources are described in further detail in **Chapter 3** along with the analysis of visual resources, private property and public health and safety.

- Vegetation;
- Noxious and invasive weed infestations;

- Special status plants;
- Wildlife;
- Watershed resources (soil erosion and streams);
- Air quality; and
- Cultural resources.

Resources/issues not addressed are discussed in **Section 3.1.1.2** explaining the reason for not conducting a detailed analysis.

1.9 APPLICABLE PERMITS

Table 1.9-1 Permits and Licenses that May Be Applicable to the Project

ACTION	PERMIT/APPROVAL	APPROVING AGENCY
ROW/Easement	Special Use Permit	USFS
ROW/Easement	Right-of-Way Grant	BLM
Dredge or fill activities in Waters of the United States. (i.e., construction of a road crossing.)	Clean Water Act, Section 404 Permit, Nationwide Permit	U.S. Army Corps of Engineers
Facilities construction	Construction Permit	Nevada Division of Environmental Protection, Bureau of Air Pollution Control
Facilities construction	Clean Water Act, Section 402 National Pollutant Discharge Elimination System (NPDES) Notification for Stormwater Management during Construction	Nevada Division of Environmental Protection
Facilities construction	Clean Water Act, Section 402 NPDES Notification for General Permit for Discharges of Storm Water Associated with Construction Activity	Lahontan Regional Water Quality Control Board
Clean Water Act 404 permit	Clean Water Act, Section 401 Water Quality Certification	Nevada Division of Environmental Protection, Bureau of Water Quality Planning
Tree removal and vegetation management activities	R6T-2009-0029 Timber Waiver	Lahontan Regional Water Quality Control Board
Tree removal in California	Public Agency, Public and Private Utility Right of Way Exemption (waives requirement to prepare a Timber Harvest Plan)	California Department of Forestry and Fire Protection (CAL FIRE)
Surface disturbing activities	Surface Area Disturbance Permit and Dust Control Permit; Waste Discharge Permit; Working in Waterways Permit	Nevada Division of Environmental Protection, Bureau of Water Pollution Control
Aerial crossing over the Truckee River	Easement	Nevada Division of State Lands
ROW/Land Use/Facilities Construction	Encroachment Permit/Special Use Permit	Sierra County Planning Commission

ACTION	PERMIT/APPROVAL	APPROVING AGENCY
ROW/Easement	Special Use Permit	Washoe County Board of Commissioners
ROW/Easement	Plan Amendment	Truckee Meadows Regional Planning Agency
Facilities Construction, Grading, and/or Hillside Development	Special Use Permit(s)	City of Reno
ROW/Easement	Special Use Permit	City of Reno

The SUP for Sierra County would be subject to the California Environmental Quality Act. It is likely that the Sierra County Planning Commission would be the lead agency for compliance with the California Environmental Quality Act. If the Planning Commission is not the lead agency, it is likely that the Lahontan Regional Water Quality Control Board would be the lead agency.

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CHAPTER 2 ALTERNATIVES

2.1 INTRODUCTION

This chapter describes five alternatives included for detailed analysis in this EIS. A discussion of the alternatives that were eliminated from detailed study is also provided in this chapter.

2.1.1 Development of Alternatives

The Stateline Alternative was originally identified as the Proposed Action for this project. This alternative is no longer feasible and was eliminated from detailed study for the reasons provided in **Section 2.11.1**. The alternatives considered for analysis are shown in **Figure 2.1-1** and include:

- No Action Alternative;
- Mitchell Alternative;
- Peavine Alternative;
- Poeville Alternative; and
- Peavine/Poeville Alternative.

The Mitchell and Peavine alternatives were developed from routes evaluated in the Constraint Study (JBR 2009a). The Mitchell Alternative maximizes routing next to the existing #102 transmission line. The Mitchell Alternative was revised after dismissal of the Stateline Alternative to avoid routing on the portion of the Stateline Alternative that was no longer feasible. The Peavine Alternative maximizes routing across land previously disturbed by wildland fire and minimizes crossing pine forest communities. The Poeville Alternative was developed by the USFS interdisciplinary team in order to maximize compliance with management goals and directives of the Forest Plan. The Poeville Alternative utilizes existing utility corridors and minimizes routing on NFS land. The Peavine/Poeville Alternative was developed in response to public comments to reduce impacts of the Peavine Alternative to the viewshed of private property near the California Substation, and to use existing utility corridors.

2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, a SUP for the construction, operation, and maintenance of a 120 kV overhead transmission line and 90-foot-wide ROW across NFS land would not be issued to NV Energy. The BLM would not issue NV Energy a ROW grant for construction, operation, and maintenance activities of an expanded Bordertown Substation on BLM-administered public lands. Project activities and associated environmental impacts on NFS land, BLM-administered public land, and private land would not occur. The existing 120 kV system would continue to rely on the #141 and #142 transmission lines for transmitting electric load to the West Reno/Verdi area in the foreseeable future. The No Action Alternative does not provide the redundancy needed in the system and therefore would not meet the purpose and need for the project.

2.3 ACTION ALTERNATIVES

The Mitchell, Peavine, Poeville, and Peavine/Poeville alternatives were selected as action alternatives to be considered for detailed analysis. The differences between the action alternatives are the location of the proposed 90-foot-wide ROW/easement and the location of construction access roads, including road widening. The project facilities and substation modifications would be constructed, operated, and maintained under any of the action alternatives. Construction activities, equipment, and materials would apply to all the action alternatives. The number of pole structures and sites, staging areas, access roads, and transmission wire setup sites required during construction would vary by length and location of each alternative. A detailed description of each action alternative is provided in **Sections 2.4** through **2.7** and displayed on **Figures 2.1-1** through **2.1-3**.

Following a final Record of Decision (ROD), NV Energy would prepare a Construction, Operation, and Maintenance (COM) Plan. The COM Plan is a comprehensive guide used during construction, as well as for operation and maintenance of the project. The COM Plan would include key project contacts; maps of the alignment and ancillary facilities; access maps, copies of permits and associated permit conditions; and specific implementation plans for restoration (including habitat restoration), fire prevention, emergency response, protection of cultural resources, protection of sensitive species, protection of wetlands and streams, stormwater pollution prevention; fencing, and weed management. Prior to its implementation, the COM Plan will be reviewed and approved by the USFS.

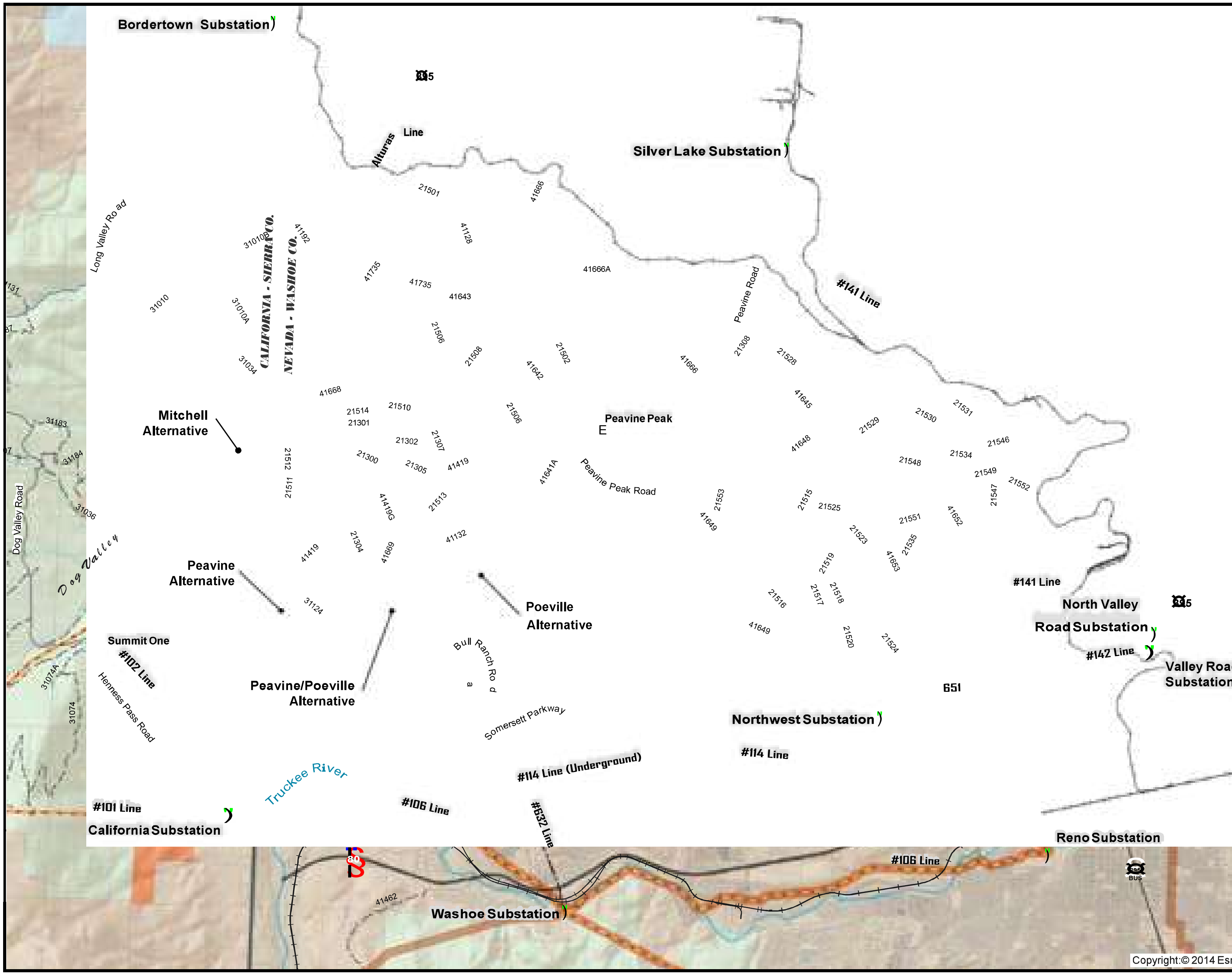
2.3.1 Proposed Substation Modifications

The Bordertown Substation would be partially rebuilt and modified with the addition of new components in order to accommodate the transmission line. The Bordertown Substation would be expanded by 3.7 acres on BLM-administered public land. Proposed modifications to the Bordertown Substation would include vegetation clearing and grading; and expansion of the existing chain-link fence for security and to restrict unauthorized persons and wildlife from entering (**Appendix A**). The site would be graded to near level and surfaced with gravel. Noxious weeds would be treated and monitored to prevent spreading onto adjacent land.

The California Substation is located on private land owned by NV Energy. All needed modifications at the California Substation would be accommodated within the existing fenced area of the substation. The footprint of the existing substation would not be expanded. The exact layout of the modifications at the California Substation would depend on the selected alternative. A preliminary plan showing the modifications proposed for the California Substation is provided in **Appendix A**.

2.3.2 Proposed Transmission Line

The proposed 120 kV transmission line would consist of bundled aluminum conductor steel-reinforced cable supported on single circuit pole structures. A combination of single-pole structures, two-pole H-frame structures, and three-pole dead end/angle structures would be used. Single-pole structures would be used less frequently where confined space prevents the use of two-pole H-frame or three-pole dead end/angle structures, which are wider than the single-pole structures. The ROW would be reduced to 40 feet in constrained areas where single pole structures are used. (For purposes of the EIS analysis, the maximum ROW width of 90 feet is used.) The span distance between the poles would average 800 feet but could range from 200 feet to 2,000 feet depending on terrain or obstructions. See **Appendix A** for an illustration of each type of proposed pole structure.



Transmission Line Alternatives
- Mitchell
- Peavine
- Poeville
- Peavine/Poeville

Existing Features
- 120 kV Transmission Line
- 345 kV Transmission Line
- 60 kV Transmission Line
- Existing Transmission Line Corridors (TMRPA, 2012)
- Substation
- Railroads

NFS Roads
- NFS Roads
- NFS Motorcycles Only
- Public and Private Road

Land Ownership
- U.S. Forest Service
- Private Land
- U.S. Bureau of Land Management
- California Dept. of Fish and Wildlife
- U.S. Dept. of Defense
- U.S. Bureau of Reclamation

Note: Segments of transmission line alternatives that appear parallel share the same alignment. Transmission lines are offset for visual purposes only.

1 " = 6,000 feet

0 3,000 6,000 12,000 Feet

FIGURE 2.1-1 OVERVIEW OF ALTERNATIVES CONSIDERED

BORDERTOWN TO CALIFORNIA 120 kV TRANSMISSION LINE EIS

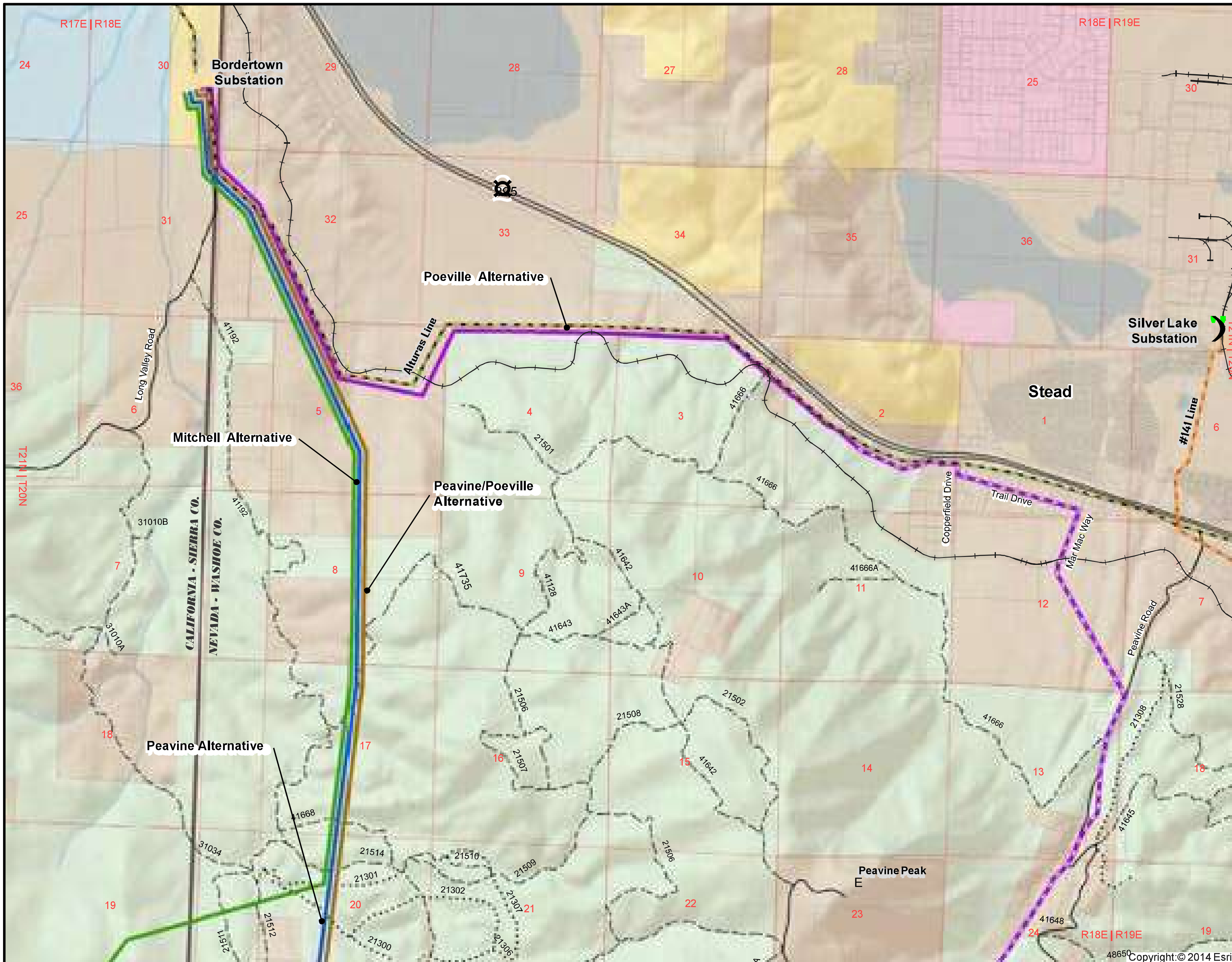


FIGURE 2.1-2
OVERVIEW OF ALTERNATIVES CONSIDERED IN DETAIL NORTH HALF

BORDERTOWN TO CALIFORNIA 120 kV TRANSMISSION LINE EIS

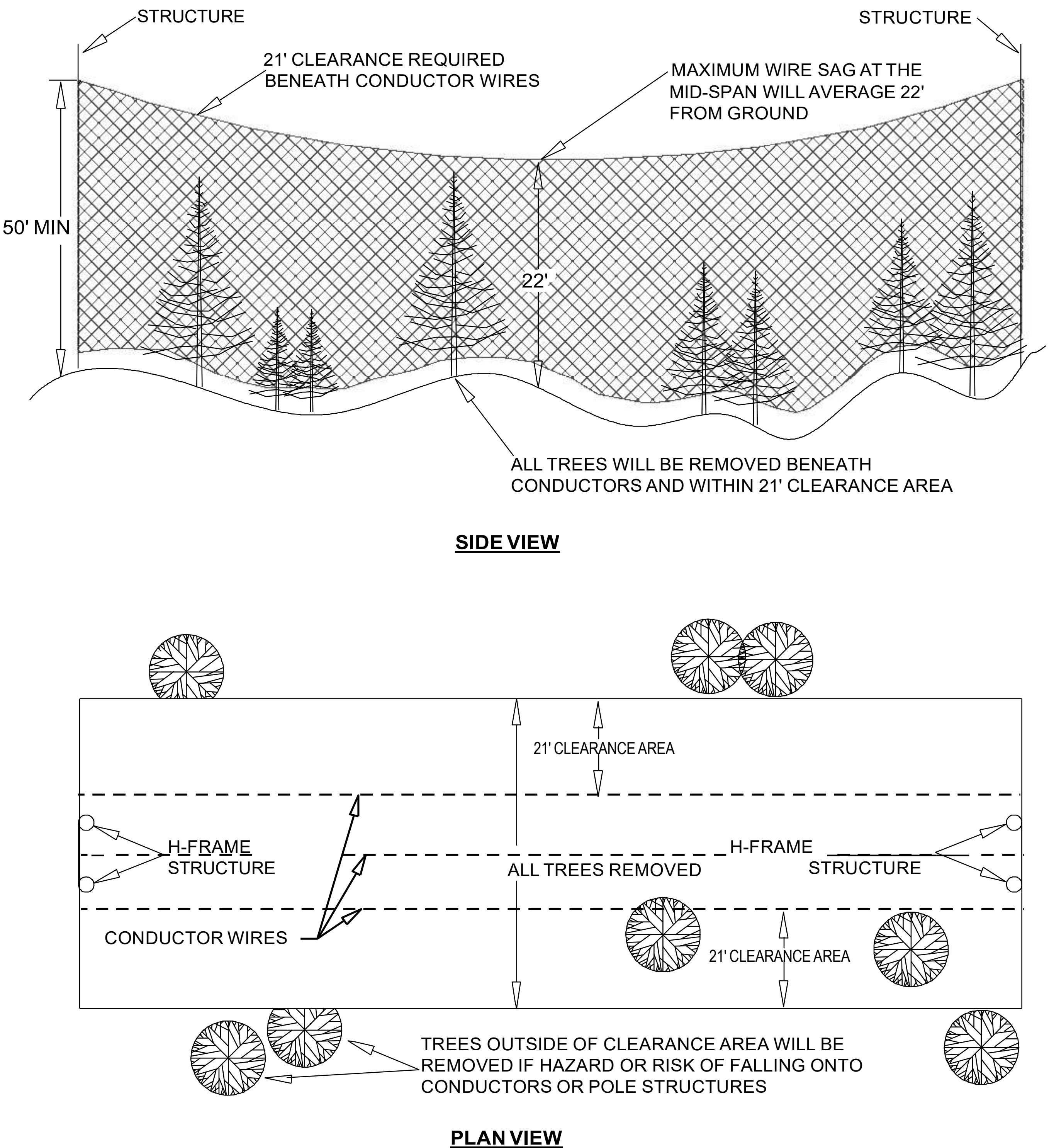


FIGURE 2.3-1
TYPICAL TREE TRIMMING AND CLEARANCE DISTANCES

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

Source: NV Energy, 2013; Modified by JBR Consultants, Inc., 2014

2.3.2.1 Transmission Line Construction

Construction of the transmission line would consist of the establishment of staging areas; construction of access roads, widening existing roads; establishment of pole sites and transmission wire setup sites; and installation of the pole structures and conductor and shield wires. Vegetation would be cleared, as needed. **Table 2.3-1** provides the area of ground disturbance for each construction activity. The exact location of these project elements would be determined prior to construction. See the Plan of Development (JBR 2009b) for a detailed description of power pole assembly, wire stringing, and equipment. Project design features, which are measures specifically formulated to protect environmental resources during construction of the transmission line, are provided in **Appendix B**.

Staging Areas

Up to four staging areas may be needed to store construction materials, equipment, tools, fuel, service trucks, spare parts, and vehicles. The staging areas would house portable, self-contained toilets and possibly portable offices or serve as equipment maintenance areas. Staging areas would measure approximately 500 feet in length by 500 feet in width. Staging areas would use previously disturbed ground and may be located on BLM-administered public land or private land, but no staging areas would be located on NFS land (design feature GP 6). Any hazardous materials such as fuel, lubricants, and solvents, would be handled and stored in accordance with applicable regulations, including 40 CFR 262. Handling, storage, and clean-up of hazardous materials at staging areas would be described in a Spill Prevention, Control, and Countermeasures (SPCC) Plan, which would be included as part of the COM Plan (design feature HM 1). Staging areas would include secondary containment to capture and contain any potential spills or leaks.

Construction Access

Existing Roads

Existing roads would be used for construction and maintenance access as much as possible; however, some existing roads would be widened up to 30 feet, including cut and fill slopes to accommodate construction equipment. Roads that would be widened include designated NFS roads (i.e., roads shown on the Carson District Motor Vehicle Use Map) and non-system roads. Widening of existing roads on BLM-administered public lands would not be required because there is adequate access to the Bordertown Substation. Roads within occupied or unoccupied potential habitat for the federally-listed threatened plant, Webber ivesia (*Ivesia webberi*), and the Forest Service sensitive plant, Dog Valley ivesia (*Ivesia aperta* var. *canina*), would not be widened (design feature SV 6). While widening is not allowed within these habitats, blading and installation of erosion control measures (design feature SV 6) would be permitted. Road improvements would comply with: 1) The Forest Service National Supplements to the FP-03 (USFS 2010c); 2) the USFS Road Construction Handbooks (FSH 7709.56 and FSH 7709.57) (design feature RT 2); and, 3) the Forest Plan. Several designated NFS roads have seasonal use restrictions from April 1 to November 18 that would be followed during construction (design feature RT 1). All designated NFS roads widened for construction or maintenance access would be restored to the original roadbed. A description of restoration activities that would be performed following construction and maintenance activities is provided in **Section 2.3.3.2**.

New Temporary Access Roads

New temporary access roads (i.e., centerline travel road and spur roads) would be constructed to pole sites, transmission wire setup sites, and staging areas when there are no existing roads available. Access roads would be 30 feet wide and located within the 300- to 600-foot-wide corridor (variable-width corridor). The variable-width corridor would be centered on the transmission line and would measure 300 feet wide where slopes are 10 percent or less, and 600 feet wide where slopes are greater than 10 percent. Temporary roads would be constructed primarily by mowing or masticating vegetation in a manner that leaves root systems intact to encourage regrowth and minimize soil erosion (design feature VG 5). Whole tree removal would be required where new access roads cross forested areas. Rocks or other obstructions would be bladed. If rocks cannot be removed with heavy equipment, explosives may be used. While new access roads wider than 30 feet would not be expected, occasional widening beyond 30 feet may be necessary in areas where extensive blading and side cuts are required. Erosion and sediment controls would be installed as identified in the project Storm Water Pollution Prevention Plan (SWPPP), which would be included as part of the COM Plan (design feature WA 1).

Following construction, all temporary access roads would be recontoured and stabilized by seeding, mulching, placement of erosion control fabric, and installing erosion control features such as water bars (design feature VG 6). Where deemed appropriate by the USFS, roads near sensitive resources may not be recontoured in order to avoid inadvertent disturbance to resources. Barriers would be installed on all restored access roads located on NFS land to prevent unauthorized vehicle use (design feature RT 3). Vehicle access for transmission line maintenance is expected to be rare as the poles would be made of steel. Access would be necessary approximately every 10 years for tree removal within the line clearance area. When future vehicle access is needed for maintenance of the transmission line, the existing NEPA analysis would be reviewed and the access may be approved based upon the level of proposed new disturbance and or the change in environmental conditions. There are no permanent roads proposed to be kept for maintenance access.

Stream Crossings

Road construction across perennial streams would be avoided (design feature WA 13). Where improvements are needed to cross ephemeral and intermittent streams, the side slopes of drainages would be reduced to a slope that would allow safe vehicle travel, and the slopes and drainage bottom would be rock armored. Once construction is complete, all drainage modifications would be recontoured and seeded based on existing site conditions (design feature WA 10).

Power Pole Structures

Pole Sites

A pole site is the area needed for the construction and installation of the pole structure, and would be 0.5 to 1 acre in size depending on the type of pole structure. Clearing of vegetation at pole sites would be limited to the area excavated for the installation of the pole structures. Pole sites in steeper terrain (greater than 10 percent to 12 percent slopes) would be graded level for safe operation of equipment. Equipment pads would not be recontoured, but reseeded so that the pad would be available for future maintenance of the pole.

Excavation and Pole Foundations

Excavation for poles set directly into the ground with no foundation would be approximately three feet in diameter and approximately 10 to 13 feet deep. Three-pole dead-end/angle poles would be secured (guyed) by anchors installed in the ground approximately 60 feet from the pole base. The anchors would require excavating a hole approximately three feet in diameter and 15 feet deep. A truck-mounted power auger is the preferred method of excavation. However, backhoe excavation and blasting may be used as alternative excavation methods as geological and site conditions require. Poles that would be set in the ground without a foundation would be backfilled with native or imported fill material. Final pole foundation requirements would be determined after design and permitting requirements are completed.

In places where guying three-pole dead-end/angle poles would not be feasible, self-supporting steel angle poles on foundations would be installed. Concrete foundations, where needed, would be cast-in-place and dimensions would vary from 12 to 40 feet below ground surface and three to 12 feet in diameter. Waste water from wash-out stations would be captured for removal from NFS land to prevent any waste water from discharging off-site and into any surface waters (design feature GP 5). Should rocky areas be encountered, foundation holes may be excavated using rock drills. Topsoil removed from foundation holes would be separated and stockpiled at the edge of active work areas to salvage the seed bank (design feature WA 6). All excavations would be covered and temporarily fenced during weekends, holidays, night hours, or to protect the public and wildlife from injury (design feature WL 5).

Power Pole Assembly

Materials, including the transmission poles, insulators, guy wire anchors, and all other associated hardware, would be delivered from staging areas to each of the pole sites. Assembly crews would build the structure and then attach insulators, travelers, and hardware to assemble a complete structural unit. Erection crews would follow and place the completed poles into the excavated holes using a large mobile crane or helicopter. Equipment pads would be established at the pole sites, where necessary, to support the equipment for the crew to erect the pole. Native soils previously excavated, imported backfill, and/or concrete would be placed around each pole and properly compacted. Guy wires to support the angle poles would be used to plumb the structure. Signs, flagging, or other readily visible marking would be used to indicate the presence of guy wires to reduce the potential for people and wildlife to run into the wires (design feature GP 9). Where self-supporting steel angle poles are required, anchor bolts would be used to secure the pole structure to the poured concrete foundation.

Transmission Wire Setup Sites

Conductor and shield wire installation would be performed from transmission wire setup sites. Transmission wire setup sites would be up to 600 feet in radius. Six to 16 wire setup sites may be needed. The number of sites is a function of wire reel span lengths and engineering requirements for conductor sagging.

Construction-Related Ground Disturbance

Most ground disturbance would be temporary and would be restored following construction. Other disturbance would be permanent, such as pole structure footings at each pole site. **Table 2.3-1** shows the average ground disturbance for each of the primary construction activities or areas.

Table 2.3-1 Temporary Ground Disturbance Required for Project Construction

CONSTRUCTION ACTIVITY OR AREA	APPROXIMATE CONSTRUCTION DIMENSIONS/DISTURBANCE	ESTIMATED NUMBER
Pole Structures: Single pole Two-pole H-frame Three-pole dead-end/angle	 85-foot radius (+/- 0.5 acre) 85-foot radius (+/- 0.5 acre) 120-foot radius (+/- 1.0 acre)	Span distance would average 800 feet but could range from 200 to 2,000 feet depending on terrain or obstructions
Transmission wire setup sites	Approximately 600 feet radius (+/- 26.0 acres)	6 to 16 sites but would vary by alternative (see **Sections 2.4** through **2.7**)
Staging areas	500 feet long and wide (+/- 5.7 acres)	As many as 4 construction staging areas would be necessary
Widening existing roads	30-foot-wide (consisting of a traveled way measuring up to 14 feet wide plus any curve widening, turnouts, and side cut and fill slope areas)	Varies by alternative (see **Sections 2.4** through **2.7**)
New access roads (i.e., spur roads, centerline travel road, and cross country travel)	30-foot-wide (consisting of a traveled way measuring up to 14 feet wide plus any curve widening, turnouts, and side cut and fill slope areas)	Varies by alternative (see **Sections 2.4** through **2.7**)
Tree removal under transmission line (i.e., transmission line clearance area)	Within 90-foot ROW plus any tree outside the ROW that may have the potential to fall on the transmission line wire; Construction of log landings (+/- 0.5 acre) would create additional disturbance	Varies by alternative (see **Chapter 3**)

Vegetation Removal and Maintenance

Prior to construction, noxious weeds would be inventoried and treated within the ROW and areas within 100 feet of project ground disturbance (design feature NW 1). Treatment methods would include manual and mechanical methods and the use of herbicides. A five-gallon backpack sprayer would be the primary method of herbicide application, but large infestations may require a truck-mounted sprayer. The following herbicides would be used for treatments (brand/shelf name in parentheses): Aminopyralid (Milestone); Clopyralid (Transline); Chlorsulfuron (Telar); Glyphosate (Roundup and Rodeo); Imazapic (Plateau, which is not labeled for use in California); and Triclopyr (Garlon).

During construction, vegetation would be removed as needed at pole sites, staging areas, transmission wire setup sites, and access roads. Removal of vegetation would generally consist of mowing or masticating shrub and grass vegetation in a manner that leaves root systems intact to encourage growth and minimize soil erosion (design feature VG 5). In forested areas, whole trees would be removed using heavy equipment where terrain and slope stability permits and skidded to log landings for disposal. In areas that are not accessible with equipment or with excessive slopes and highly erodible soils, trees would be removed by helicopter. All slash would be chipped and removed from NFS land within six weeks to reduce insect and disease infestations (design feature VG 4).

Trees within the proposed transmission line ROW/easement would be removed as necessary for compliance with National Electric Safety Code (NESC), NERC standards, California Public Utilities Commission (CPUC) regulations, Nevada Administrative Code (NAC), California Public Resources Code, California Code of Regulations, and Department of Forestry Fire Prevention standards. The NESC standards and the California and Nevada codes require that obstructions be no closer than 21 feet to an overhead transmission line. **Figure 2.3-1** shows the typical tree clearance distances that would be required for compliance with the aforementioned codes and regulations.

2.3.2.2 Restoration of Construction-Related Activities

All construction access roads constructed on NFS land would be recontoured and reclaimed (design features RT 3 and VG 6). All existing authorized NFS roads and motorized trails that are widened for construction access would be reclaimed and returned to the original roadbed. Non-designated roads on NFS land that would be widened and used for construction access would be reclaimed and reseeded. Restoration would include recontouring roads, installing erosion control features such as drain dips, ripping, chipping, and seeding (design feature VG 6). Logs, branches, pine needles, brush, and rocks may be used to disguise the road for restoration purposes or other techniques approved by the USFS (design features RT 3 and RT 4).

A detailed restoration plan would be included as part of the COM Plan for construction related ground disturbance, including disturbance associated with roads. The restoration plan would include revegetation success criteria based on USFS reference sites (design feature VG 7). Restoration success would be monitored until restoration is deemed successful by the USFS. Restoration seed mixes used on NFS land would be approved by the USFS (design features NW 2, RT 7, and VG 2). Restoration seed mixes would be certified as weed-free (design feature NW 7). Sites where revegetation is not fully restored after approximately 5 years will be mitigated by improving habitat in other onsite areas or through off-site habitat restoration projects using mitigation funds provided by NV Energy. See design feature WL 8.

2.3.2.3 Construction Schedule

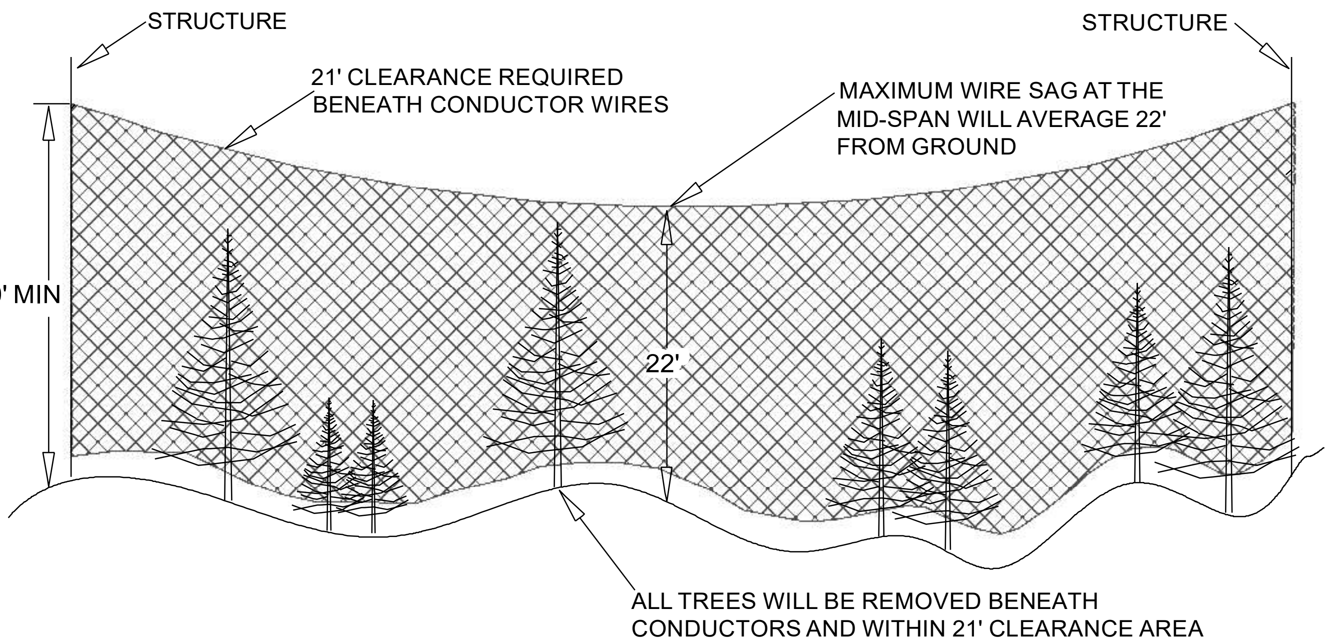
The project would commence as soon as all necessary agency approvals and permits are obtained (**Section 1.1**), and all ROW authorizations and easements are secured. Construction of the project would take 8 to 12 months. Near sensitive receptors such as occupied residences, noise-generating activities (e.g., blasting) would be limited to Monday through Friday from 7:00 a.m. to 7:00 p.m. (design feature GP 7). Otherwise, work may occur 12 hours per day any day of the week.

2.3.2.4 Construction Equipment and Vehicles

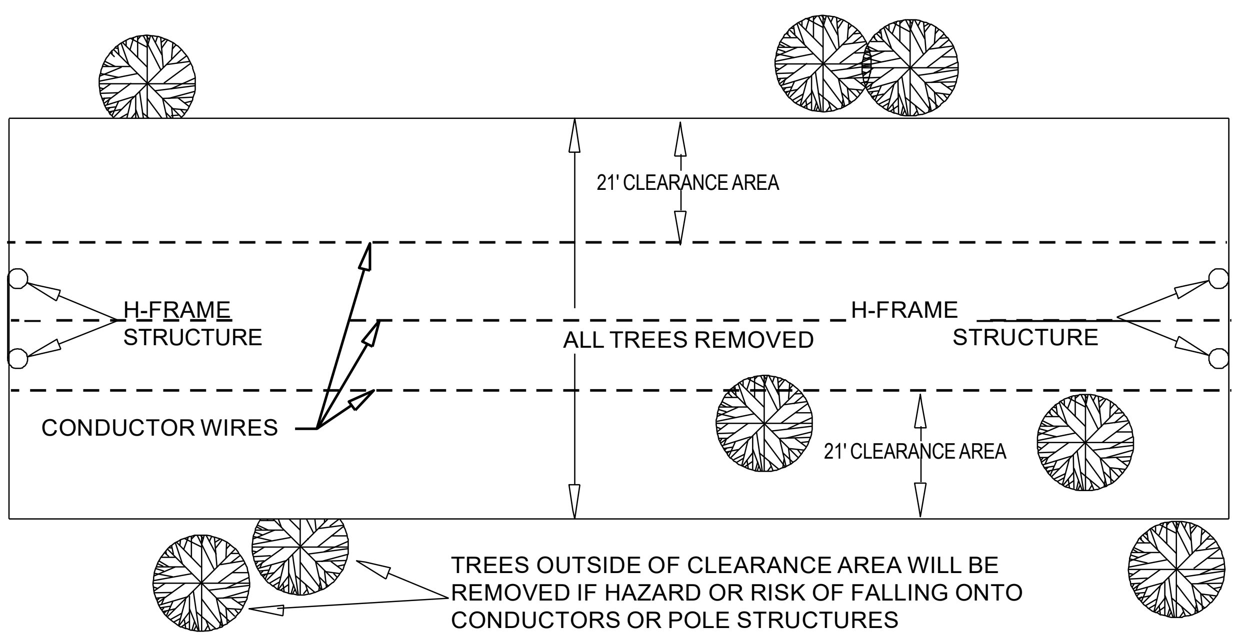
The typical equipment and vehicles that may be necessary are listed in **Table 2.3-2**. **Table 2.3-2** does not list various power and hand tools that would likely be used for the project, such as hammers, sanders, wire cutters, and shovels.

Table 2.3-2 Typical Construction Equipment and Vehicles

EQUIPMENT	USE
¾-ton and 1-ton pickup trucks	Transport construction personnel
2-ton flatbed trucks; flatbed boom truck	Haul and unload materials
Rigging truck	Haul tools and equipment
Mechanic truck	Service and repair equipment
Aerial bucket trucks	Access poles, string conductor, and other uses
Shop vans	Store tools
Bulldozer	Grade access roads and pole sites and restoration
Road grader	Construct, maintain, and upgrade roads
Compactor	Construct access roads
Truck mounted digger or backhoe	Excavate
Crawler backhoe	Excavate
Small mobile cranes (12 tons)	Load and unload materials
Large mobile cranes (75 tons)	Erect poles
Transport	Haul poles and equipment
Drill rig with augers	Excavate and install fences
Puller and tensioner	Pull conductor and wire
Cable reel trainers	Transport cable reels and reed cables into conduit
Semi-tracker trailers	Haul poles and equipment
Splice trailer	Store splicing supplies and air condition manholes
Take-up trailers	Install conductor
Air compressors	Operate air tools
Air tampers	Compact soil around pole foundations
Concrete trucks	Pour concrete
Dump truck	Haul excavated materials and import weed-free backfill
Fuel and equipment fluid truck	Refuel and maintain vehicles
Water truck	Suppress dust and fire
Winch truck	Install and pull sock line and conductors into position
Fire tender	Haul water for fire suppression
Fire unit	Fire fighting vehicle
Large helicopter	Erect and haul poles
Small helicopter	Pull hardline
Rangeland drill	Sow seed
Hydroaxe or masticator	Chop shrubs and small diameter trees



SIDE VIEW



PLAN VIEW

FIGURE 2.3-1
TYPICAL TREE TRIMMING AND CLEARANCE DISTANCES

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

Source: NV Energy, 2013; Modified by JBR Consultants, Inc., 2014

2.3.3 Operation and Maintenance

The transmission line would be operated from the NV Energy Electrical Control Center in Reno, Nevada. NV Energy personnel at the Electrical Control Center would monitor voltage and power flow along the transmission line in accordance with standard operating procedures.

NV Energy would inspect the line annually to determine if maintenance is needed. Annual inspection would be made via helicopter or from the ground by walking to pole structures from existing roads (design feature GP 8). An inspection that involves climbing pole structures is anticipated once every 10 years. The ROW would be patrolled after unexplained outages or significant natural incidents (such as fire, earthquake, flood, or extreme electrical storm) to observe facility conditions and the surrounding environment and to begin repairing any damages.

Trees that could interfere with the safe operation of the transmission line would be removed as needed. Tree and vegetation maintenance of the proposed transmission line would be done with a masticator or may be felled and lopped and scattered or chipped and broadcast onsite on a case-by-case basis, so that fuels do not build up along the corridor. Maintenance access would be by foot-travel, pickup truck, bucket truck, or off-highway vehicle (OHV) from the nearest designated NFS or maintenance road to the transmission line ROW.

2.3.4 Design Features Common to All Action Alternatives

Project design features would be implemented during construction and maintenance to reduce environmental impacts. A list of design features that would be implemented under any of the action alternatives are contained in **Appendix B**.

2.3.5 Environmental Compliance Program

During construction, NV Energy would implement an Environmental Compliance Program. NV Energy would designate an Environmental Compliance Team consisting of a Project Manager, an Environmental Manager, a ROW Agent, and a Construction Foreman. The designated Environmental Compliance Team would monitor construction activities and track compliance with design features (**Appendix B**), the COM Plan, the USFS SUP, the BLM ROW Grant, and other permit requirements.

NV Energy would maintain a compliance documentation system describing the compliance levels and use it as a tool to help explain, record, and enforce the compliance requirements. The following levels of compliance measurement would be used for the project:

- Compliance – Used to identify an action in accordance with all project requirements;
- Notification – Used to identify an action approaching non-compliance. This is like a "fix-it" notice;
- Non-compliance – This term identifies an action that does not comply with a project requirement. A Non-Compliance Report will be issued. A repeat Non-Compliance will be noted on a Non-Compliance Report as a second occurrence. A Non-Compliance Resolution Report must be approved by the USFS or BLM for each Non-Compliance Report to demonstrate compliance; and

- Stop Task Order – A third repeated Non-Compliance Report would result in a Stop Task Order. A Stop Task Order would require NV Energy to meet with the USFS or BLM to determine actions to correct or resolve the issue and resume activity in the problem area.

2.4 MITCHELL ALTERNATIVE

The Mitchell Alternative would be approximately 11.7 miles long (**Figures 2.1-1**, **2.1-2**, and **2.1-3**). The first approximately 5.0 miles would be identical to the Peavine Alternative and generally parallel the California and Nevada state line, approximately 0.6 to 0.9 mile east of the state line. The last 0.4 mile of transmission line into the California Substation would utilize single pole structures with a distribution line under-build to accommodate the new transmission line and existing distribution line on the same poles. Approximately 4.6 miles of the Mitchell Alternative would be located adjacent to an existing power line corridor. **Table 2.4-1** summarizes land status and length of ROW within California and Nevada.

Table 2.4-1 ROW/Easement Requirements for the Mitchell Alternative

LAND OWNERSHIP/ ADMINISTRATION	MILES IN CALIFORNIA	MILES IN NEVADA	TOTAL MILES	PERCENT OF ROUTE	ACRES OF ROW/EASEMENT[1]
USFS	5.4	3.0	8.4	72	91.6
BLM	0.4	0.0	0.4	3	8.1
Private Land	0.6	2.3	2.9	25	31.6
Total	6.4	5.3	11.7	100	131.3

[1] Includes proposed expansion area associated with the Bordertown Substation

Approximately 11.1 miles of roads would be widened for construction access, as displayed on **Figure 2.4-1**. The associated acres of surface disturbance are presented in **Table 2.4-2**. Widening of existing roads on BLM-administered public lands would not be required.

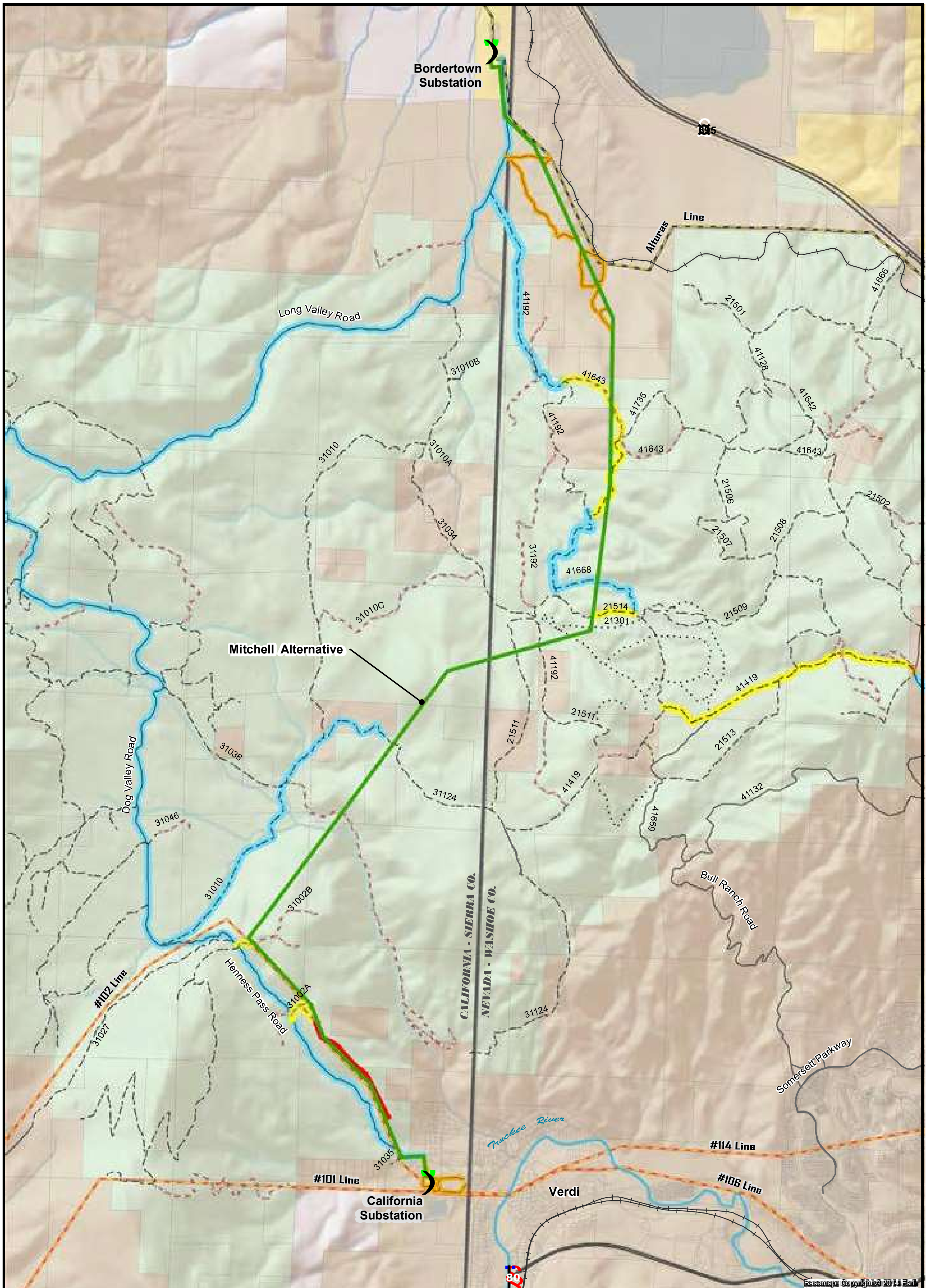
Table 2.4-2 Road Widening Required for the Mitchell Alternative

ROAD/ROUTE TYPE	WIDENING REQUIRED (MILES)	SURFACE DISTURBANCE (ACRES)[1]
Designated NFS Roads on NFS Land	5.6	14.4
Non-Designated Routes on NFS Land	1.1	2.7
Roads on BLM Lands	0.0	0.0
Existing Roads Across Private Land	4.4	11.2
Total (Roads/Routes on All Land)	11.1	28.3

[1] Does not include existing road disturbance, which is assumed to be nine feet wide.

The location of other temporary access roads would be determined prior to construction, but would be located within a 300- to 600-foot-wide corridor (variable-width corridor). Approximately 7.1 miles (25.8 acres) of new temporary centerline travel roads would be needed for construction of the Mitchell Alternative.

The design features that are specific to the Mitchell Alternative that would be implemented during construction and/or maintenance of the project are described in **Appendix B**.



Mitchell Alternative
NFS Roads
NFS Motorcycles Only
Public and Private Road
Not Open to Public Motorized Travel
Roads Used for Public Access But Not Widened
120 kV Transmission Line
345 kV Transmission Line

Land Ownership

U.S. Forest Service
U.S. Bureau of Land Management
Private Land

PROPOSED ROAD IMPROVEMENTS (TEMPORARY WIDENING)

Designated Roads on NFS Land
Non-Designated Roads on NFS Land
Private And Public Roads Across Private Land

FIGURE 2.4-1
MITCHELL ALTERNATIVE: TEMPORARY ROAD IMPROVEMENTS

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

1 " = 4,000 feet
0 2,000 4,000 8,000
Feet

2.5 PEAVINE ALTERNATIVE

The Peavine Alternative would be approximately 10.3 miles long (**Figures 2.1-1**, **2.1-2**, and **2.1-3**). The first approximately 5.0 miles of the Peavine Alternative would be identical to the Mitchell Alternative. The Peavine Alternative generally parallels the California and Nevada state line, staying on the Nevada side by approximately 0.6 to 0.9 mile east of the California and Nevada state line. The last approximately 0.4 mile of the transmission line into the California Substation would be constructed on single pole structures as part of an under-build with an existing distribution line. Approximately 2.8 miles of the Peavine Alternative would be located adjacent to an existing power line corridor. **Table 2.5-1** summarizes land status and length of ROW in California and Nevada.

Table 2.5-1 ROW/Easement Requirements for the Peavine Alternative

LAND OWNERSHIP/ AMINISTRATION	MILES IN CALIFORNIA	MILES IN NEVADA	TOTAL MILES	PERCENT OF ROUTE	ACRES OF ROW/EASEMENT[1]
USFS	2.1	4.9	7.0	68	76.4
BLM	0.4	0.0	0.4	4	8.1
Privately-owned land	0.6	2.3	2.9	28	31.6
Total	3.1	7.2	10.3	100	116.1

[1] Includes proposed expansion area associated with the Bordertown Substation

Approximately 20.8 miles of existing roads would be widened for construction access (**Figure 2.5-1**). Associated acres of surface disturbance are presented in **Table 2.5-2**. Widening of existing roads on BLM-administered public lands would not be required.

Table 2.5-2 Road Widening Required for the Peavine Alternative

ROAD/ROUTE TYPE	WIDENING REQUIRED (MILES)	SURFACE DISTURBANCE (ACRES)[1]
Designated NFS Roads on NFS Land	10.0	25.5
Non-Designated Routes on NFS Land	1.4	3.5
Roads on BLM Lands	0.0	0.0
Existing Roads Across Private Land	9.5	24.3
Total (Roads/Routes on All Land)	20.8	53.3

[1] Does not include existing road disturbance, which is assumed to be nine feet wide

Approximately 7.5 miles (27.3 acres) of new temporary centerline travel roads would be needed for construction of the Peavine Alternative.

The design features that are specific to the Peavine Alternative that would be implemented during construction and/or maintenance of the project are described in **Appendix B**.

2.6 POEVILLE ALTERNATIVE

The Poeville Alternative would be approximately 18.0 miles long (**Figures 2.1-1**, **2.1-2**, and **2.1-3**). Beginning at the Bordertown Substation, this alternative would parallel the Alturas 345 kV transmission line for approximately 6.7 miles and then follow the existing distribution power line toward the top of Peavine Peak that serves the communication site on the peak. Construction of this section would consist of single pole structures with an under-build of the distribution line. East of Verdi, the Poeville Alternative would replace the existing, but currently inactive 60 kV #632 distribution line in its exact location, and parallel the existing #114 and #106 lines through Verdi to the California Substation. The existing #632 line H-frame pole structures would be replaced with new H-frame pole structures. Approximately 12.6 miles of the Poeville Alternative would be located adjacent to an existing power line corridor. **Table 2.6-1** summarizes land status and length of ROW in California and Nevada.

Table 2.6-1 ROW/Easement Requirements for the Poeville Alternative

LAND OWNERSHIP/ ADMINISTRATION	MILES IN CALIFORNIA	MILES IN NEVADA	TOTAL MILES	PERCENT OF TOTAL	ACRES OF ROW/EASEMENT[1]
USFS	0.0	4.0	4.0	21	44.7
BLM	0.4	0.0	0.4	2	8.1
Private Land	0.7	12.9	13.6	77	147.3
Total	1.1	16.9	18.0	100	200.1

[1] Includes proposed expansion area associated with the Bordertown Substation

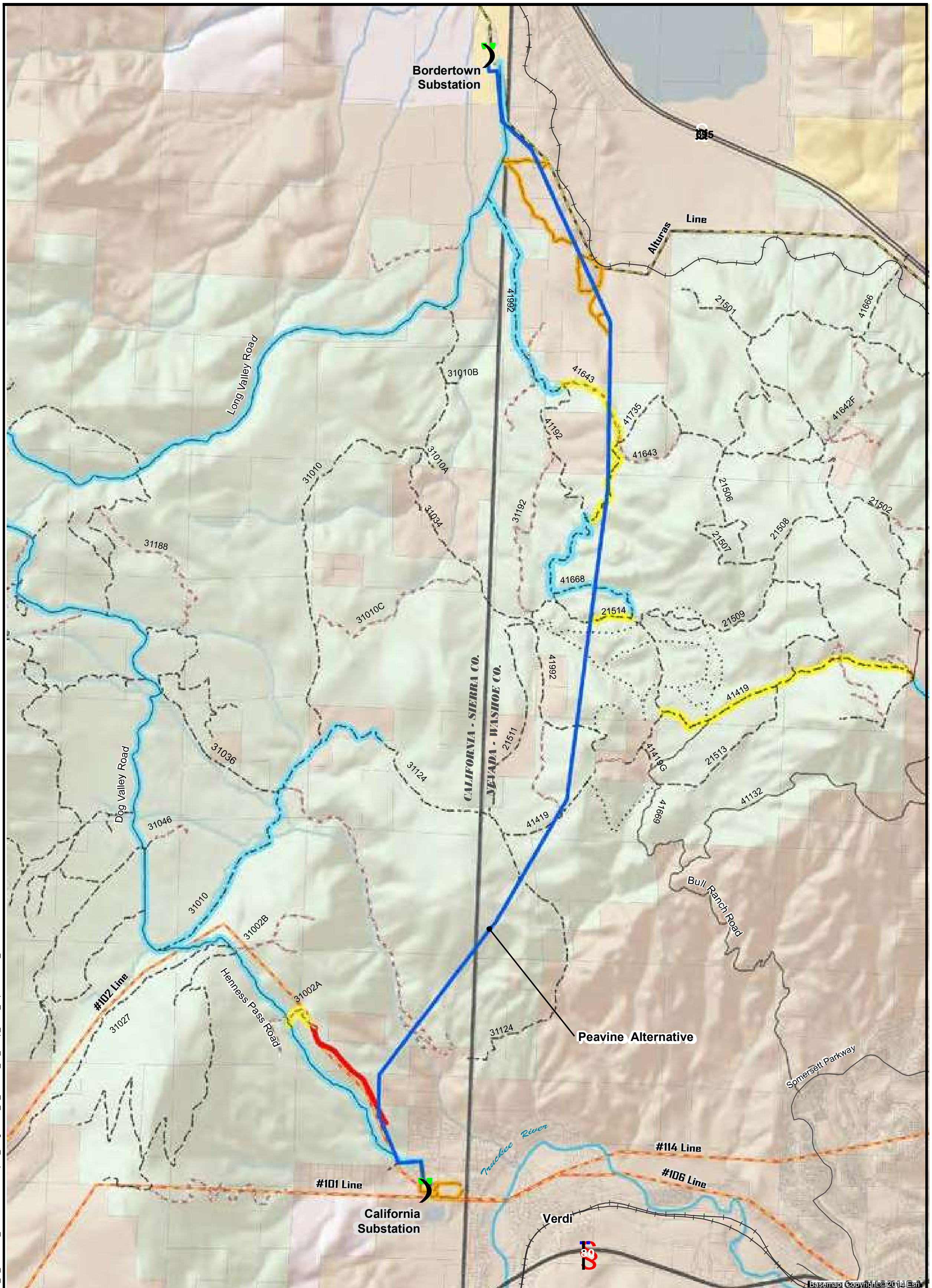
Approximately 20.2 miles of existing roads would be widened for construction access, as displayed on **Figure 2.6-1**. The associated acres of surface disturbance are presented in **Table 2.6-2**. Widening of existing roads on BLM-administered public lands would not be required. Approximately 5.4 miles (19.6 acres) of new temporary centerline travel roads would be needed for construction of the Poeville Alternative.

Table 2.6-2 Road Widening Required for the Poeville Alternative

ROAD/ROUTE TYPE	WIDENING REQUIRED (MILES)	SURFACE DISTURBANCE (ACRES)[1]
Designated NFS Roads on NFS Land	0.0	0.0
Non-Designated Routes on NFS Land	0.9	2.4
Roads on BLM Lands	0.0	0.0
Existing Roads Across Private Land	19.3	49.7
Total (Roads/Routes on All Land)	20.2	52.1

[1] Does not include existing road disturbance, which is assumed to be nine feet wide

The design features that are specific to the Poeville Alternative that would be implemented during construction and/or maintenance of the project are described in **Appendix B**.



Peavine Alternative
NFS Roads
NFS Motorcycles Only
Public and Private Road
Not Open to Public Motorized Travel
Roads Used for Public Access But Not Widened
120 kV Transmission Line
345 kV Transmission Line

Land Ownership

U.S. Forest Service
U.S. Bureau of Land Management
Private Land

PROPOSED ROAD IMPROVEMENTS (TEMPORARY WIDENING)

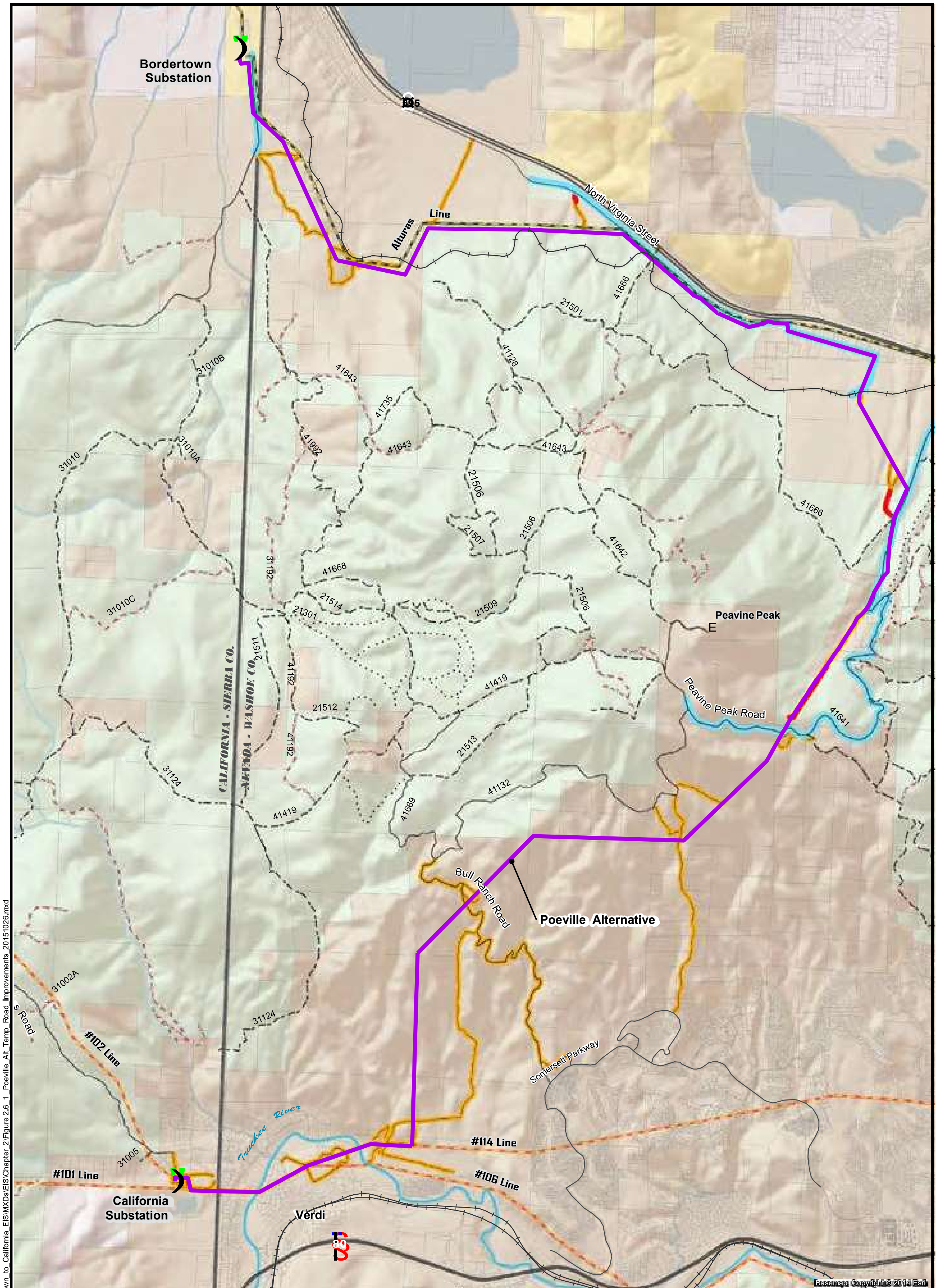
Designated Roads on NFS Land
Non-Designated Roads on NFS Land
Private And Public Roads Across Private Lan d

FIGURE 2.5-1
PEAVINE ALTERNATIVE:
TEMPORARY ROAD IMPROVEMENTS

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

1 " = 4,000 feet
0 2,000 4,000 8,000
Feet

Path: U:\Pre_MEDAD\NV\Clients\NV_Energy\Bordertown_to_California_EIS\MXDs\EIS\Chapter_2\Figure 2.5_1_Peavine_Alt_Temp_Road_Improvements_20151026.mxd



Path: U:\Pre MEDAD\NV\Clients\NV Energy\Bordertown to California EIS\MXDs\EIS\Chapter 2\Figure 2.6 1 Poeville Alt Temp Road Improvements 20151026.mxd

Poeville Alternative

NFS Roads

NFS Motorcycles Only

Public and Private Road

Not Open to Public Motorized Travel

Roads Used for Public Access But Not Widened

120 kV Transmission Line

345 kV Transmission Line

Land Ownership

U.S. Forest Service

U.S. Bureau of Land Management

Private Land

PROPOSED ROAD IMPROVEMENTS (TEMPORARY WIDENING)

Designated Roads on NFS Land

Non-Designated Roads on NFS Land

Private And Public Roads Across Private Land

FIGURE 2.6-1
POEVILLE ALTERNATIVE:
TEMPORARY ROAD IMPROVEMENTS

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

1 " = 4,000 feet

0 2,000 4,000 8,000

Feet

2.7 PEAVINE/POEVILLE ALTERNATIVE

The Peavine/Poeville Alternative would be approximately 11.9 miles long (**Figures 2.1-1**, **2.1-2**, and **2.1-3**). The first approximately 6.4 miles of the Peavine/Poeville Alternative would be the same as the first 6.4 miles of the Peavine Alternative. The last approximately 3.8 miles would be the same as the last 3.8 miles of the Poeville Alternative with approximately 2.2 miles replacing the existing H-frame pole structures, on the currently inactive 60 kV #632 distribution line, that parallels the existing #114 and #106 lines through Verdi to the California Substation. A total of approximately 4.4 miles of the Peavine/Poeville Alternative would be located within an existing power line corridor. **Table 2.7-1** summarizes land status and length of ROW in California and Nevada.

Table 2.7-1 ROW/Easement Requirements for the Peavine/Poeville Alternative

LAND OWNERSHIP/ ADMINISTRATION	MILES IN CALIFORNIA	MILES IN NEVADA	TOTAL MILES	PERCENT OF TOTAL	ACRES OF ROW/EASEMENT[1]
USFS	0	4.3	4.3	36.4	46.9
BLM	0.4	0.0	0.4	3.3	8.1
Private Land	0.7	6.5	7.2	60.2	78.5
Total	1.1	10.8	11.9	100	133.5

[1] Includes proposed expansion area associated with the Bordertown Substation

Approximately 20.7 miles of existing roads would need to be widened for construction access, as displayed on **Figure 2.7-1**. The acres of surface disturbance associated with widening are presented in **Table 2.7-2**. Widening of existing roads on BLM-administered public lands would not be required.

Table 2.7-2 Road Widening Required for the Peavine/Poeville Alternative

ROAD/ROUTE TYPE	WIDENING REQUIRED (MILES)	SURFACE DISTURBANCE (ACRES)[1]
Designated NFS Roads on NFS Land	6.0	15.3
Non-Designated Routes on NFS Land	0.7	1.7
Roads on BLM Lands	0.0	0.0
Existing Roads Across Private Land	14.0	35.7
Total (Roads/Routes on All Land)	20.7	52.7

[1] Does not include existing road disturbance, which is assumed to be nine feet wide

Approximately 7.8 miles (28.4 acres) of new temporary centerline travel roads would be needed for construction of the Peavine/Poeville Alternative.

The design features specific to the Peavine/Poeville Alternative that would be implemented during construction and/or maintenance of the project are described in **Appendix B**.

2.8 MODIFICATIONS MADE TO ALTERNATIVES

2.8.1 Mitchell Route Modification

The first alignment of the Mitchell Alternative was presented during the public scoping period. The northern portion of the original Mitchell Alternative was the same as the Stateline Alternative, and encountered the same Webber ivesia populations that made the Stateline Alternative environmentally unreasonable and technically infeasible. However, the remaining southern portion of the original Mitchell Alternative that was not shared with the Stateline Alternative was still feasible and practical. After dismissal of the Stateline Alternative, the alignment of the Mitchell Alternative was modified by connecting it to the Peavine Alternative, making the first 5.0 miles of the alignment the same as the Peavine Alternative. To ensure that the revised Mitchell Alternative had no conflicts with Webber ivesia, a field survey was conducted, and no occurrences of sensitive plants or potential habitat were discovered.

2.8.2 Poeville Alternative North Virginia/Trail Drive Modification

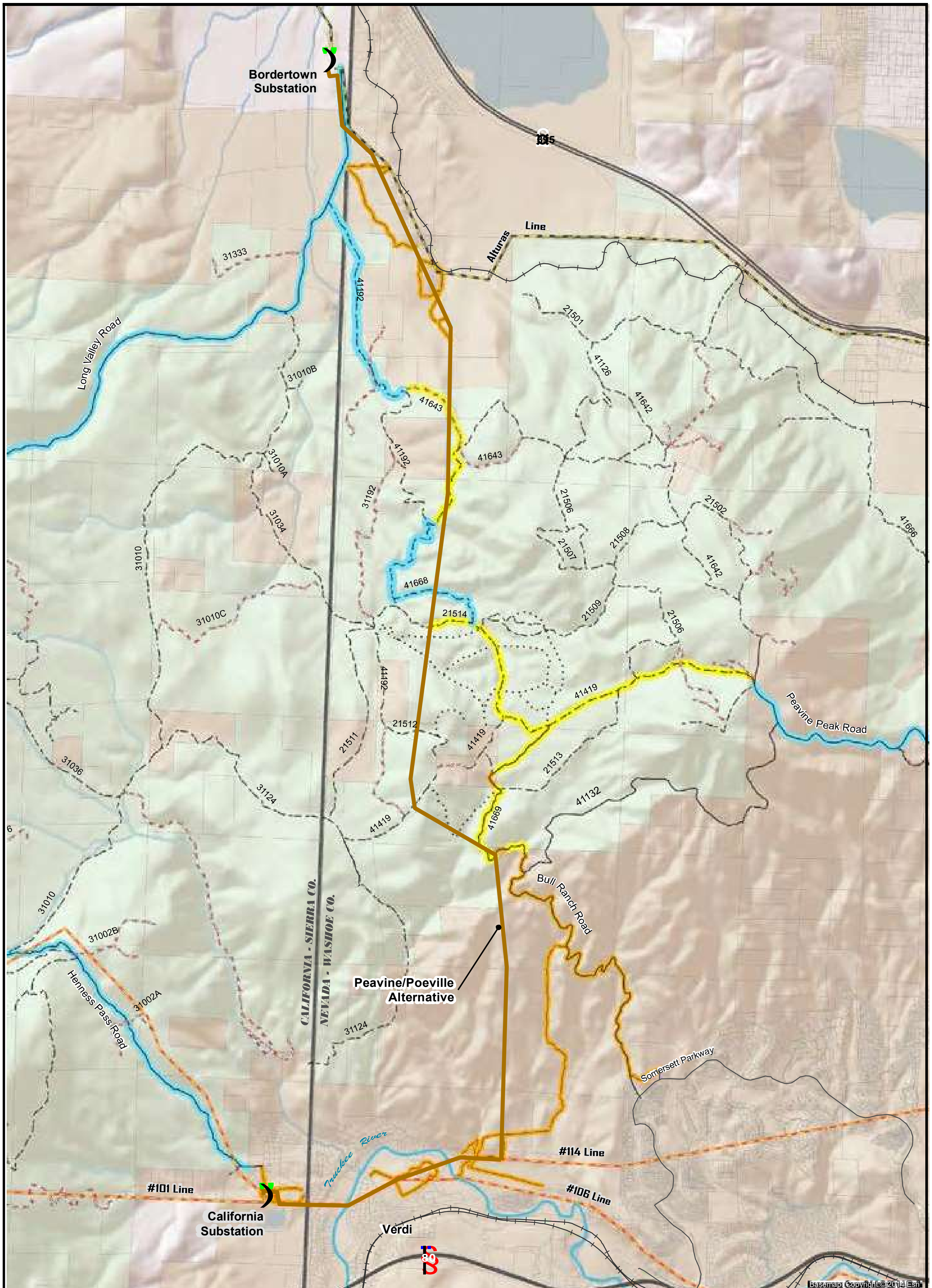
The first alignment of the Poeville Alternative was presented during the public scoping period that placed approximately 2.4 miles of the Poeville Alternative on the south side of North Virginia Street. At Mar Mac Way, the alternative would head south to the former community of Poeville, and then continue over the east shoulder of Peavine Peak. Upon further evaluation, NV Energy revised the portion of the alignment between Copperfield Drive and Mar Mac Way to follow Trail Drive rather than North Virginia Street. Placing the transmission line along Trail Drive would reduce the disruption to traffic on North Virginia Street during construction, and would be easier to construct. Distribution lines occur along both roadways (e.g., Trail Drive and North Virginia Street) that would need to be transferred to a single pole under-build. However, transfer activities on an alignment on Trail Drive would be easier because the distribution line is intermittent and single phase (rather than three phase). Easement acquisition on Trail Drive would also be easier due to fewer property owners and greater number of parcels that are vacant. Adjusting the Poeville route using Trail Drive was deemed reasonable and this modification was incorporated into the Poeville Alternative.

2.8.3 Peavine/Poeville Alternative Minor Route Modification

A minor route modification (less than 300 feet long) was made within the variable width and study corridor boundary for the Peavine/Poeville Alternative to avoid a sensitive resource that was identified during consultation. The route now avoids this sensitive resource.

2.8.4 Peavine Ranch Property Route Adjustment

The Poeville Alternative, as it was presented during public scoping, crossed diagonally over one of the Peavine Ranch parcels. To avoid splitting the parcel at the Peavine Ranch, the Poeville Alternative was moved to the perimeter of the Peavine Ranch property to follow the existing distribution line.



Peavine/Poeville Alternative
NFS Roads
NFS Motorcycles Only
Public and Private Road
Not Open to Public Motorized Travel
Roads Used for Access But Not Widened
120 kV Transmission Line
345 kV Transmission Line

Land Ownership
U.S. Forest Service
Private Land

PROPOSED ROAD IMPROVEMENTS (TEMPORARY WIDENING)
Designated Roads on NFS Land
Non-Designated Roads on NFS Land
Private And Public Roads Across Private Land

FIGURE 2.7-1
PEAVINE/POEVILLE ALTERNATIVE: TEMPORARY ROAD IMPROVEMENTS

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

2.8.5 Section 26 Route Adjustment

On the southern flank of Peavine Peak, the initial alignment of the Poeville Alternative followed the eastern and southern border of Section 26, Township 20 North, Range 18 East. This initial alignment was developed using mapping software. Based on initial investigations and a field review, a steep hill slope was identified along the eastern border of the section. Accordingly, the Poeville Alternative was moved to cross Section 26 at a diagonal rather than follow the eastern border across the steep hill slope.

2.9 AGENCY SELECTED ALTERNATIVE

The Peavine/Poeville alternative is the agency selected alternative. In the Draft EIS, the Poeville Alternative was identified as the Agency Preferred Alternative. After reviewing public comments on the Draft EIS and conducting further analysis related to cultural resources, private property, and visual resources the USFS selected the Peavine/Poeville Alternative as the Agency Selected Alternative. This alternative would use a regionally designated utility corridor east of the California Substation and federally designated portions of the Section 368 Energy Corridor near Bordertown Substation. This alternative minimizes routing across private land and avoids a property listed on the NRHP. This route maximizes crossing land previously disturbed by wildland fire, and minimizes crossing pine forest communities and avoids designated critical habitat for Webber ivesia (*Ivesia webberi*), a threatened plant species protected under the Endangered Species Act (ESA) of 1973.

2.10 ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The No Action Alternative is the environmentally preferable alternative because it would not result in disturbance to vegetation, soils or habitat loss. There would be not tree removal, and no road widening or restoration efforts needed to restore vegetation following construction. There would be no risk to new noxious weed establishment. There would be no effects to habitat that support pollinator habitat for sensitive plant species. There would be no effect to cultural resources. This alternative does not meet the purpose and need for the project.

2.11 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

The NEPA requires federal agencies to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not further developed in detail (40 CFR 1502.14). Potential alternatives were evaluated to determine which were reasonable to consider further, using the CEQ, USFS NEPA Handbook, and USFS Special Uses Handbook (FSH 2709.11). The screening criteria from CEQ and agency requirements are found in the project record. Alternatives that were dismissed from further consideration are summarized below.

2.11.1 Stateline Alternative

The Stateline Alternative was presented as the Proposed Action in the NOI and to the public and cooperating agencies during the scoping period. The Stateline Alternative generally paralleled the California state line, staying on the Nevada side, approximately 0.1 mile east of the California state line. The Stateline Alternative was based on the Stateline Route presented in the Constraint Study, which identified the Stateline Route as the most desirable route because it encountered the fewest constraints according to a desktop analysis. Field surveys conducted in 2011 found that the Stateline Alternative crossed occupied habitat for Webber ivesia, a USFS sensitive species that at the time was proposed for listing as threatened under the ESA. In order to protect Webber ivesia, the USFS formulated the following design feature:

> Project activities would be excluded from the occupied habitat unit for Webber ivesia, which includes the 500-meter buffer. (*Occupied habitat* includes the low sage habitat where the plants are present and a 500-meter buffer from the edge of the occurrence. The 500-meter buffer would include low sage and adjacent shrub steppe habitats to accommodate pollinators associated with the rare plant community).

Without the inclusion of the design feature, the Stateline Alternative would not be environmentally reasonable due to potential impacts to the occupied habitat for Webber ivesia. However, with the inclusion of the design feature, the alternative would not be technically feasible because the protection buffer exceeds the maximum span length possible between two pole structures. The Stateline Alternative was dismissed from further consideration and analysis because it would be either environmentally unreasonable or technically infeasible to implement.

2.11.2 Stateline/Poeville Alternative

The Stateline/Poeville Alternative was developed to address visual impacts to the viewshed of private property near the California Substation. The Stateline/Poeville Alternative was created by making a hybrid between the Stateline and Poeville alternatives. The last 3.8 miles of the Stateline/Poeville Alternative would be the same as the Poeville Alternative and would replace the existing, but currently inactive 60 kV #632 distribution line in its exact location, and parallel the existing #114 and #106 lines through Verdi to the California Substation. This alternative was determined to be unreasonable for the reasons discussed for the Stateline Alternative (see **Section 2.11.1**).

2.11.3 Dog Valley Alternative

The Dog Valley Alternative was originally presented in the Constraint Study (JBR 2009a). Most of this alternative would be located in California, about three miles west of the California state line. Although this alternative maximized routing next to an existing transmission line, it was the longest alternative; crossed the most pine forest community; and crossed Dog Valley, which is a popular camping and day-use area for the general public. The Dog Valley Alternative was dismissed from further consideration because it would have similar effects as the Mitchell and Peavine alternatives.

2.11.4 Long Valley Alternative

The Long Valley Alternative was originally presented in the Constraint Study (JBR 2009a). The alternative was generally located within California, one mile west of the California state line. The advantage of the Long Valley Alternative was that it crossed areas disturbed by wildfire and maximized routing next to an existing transmission line. However, the Long Valley Alternative would have similar effects as the Mitchell and Peavine alternatives.

2.11.5 All Private Land Alternative

The All Private Land Alternative would avoid NFS land by wrapping around Peavine Mountain and the eastern boundary of the Humboldt-Toiyabe National Forest. From the Bordertown Substation, the alternative would follow the Alturas 345 kV transmission line corridor to the North Valley Road Substation. From the North Valley Road Substation, several routing options to reach the California Substation would be possible, but a linear corridor of undeveloped land is unavailable. Two options would follow the #141 transmission line corridor and either crosses undeveloped hillsides above the Somersett community or follows the #114 transmission line corridor through the Northwest Reno and Somersett communities. A third option would follow the #142 transmission line corridor to reach Interstate 80, and then follow Interstate 80 to Verdi.

The All Private Land Alternative was dismissed from further consideration because it would not meet the project's purpose and need. None of the alignment options would be geographically independent of the #141 and #142 transmission lines needed to provide reliability or redundancy for the transmission system serving the West Reno/Verdi area. This alternative would unavoidably use the same corridor (with minimal separation) as the transmission lines that NV Energy needs to back up (i.e., #141 and #142 transmission lines).

2.11.6 Mostly Private Land Alternative

The Mostly Private Land Alternative would follow the Alturas 345 kV transmission line from the Bordertown Substation and then follow the #141 transmission line, which parallels North Virginia Street. Before reaching the Raleigh Heights community, the alternative would head south across NFS land, then head southwest and west to the eastern edge of the Somersett community. It would follow the #114 transmission line corridor through the Somersett community and Verdi to reach the California Substation.

The Mostly Private Land Alternative was dismissed from further consideration because it would not be technically or economically practical. Homes and businesses cannot be avoided in the Silver Lake and Raleigh Heights/Panther Valley areas along U.S. Highway 395 and North Virginia Street. The extraordinary costs associated with purchasing homes and businesses would prevent this alternative from being economically practical. Additionally, the Mostly Private Land Alternative would not be geographically independent of the #141 transmission line, NERC planning criteria for transmission system reliability for the West Reno/Verdi area which is a requirement to meet the purpose and need of the project.

2.11.7 Use Alturas 345 kV Transmission Line Poles

Use of the Alturas transmission line corridor is desirable because it is a designated Section 368 energy corridor and represents a preferred location for placing an energy facility on public land. Sections of the Mitchell, Peavine, Poeville, and Peavine/Poeville alternatives parallel the Alturas transmission line as the alternatives leave the Bordertown Substation. Under this alternative, rather than construct within a separate ROW next to the Alturas transmission line, the project would be placed on the same poles with the Alturas transmission line. This alternative was dismissed from further consideration because it would not be technically practical to construct. Construction would be limited to two two-week periods per year, the maximum period that NV Energy system controls would allow the Alturas 345 kV transmission line to be de-energized. As such, construction of the transmission line could not be completed in a reasonable and timely manner.

2.11.8 Use Alturas Line Poles to North Valley Road Substation

The All Private Land and Mostly Private Land Alternatives (**Sections 2.11.5** and **2.11.6**) are constrained by U.S. Highway 395 and adjacent homes and businesses. At many locations, adequate space for a new ROW is unavailable. To address this problem, this alternative would construct the project on the same poles with the Alturas 345 kV transmission line from the Bordertown Substation to the North Valley Road Substation.

This alternative was dismissed because the alternative does not address the NERC planning criteria for transmission system reliability for the West Reno/Verdi area. To meet the project purpose and need, an alternative would need to be geographically independent of the #141 and #142 transmission lines. The All Private Land and Mostly Private Land Alternatives would still use the #141 and #142 transmission line corridors even with the implementation of the alternative.

2.11.9 #102 Line Corridor (North side) to California Substation

With the construction of the Mitchell or Peavine alternative, a residential subdivision located next to the California Substation would be almost entirely surrounded by 120 kV transmission lines. This alternative would modify the Mitchell and Peavine alternatives to utilize the north side of the #102 transmission line corridor to approach the California Substation. Doing so would avoid placement of the proposed transmission line along the eastern and northern subdivision boundary.

This alternative was dismissed from further consideration because it would not be substantially different than either the Mitchell or Peavine alternative.

2.11.10 #102 Line Corridor (South side) to California Substation

This alternative is a variation of the alternative described above (**Section 2.11.9**). By placing the proposed transmission line on the south side of the #102 transmission line corridor, this alternative would avoid crossing the residential lots and avoid placement of the proposed transmission line along the eastern and northern subdivision boundary. However, the proposed transmission line would need to cross the existing #102 transmission line twice. This alternative was dismissed from further consideration because it would not be technically practical. Crossing of a transmission by a second transmission line introduces a potential system hazard and is not an acceptable utility line construction practice unless deemed absolutely necessary.

2.11.11 #102 Line Corridor by Rearranging Terminals

Constructing a new terminal on the west side of the California Substation would allow the use of the #102 transmission line corridor and would not require a crossing of an existing transmission line. However, the construction of a new terminal or the rearrangement of existing terminals would require the expansion of the substation and purchase of land or the acquisition of an easement on private land. It would not be technically or economically practical to expand the substation in order to facilitate the rearrangement of terminals when there is currently an available terminal space on the east side of the substation.

2.11.12 Bulk Power from #101 and #102 120 kV Lines

A public scoping comment suggested that the need to construct a new power line could be eliminated if bulk power can be brought to the California Substation from California via the #101 and #102 transmission lines. This alternative was dismissed from further consideration because the #101 and #102 transmission lines are not available to deliver bulk energy into the NV Energy western service territory. Both transmission lines continue west from the California Substation to the Pacific Gas and Electric Company's Summit Substation and NV Energy's Summit Monitoring Station at Donner Summit. Neither facility has a 345 kV bulk power source.

2.11.13 Peavine Ranch Northside of U.S. 395

A comment was received regarding the potential for the Poeville Alternative to affect the historic setting of Peavine Ranch, a property on the NRHP. Additionally, the safety of electromagnetic fields produced by the proposed transmission line and its proximity to the Peavine Ranch residence was also raised as a concern. To avoid the Peavine Ranch, this alternative would construct the Poeville Alternative on the north of U.S. Highway 395.

This alternative was dismissed from further consideration because it would not be technically practical. This alternative would require that the proposed transmission line cross the Alturas 345 kV transmission line twice. Crossing of the Alturas 345kV transmission line by a second transmission line (i.e., Poeville Alternative) introduces a potential system hazard and is not an acceptable utility line construction practice unless deemed absolutely necessary.

2.11.14 Parcel Block Route Adjustment

The Parcel Block Route Adjustment Alternative was developed in response to a public comment regarding the Poeville Alternative which would split a contiguous block of parcels owned by a single property owner. This alternative would move the Poeville Alternative to the outer perimeter of the contiguous block of parcels, keeping the block of parcels intact.

This alternative would not be substantially different from the Poeville Alternative and would not reduce or mitigate potential environmental impacts associated with the Poeville Alternative. This alternative would not be substantially different than the Poeville Alternative, and therefore, was dismissed from further consideration.

2.11.15 Undergrounding

This alternative would place the proposed transmission line underground to avoid visual impacts. Undergrounding involves placing the transmission line beneath the ground in a concrete encased conduit system and requires far more ground disturbance than overhead construction. Undergrounding is 7 to 10 times the cost of overhead construction (BLM 2013). In the event of a failure, the repair of an underground transmission line is slower due to the difficulty in accessing the line and the need to find specialized repair expertise. This alternative was dismissed from further evaluation because it is not technically practical to bury transmission lines for long distances in very steep terrain, which is a common condition along every alternative.

2.11.16 Renewable Energy Generation Alternatives

A number of methods to generate renewable energy to serve utility customers in the West Reno/Verdi area were suggested, including a solar power plant in West Reno, a wind turbine on

Peavine Peak, a hydroelectric generation facility on the Truckee River, and a large-scale battery or flywheel power storage facility. All power generation alternatives were dismissed from further evaluation because they would not meet the project purpose and need. Power generation would not provide the redundancy needed (i.e., an alternate transmission route) to improve the reliability of the 120 kV network that supplies power to the West Reno/Verdi area.

2.11.17 Energy Conservation

Lowering energy consumption could potentially increase available energy within NV Energy's system. This alternative was dismissed from further consideration because it would not meet the project purpose and need. Energy conservation does not provide reliability when providing power to a specific load center nor does it provide redundancy in the 120 kV transmission system needed to meet NERC reliability criteria.

2.11.18 New Substation in Reno

A new substation in Reno was suggested as an alternative to constructing a new transmission line. Construction of a new substation would not meet the project purpose and need, and therefore, this alternative was dismissed from further consideration. A new substation in Reno or the West Reno/Verdi area would not improve reliability or provide redundancy to the 120 kV system that supplies power to the West Reno/Verdi area. A substation is used to convert power to a different voltage and is needed to regulate or reduce electric voltage to levels that can be conveyed to the customer.

2.11.19 21st Century Solution Alternative

An alternative to transmit power without the use of power lines was submitted during public scoping. This alternative was dismissed from further consideration because it would not meet the project purpose and need. There are no known methods of transmitting power except by using transmission lines and the alternative does not offer a tangible means for meeting NERC reliability criteria in providing power to the West Reno/Verdi area.

2.11.20 Peavine Peak Road Route Adjustment

The Peavine Peak Road Route Adjustment was developed in response to a public comment to the Poeville Alternative because the alternative would split private land parcels located on the south side of Peavine Peak. The Peavine Peak Road Route Adjustment would align the transmission line away from the private land parcels by utilizing Peavine Peak Road and several other roads and properties, including NFS land.

The Forest Plan's established standards and guidelines include avoiding NFS land for uses that can be accommodated on private land. The Poeville Alternative was developed to use existing utility corridors as much as possible. The suggested Peavine Peak Road Route Adjustment would not be substantially different than the Poeville Alternative except that it would cross more NFS land and other private land parcels. Accordingly, the suggested alternative was considered and eliminated from detailed consideration.

2.12 COMPARISON OF ALTERNATIVES

To facilitate a clear understanding of the alternatives being considered in detail, this section provides a summary of the effects of implementing each alternative presented in **Chapter 2**.

2.12.1 Summary of Alternatives Carried Forward for Analysis

Components from each alternative are provided in **Table 2.12-1** to allow for ease of comparison.

Table 2.12-1 Summary of Action Alternatives Carried Forward for Detailed Analysis

PROJECT COMPONENT	MITCHELL ALTERNATIVE	PEAVINE ALTERNATIVE	POEVILLE ALTERNATIVE	PEAVINE/ POEVILLE ALTERNATIVE
Miles of new transmission line...	11.7	10.3	18.0	11.9
...in Nevada	5.3	7.2	16.9	10.8
...in California	6.4	3.1	1.1	1.1
Miles sharing an existing utility corridor…	4.6	2.8	12.6	4.4
...on NFS land	3.8	2.0	4.0	0.0
...on BLM-administered public land	0.4	0.4	0.4	0.4
Miles of new transmission line...				
...on NFS land	8.4	7.0	4.0	4.3
...on BLM-administered public land	0.4	0.4	0.4	0.4
...on private land	2.9	2.9	13.6	7.2
Bordertown Substation expansion BLM-administered public land (acres)	3.7	3.7	3.7	3.7
Number of new transmission line poles...	124	109	190	126
...on BLM-administered public land	5	5	5	5
...on NFS land	89	74	43	45
Miles of temporary centerline travel road...	7.1	7.5	5.4	7.8
...on NFS land	6.1	6.5	0	4.3
...on private land	1.0	1.0	5.4	3.5
…on BLM-administered public land	0.4	0.4	0.4	0.4
Temporary road widening disturbance (acres)...	28.3	53.3	52.1	52.7
...on NFS land (designated roads)	14.4	25.5	0.0	17.0
...on NFS land (non-designated roads)	2.7	3.5	2.4	0
...on BLM-administered public land	0	0	0	0
...on private land	11.2	24.3	49.7	35.7

PROJECT COMPONENT	MITCHELL ALTERNATIVE	PEAVINE ALTERNATIVE	POEVILLE ALTERNATIVE	PEAVINE/ POEVILLE ALTERNATIVE
Short-term disturbance during construction (acres)...	281.7	302.1	617.7	364.3
...on NFS land	176.5	184.2	162.2	127.3
...on BLM-administered public land	29.1	29.1	29.1	29.1
...on private land	76.1	88.8	426.4	207.9

Note: See **Table 2.12-2** for acres of tree removal under transmission line wires

2.12.2 Comparison of Alternatives – Resource Impacts

The comparison of alternatives draws together the conclusions from the information and discussion presented throughout the EIS and briefly summarizes the results of the analysis. **Table 2.12-2** compares alternatives by key issues and environmental effects. See **Chapter 3** for the detailed analysis by resource area.

Table 2.12-2 Comparison of Alternatives

ISSUE	NO ACTION ALTERNATIVE	MITCHELL ALTERNATIVE	PEAVINE ALTERNATIVE	POEVILLE ALTERNATIVE	PEAVINE/ POEVILLE ALTERNATIVE
Visual Resources					
Loss of visual quality and scenic attributes of the characteristic landscape at KOPs	No impact	Negligible to minor long-term impacts	Negligible to minor long-term impacts	Negligible to moderate long-term impacts	Negligible to minor long-term impacts
Consistency with the goals and objectives of the existing VQOs assigned to the NFS land and VRM Class III designation assigned to BLM-administered public lands that would be crossed by an action alternative	Consistent; no impact	Consistent with all VQOs and VRM Class III	Same as the Mitchell Alternative	Same as the Mitchell Alternative	Same as the Mitchell Alternative
Number of residences within 0.25 mile of the proposed transmission line	No impact	25 residences	25 residences	245 residences	134 residences
Acres of forest vegetation cleared for the proposed transmission line	No impact	41.8 acres	21.4 acres	2.9 acres	12.1 acres
Land Use and Private Property					
Number of private property parcels (excluding parcels owned by Sierra Pacific Power Company) crossed by the proposed transmission line ROW/easement	No impact	19 parcels	19 parcels	127 parcels	61 parcels
Private property value	No impact	Long-term negligible impacts on properties with existing homes, and long-term minor to negligible impacts on vacant properties	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Consistency with local land use plans	Consistent; no impact	Requires an amendment to the Truckee Meadows Regional Plan and a SUP in Sierra County, Washoe County, and the City of Reno	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative

ISSUE	NO ACTION ALTERNATIVE	MITCHELL ALTERNATIVE	PEAVINE ALTERNATIVE	POEVILLE ALTERNATIVE	PEAVINE/ POEVILLE ALTERNATIVE
Public Health and Safety					
Maximum electric field during project operation	No impact	Up to 2.6 kV per meter within the ROW/easement (below non-regulatory threshold), and up to 1.0 kV per meter at ROW/easement boundary (below non-regulatory threshold)	Same as Mitchell Alternative	Up to 2.9 kV per meter within the ROW/easement (below non-regulatory threshold), and up to 0.9 kV per meter at ROW/easement boundary (below non-regulatory threshold)	Same as Poeville Alternative
Maximum magnetic field during project operation	No impact	Up to 153.2 milligauss within the ROW/easement (below non-regulatory threshold), and up to 46.9 milligauss at ROW/easement boundary (below non-regulatory threshold)	Same as Mitchell Alternative	Up to 151.1 milligauss within the ROW/easement (below non-regulatory threshold), and up to 60.8 milligauss at ROW/easement boundary (below non-regulatory threshold)	Same as Poeville Alternative
Risk to public health and safety	No impact	No impact	No impact	No impact	No impact
Air Quality Resources					
Emissions of criteria pollutants (carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide) from construction, operation, and maintenance of the proposed project	No change from current condition	Temporary and minor impacts from particulate matter emissions; Temporary and negligible impacts from emission of all other criteria pollutants	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative

ISSUE	NO ACTION ALTERNATIVE	MITCHELL ALTERNATIVE	PEAVINE ALTERNATIVE	POEVILLE ALTERNATIVE	PEAVINE/ POEVILLE ALTERNATIVE
Biological Resources					
Acres of vegetation communities disturbed but are proposed to be restored	No impact	281.7 acres	302.1 acres	617.7 acres	364.3 acres
Acres of vegetation permanently removed with no proposed restoration (Pole structures and Bordertown Substation expansion)	No impact	3.8 acres	3.8 acres	3.9 acres	3.8 acres
Acres of tree cutting needed to maintain safe transmission line clearance	No impact	42 acres	21.4 acres	3 acres	12 acres
Acres of known noxious weed infestations within variable-width corridor and road widening corridor as a measure of the potential to spread and/or introduce noxious weeds	No impact	6.4 acres plus an additional 30 infestations of unknown size	12.7 acres plus an additional 23 infestations of unknown size	34.3 acres plus an additional 115 infestations of unknown size	30.3 acres plus an additional 109 infestations of unknown size
Miles of temporary new centerline travel roads required for project access as a measure of the potential to spread noxious weeds	No impact	7.1 miles	7.5 miles	5.4 miles	7.8 miles
Disturbance to Forest Service Sensitive and other special status plants	No impact	No impact on special status plant populations or individuals;	4.5 acres of occupied habitat (the potential pollinator forage area within 1,640 feet of a known population) for Dog Valley ivesia.	Same as Mitchell Alternative	4.5 acres of occupied habitat (the potential pollinator forage area within 1,640 feet of a known population) for Dog Valley ivesia
Occupied habitat for Webber ivesia	No impact	No impact	No impact	No impact	No impact
Result in a loss of population viability or trend toward federal listing for Forest Service Sensitive wildlife	No impact	Short term impacts to individuals; no impact to viability	Short term impacts to individuals; no impact to viability	Short term impacts to individuals; no impact to viability	Short term impacts to individuals; no impact to viability
Result in downward trend in populations and/or habitat capability for Management Indicator Species or other general wildlife species	No impact	No long-term impact populations or habitat capability	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Disturbance to federally threatened species: Lahontan cutthroat trout	No impact	No impact	No impact	No impact	No impact

ISSUE	NO ACTION ALTERNATIVE	MITCHELL ALTERNATIVE	PEAVINE ALTERNATIVE	POEVILLE ALTERNATIVE	PEAVINE/ POEVILLE ALTERNATIVE
Interference with wildlife movement/migration or important seasonal habitat, particularly for mule deer	No impact	Short-term and long-term minor to negligible impacts	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Cultural Resources					
Number of known eligible historic properties or sites, including historic properties or sites with unknown eligibility status that would be treated as an eligible site (Alternatives are ranked by the number of sites affected. 1 being fewest and 3 being the most sites affected.)	No impact	Rank 2	Rank 1	Rank 3	Rank 3
Potential for unanticipated discovery of resources during road widening	No impact	High potential	Moderate potential	Low potential	Low potential
Watershed Resources (Soil and Water)					
Acres of surface disturbance to soils rated as severe erosion hazard	No impact	285.5 acres	305.9 acres	621.5 acres	368.2 acres
Number of constructed fords and unimproved crossings of streams	No impact	7 stream crossings on NFS land and 2 stream crossings on private land	12 stream crossings on NFS land and 4 stream crossings on private land	No stream crossings on NFS land and 15 stream crossings on private land	11 stream crossings on NFS land and 5 stream crossings on private land
Number of constructed fords and unimproved crossings of wetlands and riparian zones	No impact	No crossings on NFS land and 2 wetlands and/or riparian zone crossings on private land	No crossings on NFS land and 7 wetlands and/or riparian zone crossings on private land	2 riparian zone crossings on NFS land and 7 crossings on private land	No crossings on NFS land and 8 wetlands and/or riparian zone crossings on private land
Impacts to Waters of the United States	No impact	0.007 acre	0.010 acre	0.031 acre	0.010 acre
Climate Change					
Total tons of greenhouse gas (GHG) emissions for construction and maintenance	No impact	941.5	828.9	1448.5	949.6

Table 2.12-3 compares alternatives by issues and environmental effects specific to BLM-administered public land. Each of the action alternatives would be constructed in the exact same location and position on BLM-administered public land, and expansion of the Bordertown Substation would occur under each action alternative. Thus, as **Table 2.12-3** shows, issues and effects are the same for all action alternatives.

Table 2.12-3 Comparison of Alternatives on BLM-Administered Public Land

ISSUE	NO ACTION ALTERNATIVE	MITCHELL ALTERNATIVE	PEAVINE ALTERNATIVE	POEVILLE ALTERNATIVE	PEAVINE/ POEVILLE ALTERNATIVE
Visual Resources					
Consistency with the goals and objectives of the existing VRM Class III designation assigned to BLM-administered public lands that would be crossed by an action alternative	Consistent; no impact	Consistent; no impact	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Land Use and Private Property					
Consistency with the Eagle Lake RMP (BLM 2008b)	Consistent; no impact	Consistent; no impact	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Public Health and Safety					
Maximum electric field on BLM-administered public land during project operation	No impact	Up to 2.5 kV per meter within the ROW/easement (below non-regulatory threshold), and up to 1.0 kV per meter at the ROW/easement boundary (below non-regulatory threshold)	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Maximum magnetic field on BLM-administered public land during project operation	No impact	Up to 151.1 milligauss within the ROW/easement (below non-regulatory threshold), and up to 41.8.9 milligauss at the ROW/easement boundary (below non-regulatory threshold)	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative

ISSUE	NO ACTION ALTERNATIVE	MITCHELL ALTERNATIVE	PEAVINE ALTERNATIVE	POEVILLE ALTERNATIVE	PEAVINE/ POEVILLE ALTERNATIVE
Risk to public health and safety on BLM-administered public land	No impact	No impact	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Air Quality Resources					
Emissions of criteria pollutants (carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide) from construction, operation, and maintenance of the proposed project on BLM-administered public land	No change from current condition	Temporary and minor impacts from particulate matter emissions; Temporary and negligible impacts from emission of all other criteria pollutants	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Biological Resources					
Acres of vegetation communities on BLM-administered public land disturbed but are proposed to be restored	No impact	29.1 acres	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Acres of vegetation communities on BLM-administered public land permanently removed with no proposed restoration (pole structures and Bordertown Substation expansion)	No impact	3.8 acres	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Acres of tree cutting on BLM-administered public land needed to maintain safe transmission line clearance	No impact	No impact; forest vegetation and trees do not occur on BLM-administered public land	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Acres of known noxious weed infestations on BLM-administered public land within variable-width corridor as a measure of the potential to spread and/or introduce noxious weeds	No impact	Five infestations of unknown size	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Miles of temporary new centerline travel roads required on BLM-administered public land for project access as a measure of the potential to spread noxious weeds	No impact	0.4 mile	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative

ISSUE	NO ACTION ALTERNATIVE	MITCHELL ALTERNATIVE	PEAVINE ALTERNATIVE	POEVILLE ALTERNATIVE	PEAVINE/ POEVILLE ALTERNATIVE
Disturbance to sensitive and other special status plants on BLM-administered public land	No impact	No impact; special status plants do not occur on BLM-administered public land	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Occupied habitat for Webber ivesia on BLM-administered public land	No impact	No impact; occupied habitat does not occur on BLM-administered public land	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Result in a loss of population viability or trend toward federal listing for BLM sensitive wildlife species due to impacts on BLM-administered public land	No impact	No impact to viability and no trend toward federal listing	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Result in downward trend in populations and/or habitat capability for general wildlife species due to impacts on BLM-administered public land	No impact	No long-term impact populations or habitat capability	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Disturbance to federally threatened species: Lahontan cutthroat trout	No impact	No impact; aquatic habitat does not occur on BLM-administered public land	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Interference with wildlife movement/migration or important seasonal habitat, particularly for mule deer	No impact	Short-term to long-term negligible impacts to crucial winter habitat (1.3 acres) and summer use habitat (13.8 acres)	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Cultural Resources					
Number of known eligible and potentially eligible historic properties or sites on BLM-administered public land	No impact	0 sites; no impact	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative

ISSUE	NO ACTION ALTERNATIVE	MITCHELL ALTERNATIVE	PEAVINE ALTERNATIVE	POEVILLE ALTERNATIVE	PEAVINE/ POEVILLE ALTERNATIVE
Number of historic properties or sites with unknown eligibility status on BLM-administered public land that would be treated as an eligible historic property or site	No impact	0 sites; no impact	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Potential for unanticipated discovery of resources on BLM-administered public land during road widening	No impact	No impact; road widening would not occur on BLM-administered public land	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Watershed Resources (Soil and Water)					
Acres of surface disturbance to soils rated as severe erosion hazard on BLM-administered public land	No impact	32.8 acres	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Number of constructed fords and unimproved crossings of streams on BLM-administered public land	No impact	No impact; streams do not occur on BLM-administered public land	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Number of constructed fords and unimproved crossings of wetlands and riparian zones on BLM-administered public land	No impact	No impact; wetlands and riparian zones do not occur on BLM-administered public land	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Impacts to Waters of the United States on BLM-administered public land	No impact	No impact; Waters of the United States do not occur on BLM-administered public land	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative
Climate Change					
Total tons of GHG emissions for construction and maintenance on BLM-administered public land	No impact	32.2	Same as Mitchell Alternative	Same as Mitchell Alternative	Same as Mitchell Alternative

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CHAPTER 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION TO ENVIRONMENTAL ANALYSIS

This chapter describes the existing condition of the natural and human environment in terms of the environmental resources that would potentially be affected by the project alternatives presented in **Chapter 2**. **Chapter 3** also analyzes and discloses the potential effects on these resources that would result from implementation of any of the alternatives, including the No Action Alternative. This chapter presents the scientific and analytical basis for comparison of these alternatives.

3.1.1 Resource Analysis

The potential effects of the alternatives for most resource areas have been documented in project-specific specialist reports. Specialist reports are a part of the planning record on file at the Humboldt-Toiyabe National Forest Supervisor's Office in Sparks, Nevada. The following reports are incorporated by reference:

- *Specialist Report: Cultural Resources Bordertown to California 120 kV Transmission Line Project* (USFS 2014a);
- *Cultural Resources Inventory for the Bordertown to California 120kV Transmission Line Project Sierra County, California and Washoe County, Nevada (Humboldt-Toiyabe National Forest Report No. R2011041702128) (Bureau of Land Management, Eagle Lake Field Office Report No. SU2-2013-05). Davis, California: Far Western Anthropological Research Group Inc.* (Garner et al. 2013);
- *Humboldt-Toiyabe National Forest Report Number: R2013041702329: Cultural Resources Inventory of the Peavine Mitchell Connector: An Addendum to the Bordertown to California 120KV Transmission Line; Project Report No. R2011041702128* (Garner and Young 2013);
- *R2015041702520, Cultural Resources Inventory of Proposed Peavine-Poeville Access Roads and Material Yards: An Addendum to the Bordertown to California 120kV Transmission Line Project Report No. R2011041702128* (Garner and Clay 2016);
- *Identification, NRHP Evaluation and Determination of Effects for Traditional Cultural Properties within the Area of Potential Effects of the Peavine-Poeville Alternative for the California to Bordertown 120 kV Transmission Line Project. Humboldt-Toiyabe National Forest Report Number: R2015041702537* (McBride 2016);
- *Specialist Report: Recreation Bordertown to California 120 kV Transmission Line Project* (USFS 2014b);
- *Specialist Report: Roads and Transportation Bordertown to California 120 kV Transmission Line Project* (USFS 2014c);

- *Specialist Report: Special Status Plants Bordertown to California 120 kV Transmission Line Project* (USFS 2016b);
- *Specialist Report: Special Status Wildlife Bordertown to California 120 kV Transmission Line Project* (USFS 2016c);
- *Specialist Report: Vegetation Resources Bordertown to California 120 kV Transmission Line Project* (USFS 2014d);
- *Specialist Report: Visual Resources Bordertown to California 120 kV Transmission Line Project* (USFS 2017);
- *Specialist Report: Water and Soils Bordertown to California 120 kV Transmission Line Project* (USFS 2014e);
- *Wildfire and Fuels Management Bordertown to California 120 kV Transmission Line Project* (USFS 2014f);
- *Noxious Weed Risk Assessment Bordertown to California 120 kV Transmission Line Project* (JBR 2013b);
- *Electric and Magnetic Field Evaluation for Proposed Bordertown to California 120 kV Transmission Line* (Enertech and Sheppard 2013); and
- *Technical Memo to the Electric and Magnetic Field Evaluation for Proposed Bordertown to California 120 kV Transmission Line* (Enertech 2015).

3.1.1.1 Cumulative Effects

Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions" (40 CFR 1508.7).

The *temporal extent* of the actions to be considered is 50 years, which is the maximum term of the SUP that would be issued for the proposed ROW/easement. The *spatial extent* of the projects considered in the cumulative effects analysis varies by the resource. **Table 3.1-1** defines the Cumulative Impact Analysis Area (CIAA) considered for each resource.

The CEQ issued an interpretative 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." In order to understand the contribution of past actions to the cumulative effects of the proposed project, 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.

Table 3.1-1 Cumulative Impact Analysis Area by Resource

RESOURCE	DEFINITION OF CIAA	RATIONALE FOR CIAA
Visual Resources	All areas within two miles of the centerline of each action alternative and the California and Bordertown substations	Area contains all of the visual evidence of present and reasonably foreseeable future actions that would typically be viewed in conjunction with the proposed project
Land Use Water Resources and Soils Vegetation Special Status Plants	All areas within two miles of the centerline of each action alternative and the California and Bordertown substations	The action alternatives would be unlikely to have any measurable incremental effects on the resource beyond two miles
Wildlife Special Status Wildlife	All areas within two miles of the centerline of each action alternative and the California and Bordertown substations	Area incorporates NFS land and areas that may have an influence on wildlife and habitat, and is the extent to which impacts of the proposed project would be limited
Wildfire	All areas within two miles of the centerline of each action alternative and the California and Bordertown substations	Area captures the fire history and is the extent to which impacts of the proposed project would be limited
Air Quality	Sierra County, California, and Washoe County, Nevada	Regulatory boundary for which ambient air quality attainment is measured and in which project-related emissions would occur
Cultural Resources	Variable-width corridor and road widening corridor	Maximum extent of construction- and maintenance-related surface disturbance, and includes a buffer from which a cultural site could be viewed concurrent with visual impacts of the proposed project

The present actions that are occurring within the resource CIAAs that are affecting resources that would be impacted by the proposed project include the following:

- Resource management activities;
- Other transmission lines and utility lines (e.g., pipelines);
- Maintenance and use of existing transportation network;
- Urban development;
- Livestock grazing; and
- Mining, including sand and gravel extraction.

NEPA requires analysis of "reasonably foreseeable" future actions and does not require speculation about unknown future events. Therefore, this cumulative effects analysis is generally limited to projects with known locations and descriptions, usually those for which a permit application has been filed or other public announcement made with enough detail to allow for comparison provided. Projects with known locations and descriptions that have been considered as "reasonably foreseeable" include the continuation of present actions. The following actions are reasonably foreseeable:

- Stonegate Master Plan Development; and
- USFS resource management activities, such as the Collie Stewardship Sale (11.4 acres), and personal use fuel wood cutting (primarily in the Mitchell Canyon and the Dog Valley areas).

The Stonegate Master Plan Development is a proposed residential and commercial development project planned on approximately 1,378 acres, south of White Lake, Nevada. The proposed development would be located on both sides of U.S. Highway 395, west of the White Lake Parkway interchange.

3.1.1.2 Information for Resource Issues

The following resource issues are not affected by the alternatives. A brief summary on why they are not discussed further is provided and considers input received during scoping.

Environmental Justice (Executive Order 12898)

There are no minority populations or low-income populations identified within any of the U.S. Census Bureau census block areas that would be crossed by the action alternatives. Minority populations and low-income populations were evaluated in accordance with the criteria and direction provided by the U.S. Environmental Protection Agency (USEPA) in *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* (1998).

Hazardous Materials and Waste

Limited use of hazardous materials, such as fuel, lubricants, and paint solvents is expected for construction of the proposed project. To ensure that the use of such materials would have negligible impacts on human health or any other environmental resources, design feature HM 1 and WA 3 (**Appendix B**) would be implemented during construction. Design feature HM 1 requires the development of an SPCC Plan that would describe safe handling, storage, and clean-up of hazardous materials. Design feature WA 3 prohibits storage of equipment fuels near streams, wetlands, and water features.

Herbicides would be used to control noxious weeds. While herbicides are not a hazardous material, it is recognized that safe handling and usage would ensure safety for humans and other biological resources. Design features HM 1, HE 1, HE 5, and HE 6 (**Appendix B**) would be implemented to ensure safe handling and usage and would require that a spill cleanup kit be readily available whenever herbicides are transported or stored. These design features would also ensure that all herbicides are mixed away from surface waters and groundwater wells.

Noise

Operation of the project would not increase ambient noise levels at the California or Bordertown substations. The current equipment at each substation that creates audible sound includes transformers and phase shifters and regulators; these are magnetic devices that generate noise. The proposal is to install line switches, circuit breakers, and protection relays at the substations; none of which will add to the audible noise level.

High voltage transmission lines emit what is called corona discharge. In the case of a high voltage transmission line, corona discharge is an electrical discharge caused by the ionization of air surrounding an energized conductor. As the energized conductor comes in contact with more particulates and contaminants in the air (e.g., dust, rain, fog, snow, etc.) there is a higher degree of ionization that can make the resulting popping noise louder and more constant.

When the corona noise of a 120 kV transmission line was analyzed in a laboratory setting, the long-term noise levels over the length of the analysis time were measured at 23.3 decibels (Egger, Draxler, Wernegger, Muhr, and Woschitz 2009). Corona noise levels of any of the action alternatives are expected to be between 20 and 30 decibels. According to the National Institute on Deafness and Other Communication Disorders, a noise level of 20 decibels is just audible and comparable to rustling leaves. Noise levels of 30 decibels are very quiet and comparable to a whisper. Noise levels are anticipated to attenuate (lessen) within the proposed ROW and be less than audible outside of the ROW.

Paleontological Resources

The majority of geologic units that would be crossed by one or more of the action alternatives consist of either igneous or metamorphic rock formations (Bell and Garside 1987; Saucedo and Wagner 1992; Soeller and Nielsen 1980). The heat and pressure under which these formations are created are not conducive to fossil preservation. Sedimentary rock generally Pleistocene in age (i.e., older than 10,000 years before present day) are conducive to fossil preservation, while geologic formations younger than 10,000 years before present are generally not likely to contain vertebrate fossils or scientifically important non-vertebrate fossils (BLM 2007). Pleistocene-aged sedimentary rock units that would be crossed by the action alternatives are few and generally located in areas where existing roads provide access and little excavation or grading would be required for project construction. Additionally, there are no known surface fossils within areas that would be crossed by any of the action alternatives. Accordingly, implementation of any of the action alternatives would be anticipated to have negligible to no impact on paleontological resources.

Recreation

Visibility of the proposed pole structures and overhead conductors would increase the evidence of human activity for the operational life of the proposed project. However, increased evidence of human activity from the project would generally occur in settings where some evidence of human activity currently exists in the form of roads, motorized travel on roads, buried utility lines, and overhead utility lines. Accordingly, the proposed project would not conflict with or modify the existing Recreation Opportunity Spectrum designations within the project area, which consist of Roaded Natural on NFS land and Backcountry on BLM-administered public land (USFS 2014b).

Socioeconomics

The proposed project would be constructed, operated, and maintained by the existing NV Energy workforce or their contractors. Thus, the proposed project is anticipated to maintain employment for the NV Energy workforce and generate employment and additional revenue for contractors. Implementation of any of the action alternatives would not have any adverse impacts on socioeconomics.

Transportation/Road Networks

The proposed project would not modify the existing Motor Vehicle Use Map (USFS 2011b) or other network of roads and trails open to public use. Impacts on transportation and road networks would not occur from implementation of the No Action Alternative or any of the action alternatives (USFS 2014c).

Wilderness and Roadless Areas

The nearest wilderness area to any of the action alternatives, Mt. Rose Wilderness, is approximately four miles southeast of the California Substation (USFS 2007). Mt. Rose Wilderness would not be affected from implementation of any of the action alternatives. There are no inventoried roadless areas on the NFS land within the project area (USFS 2001).

3.2 VISUAL RESOURCES

3.2.1 Issue Statement

Transmission line poles and conductor wires may reduce the scenic quality in the proposed ROW/easement and interrupt the scenic integrity of the viewshed.

a. Issue measured by: Loss of the visual quality and scenic attributes of the characteristic landscape at KOPs.
b. Issue measured by: Consistency with the goals and objectives of the VQOs assigned on NFS land and VRM Class III assigned to BLM-administered public lands that would be crossed by an action alternative.
c. Issue measured by: Number of residences within 0.25 mile of the proposed transmission line.
d. Issue measured by: Acres of forest vegetation cleared for the proposed transmission line.

The area of analysis, or study area, for visual resources within 0.5 mile of either side of the centerline for each action alternative, except where noted. This area was selected because the characteristic landscape in which the proposed project may be visible would generally not extend farther than 0.5 mile to either side of the alignment centerline when viewed from travel routes, hiking trails and/or trailheads, population centers, and community facilities that are located nearby.

3.2.2 Regulatory Framework

3.2.2.1 NFS Land

The Forest Plan states that the National Forest is to be managed with a sensitivity for visual quality. The VQOs on NFS land within any particular landscape are based on the scenic quality and aesthetic concern or sensitivity level for three possible distance zones of the landscape:

- Foreground: area within 0.25 to 0.5 mile of observer;
- Middleground: area up to 3 to 5 miles from observer; and
- Background: area beyond the middleground (USFS 1974).

The VQOs describe the magnitude of alteration that is acceptable within a characteristic landscape. There are five different VQOs that can be managed on a landscape: Preservation, Retention, Partial Retention, Modification, and Maximum Modification. The management goals and objectives that define each of the VQOs are provided in **Table 3.2-1**.

Table 3.2-1 Description of VQOs

VQO OBJECTIVE	MANAGEMENT GOALS AND OBJECTIVES
Preservation	Management activities and actions, except for very low visual-impact recreation facilities, are prohibited. Only ecological changes are acceptable.
Retention	Management activities and actions should not be visually evident. Activities and actions may only repeat form, line, color, and texture which occur frequently in the characteristic landscape; changes in their qualities of size, amount, intensity, direction, and so forth, should not be evident.
Partial Retention	Management activities and actions should remain visually subordinate to the characteristic landscape. Activities and actions may repeat form, line, color, or texture common to the characteristic landscape, but changes in their qualities of size, amount, intensity, direction, and so forth, should remain visually subordinate to the characteristic landscape. Activities and actions may also introduce form, line, color, or texture which occur infrequently or not at all in the characteristic landscape, but should remain subordinate to the visual strength of the characteristic landscape.
Modification	Management activities and actions may visually dominate the characteristic landscape; however, activities and actions of vegetative and landform alterations must borrow from naturally established form, line, color, or texture such that its visual characteristics are of those naturally occurring within the surrounding area. Additional parts of these activities and actions, such as structures, roads, slash, root wads, and so forth, must remain visually subordinate to the proposed composition. Activities and actions which are predominately the introduction of facilities such as buildings, signs, and roads, should borrow naturally established form, line, color, and texture such that its visual characteristics are compatible with the natural surroundings.
Maximum Modification	Management activities and actions of vegetative and landform alterations may dominate the characteristic landscape; however, when viewed in the background distance zone, the visual characteristics must be of those naturally occurring within the surrounding area. When viewed in the foreground or middleground, they may not appear to borrow completely from naturally established form, line, color, or texture. Alterations may also be out of scale or contain details unlike the natural occurrences seen in the foreground or middleground. Introduction of additional parts to these activities and actions, such as structures, roads, and slash, must remain visually subordinate to the proposed composition when viewed in the background.

Source: National Forest Landscape Management, Volume 2: Agriculture Handbook 462 (USFS 1974)

3.2.2.2 BLM-Administered Public Land

The BLM uses a VRM system to manage visual resources on the public lands that it administers. The primary objective of the VRM system is to maintain the existing visual quality of BLM-administered public lands and to protect unique and fragile visual resources. The VRM system uses four classes, Class I through Class IV, to describe the different degrees of modification allowed to the basic elements of the landscape (i.e., line, form, color, and texture) (BLM 1986). The VRM Classes and their objectives are described in **Table 3.2-2**.

Table 3.2-2 Description of VRM Classes and Objectives

VRM CLASS	OBJECTIVES
I	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and should not attract attention.
II	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
III	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
IV	Class IV provides for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements of the landscape.

Source: BLM Manual H-8410-1 Visual Resource Inventory (BLM 1986)

3.2.2.3 Private Land

The Visual Resources Elements of the Sierra County General Plan (Sierra County 1996) provides a list of visual resources goals and policies. Goals and policies from the Visual Resources Element applicable to the proposed project are provided below:

- Goal 1 (page 16-20): "Protect and preserve important scenic resources in the County."
- Goal 2 (page 16-20): "Protect visually sensitive areas by promoting and providing for aesthetic design in new development which reflects the customs and culture of the County."
- Policy 1 (page 16-21): "Protect the visual quality of the County's scenic corridors (local and State)."
- Policy 8d (page 16-24): "Prohibit ridgeline intrusions by structures wherever possible; incorporate this requirement into Design Guidelines."

The *Washoe County Regional Open Space and Natural Resource Management Plan* (Washoe County 2008) provides the framework, goals, and policies for the management of natural resources and open spaces in southern Washoe County. The plan identifies visual and scenic areas and directs Washoe County to protect these through ridgeline protection and coordination with other jurisdictions. Area plans in the Washoe County Master Plan address visual resources. The area plans applicable to the visual resource study area include *Washoe County Master Plan-North Valleys Area Plan* (Washoe County 2010) and *Washoe County Master Plan-Verdi Area Plan* (Washoe County 2015). Policies from the area plans applicable to the visual resources are provided below:

- North Valleys Area Plan Policy NV.8.1 (page 11): "With the exception of temporary infrastructure for construction projects, Washoe County will require the underground placement of utility distribution infrastructure within the North Valleys Management Area. Utility transmission facilities will be subject to a special use permit. In considering whether to grant a special use permit, or in consideration of any conditions, including underground placement, which may be placed upon an approval, the Planning Commission will utilize the best available information, including but not limited to the most recent Regional Utility Corridor Report, and any Environmental Impact Statement or other study undertaken regarding the proposal."
- North Valleys Area Plan Policy NV.8.2 (page 11): "The Washoe County Departments of Community Development and Public Works will establish and oversee compliance with design standards for grading that minimize the visual impact of all residential and non-residential hillside development."
- Verdi Area Plan Policy V.3.1 (page 5): "The Washoe County Departments of Community Development and Public Works will establish and oversee compliance with design standards for grading that minimize the visual impact of all residential and non-residential hillside development."

Article 424 – Hillside Development of the Washoe County Development Code (Washoe County 2013b) establishes provisions for developing, preserving, and protecting hillsides and ridgelines within Washoe County. One intent of the regulations is to protect the public health, safety, and welfare by minimizing impacts on prominent ridgelines, significant viewsheds, canyons, and visually prominent rock outcroppings that reflect the visual value and scenic character of hillside areas. For example, Section 110.424.40 states that "all graded or disturbed areas, exposed slopes and areas of soil or landform disturbance not designated for development shall be revegetated and replanted immediately after grading in order to mitigate adverse visual impacts, improve soil conditions, minimize erosion and stabilize necessary cut and fill slopes with plant roots."

Both Washoe County and the City of Reno must show Master Plan compliance with the 2012 Truckee Meadows Regional Plan, which was adopted in 2013 and is implemented by the Truckee Meadows Regional Planning Agency (TMRPA). The *Regional Utility Corridor Report*, which has been adopted by reference into the Truckee Meadows Regional Plan, provides the following policy on visual resources:

- Section F.7: "New overhead utilities shall be located to take advantage of existing topographic features to minimize visual impacts."
- Section F.8: "New overhead utilities shall be constructed so as to minimize the disturbance to and/or alteration of the natural environment. For example, alignments could avoid crossing hills at right angles to the contours and could cross wooded hills and mountains at an oblique angle to minimize the focus of attention on the overhead utility."
- Section F.9: "In siting new overhead utilities, consideration shall be given to minimizing disruption of existing land use patterns. New overhead utilities shall parallel existing roads, fence lines, windbreaks, or other major patterns in the area or be moved back from the road when land use and visual impacts are reduced by so doing."

The following planning principle is stated in the Truckee Meadows Regional Plan pertaining to visual resources management:

- "The Regional Plan will require local government master plans to preserve the natural function and scenic value of mountains, rivers, significant ridgelines, wetlands, aquifer recharge areas, and water bodies as wilderness, habitats, open space, greenways, parks, trails, and recreational areas." (Module 2, page 2)

3.2.3 Affected Environment

3.2.3.1 Mitchell Alternative

Visual Character

To facilitate the inventory of landscape features and describe the existing visual character, the Mitchell Alternative study area has been divided into four sub-areas: Bordertown sub-area, Central sub-area, Southern sub-area, and Verdi sub-area.

The Bordertown sub-area corresponds with the portion of the study area containing the existing Bordertown Substation and the first approximately 2.0 miles of the Mitchell Alternative from the substation. The Bordertown sub-area consists mostly of undeveloped shrubland that is dominated by xeric shrub species common to western Nevada and the east slope of the Sierra Nevada. There are a wide variety of species that occur within the area: sagebrush (*Artemisia* sp.), rubber rabbitbrush (*Ericameria nauseosa*), and antelope bitterbrush (*Purshia tridentata*) are among the most commonly occurring species. Individual or small groups of Jeffrey pine (*Pinus jeffreyi*) occur at isolated locations within the Bordertown sub-area, as do several small stands of aspen (*Populus tremuloides*). However, forest cover is generally absent within this sub-area.

Existing vegetation cover within the Bordertown sub-area is bisected by numerous unpaved roads, including Long Valley Road. Shrubland vegetation has been converted to agriculture fields at isolated locations. There are two residences located within this sub-area. There is a small water reservoir located next to the southernmost residence. Other development within the Bordertown sub-area includes the existing Alturas 345 kV transmission line, an overhead distribution power line, the existing Bordertown Substation, and a small sawmill/lumber yard. There is also an existing railroad track that crosses this sub-area.

The Central sub-area corresponds with the portion of the study area containing the next approximately 7.1 miles of the Mitchell Alternative. Most of the Central sub-area consists of undeveloped NFS land characterized by conifer forest and open shrubland vegetation. Coniferous forest cover within this sub-area is dominated by intermediate- to late intermediate-aged Jeffrey pine. Understory species composition and density varies, but the most commonly occurring species include antelope bitterbrush and manzanita (*Arctostaphylos* sp.). Shrubland vegetation is dominated by the same species that dominate shrubland vegetation within the Bordertown sub-area. Past wildfires (post-1980) have affected much of the vegetation cover in this sub-area (**Figure 3.2-1**). These fire-affected communities lack tree cover or have a reduced number of trees. Trees are less than approximately 20 years old. There are numerous unpaved roads and trails that have also resulted in the removal of vegetation cover. Most travel on roads within this sub-area is for recreational purposes and access. The portions of this sub-area within Washoe County are identified as part of a scenic viewshed associated with Peavine Peak in the *Washoe County Regional Open Space and Natural Resource Management Plan* (Washoe County 2008).

The Southern sub-area corresponds with the next approximately 2.4-mile section of the Mitchell Alternative. This section of the proposed transmission line alignment is roughly parallel with and adjacent to the existing #102 overhead transmission line. In addition to the existing transmission line, the Southern sub-area contains an existing buried gas pipeline and an unpaved section of Henness Pass/Dog Valley Road. Henness Pass/Dog Valley Road is a primary access route for visitors to NFS land. The road and the area within 300 feet to either side of the centerline of the road is designated as a scenic corridor in the Sierra County General Plan (Sierra County 2012). Because development within the Southern sub-area has been limited to these utilities and the road, most of the Southern sub-area is undeveloped. Undeveloped areas were burned during past wildfires and the resulting vegetation cover consists mostly of open shrubland. The charred remains of some conifer trees are visible in open shrubland vegetation. Additionally, there are occasional trees and small stands of forest cover that survived the wildfire within this sub-area. Past wildfires in study area and surrounding region are shown on **Figure 3.2-1**.

The Verdi sub-area corresponds with the portion of the study area containing the existing California Substation and the last approximately 0.2-mile section of the Mitchell Alternative. Existing development is prevalent within the Verdi sub-area. Development consists largely of homes and paved roads associated with the residential community of Verdi. There are more than 30 residences located within this sub-area. Many of the residences also include one or more smaller accessory structures. Henness Pass/Dog Valley Road also occurs within the Verdi sub-area, but this section of the road is paved and used by residents of Verdi as well as visitors to NFS land. Other development within this sub-area includes the California Substation, the #102 120 kV transmission line, and numerous overhead distribution power lines and telephone lines. One distribution line is parallel and adjacent to Henness Pass/Dog Valley Road and other overhead distribution lines and telephone lines cross the road. Conifer forest characterizes the type of vegetation cover in most undeveloped areas.

Visual Resources

The Mitchell Alternative would cross NFS land that has been assigned VQOs and BLM-administered public lands that have been assigned a VRM Class. As shown on **Figure 3.2-2**, the VQOs that have been assigned to the NFS land within the study area include: Partial Retention, and Maximum Modification. The Mitchell Alternative would not cross NFS land that has been assigned the Modification, Retention, or Preservation VQO. There is NFS land that was transferred from the BLM to the USFS under the Nevada Enhancement Act in 1988 that has not been assigned any VQO. All BLM-administered public lands within the study area are managed as VRM Class III (**Figure 3.2-2**).

The acres of each VQO and BLM VRM Class III that would be contained with the proposed ROW area for the Mitchell Alternative are summarized in **Table 3.2-3**.

Table 3.2-3 Visual Resources: Mitchell Alternative

ALTERNATIVE	VQO WITHIN ROW/EASEMENT (ACRES)[1]				VRM CLASS (ACRES)[1]
	PARTIAL RETENTION	MODIFICATION	MAXIMUM MODIFICATION	UNASSIGNED NFS LAND	CLASS III[2]
Mitchell	12.6	0.0	76.8	2.2	4.4

[1] Acres are approximate and rounded to the nearest tenth of an acre.
[2] Proposed improvements to Bordertown Substation would also be located on BLM-administered public land designated VRM Class III.

All VQO classifications in this area contain Forest Roads and vegetation communities with sparse tree cover due to past wild-fires. From the Mitchell Alternative, the Alturas 345 kV transmission line is 0.9 mile away and within sight.

The area of Partial Retention VQO is on the lower slopes of Peavine Peak. The transmission line could be visible for a moment when traveling on U.S. Highway 395. This area would be at a distance of 2.5 miles from the viewer. However, the viewer would first notice the Alturas 345 kV Transmission Line in the foreground, then the railroad line bisecting the landscape in the middleground. The proposed transmission line would be in the background and not likely seen within the Partial Retention area. From Forest Road 41192 or the Long Valley Road, the Mitchell Alternative would be behind a hill and hidden from view if travelling north to south. When travelling the opposite direction, it is possible but not probable, that the viewer may see the transmission line.

The proposed transmission line would be noticeable when traveling along the Long Valley Road, in either direction, the foreground elements would dominate the view, and features seen include rolling hills, ranches, existing transmission lines, and roads. The area mapped as Partial Retention VQO contains no features (vegetation cover and landform) different from adjacent areas classified as Retention or Maximum Modification, it would not stand out.

3.2.3.2 Peavine Alternative

Visual Character

To facilitate the inventory of landscape features and describe the existing visual character, the Peavine Alternative study area was divided into four sub-areas: Bordertown sub-area, Central sub-area, Southern sub-area, and Verdi sub-area.

The Bordertown sub-area corresponds with the portion of the study area containing the existing Bordertown Substation and the first approximately 2.0 miles of the Peavine Alternative from the substation. The existing visual character within this sub-area is the same as described for the Bordertown sub-area of the Mitchell Alternative in **Section 3.2.3.1**.

The Central sub-area corresponds with the portion of the study area containing the next approximately 7.5-mile section of the Peavine Alternative. The existing visual character within this area is the same as described for the Central sub-area of the Mitchell Alternative in **Section 3.2.3.1**.

The Southern sub-area corresponds with the portion of the study area containing the next approximately 0.6-mile section of the Peavine Alternative. The existing visual character within this sub-area is the same as described for the Southern sub-area of the Mitchell Alternative in **Section 3.2.3.1**.

The Verdi sub-area corresponds with the portion of the study area containing the existing California Substation and the last approximately 0.2 mile of the Peavine Alternative. The existing visual character within this sub-area is the same as described for the Verdi sub-area of the Mitchell Alternative in **Section 3.2.3.1**.

Visual Resources

As shown on **Figure 3.2-2**, the VQOs assigned to the NFS land that would be crossed by the Peavine Alternative include Maximum Modification, Modification, and Partial Retention. The Peavine Alternative would not cross NFS land that has been assigned the Preservation or Retention VQO. All BLM-administered public lands within the study area are managed as VRM Class III (**Figure 3.2-2**). The acres of VQO and BLM VRM Class III that would be contained with the proposed ROW area for the Peavine Alternative are summarized in **Table 3.2-4**.

Table 3.2-4 Visual Resources: Peavine Alternative

ALTERNATIVE	VQO WITHIN ROW/EASEMENT (ACRES[1])				VRM CLASS (ACRES[1])
	PARTIAL RETENTION	MODIFICATION	MAXIMUM MODIFICATION	UNASSIGNED NFS LAND	CLASS III[2]
Peavine	11.0	24.3	35.3	5.8	4.4

[1] Acres are approximate and rounded to the nearest tenth of an acre.
[2] Proposed improvements to Bordertown Substation would also be located on BLM-administered public land designated VRM Class III.

3.2.3.3 Poeville Alternative

Visual Character

To facilitate the inventory of landscape features and describe the existing visual character, the Poeville Alternative study area was divided into six sub-areas: Bordertown sub-area, Peavine sub-area, Trail Drive sub-area, Poeville sub-area, Peavine Peak sub-area, and East Verdi sub-area.

The Bordertown sub-area corresponds with the portion of the study area containing the existing Bordertown Substation and the first approximately 2.0 miles of the Poeville Alternative from the substation. The existing visual character within the Bordertown sub-area is the same as described for the Bordertown sub-area of the Mitchell Alternative in **Section 3.2.3.1**.

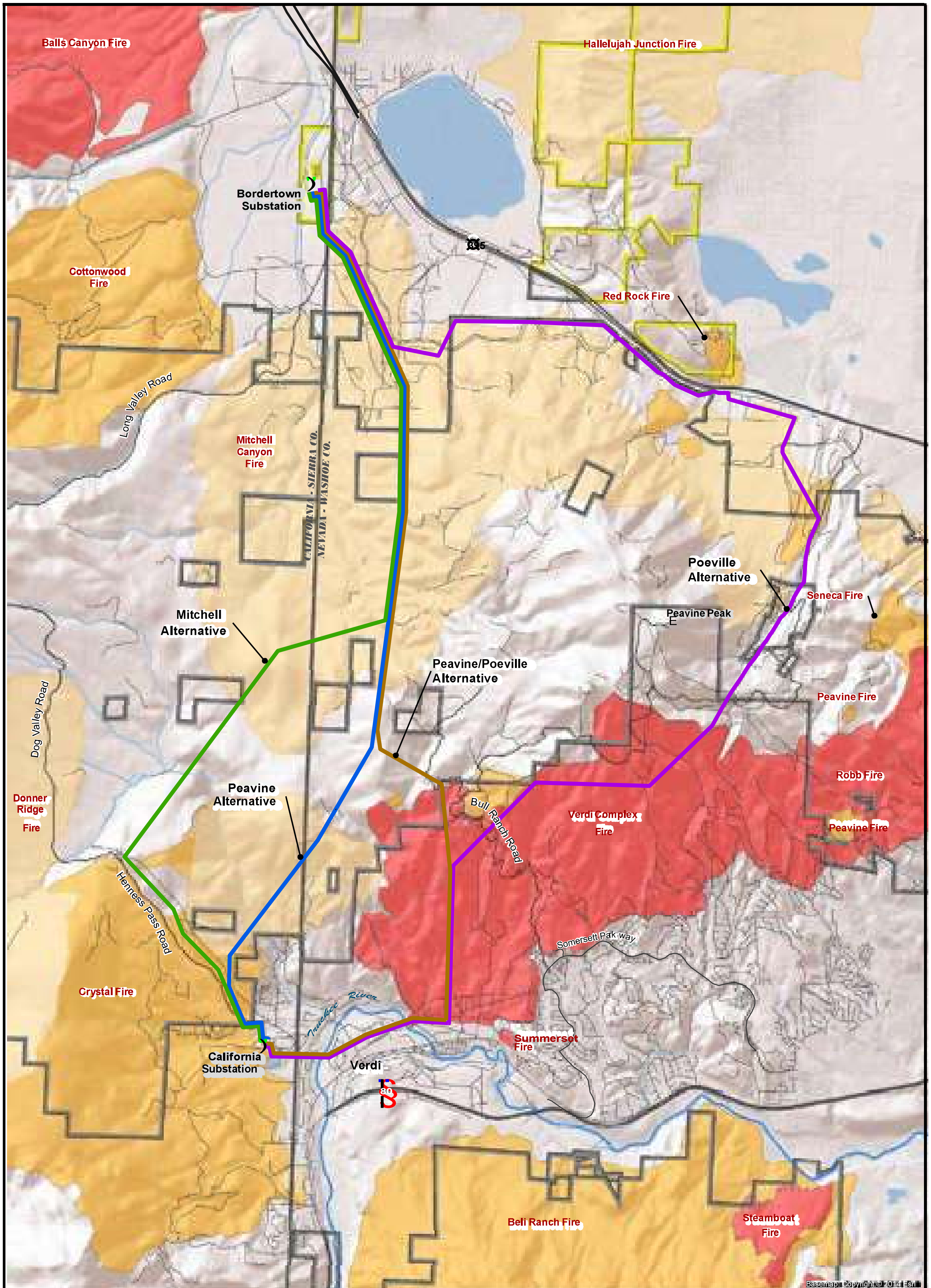
The Peavine sub-area corresponds with the portion of the study area containing the next approximately 4.2-mile section of the Poeville Alternative. This sub-area consists mostly of undeveloped shrubland dominated by the same species as the Bordertown sub-area, as described in **Section 3.2.3.1**. Existing development within the Peavine sub-area includes a railroad track, North Virginia Street and other unpaved roads, and U.S. Highway 395. North Virginia Street is a highway frontage road that is roughly parallel with U.S. Highway 395. The existing Alturas

345 kV transmission line occurs throughout the Peavine sub-area, and is roughly parallel and adjacent to North Virginia Street. There are also several overhead power lines and telephone lines within the sub-area. Structures within the sub-area are limited to two residential sites, one of which is the historic Peavine Ranch Property. Both residential sites include the primary residential structure as well as smaller accessory structures, driveways, and vehicles. Large deciduous trees are located throughout the Peavine Ranch Property.

The Trail Drive sub-area corresponds with the portion of the study area containing the next approximately 1.1-mile section of the Poeville Alternative. Most of the Trail Drive sub-area is developed with residential structures and roads. It is estimated that there are more than 150 residences within this sub-area. The majority of these structures are located north of U.S. Highway 395, which also crosses this sub-area. Many of the roads within this sub-area are residential collector streets, such as unpaved Trail Drive and Mar Mac Way and paved North Virginia Street. In addition to primary residential structures, most residences also include small accessory structures, fences, driveways, parked vehicles, and landscaping. Several residences also have large trees on the property. The existing Alturas 345 kV transmission line is located adjacent to the north side of North Virginia Street, about 0.1 mile north of most of the segment of proposed centerline within this sub-area. Most of the residences within close proximity to Trail Drive and this segment of the proposed centerline are also within relatively close proximity to the Alturas 345 kV transmission line. Several existing overhead distribution power lines and telephone lines also cross the Trail Drive sub-area. Undeveloped areas within the Trail Drive sub-area are characterized by open shrubland.

The Poeville sub-area corresponds with the portion of the study area containing the next approximately 3.2-mile section of the Poeville Alternative. This sub-area consists of undeveloped to lightly developed land. Undeveloped areas are characterized by open shrubland, some of which is the result of a past wildfire (**Figure 3.2-1**). There are also isolated areas of riparian vegetation cover adjacent to Peavine Road. Peavine Road is one of several unpaved roads that cross the Poeville sub-area and provide access to NFS land and private land around Peavine Peak. An existing distribution line that would be constructed as an under-build on the pole structures for the segment of the Poeville Alternative within this sub-area is located next to Peavine Road. The existing distribution power line diverges from Peavine Road within the southern portion of the Poeville sub-area and coincides with an unpaved two-track road instead. There is also an existing gravel pit/aggregate operation located immediately next to and west of Peavine Road and evidence of past mining activities east of the road that are located within the Poeville sub-area.

The Peavine Peak sub-area corresponds with the portion of the study area containing the next approximately 5.4-mile section of the Poeville Alternative. Most of this sub-area consists of undeveloped private land that has burned during past wildfires (**Figure 3.2-1**). Consequential to the wildfires, existing vegetation cover is dominated by cheatgrass, which is an invasive species that colonizes areas burned by wildfire (Colorado State University Extension 2012). Development within the Peavine Peak sub-area is limited to several unpaved roads and trails. Much of the Peavine Peak sub-area is visible throughout the city of Reno and neighboring communities located along Interstate 80 west of the city of Reno.



Transmission Line Alternatives

- Mitchell
- Peavine
- Poeville
- Peavine/Poeville

Fire History

- Fire History 0-10 Years
- Fire History 10-20 Years
- Fire History >20 Years

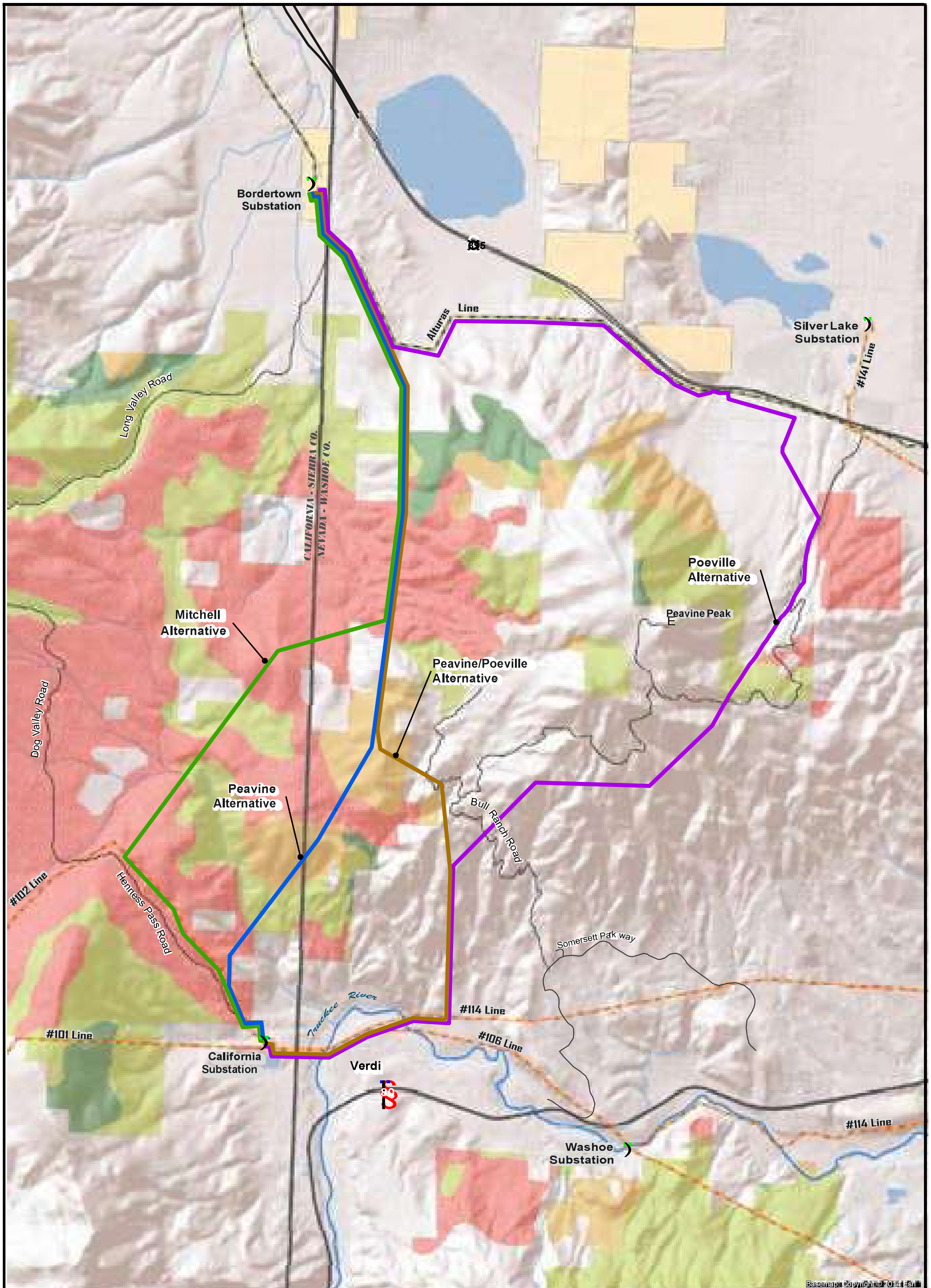
Land Ownership

- U.S. Forest Service
- U.S. Bureau of Land Management

FIGURE 3.2-1
FIRE HISTORY MAP

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

1 " = 1 mile
0 0.5 1 2
Miles



Transmission Line Alternatives
Mitchell
Peavine
Poeville
Peavine/Poeville

Existing Transmission Lines
120 kV Transmission Line
345 kV Transmission Line

USFS Visual Quality Objective Designations
Retention
Partial Retention
Modification
Maximum Modification

BLM VRM Classes
Class III

FIGURE 3.2-2
VISUAL QUALITY OBJECTIVES

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

1 " = 1 mile
0 0.5 1 2
Miles

The Washoe County Scenic Resources Map in the *Washoe County Regional Open Space and Natural Resource Management Plan* (Washoe County 2008) identifies Peavine Peak as a scenic viewshed and a high value area. In the discussion of visual resources in the *Washoe County Regional Open Space and Natural Resource Management Plan*, Peavine Peak is described as being "significant" and "one of the prominent backdrops in the region". Both the Poeville sub-area and Peavine Peak sub-area are within the scenic viewshed associated with Peavine Peak.

The East Verdi sub-area corresponds with the portion of the study area containing the existing California Substation and the last approximately 2.1-mile section of the Poeville Alternative. Existing land uses within this sub-area include the inactive #632 power line that this section of the Poeville Alternative would replace, and the existing #114 and #106 transmission lines that would be located next to this section of the alignment. There are also other overhead distribution power lines and overhead communications lines located within the East Verdi sub-area. The existing California Substation is located at the west end of this sub-area. An electrical powerhouse is located next to the Truckee River, within very close proximity to existing transmission lines that cross the East Verdi sub-area. Other utility corridors within this sub-area include an existing buried gas pipeline.

It is estimated that there are at least 250 residences located within the East Verdi sub-area. More than half of these are concentrated in the western half of the sub-area. However, residential development is least dense in the area surrounding the California Substation, which is at the far western end of the sub-area. The portion of the East Verdi sub-area southwest of the substation consists of open pasture land for horses. Other structures located within the East Verdi sub-area include the Verdi Public Library on Bridge Street, the Verdi Elementary School next to the library, the Verdi Post Office, and a bar/restaurant and group of industrial/warehouse structures east of the post office. Parking lots and accessory facilities, such as elementary school baseball fields, associated with these structures are also located within the East Verdi sub-area.

Most of the roads within the East Verdi sub-area are paved residential collector streets, but there are some minor unpaved roads as well. Some of the specific residential collector streets that occur within this area include Prickly Pear Drive, Hansen Drive, Lakeview Drive, Ana Mandara Creek, Bridge Street, and Hill Lane. This sub-area is also crossed by 3rd Street (i.e., Old Highway 40), which is a paved arterial road used by local residents, as well as cyclists for recreation.

The Truckee River crosses the East Verdi sub-area at two locations. The Truckee River is commonly used for water-based recreation, especially during summer months. Tall deciduous trees and riparian shrubs and grasses characterize the undeveloped portions of the river banks. Other undeveloped areas within the sub-area consist predominantly of open shrubland or cheatgrass. Parts of fairways, greens, and other areas of golf course landscaping associated with an abandoned golf course are also located within the East Verdi sub-area.

Visual Resources

The VQOs assigned on NFS land that would be crossed by the Poeville Alternative include Modification, Maximum Modification, and Partial Retention (**Figure 3.2-2**). The Poeville Alternative does not cross Retention or Preservation VQO. There is NFS land without an assigned VQO that was transferred to the USFS from the BLM in 1988 under the Nevada Enhancement Act. All BLM-administered public lands within the study area are managed as VRM Class III

(**Figure 3.2-2**). The acres of each VQO and BLM VRM Class III that would be contained with the proposed ROW area for the Poeville Alternative are summarized in **Table 3.2-5**.

Table 3.2-5 Visual Resources: Poeville Alternative

ALTERNATIVE	VQO WITHIN ROW/EASEMENT (ACRES)[1]				VRM CLASS (ACRES)[1]
	PARTIAL RETENTION	MODIFICATION	MAXIMUM MODIFICATION	UNASSIGNED NFS LAND	CLASS III[2]
Poeville	4.7	2.9	0.9	36.2	4.4

[1] Acres are approximate and rounded to the nearest tenth of an acre.
[2] Proposed improvements to Bordertown Substation would also be located on BLM-administered public land designated VRM Class III.

3.2.3.4 Peavine/Poeville Alternative

Visual Character

To facilitate the inventory of landscape features and describe the existing visual character, the Peavine/Poeville Alternative study area was divided into four sub-areas: Bordertown sub-area, Central sub-area, Peavine Peak sub-area, and East Verdi sub-area.

The Bordertown sub-area corresponds with the portion of the study area containing the existing Bordertown Substation and the first approximately 2.0 miles of the Peavine/Poeville Alternative from the substation. The existing visual character within this sub-area is the same as described for the Bordertown sub-area of the Mitchell Alternative in **Section 3.2.3.1**.

The Central sub-area corresponds with the portion of the study area containing the next approximately 5.4-mile section of the Peavine/Poeville Alternative. The existing visual character within this sub-area is the same as described for the Central sub-area of the Mitchell Alternative in **Section 3.2.3.1**.

The Peavine Peak sub-area corresponds with the portion of the study area containing the next approximately 2.4-mile section of the Peavine/Poeville Alternative. The existing visual character within this sub-area is the same as described for the Peavine Peak sub-area of the Poeville Alternative in **Section 3.2.3.3**.

The East Verdi sub-area corresponds with the portion of the study area containing the existing California Substation and the last approximately 2.1 miles of the Peavine/Poeville Alternative. The existing visual character within this sub-area is the same as described for the East Verdi sub-area of the Poeville Alternative in **Section 3.2.3.3**.

Visual Resources

As shown on **Figure 3.2-2**, the VQOs that have been assigned to the NFS land that would be crossed by the Peavine/Poeville Alternative include Maximum Modification, Modification, and Partial Retention. The Peavine/Poeville Alternative does not cross Retention or the Preservation VQO. There is NFS land without an assigned VQO that was transferred to the USFS from the BLM in 1988 under the Nevada Enhancement Act. All BLM-administered public lands within the study area are managed as VRM Class III (**Figure 3.2-2**). The acres of VQO and BLM VRM Class III that would be contained with the proposed ROW area for the Peavine/Poeville Alternative are summarized in **Table 3.2-6**.

Table 3.2-6 Visual Resources: Peavine/Poeville Alternative

ALTERNATIVE	VQO WITHIN ROW/EASEMENT (ACRES)[1]				VRM CLASS (ACRES)[1]
	PARTIAL RETENTION	MODIFICATION	MAXIMUM MODIFICATION	UNASSIGNED NFS LAND	CLASS III[2]
Peavine/Poeville	5.1	13.0	19.3	9.5	4.4

[1] Acres are approximate and rounded to the nearest tenth of an acre
[2] Proposed improvements to Bordertown Substation would also be located on BLM-administered public land designated VRM Class III

3.2.4 Environmental Consequences

3.2.4.1 Methods of Analysis

Visual Quality and Scenic Attribute Effects

The direct and indirect effects of each alternative on visual resources was assessed using a contrast analysis based on the methods of the Visual Management System described in *National Forest Landscape Management, Volume 2: Agriculture Handbook 462* (USFS 1974). Contrast analysis is the degree to which a project or activity affects scenic quality or visual resources depending on the visual contrasts created or imposed by a project on the landscape. Contrasts are measured by comparing the form, line, color, and texture elements that characterize the appearance of the project features with the same elements for the major features in the landscape. Changes in the size, amount, intensity, direction, pattern, were used as indicators in comparing the form, line, color, and texture elements and to quantify the contrast an alternative would be expected to have with the landscape. The contrast analysis considered effects of the project after the incorporation of project design features that have been developed to reduce or avoid impacts to visual resources (design features VI 1, VI 2, RT 4, and VG 6) contained in **Appendix B**. Design feature VI 1 would reduce glare and reflection off of conductors; design feature RT 4 requires that road closure barriers harmonize with the natural environment; and design feature VG 6 requires that all areas of temporary disturbance would be revegetated. Design feature VI 2, would apply to the Mitchell, Peavine, and Peavine/Poeville alternatives, and minimizes the number of poles used within NFS land assigned Partial Retention VQO.

The contrast analysis was completed at KOPs. KOPs are sensitive receptor locations from which views of an alternative or alternatives would be possible. KOPs that were selected are representative of the characteristic landscapes in the project area, such as forest land, open shrubland, and residential areas. A list of the KOPs is presented in **Table 3.2-7**, and the location and direction of view from each is shown on **Figure 3.2-3**.

Table 3.2-7 Key Observation Points

KOP	KOP NAME	DIRECTION OF VIEW	VISUAL RESOURCES SUB-AREA
KOP 1	California Substation – South	South toward the California Substation	Verdi sub-area
KOP 2	California Substation – West	West and roughly aligned with Henness Pass/Dog Valley Road	Verdi sub-area
KOP 3	Henness Pass/Dog Valley Road	North toward the existing #102 overhead transmission line	Southern sub-area
KOP 4	Forest Boundary – West	West and roughly aligned with Henness Pass/Dog Valley Road	Southern sub-area
KOP 5	Forest Boundary	North-northwest towards the existing #102 transmission line and Henness Pass/Dog Valley Road	Southern sub-area
KOP 7*	Forest Route 41192 – North	North-northeast towards the Alturas 345 kV transmission line	Bordertown sub-area
KOP 9	Peavine Ranch	East and roughly aligned with North Virginia Street	Peavine sub-area
KOP 10	Peavine Ranch – Southwest	Southwest towards North Virginia Street and a residence	Peavine sub-area
KOP 11	Peavine Road	Southwest and roughly aligned with an overhead distribution line	Poeville sub-area
KOP 12	Stead Trailhead	South-southwest and roughly aligned with Peavine Road	Poeville sub-area
KOP 13	Trail Drive – East	East and roughly aligned with Trail Drive	Trail Drive sub-area
KOP 14	Trail Drive – West	West and roughly aligned with Trail Drive	Trail Drive sub-area
KOP 15	Truckee River Bridge	North towards the existing #106 and #114 overhead transmission lines	East Verdi sub-area
KOP 16	Verdi Library Parking Lot – West	West-southwest towards Bridge Street	East Verdi sub-area
KOP 17	Verdi Library Parking Lot – East	East towards the Verdi Library	East Verdi sub-area

*KOP 6 shares the same location as KOP 7, but was not used in the analysis, as the angle of view at KOP 7 is north-northeast towards the general area where the existing Alturas 345 kV transmission line crosses the California state line and provides the best representation.

A brief summary of the rationale and determining factors in selecting each of the KOP locations is provided in **Table 3.2-8**.

Table 3.2-8 Key Observation Points Selection Rationale

KOP	SELECTION RATIONALE
KOP 1	KOP 1 was selected because it would show visual changes along Henness Pass/Dog Valley Road. This road is a primary residential collector street for residents in the Verdi area. The road is also a primary access route for persons visiting NFS land.
KOP 2	KOP 2 was selected because it would show visual changes along Henness Pass/Dog Valley Road. This road is a primary residential collector street for residents in the Verdi area. The road is also a primary access route for persons visiting NFS land.

KOP	SELECTION RATIONALE
KOP 3	KOP 3 was selected to show visual changes along an exposed ridge next to Henness Pass/Dog Valley Road. The road is the primary access to NFS land from the south and west sides of Reno. Most users on the road are OHV recreationists. However, the road is also used for access for dispersed recreation, mostly hunting.
KOP 4	KOP 4 was selected to show visual changes to an area of forest vegetation adjacent to Henness Pass/Dog Valley Road near a main “gateway” to NFS land in the Dog Valley area. The area of forest vegetation is close to residences in Verdi and easily accessible to all types of vehicles. Thus, the area is commonly used for passive recreation, such as off-leash dog play or brief walks. The area is also readily visible to persons travelling on Henness Pass/Dog Valley Road to gain access to other OHV routes on NFS land.
KOP 5	KOP 5 was selected to show visual changes to an area of forest vegetation adjacent to Henness Pass/Dog Valley Road near a main “gateway” to NFS land in the Dog Valley area. The area of forest vegetation is close to residences in Verdi and easily accessible to all types of vehicles. Thus, the area is commonly used for passive recreation, such as off-leash dog play or casual walks. The area is also readily visible to persons travelling on Henness Pass/Dog Valley Road to gain access to other OHV routes on NFS land.
KOP 7*	KOP 7 was selected to capture visual changes that would potentially be visible from the Long Valley area. The KOP was placed on Long Valley Road because relative to other public roads in the area, it is in the best condition and receives the most users. Users primarily include persons residing in Long Valley as well as visitors to NFS land. Most visitors to NFS land would be OHV recreationists and seasonal hunters.
KOP 9	KOP 9 was selected because it provides easterly views of visual changes that would occur within the historic setting of the Peavine Ranch property.
KOP 10	KOP 10 was selected because it provides westerly views of visual changes that would occur within the historic setting of the Peavine Ranch property.
KOP 11	KOP 11 was selected because it provides views of the visual changes that would potentially be seen from Peavine Peak Road. The road is a primary access route to the top of Peavine Peak as well as numerous OHV routes on NFS land. Most users on Peavine Peak Road are OHV recreationists.
KOP 12	KOP 12 was selected because it would show visual changes along Peavine Peak Road at the Stead Trailhead. Both the trailhead and Peavine Peak Road are used by OHV recreationists.
KOP 13	KOP 13 was selected because it would show visual changes along Trail Drive. Most people using Trail Drive would be property owners that reside on the street.
KOP 14	KOP 14 was selected because it would show visual changes along Trail Drive. Most people using Trail Drive would be property owners that reside on the street.
KOP 15	KOP 15 was selected to show the visual changes on the south side of Peavine Peak. The mountain is a prominent land feature visible throughout much of the city of Reno and surrounding Truckee Meadows area. KOP 15 was placed along 3rd Street because it is a major through road and within closer proximity to Peavine Peak than most other public roads in the area. 3rd Street is used by residents in Verdi and Mogul, as well as cyclists and people visiting the Truckee River for recreation.
KOP 16	KOP 16 was selected to show visual changes in the Verdi community from a public location (i.e., library). The KOP is also located within close proximity to Bridge Street, which is a primary residential collector street for the Verdi community. Bridge Street also transitions into Henness Pass/Dog Valley Road, which is a primary access route to the Dog Valley area, a popular use area on NFS land.
KOP 17	KOP 17 was selected to show visual changes in the Verdi community from a public location (i.e., library). The KOP is also located within close proximity to Bridge Street, which is a primary residential collector street for the Verdi community. Bridge Street also transitions into Henness Pass/Dog Valley Road, which is a primary access route to the Dog Valley area, a popular use area on NFS land.

*KOP 6 shares the same location as KOP 7, but was not used in the analysis, as the angle of view at KOP 7 is north-northeast towards the general area where the existing Alturas 345 kV transmission line crosses the California state line and provides the best representation.

Computer-generated visual simulations of the proposed project in its operational phase were produced to aid the contrast analysis. The visual simulations are effectively the same photograph of the existing characteristic landscape taken from each KOP with the proposed project overlaid as it would appear after construction. The computer-generated visual simulations that are provided in comparison of the existing characteristic landscape from each KOP are in **Appendix C**. Visual effects anticipated from construction activities of the project would be temporary because temporary roads are required to be revegetated and are discussed in detail in *Specialist Report: Visual Resources Bordertown to California 120 kV Transmission Line Project* (USFS 2017).

Consistency with Forest Plan and BLM RMP

The visual contrast analysis (see above methodology) was used to determine whether the alternative would be consistent with the goals and objectives of each VQO and VRM Class crossed. Not all VQO and VRM Classes that would be crossed by an alternative are captured in the visual simulations. For these areas, available resources such as aerial photography, vegetation mapping, and field observations were used to determine the existing setting of the characteristic landscapes.

Each action alternative was evaluated for consistency with the Forest Plan and BLM RMP based on whether it conforms with the VQOs and VRM classes assigned.

Residences with Close Proximity

The number of residential structures entirely or partially within 0.25 mile of the centerline of each action alternative was tallied as an indicator of visual impacts to private property within residential communities that are located in close proximity to an action alternative. A distance of 0.25 mile was used because this distance is considered the foreground, and the range of which visual effects would be most readily seen or noticed. Residential structures were counted using 2015 aerial imagery (United States Farm Service Agency 2015). When structure type (e.g., residence, garage, barn, etc.) was unclear or uncertain from aerial photographs, the structure was counted as a residence.

Acres of Forest Vegetation Clearing

A corridor of shrubs and low grasses would be created through forested communities from maintaining the transmission line clearance area of each action alternative. The corridor would be easily noticeable to recreationists on NFS land. The corridors may also be more apparent than the physical transmission line to person's considerable distances away (i.e., middleground and background distance zones), including persons on private land. Thus, the acres of forested communities within the transmission line clearance area that would be cleared during construction and thereafter for the life of the project was used as an indicator of visual effects.

3.2.4.2 No Action Alternative

Under the No Action Alternative, there would be no visual effects from the proposed project as construction of the proposed project and subsequent operation and maintenance of the proposed transmission line would not occur.

3.2.4.3 Mitchell Alternative

Visual Quality and Scenic Attribute Effects

The KOPs that were selected to analyze the visual effects of the Mitchell Alternative include:

- KOP 1 (California Substation – South);
- KOP 2 (California Substation – West);
- KOP 3 (Henness Pass/Dog Valley Road);
- KOP 4 (Forest Boundary – West);
- KOP 5 (Forest Boundary); and
- KOP 7 (Forest Road 41192 – North).

The location of each KOP is shown on **Figure 3.2-3**.

KOP 1

KOP 1 is on Henness Pass/Dog Valley Road, looking south toward the California Substation. Two single power pole structures would be visible from KOP 1 in the foreground distance zone of the characteristic landscape. The existing distribution line poles would be replaced with transmission line poles that would be thicker and 40 to 60 percent taller and would create taller and slightly thicker vertical lines. The conductors on the existing distribution line would be attached to the new structure as an under-build. A visitor using the road to reach destinations on NFS land would see the new transmission line for a brief period while traveling. Residents in the area would have repeated episodes of viewing because of frequent travel on the road. The color of the proposed pole structures would be dark brown and matte which would be similar to the existing distribution line poles when viewed against middleground vegetation. There would be a difference in the size of the proposed power pole structures they would repeat line, color, and texture elements found in the existing characteristic landscape.

The proposed and existing conductors would be nearly identical, and the line elements associated with them would be roughly parallel and grouped. The proposed conductors would not introduce form, line, color, or texture elements to the characteristic landscape.

Most of the form, line, color, and texture elements that would be added from the proposed project at KOP 1 would repeat elements that are common to the characteristic landscape, reducing the degree of contrast. There may be an increase in the size and amount of some elements common to the landscape the increase would be minimal. The proposed project would not be expected to attract the attention or dominate the view of the casual observer. At KOP 1, implementation of the Mitchell would result in a minimal loss of the visual quality and scenic attributes of the landscape at KOP 1.

KOP 2

KOP 2 is at the same location as KOP 1, except the view is to the west along Dog Valley/Henness Pass Road. Five single power pole structures would be visible from KOP 2 in the foreground distance zone of the characteristic landscape. The existing distribution line pole would be replaced with a transmission line pole that is thicker and 40 to 60 percent taller. The proposed transmission line would increase the size and amount of some elements common to the landscape, however, the increase would be minimal and visually subordinate. The existing character of the landscape would be retained. Implementation of the Mitchell Alternative would maintain the of the visual quality and scenic attributes of the existing landscape at KOP 2.

KOP 3

KOP 3 is on Henness Pass/Dog Valley Road, looking northeast toward a ridge. The proposed transmission line would follow the ridge and parallel the existing #102 transmission line. Approximately four proposed power pole structures would be visible from KOP 3 in the middleground distance zone of the characteristic landscape. There would be little to no loss of trees because the wildland Crystal Fire burned the area as evidenced by the snags that have fallen. Two H-frame structures would be next to the existing transmission line that is similar in appearance and scale, creating only a slight degree of visual contrast. The proposed power pole structures and overhead conductors would repeat line, color, and texture elements found in the existing characteristic landscape. From KOP 3, the proposed project would not likely attract the attention of the casual observer and would generally be retained resulting in a negligible loss to visual quality and scenic attributes of the existing characteristic landscape at KOP 3.

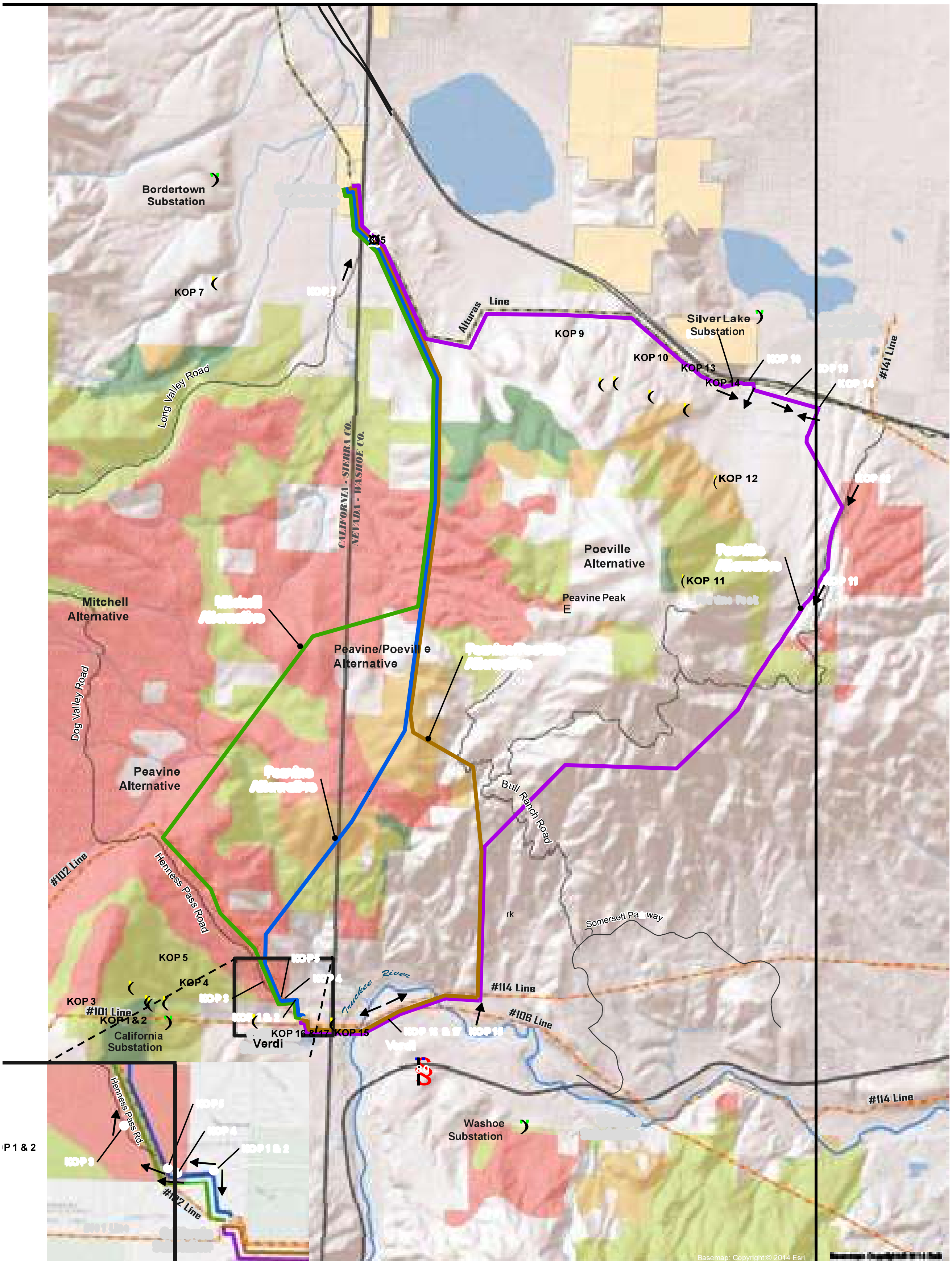
The foreground of the characteristic landscape visible from KOP 3 consists of NFS land that is mapped as Maximum Modification VQO. The degree of contrast that would be expected to result from implementation of the Mitchell Alternative would be consistent with the management goals and objectives of the Maximum Modification VQO (**Table 3.2-1**).

KOP 4

KOP 4 is on Henness Pass/Dog Valley Road, west of the Forest boundary, approximately 300 feet east of Sunrise Creek Road. At least two proposed H-frame pole structures, three existing H-frame pole structures of the #102 line, and approximately 200 hundred feet of overhead conductors would be visible in the foreground distance zone of the characteristic landscape. A stand of trees currently screening the existing #102 line would be removed, making both the existing #102 transmission line and proposed power line visible. The vicinity of KOP 4 is an entry point to NFS lands and the view from KOP 4 would be brief for those driving on the road and visible for a longer period by pedestrians or those who take a break at the Forest boundary.

The contrast created by the proposed power poles and conductors would be evident, although minimized to some degree because the existing trees contribute similar lines and colors and the conductor wires are thin. The visibility of the conductors would introduce straight, hard silhouette-lines against the backdrop of the sky. The thinness of the conductor wires would create minimal visual contrast.

The clearing of trees from the ROW area would create a greater visual contrast. The vertical line elements of individual tree trunks would be reduced when trees are removed. The exposure of the understory vegetation would increase the tan and brown colors and textures of the vegetation. The color and texture of understory shrubs and grasses are visible in many areas of the existing characteristic landscape. KOP 4 is located at the edge of forest cover, and there are a number of openings in the forest cover on either side of Henness Pass/Dog Valley Road. The removal of trees would not create a drastic corridor-effect that would otherwise result from removal of trees within interior areas of forest cover because openings in the forest already exist in this location.



Line Alternatives
KOP Locations + Direction
USFS Visual Quality Objective Designations
Retention
Partial Retention
Modification
Maximum Modification
Transmission Lines
kV Transmission Line
kV Transmission Line
BLM VRM Classes
Class III

FIGURE 3.2-3
VISUAL QUALITY OBJECTIVES & KOP LOCATIONS

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

1 " = 1 mile
0 0.5 1 2
Miles

The proposed project would introduce contrasting form, line, color, and texture elements to the characteristic landscape, the degree of contrast is reduced because there would not be a corridor effect. Its location is at the edge of forest cover, and there are other openings in the forest cover nearby. There would be minimal loss of the visual quality and scenic attributes of the landscape from the Mitchell Alternative.

The foreground and middleground distance zone of the landscape visible from KOP 4 consists of NFS land assigned Maximum Modification VQO. The degree of contrast that would be expected to result from implementation of the Mitchell Alternative are consistent with the management goals and objectives of the Maximum Modification VQO (**Table 3.2-1**).

KOP 5

KOP 5 is on Henness Pass/Dog Valley Road at the entry point to NFS lands. One proposed single pole structure would be visible in the foreground distance zone of the characteristic landscape.

The pole structure would introduce a bold vertical and horizontal line that is dark brown in color. New overhead conductors would introduce very thin, curvilinear lines. Trees in the foreground distance zone would be cleared from the ROW. The contrast created by the proposed power pole and conductors would be minimal because existing trees contribute similar lines and colors and the conductor wires area thin. A greater visual contrast would be created by the loss of trees in the cleared corridor. However, the contrast is reduced because KOP 5 is located at the edge of forest cover, and there are also a number of openings in the forest canopy on either side of Henness Pass/Dog Valley Road. Additionally, the color and texture of understory shrubs and grasses are visible in many areas of the existing characteristic landscape. The removal of trees would not create the corridor-effect that would otherwise result from removal of trees within interior areas of forest cover because openings in the forest already exist.

Although the proposed project would introduce contrasting form, line, color, and texture elements, the existing character of the landscape would be retained. Implementation of the Mitchell Alternative would be expected to result in a minimal loss of the visual quality and scenic attributes of the characteristic landscape at KOP 5.

The effects that would be expected from the implementation of the Mitchell Alternative would be consistent with management goals and objectives of the Maximum Modification VQO (**Table 3.2-1**).

KOP 7

KOP 7 is located on Long Valley Road/Forest Route 41192. Approximately one mile of transmission line, or potentially up to six or seven proposed H-frame power pole structures would be visible from KOP 7 in the foreground distance zone of the characteristic landscape. The proposed power pole structures would introduce thin, simple vertical lines that are dark brown or dark gray in color. There are several existing power pole structures visible in the foreground that contribute thin, simple vertical lines that are very similar to those that would be introduced by the proposed power pole structures. Because the introduced lines and existing lines of the pole structures would be so similar, the degree of contrast would not be substantial. The proposed overhead conductors are not likely to be visible due to the thinness of the conductors.

The degree of visual contrast would not attract the attention of the casual observer. The proposed power pole structures would repeat line, color, and texture elements found in the existing characteristic landscape. Implementation of the Mitchell Alternative would be expected to result in a minimal loss of the visual quality and scenic attributes of the existing characteristic landscape at KOP 7 and the existing character of the landscape would be retained.

Consistency with Visual Resources Management

The existing #102 transmission line crosses the area of Maximum Modification VQO located in California (within the Verdi and Southern sub-areas). The Mitchell Alternative would be located adjacent to and parallel with the existing transmission line. The elements that would be introduced by the proposed project would repeat those common to the characteristic landscape as a result of the existing transmission line. The corridor-shaped form element that would be introduced by removal of forest cover from the ROW area for the proposed transmission line would be very similar to the corridor-shaped form associated with the removal of forest cover that has occurred within the ROW area for the #102 transmission line. It would also be similar to the form element associated with an existing ROW for a buried gas pipeline near the #102 transmission line from which forest cover has also been removed. Repetition of elements common to the characteristic landscape would reduce the degree of contrast. The proposed project would not dominate the view of the casual observer.

The areas assigned Maximum Modification VQO that are located in Nevada and would be crossed by the Mitchell Alternative do not contain any existing overhead transmission lines or any other overhead utility lines. When the proposed transmission line is viewed in the foreground distance zone, the vertical lines associated with the proposed pole structures would repeat vertical lines associated with the trunks of conifer trees in the Maximum Modification VQO areas. Existing unpaved roads and trails have created corridor-like clearings through the forest cover. The removal of forest cover from the proposed ROW area would repeat elements associated with the removal of the forest cover from existing roads and trails. The section of the proposed transmission line located within these areas may attract the attention of the casual observer. However, because introduced elements would repeat elements that are found in the characteristic landscape of these areas, the proposed project would not be expected to dominate the view. Thus, implementation of the Mitchell Alternative would be consistent with the objectives of the Maximum Modification VQO (**Table 3.2-1**).

Three areas of Partial Retention VQO (within the Central sub-area) would be crossed by the Mitchell Alternative (**Figure 3.2-2**). Two areas are in California, between the state line and Henness Pass/Dog Valley Road, north of the California Substation. Neither area contains existing power lines or other constructed structures that would contribute line, color, and texture elements that are similar to the proposed project. Vegetation cover within both areas consists almost entirely of conifer forest. The vertical form and line elements that would be introduced by the proposed power pole structures would repeat the vertical line and form elements that the trunks of the conifer trees contribute to characteristic landscape. The dark brown color and matte appearance of the proposed pole structures would be similar to the color of the tree trunks. Removal of the forest cover from within the ROW area for the alignment would create a contrasting form element with a corridor-like shape. However, there are existing unpaved roads and trails in the area that resulted in linear clearings of forest cover. Removal of the forest cover for these roads and trails contributes form elements with a corridor-like shape that are similar to those that would be created by the proposed project. Considering that linear clearings through the forest exist in this area, and that the vertical forms and lines, and brown colors that would be introduced by the power pole structures would be similar to those of existing tree trunks, the proposed project would be visually subordinate to the characteristic landscape.

The third area of Partial Retention VQO is in Nevada, approximately 2.5 miles southeast of the Bordertown Substation. The characteristic landscape is similar to the California sites, except that the Alturas 345 kV transmission line is 0.9 mile away and contributes vertical form and line elements similar to the proposed transmission line. Additionally, tree cover is relatively sparse because the area was previously burned by the Green Gulch Fire. Tree clearing would not be extensive. Considering that linear clearings exist in this area, and that the vertical forms and the lines and brown colors that would be introduced by the power pole structures would be similar to those of existing tree trunks and the Alturas transmission line, the proposed project would be visually subordinate to the characteristic landscape. Additionally, design feature VI 2 below, would be implemented to minimize visual contrast:

VI 2. The number of new poles will be minimized by increasing the pole span length on NFS land where the area is designated as Partial Retention for VQO, as terrain allows.

The Mitchell Alternative would be consistent with the goals and objectives of the Partial Retention VQO.

The proposed transmission line would be located adjacent to and roughly parallel with the existing Alturas 345 kV transmission line where the Mitchell Alternative would cross the BLM VRM Class III area (Bordertown sub-area). The Alturas 345 kV transmission line contributes form, line, color, and texture elements to the characteristic landscape that would be repeated by the proposed project. Because the proposed transmission line would repeat elements found in the characteristic landscape, the resulting degree of contrast would be minimal and would not dominate the view of the casual observer. Any roads or routes or other clearings created during construction of the proposed project would introduce elements that repeat those found in the characteristic landscape from existing unpaved roads that cross the BLM VRM Class III area. Improvements to the Bordertown Substation would repeat elements that currently exist at the substation and would not attract the attention of casual observers. Implementation of the Mitchell Alternative would be consistent with BLM VRM Class III objectives.

Residences within Close Proximity

Implementation of the Mitchell Alternative would locate the proposed transmission line within 0.25 mile of 25 residences. All 25 residences are located in the Verdi community, within relatively close proximity to the California Substation.

Forest Vegetation Community Clearing Effects

Approximately 41.8 acres of forested community would be removed within the transmission line clearance area of the Mitchell Alternative.

3.2.4.4 Peavine Alternative

Visual Quality and Scenic Attribute Effects

The KOPs that were selected to analyze the visual impacts of the Peavine Alternative are the same as those that were selected for the Mitchell Alternative:

- KOP 1 (California Substation – South);
- KOP 2 (California Substation – West);
- KOP 3 (Henness Pass/Dog Valley Road);
- KOP 4 (Forest Boundary – West);
- KOP 5 (Forest Boundary); and
- KOP 7 (Forest Road 41192 – North).

The sections of the Peavine Alternative that would be visible from KOP 1 through KOP 5 and KOP 7 are identical to the sections of the Mitchell Alternative that would be visible from these KOPs. Thus, the proposed transmission line would appear identical from each of these KOPs regardless of the potential implementation of the Peavine Alternative or the Mitchell Alternative. Because the proposed transmission line would appear identical, the visual simulations prepared for these KOPs are applicable to both the Mitchell Alternative and the Peavine Alternative. The visual contrasts and effects that the Peavine Alternative would have on the characteristic landscape of KOP 1 through KOP 5 and KOP 7 during construction and operation and maintenance are the same as those that would result from the Mitchell Alternative. These contrasts and effects are described in **Section 3.2.4.2**.

Consistency Visual Resources Management

The VQOs that have been assigned to the NFS land that would be crossed by the Peavine Alternative include Maximum Modification, Modification, and Partial Retention (**Figure 3.2-2**). The BLM-administered public lands that would be crossed by the Peavine Alternative are designated as VRM Class III. The proposed improvements at the Bordertown Substation would also occur on BLM-administered public lands that are designated as VRM Class III.

The proposed power pole structures would introduce tall, vertical lines with smooth to indistinct textures to these areas. The proposed overhead conductors would introduce curvilinear lines with no distinct texture that are gray in color. Removal of forest cover from within the proposed ROW area would introduce contrasting form, line, color, and texture elements as well. The contrast created by these introduced elements would be consistent with the objectives of the Maximum Modification, Modification, and Partial Retention VQOs, as well as the VRM Class III objectives. Most of the NFS land that would be crossed where Maximum Modification and Modification VQOs occur (Central sub-area) contains similar form, line, color, and texture elements as those that would be introduced by the proposed project.

The Peavine Alternative crosses two areas mapped as Partial Retention VQO (Central sub-area) (**Figure 3.2-2**). The first area is located approximately 2.5 miles southeast of the Bordertown Substation in Nevada. It is the same area crossed by the Mitchell Alternative. The visual contrast and effects are described in **Section 3.2.4.2**. Considering that linear clearings exist in this area, and that the vertical forms and the lines and brown colors that would be introduced by the power pole structures would be similar to those of existing tree trunks and the Alturas transmission line, the proposed project would be visually subordinate to the characteristic landscape.

The second Partial Retention VQO area is west of and adjacent to Dog Creek, north of Verdi, Nevada (**Figure 3.2-2**). The area also does not contain any existing power lines or other constructed structures that would contribute line, color, and texture elements that are similar to the proposed project. There are existing overhead utility lines within view of some locations within this area that contribute elements to the characteristic landscape that are similar to the elements that would be introduced by the proposed project. Vegetation cover within this area consists almost entirely of conifer forest. The vertical form and line elements that would be introduced by the proposed power pole structures would repeat the vertical line and form elements that the trunks of the conifer trees contribute to characteristic landscape. The dark brown color and matte appearance of the proposed pole structures would be similar to the color of the tree trunks. Removal of the forest cover from within the ROW area for the alignment would create a contrasting form element with a corridor-like shape. There are existing unpaved roads and trails in the area that resulted in linear clearings of forest cover. Removal of the forest cover for these roads and trails contribute form elements with a corridor-like shape that are similar to those that would be created by the proposed project. Considering that linear clearings through the forest exist in this area, and that the vertical forms and lines, and brown colors that would be introduced by the power pole structures would be similar to those of existing tree trunks and power poles within view, the proposed project would be visually subordinate to the characteristic landscape. To ensure that the visual contrast introduced by the Peavine Alternative within Partial Retention is minimized, the alternative includes design feature VI 2 which requires that the number of new poles be minimized by increasing the pole span length on NFS land, as terrain allows. The Peavine Alternative would be consistent with the goals and objectives of the Partial Retention VQO.

Residences within Close Proximity

Implementation of the Peavine Alternative would locate the proposed transmission line within 0.25 mile of 25 residences. All 25 residences are located in the Verdi community, within relatively close proximity to the California Substation.

Forest Vegetation Community Clearing Effects

Approximately 21.4 acres of forested community would be removed within the transmission line clearance area of the Peavine Alternative.

3.2.4.5 Poeville Alternative

Visual Quality and Scenic Attribute Effects

The KOPs that were selected to analyze the visual impacts of the Poeville Alternative include:

- KOP 9 (Peavine Ranch);
- KOP 10 (Peavine Ranch – Southwest);
- KOP 11 (Peavine Road);
- KOP 12 (Stead Trailhead);
- KOP 13 (Trail Drive – East);
- KOP 14 (Trail Drive – West);

- KOP 15 (Truckee River Bridge);
- KOP 16 (Verdi Library Parking Lot – West); and
- KOP 17 (Verdi Library Parking Lot – East).

KOP 9

KOP 9 is adjacent to the Peavine Ranch and view is the east. The existing distribution line poles would be replaced by thicker transmission line poles that are approximately 20 percent to 40 percent taller. The conductors of the existing distribution line would be attached to the proposed pole structures as an under-build. From KOP 9, two proposed power pole structures would be visible in the foreground distance zone of the characteristic landscape. The vertical lines created by the existing poles would be replaced by taller, darker, and slightly thicker vertical lines. The vertical lines would be bold and distinct because their matte brown color would contrast against the light hues of green, tan, brown of the vegetation cover in the middleground distance zone. Additionally, because the proposed pole structures would be taller, a greater length of the pole would be viewed against the backdrop of the sky, which would also increase contrast.

The Alturas 345 kV transmission line is also visible in the foreground distance zone. The color of the Alturas 345 kV line poles are similar to the color of the proposed structures, but are almost twice as tall. The presence of the Alturas line in the characteristic landscape reduces the degree of contrast that would be introduced by the proposed pole structures.

Most of the elements that would be introduced during operation and maintenance of the proposed project would repeat form, line, color, and texture elements that are common to the characteristic landscape. The repetition of elements common to the characteristic landscape would reduce the degree of contrast that the proposed project would have. Although the proposed project may increase the size and amount of some elements common to the characteristic landscape, the increase would be minimal and visually subordinate. The proposed project would not be expected to dominate the view of casual observers and the loss of the visual quality and scenic attributes of the characteristic landscape at KOP 9 would be minimal.

KOP 10

KOP 10 is also adjacent to Peavine Ranch, except the view is to the southwest. Two existing distribution line poles would be replaced by thicker transmission line poles that are approximately 40 percent to 60 percent taller. The conductors of the existing distribution line would be attached to the proposed pole structures as an under-build. Implementation of the Poeville Alternative would be expected to result in a moderate loss of the visual quality and scenic attributes of the characteristic landscape at KOP 10. Although there are form, line, color, and texture elements visible in the characteristic landscape that would be repeated by the proposed project, the number of these elements visible would increase substantially. Additionally, many of the line and color elements that are unlike those that would be viewed against the backdrop of the middle ground. The middle ground is characterized by line an color elements that are unlike those that would be introduced by the project. The proposed project may attract the attention of the casual observer, but would be expected to remain visually subordinate to the landscape. size and amount of some elements common to the characteristic landscape, the increase.

The foreground of the characteristic landscape, which would be crossed by the Poeville Alternative, consist of private and NFS land. NFS land has not been assigned a VQO.

KOP 11

KOP 11 is located on Peavine Road, view is southwest. The proposed pole structures would replace the existing distribution line pole structures, with the conductors of the distribution line attached to the new structures as an under-build. Up to at least five proposed power pole structures would be visible from KOP 11 in the foreground and middleground distance zones of the characteristic landscape. There would be additional pole structures in the background distance zone, but the visual simulation suggests that these structures would not be readily visible from this KOP location.

The proposed pole structures would be slightly thicker and approximately 40 percent to 60 percent taller than the existing pole structures. The color of the proposed pole structures would be matte brown, which is similar to the color of the existing poles. The proposed power pole structures would introduce thin, simple vertical lines. Most of the elements that would be introduced would repeat form, line, color, and texture elements that are common to the characteristic landscape of KOP 11. For this reason, the degree of contrast that the proposed project would have with the characteristic landscape would be reduced and the increase would be minimal and visually subordinate. The proposed project would not be expected to attract the attention of, or dominate the view of the casual observer. Loss of the visual quality and scenic attributes of the characteristic landscape at KOP 11 would be minimal.

The background distance zone that would be crossed by the Poeville Alternative consists of NFS land mapped as Partial Retention VQO. The degree of contrast that would be expected to result from implementation of the Poeville Alternative would be consistent with the management goals and objectives of the Partial Retention VQO (**Table 3.2-1**).

KOP 12

KOP 12 is at the Stead Trailhead off of Peavine Road, view is southwest. Potentially up to two proposed power pole structures would be visible from KOP 12 in the middleground distance zone of the characteristic landscape. The proposed pole structures would replace the existing pole structures that are currently used for a distribution power line. The conductors of the distribution line would be attached to the new structures as an under-build. Based on the visual simulation, the new poles would be far away, and consequently, appear the same height, diameter, and color as the existing pole structures. The proposed pole structures would not introduce any new form, line, color, or texture elements to the characteristic landscape. The degree of contrast of the characteristic landscape from the proposed project would be negligible because the proposed pole structures would not introduce any new form, line, color, or texture elements. The Poeville Alternative is expected to have negligible impacts to the visual quality and scenic attributes of the existing landscape.

The middleground of the characteristic landscape, which would be crossed by the Poeville Alternative, consist of NFS land that has not been assigned a VQO.

KOP 13

KOP 13 is located on Trail Drive, view is looking east. Three proposed power pole structures are visible in the foreground distance zone of the characteristic landscape. The proposed pole structures would replace the existing distribution line pole structures, with the conductors of the distribution line attached to the new structures as an under-build. The new poles would be approximately 40 percent to 60 percent taller than the existing structures. Noticeable changes may include slight variations in the color of the lines formed by the power pole structures, and an increase in the length of the vertical lines. Existing pole structures associated with the Alturas 345 kV transmission line and other distribution power lines visible from KOP 13 also contribute thin, vertical lines to the characteristic landscape. These elements are similar to those that would be introduced by proposed structures.

The degree of contrast that the proposed project would have with the characteristic landscape would be minor because the form, line, color, or texture elements introduced by the proposed project would repeat elements found in the characteristic landscape. Implementation of the Poeville Alternative would result in a minimal loss of the visual quality and scenic attributes of the existing characteristic landscape at KOP 13.

KOP 14

KOP 14 is located at the east end of Trail Drive and approximately 500 feet south of North Virginia Street, looking to the west. Up to four proposed power pole structures would be visible in the foreground distance zone of the characteristic landscape. The proposed pole structures would approximately 40 percent to 60 percent taller than the existing structures and would replace existing distribution line pole structures, with the conductors of the distribution line attached to the new pole structures as an under-build.

Similar to KOP 13, the noticeable changes that would result from replacement of existing pole structures are slight variations in the color of the lines formed by the new structures and an increase in the length of the vertical lines. Existing pole structures of the Alturas 345 kV transmission line and other distribution power lines visible from KOP 14 also contribute thin, vertical lines to the characteristic landscape that are similar to those that would be introduced by the proposed structures. The degree of contrast would be minimal because the line, color, and texture elements that would be introduced by proposed pole structures would be similar to and repeat elements create by existing pole structures in the characteristic landscape.

The proposed project may increase the size and amount of some elements common to the characteristic landscape, however the increase would be minimal and visually subordinate. The proposed project would not be expected to attract the attention of, or dominate the view of the casual observer. Loss of the visual quality and scenic attributes of the characteristic landscape at KOP 14 would be minimal.

KOP 15

KOP 15 is near a bridge over the Truckee River, view is looking north. Two proposed H-frame pole structures would be visible in the middleground and up to four H-frame structures would be visible in the background distance zone of the characteristic landscape of KOP 15. The proposed pole structures would introduce thin, vertical lines that are simple and continuous and would be consistent with the existing structures in the area, as the existing #632 line would be replaced with the proposed project. In the middleground distance zone, the color would appear as dark brown against the backdrop of the tan vegetation in the background. In the background distance zone, the vertical lines would not be noticeable to the casual observer because the poles would appear tan to light brown and similar to the color of the surrounding vegetation.

Existing power pole structures in the middleground distance zone and dark green fence posts in the foreground distance zone contribute simple vertical lines to the landscape. The lines are similar to those introduced by the proposed project and reduce the degree of visual contrast. Most of the form, line, color, and texture elements that would be added from the proposed project would repeat elements that are common to the characteristic landscape of KOP 15. The proposed project may increase the size and amount of some elements common to the landscape; however, the increase would be minimal and visually subordinate. The proposed project would not be expected to attract the attention of or dominate the view of the casual observer. Implementation of the Poeville Alternative would result in a minimal loss of the visual quality and scenic attributes of the landscape at KOP 15.

KOP 16

KOP 16 is located at the parking lot of the Verdi Public Library, and is approximately 200 feet east of Bridge Street, view is to the west. One proposed H-frame power pole structure would be visible in the foreground distance zone of the characteristic landscape which would replace the existing H-frame pole structure of the inactive #632 power line in the same location with a similar H-frame structure. The color of the proposed pole structure would be dark brown and matte, which is similar to the dark brown color of the existing pole structure. Slight variations in the color and minor increase in the height of the vertical lines are the only noticeable changes that would result from replacement of existing pole structure with the proposed structure.

The degree of contrast that the proposed project would have with the landscape would be the same as that which currently exists because elements added by the proposed project would repeat elements common to the landscape in the same location. The proposed project would not be expected to attract the attention of, or dominate the view of the casual observer and would result in minimal change to the visual quality and scenic attributes of the landscape at KOP 16 through Verdi. Loss of the visual quality and scenic attributes of the landscape at KOP 16 would be negligible.

KOP 17

KOP 17 is at the same location as KOP 16, except the view is to the east. Two proposed H-frame pole structures would replace the existing structures of the #632 line in the same location. The poles would be visible in the foreground distance zone of the characteristic landscape. As described for KOP 16, the proposed structures would be slightly taller than the existing pole structures. Slight variations in the color of the lines formed by the power pole structures, and minor increase in the height of the vertical lines are the only noticeable changes that would result from replacement of existing pole structures with proposed structures.

The degree of contrast that the proposed project would have with the landscape would be negligible because elements added by the proposed project would repeat elements common to the landscape in the same location. The proposed project would not be expected to attract the attention of, or dominate the view of the casual observer and implementation of the Poeville Alternative would result in a negligible loss of the visual quality and scenic attributes of the landscape at KOP 17.

Consistency with Visual Resource Management

The VQOs that have been assigned on NFS land crossed by the Poeville Alternative include Modification, Partial Retention, and a very small area of Maximum Modification (**Figure 3.2-2**). The BLM-administered public lands that would be crossed by the Poeville Alternative are designated as VRM Class III. The proposed improvements at the Bordertown Substation would also occur on BLM-administered public lands that are assigned as VRM Class III.

The area of NFS land assigned as Modification (Peavine sub-area) that would be crossed by the Poeville Alternative is also crossed by the existing Alturas 345 kV transmission line and North Virginia Street. These existing features contribute form, line, color, and texture elements to the characteristic landscape that would be repeated by the proposed project. Repetition of elements common to the characteristic landscape would reduce the degree of contrast that the proposed project would have, and would prevent the proposed project from dominating the view of the casual observer. The visual characteristics of the proposed project would be compatible with the natural surroundings because it would repeat elements common to the characteristic landscape that surrounds it. Accordingly, implementation of the Poeville Alternative would be consistent with the objectives of the Modification VQO.

The area of NFS land assigned Partial Retention VQO (Poeville sub-area) crossed by the Poeville Alternative appears in the background zone of the characteristic landscape of KOP 11. As discussed in the analysis of potential impacts at KOP 11, form, line, color, and texture elements that would be introduced by the proposed project would repeat those found in the existing characteristic landscape. The proposed pole structures would replace existing pole structures that are associated with an existing overhead distribution power line. The vertical line elements that existing pole structures contribute to the characteristic landscape would increase in length when replaced with the proposed pole structures. However, the change in the size of elements resulting from the replacement of existing pole structures with proposed structures would be minimal and visually subordinate within the characteristic landscape.

The overhead conductors of the existing overhead distribution power line contributes thin curvilinear lines to the characteristic landscape. The proposed conductors would add additional curvilinear lines to the characteristic landscape that are essentially identical in appearance and roughly parallel with the existing conductors. Because the proposed conductors would repeat elements found in the characteristic landscape, the resulting degree of contrast would be minimal and visually subordinate.

The objectives of the Partial Retention VQO indicate that activities and actions should remain visually subordinate to the characteristic landscape. Activities and actions may repeat form, line, color, or texture common to the characteristic landscape, but changes in their qualities of size, amount, intensity, direction, and so forth, should remain visually subordinate to the characteristic landscape (**Table 3.2-1**). Because the proposed project would repeat elements found in the area of the Partial Retention VQO that would be crossed by the Poeville Alternative, and changes in the size and amount of the elements would remain visually subordinate, implementation of the Poeville Alternative would be consistent with the objectives of the Partial Retention VQO.

The BLM VRM Class III objectives are to partially retain the existing character of the landscape. Activities in areas of VRM Class III may attract attention but should not dominate the view of the casual observer, and changes should repeat basic elements found in the predominant natural features of the characteristic landscape (**Table 3.2-2**).

The proposed transmission line would be located adjacent to and roughly parallel with the existing Alturas 345 kV transmission line where the Poeville Alternative would cross the BLM VRM Class III area (**Figure 3.2-2**). The Alturas 345 kV transmission line contributes form, line, color, and texture elements to the characteristic landscape that would be repeated by the proposed project during operation and maintenance. Because the proposed transmission line would repeat elements found in the characteristic landscape, the resulting degree of contrast would be minimal and would not dominate the view of the casual observer. Any roads or routes or other clearings created during construction of the proposed project would introduce elements that repeat those found in the characteristic landscape from existing unpaved roads that cross the BLM VRM Class III area. Improvements to the Bordertown Substation would repeat elements that currently exist at the substation and would not attract the attention of casual observers. Implementation of the Poeville Alternative would be consistent VRM Class III objectives.

Residences within Close Proximity

Implementation of the Poeville Alternative would locate the proposed transmission line within 0.25 mile of 245 residences. Of the 245 residences, 134 would be located within 0.25 mile of the segment of the Poeville Alternative that would replace the existing inactive #632 distribution line in its exact location through Verdi. Thus, the Poeville Alternative would have minimal visual impacts on these 134 residences despite their proximity to the proposed transmission line. The remaining 111 residences are located near North Virginia Street and Trail Drive.

Forest Vegetation Community Clearing Effects

Approximately 2.9 acres of forested community would be removed within the transmission line clearance area of the Poeville Alternative.

3.2.4.6 Peavine/Poeville Alternative

The following KOPs were selected to analyze the visual impacts of the Peavine/Poeville Alternative:

- KOP 7 (Forest Road 41192 – North);
- KOP 15 (Truckee River Bridge);
- KOP 16 (Verdi Library Parking Lot – West); and
- KOP 17 (Verdi Library Parking Lot – East).

The section of the Peavine/Poeville Alternative that would be visible from KOP 7 is identical to the section of the Mitchell Alternative that would be visible from KOP 7. Thus, the proposed transmission line would appear identical from KOP 7 regardless of the potential implementation of the Peavine/Poeville Alternative or the Mitchell Alternative. Because the proposed transmission line would appear identical, the visual simulation prepared for KOP 7 is applicable to the Peavine/Poeville Alternative and the Mitchell Alternative. The visual contrasts and effects that the Peavine/Poeville Alternative would have on the landscape of KOP 7 during construction and operation and maintenance are the same as those that would result from the Mitchell Alternative. These contrasts and effects are described in **Section 3.2.4.2**.

The section of the Peavine/Poeville Alternative that would be visible from KOP 15, KOP 16, and KOP 17 is identical to the section of the Poeville Alternative that would be visible from these KOPs. Thus, the proposed transmission line would appear identical from these KOPs regardless of the potential implementation of the Peavine/Poeville Alternative or the Poeville Alternative. Because the proposed transmission line would appear identical, the visual simulations prepared for these KOPs are applicable to the Peavine/Poeville Alternative and the Poeville Alternative. The visual contrasts and effects that the Peavine/Poeville Alternative would have on the landscape of KOP 15, KOP 16, and KOP 17 during construction and operation and maintenance are the same as those that would result from the Poeville Alternative. These contrasts and effects are described in **Section 3.2.4.4**.

Consistency with Visual Resources Management

The VQOs that have been assigned to NFS land that would be crossed by the Peavine/Poeville Alternative include Maximum Modification, Modification, and Partial Retention (**Figure 3.2-2**). The BLM-administered public lands that would be crossed by the Peavine/Poeville Alternative are assigned as VRM Class III. The proposed improvements at the Bordertown Substation would also occur on BLM-administered public lands that are assigned as VRM Class III.

The areas assigned Maximum Modification and Partial Retention VQO that would be crossed by this alternative are the same areas that also would be crossed by the Mitchell and Peavine alternatives. The area assigned as Modification that would be crossed by the Peavine/Poeville Alternative would also be crossed by the Peavine Alternative. The proposed transmission line would appear identical in these areas regardless of the implementation of this alternative or the Mitchell and Peavine alternatives.

The Partial Retention VQO crossed by the Peavine/Poeville Alternative is located approximately 2.5 miles southeast of the Bordertown Substation in Nevada. The visual contrasts and effects are described in **Section 3.2.4.2.** There are linear clearings that exist in this area, and that the vertical forms and the lines and brown colors that would be introduced by the power pole structures would be similar to those of existing tree trunks and the Alturas transmission line. The proposed project would be visually subordinate to the characteristic landscape. To minimize the visual contrast introduced by the Peavine/Poeville Alternative within Partial Retention, the alternative includes design feature VI 2 which requires that the number of new poles to be minimized by increasing the pole span length on NFS land, as terrain allows. The Peavine/Poeville Alternative would be consistent with the goals and objectives of the Partial Retention VQO.

The BLM VRM Class III area that would be crossed by the Peavine/Poeville Alternative is the same area that would be crossed by the Mitchell, Peavine, and Poeville alternatives. The proposed transmission line would appear identical within the BLM VRM Class III area regardless of the potential implementation of this alternative or the other action alternatives. Improvements to the existing Bordertown Substation would also appear identical under any of the action alternatives. Thus, like the other action alternatives, the Peavine/Poeville Alternative would be consistent with VRM Class III objectives.

Residences within Close Proximity

Implementation of the Peavine/Poeville Alternative would locate the proposed transmission line within 0.25 mile of 134 residences. All of the residences are in Verdi, where the Peavine/Poeville Alternative would replace the existing inactive #632 distribution line in its exact location. Thus, the Peavine/Poeville Alternative would have minimal visual effects on these 134 residences despite their proximity to the proposed transmission line.

Forest Vegetation Community Clearing Effects

Approximately 12.1 acres of forested community would be removed within the transmission line clearance area of the Peavine/Poeville Alternative.

3.2.4.7 Cumulative Effects

The existing visual character of the project area described for each alternative (**Section 3.2.3**) generally describes the current landscapes within the visual resources CIAA. Present actions which have affected visual resources include existing transmission lines and utility lines (e.g., pipelines); maintenance and use of existing transportation network (roads and trails), urban development, livestock grazing, mining, and resource management activities. Reasonably foreseeable future actions within the CIAA include resource management activities and the Stonegate Master Plan Development.

Visual resources have been less affected from resource management activities than other present actions because forest thinning and other vegetation treatments appear to be more natural than roads, urban development, mining, and utility lines. Reasonably foreseeable future resource management activities may continue to contribute to this effect, as forest thinning and other vegetation management treatments are proposed within the CIAA. The Stonegate Master Plan Development would be expected to contribute additional structures and roads to the CIAA. Visual contrast would generally be low because of the number of existing structures and roads present in the CIAA.

The incremental impacts on visual resources from any of the action alternatives would have a negligible cumulative impact. The cumulative impact would be negligible because the proposed transmission line would be located within landscapes that are generally characterized by some degree of alteration from present actions. Present actions, especially existing power lines would reduce the degree of contrast that the proposed pole structures and overhead conductors would have within the landscape.

3.3 LAND USE AND PRIVATE PROPERTY

3.3.1 Issue Statement

The presence of a new transmission line adjacent to or crossing private land may reduce private property values.

a. Issue measured by: Number of private property parcels crossed by the proposed transmission line ROW/easement.
b. Issue measured by: Estimated depreciation of property value.
c. Issue measured by: Consistency with local land use plans.

3.3.2 Regulatory Framework

3.3.2.1 NFS Land

The NFS land within the analysis area is part of the Humboldt-Toiyabe National Forest and is managed under the Forest Plan (USFS 1986). The Forest Plan list following goals and desired future conditions applicable to the analysis area are listed in the Forest Plan specifically for lands and special uses:

- Use and occupancy of the National Forest will be provided when it is consistent with management area objectives, is in the public interest, and when it cannot reasonably be served by development on private land (page IV-8);
- Sufficient access will be provided for public use and resource management of the National Forest (page IV-8);
- Issuance of SUPs will be limited to those cases which serve the public need and which cannot reasonably be met on private lands. Priority will be given to special uses which maximize public benefits including energy related uses. Any necessary mitigating measures will be incorporated into permits (page IV-62);
- Manage all utility, road, and transmission corridors in accordance with plans and permits issued for their construction and use. When applications for utility ROW are received, the first priority will be to utilize existing corridors (page IV-62);
- NFS land will not be available for uses that can be accommodated on private land (page IV-62); and
- An environmental analysis will be required prior to adding new facilities to existing corridors. The integrity of visual quality for the corridor will be maintained to the highest standard to minimize adverse resource and environmental impacts. Any new utility corridor not identified in the Forest Plan will be handled through the NEPA process (page IV-62).

3.3.2.2 BLM-Administered Public Land

BLM-administered public land within the analysis area is managed in accordance with the Eagle Lake RMP (BLM 2008b). Some goals and policies that the RMP lists regarding land use and ROW grants and that area specifically applicable to the proposed project include:

- New ROW would be located within or adjacent to existing ROW, to the extent that is practicable, in order to minimize adverse environmental impacts;
- Utility corridors included in the Western Regional Corridor Study will be available for ROW development, unless environmental analysis reveals the likelihood of significant adverse impacts on other resources. The Western Regional Corridor Study (Michael Clayton and Associates 1992) identifies the Alturas 345 transmission line alignment as an appropriate corridor for future utility ROW development. The corridor is also designated as a Section 368 energy corridor (West-Wide Energy Corridor) (U.S. Department of Energy 2008). Transmission lines of 69 kV or greater and pipelines 10 inches in diameter or greater would be located within these corridors. Corridor width would be a maximum

of 2,000 feet (1,000 feet on either side of centerline), unless adjacent to an exclusion area; and

- Additional corridors may be designated as future needs dictate, subject to onsite environmental reviews and clearances.

3.3.2.3 Section 368 Energy Corridor

Per Section 368 of the Energy Policy Act of 2005, energy corridors were designated on federal land as locations preferred by federal land management agencies for future energy transport projects. Placement of a transmission facility within a designated Section 368 energy corridor generally expedites the environmental review of right-of-way applications, although compliance with NEPA and other relevant laws is still required. Within the analysis area, a corridor centered on the Alturas 345 kV transmission line is a designated Section 368 energy corridor where it overlaps public land.

3.3.2.4 Private Land

Sierra County General Plan

The 2012 Sierra County General Plan was adopted in 1996. The purpose of the General Plan is to protect Sierra County's existing qualities and address local concerns as Sierra County grows (Sierra County 1996). Essentially, the plan policies and measures require minimization of new transmission lines, or that they are efficiently located, preferably within existing ROW, that the CPUC (and other permitting authorities) ask all transmission line applicants to first obtain a preliminary approval of the proposed alignment from the County, and acquire other permits such as conditional permits. In the event that new transmission lines cannot be located to follow existing ROW, a conditional use permit may be issued, and an amendment of the Sierra County Zoning Ordinance (Sierra County 2012) may be required.

Washoe County Master Plan and Development Code

The Washoe County Master Plan sets goals, policies, and action items to guide location and use of land and transportation systems within Washoe County (Washoe County 2011). The Washoe County Master Plan includes various Area Plans to provide guidance for development intensity and character within these specific regions. Two Area Plans provide guidance for development for the portions of Washoe County within the analysis area: the North Valleys Area Plan and the Verdi Area Plan. The North Valleys Area Plan (Washoe County 2010a) provides the following policy statement relating to transmission lines:

> "With the exception of temporary infrastructure for construction projects, Washoe County will require the underground placement of utility distribution infrastructure within the North Valleys Management Area. Utility transmission facilities will be subject to a special use permit."

According to the Washoe County Development Code (2013b), a SUP is required for all utility services.

City of Reno Master Plan and Annexation and Land Development Code

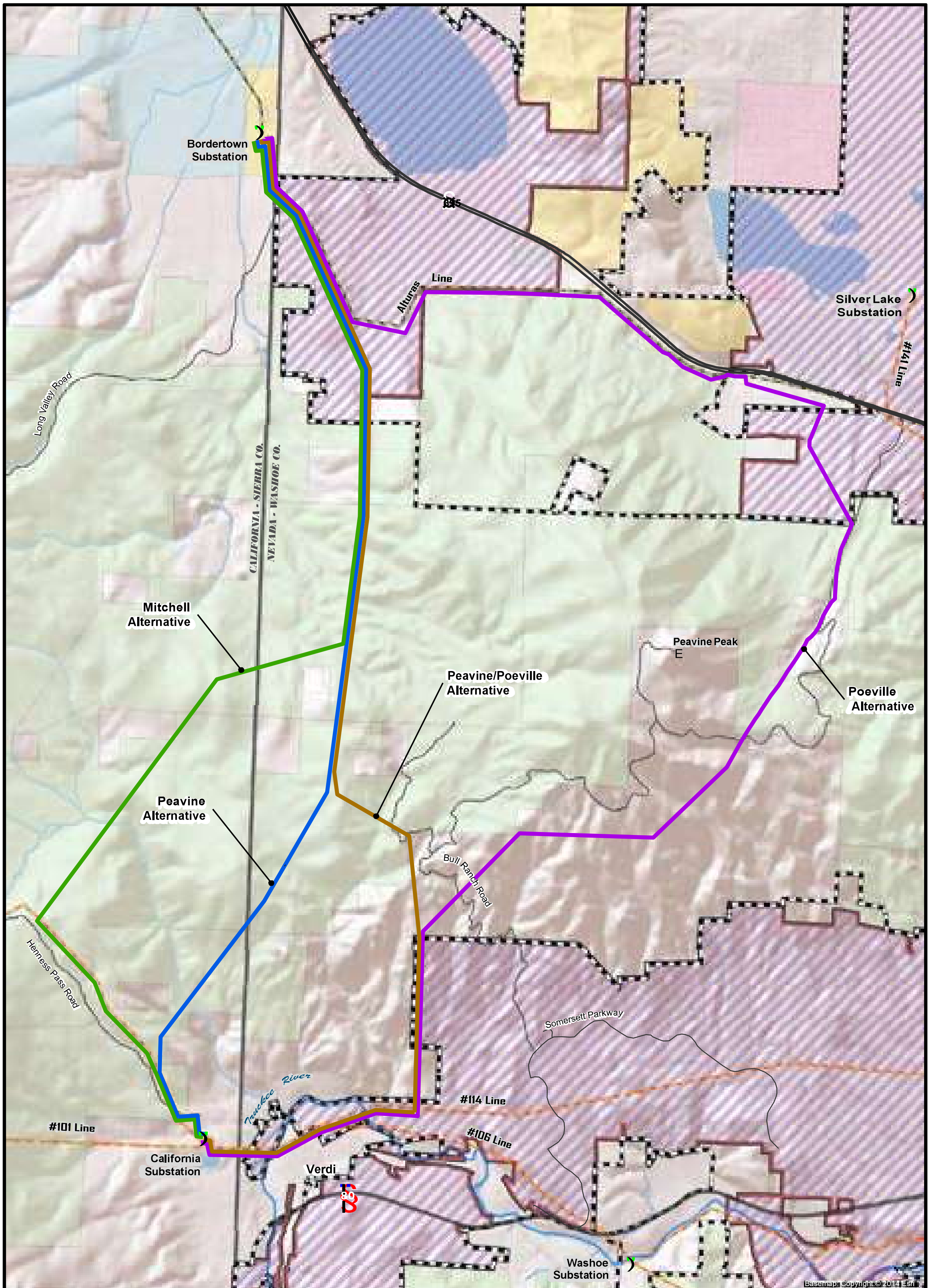
Portions of the analysis area are located in unincorporated Washoe County within the City of Reno Sphere of Influence (SOI), with some areas annexed to the city of Reno and within the city limits (**Figure 3.3-1**). The Reno SOI is the area surrounding the city of Reno limits that is planned for annexation within 20 years. A SUP is required for the establishment of major utility services in the city of Reno limits or SOI.

Development on private land within the city of Reno SOI, or within the city of Reno limits requires compliance with the City of Reno Master Plan (2012) and the City of Reno Annexation and Land Development Code (2005).

2012 Truckee Meadows Regional Plan

Both Washoe County and the City of Reno must show Master Plan compliance with the 2012 Truckee Meadows Regional Plan, which was adopted in 2013 and is implemented by the TMRPA. All projects of regional significance within Washoe County or the city of Reno must receive approval from the TMRPA in order to confirm compliance with the Truckee Meadows Regional Plan (Nevada Revised Statutes [NRS] 278.026). Pursuant to NRS 278.026, a transmission line that carries 60 kV or more is considered a project of regional significance. Stated goals and policies of the Truckee Meadows Regional Plan relating to land use authorizations and applicable to the proposed project include:

- The Truckee Meadows Regional Plan will establish, maintain, promote the use of, and protect the future expansion of identified utility corridors and sites for the transmission of electricity and promote the use of these corridors for the placement of other utilities;
- The removal of existing, or establishment of new utility corridors and sites from those shown in the Truckee Meadows Regional Plan requires an amendment of the Plan;
- To be in conformance with the Truckee Meadows Regional Plan, local-government master plans must require that proponents of utility projects, including private developers, NV Energy, or other multi-state utility-related entities, place new electrical transmission infrastructure in existing utility corridors, unless adequate justification can be provided that demonstrates why the new infrastructure cannot be placed in an existing corridor;
- To be in conformance with the Truckee Meadows Regional Plan, local-government master plans must use the following priority hierarchy for the placement of new above ground and underground electrical transmission infrastructure:
    - Locate new above ground or underground transmission infrastructure in an existing corridor that already contains above ground transmission infrastructure, without expanding the corridor width;
    - Locate new above ground or underground transmission infrastructure in either a federally designated corridor (i.e. BLM corridor) or an easement that has an approved preliminary or final EIS;
    - Locate new above ground or underground transmission infrastructure in an existing corridor that already contains above ground transmission infrastructure, but with an expanded corridor width;



Transmission Line Alternatives

Mitchell

Peavine

Poeville

Peavine/Poeville

120 kV Transmission Line

345 kV Transmission Line

Reno Shere of Influence

City of Reno

Land Ownership

Bureau of Land Management

California Department of Fish and Game

Department of Defense

U.S. Forest Service

FIGURE 3.3-1

RENO SPHERE OF INFLUENCE

BORDERTOWN TO CALIFORNIA 120 kV TRANSMISSION LINE EIS

1 in = 4,500 feet

0 2,250 4,500 9,000 Feet

- Request the creation of a new corridor based on the route of an existing above ground distribution line;
- Locate new above ground transmission infrastructure within an existing corridor that already contains underground transmission infrastructure, without expanding the corridor width;
- Locate new above ground transmission infrastructure within an existing corridor that already contains underground transmission infrastructure, but with an expanded corridor width; and
- Request the creation of a new corridor for the placement of new transmission infrastructure where no utility infrastructure currently exists.

- To be in conformance with the Truckee Meadows Regional Plan, local-government master plans must preserve the viability of existing and future utility corridors and sites to accommodate new or expanded infrastructure by:
  - Requiring a minimum setback of 10 feet on each side of existing regional utility corridors within which structures approved after August 12, 2010, are prohibited.

- To be in conformance with the Truckee Meadows Regional Plan, local-government master plans must ensure the edge of an easement associated with a new or expanded above ground or underground electrical transmission line is a minimum of 10 feet from existing structures.

3.3.3 Affected Environment

3.3.3.1 Land Use and Ownership

All action alternatives would cross public land as well as private land (**Figure 3.3-1**). The acres and associated percentages of NFS land, BLM-administered public land, and private land within the proposed ROW/easement of each action alternative is presented in **Table 3.3-1**.

Table 3.3-1 Land Administration/Ownership within ROW/Easement

ALTERNATIVE	USFS		BLM		PRIVATE LAND		TOTAL AREA OF ROW/EASEMENT (ACRES)
	ACRES	PERCENT	ACRES	PERCENT	ACRES	PERCENT	
Mitchell	91.6	70	8.1	6	31.6	24	131.3
Peavine	76.4	66	8.1	7	31.6	27	116.1
Poeville	44.7	22	8.1	4	147.3	74	200.1
Peavine/Poeville	46.9	35	8.1	6	78.5	59	133.5

Existing land uses in the project area include dispersed recreation, timber management, firewood and Christmas tree cutting, and utilities, including an underground gas pipeline and electrical transmission and distribution lines. The Alturas 345 kV transmission line is contained within a designated Section 368 energy corridor. Private land is primarily undeveloped or used for livestock grazing. The community of Verdi is developed with residential properties including an elementary school and library.

Construction of a transmission line on private land would be regulated by Sierra County, Washoe County, the City of Reno, and the TMRPA. Municipal jurisdictions crossed by alternatives are shown on **Table 3.3-2** and **Figure 3.3-2**. City of Reno SOI is shown on **Figure 3.3-1**.

Table 3.3-2 Municipal Jurisdictions Crossed by Alternatives

ALTERNATIVE	SIERRA COUNTY (MILES)	WASHOE COUNTY (MILES)	CITY OF RENO[1] (MILES)
Mitchell	6.4	3.0	2.3
Peavine	3.1	4.9	2.3
Poeville	1.1	8.2	8.7
Peavine/Poeville	1.1	6.3	4.5

[1] Includes land with the City of Reno SOI

Zoning designations consist of open space, various medium to large lot residential zoning designations, and public and semi-public facilities, as shown on **Figure 3.3-2** (City of Reno 2007a; Washoe County 2013a; Sierra County 2013). NFS land and BLM-administered public land are zoned as open space within portions of the project area in Washoe County.

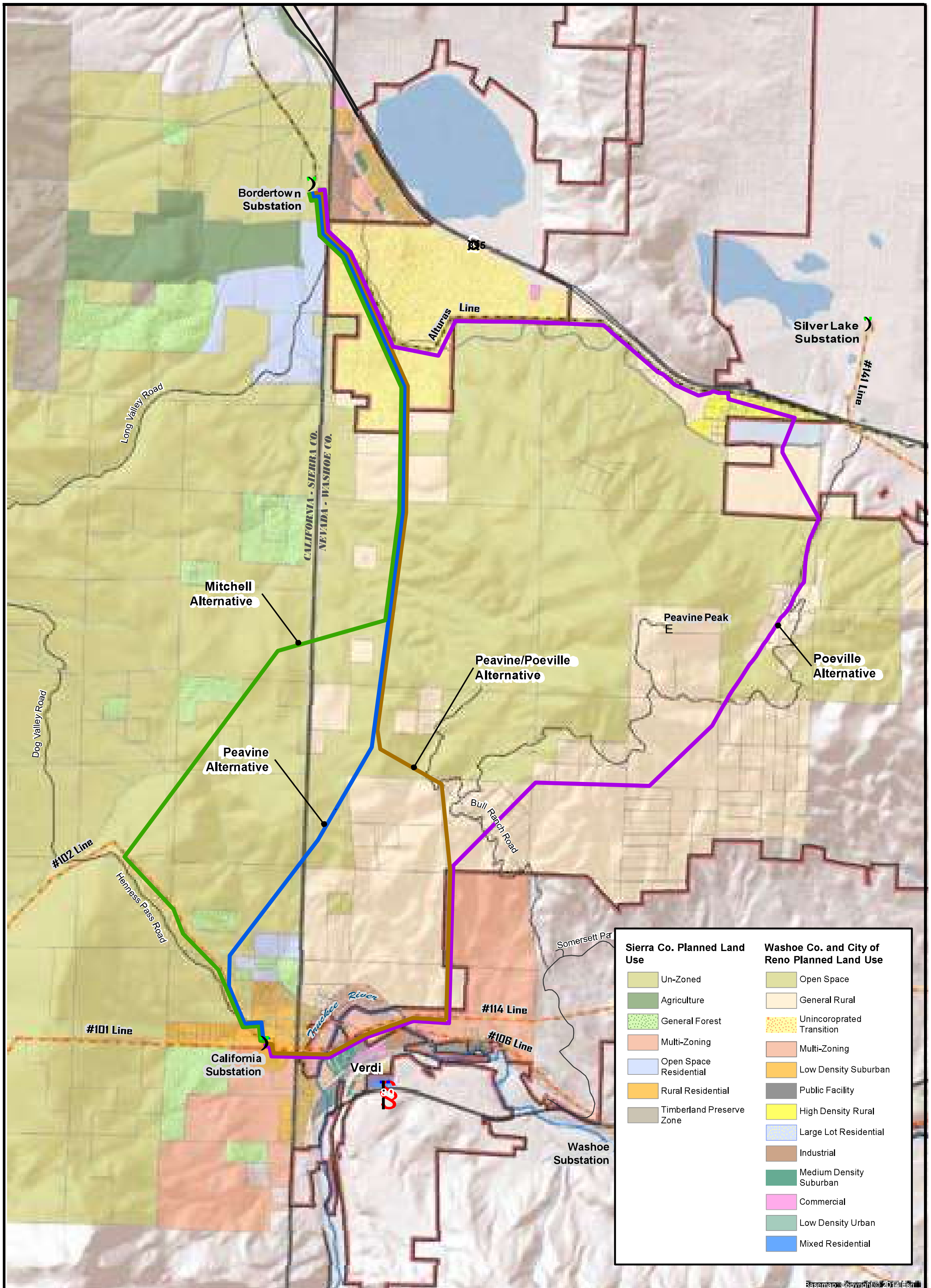
The Truckee Meadows Regional Plan designates Regional Utility Corridors within in Nevada. Regional Utility Corridors include the Alturas Corridor (which is also a Section 368 energy corridor where it overlaps federal land), and the corridor containing the existing #114 and #106 transmission lines and the inactive #632 distribution line (**Figure 2.1-1**). The Alturas corridor is a 2,000-foot-wide corridor and the #114, #106, and #632 corridor consists of a 125-foot-wide easement with an additional 60-foot-wide easement in a portion of the Verdi Lake Estates area (BLM 2008b; Washoe County 2012a; CFA, Inc. 2007). Opportunities to use utility corridors exist for all alternatives in the following circumstances: where a single-pole under-build can be used to co-locate an electric distribution line with the proposed transmission line; where the easement of an inactive power line, such as the #632 line is available; and, where the proposed transmission line can be placed next to an existing ROW or easement of an existing utility line.

Table 3.3-3 presents the number of privately owned parcels along each alternative.

Table 3.3-3 Number of Privately Owned Parcels Crossed by Alternative

ALTERNATIVE	NUMBER OF PRIVATELY OWNED PARCELS CROSSED BY THE PROPOSED ROW/EASEMENT
Mitchell	19
Peavine	19
Poeville	127
Peavine/Poeville	61

[1] Privately owned parcels do not include NFS land, BLM-administered public land, or property owned by Washoe County, Washoe County School District Board, Washoe County Regional Open Space Program, Sierra County, and Sierra Pacific Power Company



Transmission Line Alternatives
Mitchell
Peavine
Poeville
Peavine/Poeville

City of Reno
Existing Features
120 kV Transmission Line
345 kV Transmission Line

FIGURE 3.3-2
LAND USE

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

1 in = 1 mile
0 0.5 1 2
Miles

Private land is zoned within its respective jurisdiction. Within portions of the project area in Washoe County, public land is zoned as open space. Zoning designations do not conflict with transmission line placement; however, a permit or plan amendment may be required where an existing designated utility corridor does not exist. **Table 3.3-4** presents the land use or zoning by action alternative, and **Figure 3.3-1** displays these land use designations.

Table 3.3-4 Zoning Category Crossed by Each Action Alternative

LAND USE OR ZONING CATEGORY	ACRES WITHIN THE PROPOSED ROW/EASEMENT			
	MITCHELL	PEAVINE	POEVILLE	PEAVINE/ POEVILLE
Multi-zoning[1]	0	0	18.7	18.7
Unincorporated Transition-40 Acre Lots (UT-40)	22.5	22.4	24.0	22.4
Large Lot Residential-2.5 Acre Lots (LLR-2.5)	0	0	2.8	0
Open Space (OS)	26.4	45.7	38.0	39.8
General Rural (GR)	8.2	10.1	76.0	25.6
High Density Rural (HDR)	0	0	9.8	0
Public and Semi-Public Facilities (PSP)	0	0	10.4	7.6
Low Density Suburban (LDS)	0	0	2.2	2.2
Open Space-20 Acres (OS-20)	2.2	2.2	2.2	2.2
Rural Residential-1.5 Acre Lots (RR-1.5)	3.1	3.1	5.2	5.2
Un-zoned Land in Sierra County	63.4	27.9	4.3	4.3

[1] In the Verdi area, the proposed transmission line would traverse parcels that are between two land use categories or split land use parcels and exact category placement cannot be determined. These areas have been classified as "Multi-zoning"; The mixed or multiple zoning in this category include OS, PSP, LLR-1, GR, LDS, UT-40, Mixed and RR-1.5

3.3.4 Environmental Consequences

3.3.4.1 No Action Alternative

Under the No Action Alternative, construction of the proposed project and subsequent operation and maintenance of the proposed transmission line would not occur. There would be no change in land use, and special use permits and master plan amendments would not be required.

3.3.4.2 Effects Common to All Action Alternatives

Table 3.3-5 shows utilization of existing utility corridors by action alternative. An action alternative would use an existing utility corridor if it is co-located with a distribution line using a single pole under-build; constructed adjacent to an undesignated power line (i.e., #102 transmission line), or constructed within a designated Section 368 energy corridor (i.e., within 1,000 feet of either side of the Alturas 345 kV transmission line). Percentages presented in **Table 3.3-5** are relative to each action alternative.

Table 3.3-5 Use of Utility Corridors by Action Alternative

ALTERNATIVE	WITHIN 368 ENERGY CORRIDOR (MILES)	CO-LOCATED OR ADJACENT TO UNDESIGNATED LINE[1] (MILES)	WITHIN REGIONAL UTILITY CORRIDOR (MILES)	PERCENT WITHIN UTILITY CORRIDOR	PERCENT WITHIN REGIONAL UTILITY CORIDOR
Mitchell	0.4	2.4	2.2	39	19
Peavine	0.4	0.6	2.2	27	21
Poeville	2.9	3.3	9.32	70	52
Peavine/Poeville	0.4	0.2	4.42	39	37

[1] Includes distribution lines and the #102 transmission line in Sierra County
[2] Mileage includes 0.5 mile of proposed transmission line that would be within the #114 and #106 transmission line corridor in Sierra County, but which is not shown on the Regional Utility Corridor map since it is outside the TMRPA jurisdiction

Conflicts with Plans, Policies, or Regulations

Each action alternative utilizes existing transmission or distribution lines as practicable; nevertheless, none fulfill any one plan or policy completely. Any alternative would require a Truckee Meadows Regional Plan Amendment, since all of the action alternatives would be located outside of a Regional Utility Corridor in at least one area (**Table 3.3-5**).

Construction of all of the alternatives would require a SUP in the city of Reno and Washoe County. In Sierra County, the transmission line would cross private property and the Sierra County Zoning Code does not specifically state that transmission lines are permitted or prohibited in these zoning districts (Sierra County 2012). However, sections of the proposed transmission line on private land in Sierra County would be co-located with existing power lines and/or utilize existing utility line corridors. Utilizing an existing utility corridor and co-locating the transmission line with other power lines is preferred when a new transmission line must be constructed in Sierra County (Sierra County 1996). It is likely that a SUP would be required for the proposed transmission line in Sierra County.

Impacts to Private Land

The number of private land parcels that would be affected from each action alternative is presented in **Table 3.3-3**. The proposed ROW/easement would limit new structures from being constructed in the ROW. Some passive uses such as parking of vehicles, landscaping and fencing within the ROW/easement would require approval by NV Energy in order to confirm compatibility with the proposed transmission line.

The Truckee Meadows Regional Plan requires a 10-foot-wide setback in which structures cannot be constructed on either side of the ROW/easement for a 120 kV transmission line (TMRPA 2012). The 10-foot-wide setback on either side of the ROW/easement does not apply to existing development or development approved prior to August 12, 2010.

For all of the action alternatives, the ROW/easement would have a long-term impact on developed private property, because new structures or expanding existing structures within the ROW/easement area would be prohibited. Parcels generally larger than 1 acre would have more area to absorb the ROW/easement and the 10-foot-wide setback. Parcels generally smaller than one acre would have less area to absorb the ROW/easement and setback, which may reduce the area on the parcel that could be developed in the future.

Property values were evaluated in south suburban Reno in a study to determine the impacts to private land from the construction of a 120 kV transmission line (Warren and Schiffmacher LLC 2007). The study made several determinations:

- Developers and property owners will build and live on properties that are encumbered by, or adjacent to 120 kV transmission lines;
- The proximity of a property developed with an existing house to a 120 kV transmission line does not have a discernible impact on the value of the property; and
- Under certain market conditions, the existence of a 120 kV transmission line adjacent to vacant and undeveloped property may have negative impacts on property values between 10 percent and 15 percent. This is typical if the market supply exceeds the market demand.

Construction of any action alternative on land with existing homes would have negligible impacts on private property values. However, undeveloped private land has the potential to lose between 10 percent and 15 percent of its value depending on market conditions.

To minimize the loss of buildable land and minimize loss of property value, NV Energy would purchase easements based on the appraised value of the land. Land use restrictions within the easement, and the potential loss of property value would be considered during the easement acquisition process.

Impacts to Tax Revenue

As described above, the implementation of any of the action alternatives would potentially result in reduced property values of undeveloped properties. The reduced property values would result in decreased tax revenues for Sierra County, Washoe County, and the City of Reno. However, the number of parcels that would potentially be affected from any action alternative would be negligible compared to the total number of parcels in either county or the city of Reno from which tax revenue is generated. The diminished value of so few parcels would have negligible effects on tax revenue.

3.3.4.3 Mitchell Alternative

Approximately 70 percent of the proposed ROW/easement for the Mitchell Alternative is NFS land, and approximately 24 percent is private land (**Table 3.3-1**). The Mitchell Alternative is consistent with Forest Plan goals and objectives regarding locating projects off of NFS land and on private land when reasonably possible, utilizes existing utility corridors, and is in the public interest. The Mitchell Alternative uses 5.0 miles of utility corridors, consisting of 2.4 miles of distribution line corridor, 2.2 miles of Regional Utility Corridors, and a short section of Section 368 energy corridor where it occurs at the Bordertown Substation (**Table 3.3-5**).

There would be 19 private land parcels crossed by the proposed transmission line (**Table 3.3-3**). Fourteen of the parcels are within Sierra County and the other five are within either the city of Reno limits or the city of Reno SOI. One of the parcels in Sierra County is developed with a residential house that would be approximately 315 feet from the proposed transmission line. One parcel in the city of Reno limits is developed with two structures. Field observations suggest that neither structure is residential, but related to industrial uses. The nearest structure to the proposed transmission line would be approximately 930 feet away. The remaining 17 parcels are undeveloped.

Implementation of the Mitchell Alternative may result in long-term impacts to private property values. NV Energy would pay fair market value for the easement.

3.3.4.4 Peavine Alternative

Approximately 66 percent of the area within the proposed ROW/easement for the Peavine Alternative is NFS land, and approximately 27 percent is private land (**Table 3.3-1**). The Peavine Alternative would use 0.6 mile of distribution line corridor, 2.2 miles of Regional Utility Corridors, and a short section of Section 368 energy corridor where it occurs at the Bordertown Substation (**Table 3.3-5**).

Compared to the Mitchell Alternative, the Peavine Alternative would utilize slightly less (about 3 percent) NFS land (**Table 3.3.1**). However, relative to the total area within the proposed ROW/easement, the Peavine Alternative would utilize less private land and more NFS land than the Poeville and Peavine/Poeville alternatives. Implementation of the Peavine Alternative is consistent with Forest Plan goals and objectives as the project is on and off of NFS land, utilizes existing utility corridors and provides a public benefit.

The Peavine Alternative would cross approximately 19 private land parcels. The parcels that would be crossed are the same as those that would be crossed by the Mitchell Alternative.

3.3.4.5 Poeville Alternative

Approximately 22 percent of the land within the proposed ROW/easement for the Poeville Alternative is NFS land. Approximately 74 percent is private land (**Table 3.3-1**).The route would utilize existing utility corridors, consisting of 13.0 miles of transmission and distribution lines, including 9.3 miles of Regional Utility Corridors and 2.9 miles of Section 368 energy corridor. The Poeville Alternative is consistent with the Forest Plan, it is on and off of NFS land, utilizes existing utility corridors and provides a benefit to the public (**Table 3.3-5**).

The Poeville Alternative would cross an area designated as City of Reno Open Space on the City's Open Space and Greenways Plan (2007b). The Poeville Alternative would also cross two separate areas designated as Proposed Urban Connections on the Open Space and Greenways Plan. Potential impacts to City of Reno Open Space, Proposed Urban Connections, and the conceptual ring trail may result from the transmission line modifying the setting and characteristics of the area. The City of Reno would need to coordinate with NV Energy in the areas where the proposed ROW would cross the Proposed Urban Connections and conceptual ring trail to confirm any improvements within the proposed transmission line ROW do not interfere with transmission line operation and maintenance.

It is estimated that approximately 127 private parcels would be crossed (**Table 3.3-3**). Aerial photography (U.S. Farm Service Agency 2013) suggests that two parcels in Washoe County are developed with houses and accessory structures. On both parcels, a residential house would be partially within the 10-foot setback required next to the proposed ROW/easement. Accordingly, the Poeville Alternative would not conform to the Truckee Meadows Regional Plan on either of these parcels because the edge of the proposed ROW/easement would be within 10 feet from existing structures, unless the centerline of the Poeville is shifted 10 feet further away from the homes. On one parcel in the City of Reno, a shed or garage structure would be partially located within the proposed ROW/easement.

The Poeville Alternative may have long-term impacts on the property values of private land. Based on conclusions of the Warren and Schiffmacher study, impacts on the property values of private properties developed with an existing house would be negligible. NV Energy would compensate private land owners based on fair market value to reduce the impacts to private property values.

3.3.4.6 Peavine/Poeville Alternative

Approximately 35 percent of the area within the proposed ROW/easement for the Peavine/Poeville Alternative is NFS land, and approximately 59 percent is private land (**Table 3.3-1**). Implementation of the Peavine/Poeville Alternative is consistent with the Forest Plan, it is on and off NFS land, utilizes existing utility corridors and is in the public interest.

Approximately 4.6 miles of the proposed transmission line, which is approximately 39 percent of its total length, would be located within existing utility corridors (**Table 3.3-5**). The Peavine/Poeville Alternative uses 4.4 miles of Regional Utility Corridors and a short section of Section 368 energy corridor at the Bordertown Substation. Thus, the Peavine/Poeville Alternative would utilize fewer miles of Regional Utility Corridor and Section 368 energy corridor than the Poeville Alternative, but more than the Peavine Alternative. Approximately 61 private land parcels would be crossed by the proposed transmission line (**Table 3.3-3**). Impacts to structures from setbacks and separation requirements would not be anticipated from this alternative. The Peavine/Poeville Alternative would cross an area designated as City of Reno Open Space on the City's Open Space and Greenways Plan (2007b) and would also cross a conceptual ring trail identified on this plan. Potential impacts to City of Reno Open Space and the conceptual ring trail may result from the transmission line modifying the setting and characteristics of the area. In addition, the City of Reno would have to coordinate with NV Energy in the areas where the proposed ROW would cross the conceptual ring trail to confirm any improvements within the proposed transmission line ROW do not interfere with transmission line operation and maintenance.

The Peavine/Poeville Alternative may result in long-term impacts to the property values of undeveloped private property as the 90-foot ROW/easement would be designated for the operation and maintenance of a transmission line. Owners would be compensated for the easement based on fair market value.

3.3.4.7 Cumulative Effects

Within the land use CIAA, ROW/easements currently exist for utilities, the Bordertown and California Substation facilities, and numerous state and county maintained roads. Additional ROW/easements also exist on private land for other agreements or commitments, such as ingress/egress and open space.

All ROW/easements on NFS land and BLM-administered public land are issued in concert with existing approved resource management plans, and there have been no overall change in planned land use. However, as the density of ROW/easements increases within the CIAA, the ability to issue any additional ROW/easements or building permits may become more limited due to the potential for use conflicts. With the exception of the proposed project, there are no reasonably foreseeable future actions on NFS land or BLM-administered public land within the CIAA that would include or require a new ROW/easement to be issued. The reasonably foreseeable Stonegate Master Plan Development does not require any easements or ROWs across NFS land or BLM-administered public land. Owners of private land would be compensated for the loss of buildable land or value resulting from the proposed ROW/easement across their property. The proposed project, regardless of the action alternative selected, would have a minor contribution to cumulative impacts to land use.

3.4 PUBLIC HEALTH AND SAFETY

3.4.1 Issue Statement

A new transmission line could increase electromagnetic fields (EMFs) that may affect the health and safety of children at Verdi Elementary School and residents in Verdi and Long Valley, and along North Virginia Street who would live near the proposed transmission line.

a. Issue measured by: Computer modeling of predicted maximum electric field during project operation.

b. Issue measured by: Computer modeling of predicted maximum magnetic field during project operation.

c. Issue measured by: Risk to public health and safety.

3.4.2 Affected Environment

3.4.2.1 Electric Fields

All household appliances and devices that use electricity create electric fields. The strength of an electric field is strongest near the appliance and decreases rapidly with distance away from the appliance. The measure of electric field strength is expressed in volts per meter or kV per meter. Typical electric fields measured one-foot away from common household appliances are shown in **Table 3.4-1**.

Table 3.4-1 Typical Electric Field Values for Appliances

APPLIANCE	ELECTRIC FIELD AT 12 INCHES AWAY (KV PER METER)
Electric Blanket	0.25
Broiler	0.13
Refrigerator	0.06
Iron	0.06
Hand Mixer	0.05
Coffee Pot	0.03

Source: Enertech and Sheppard 2013

Electric current flowing in an energized transmission line creates an electric field. The strength of the electric field decreases rapidly with distance away from the transmission line. As an example, electric fields were measured for the existing #102 line, which is a 120 kV line, at Sunrise Creek Road near Henness Pass/Dog Valley Road, west of the California Substation. Electric fields were highest nearest to the conductor wires. Field measurements confirm that fields attenuate rapidly with distance. At 30, 60, 90, and 120 feet from the transmission line's centerline, fields were 0.8 kV per meter, 0.4 kV per meter, 0.1 kV per meter, and 0.05 kV per meter, respectively. Electric fields are affected by the presence of grounded and conductive objects. For transmission lines, trees and buildings can significantly reduce ground level electric fields by shielding the nearby area.

3.4.2.2 Magnetic Fields

The electric current flowing in electric equipment, household appliances, and power transmission lines creates a magnetic field. The unit of measure for magnetic field intensity is the gauss or milligauss. As with electric fields, magnetic field strength diminishes rapidly with distance from the source. Unlike electric fields, magnetic fields are not shielded by most objects or materials. Illustrating how rapidly magnetic fields decrease with distance, **Table 3.4-2** presents magnetic field values measured at distances up to three feet away from common household appliances.

Table 3.4-2 Magnetic Fields from Household Appliances

APPLIANCE TYPE	MEASURED MAGNETIC FIELD (MILLIGAUSS)		
	1.2 INCHES AWAY FROM DEVICE	12 INCHES AWAY FROM DEVICE	36 INCHES AWAY FROM DEVICE
Coffee Grinders	60.9 to 77.9	0.3 to 6.5	0 to 1.5
Compact Fluorescent Bulbs	0 to 32.8	0 to 0.1	0
Computers, Desktop	3.8 to 68.9	0 -1.1	0
Computers, Laptop	0 to 5.1	0	0
Electric Leaf Blowers	272 to 4,642	17.1 to 155	1.2 to 6.2
Electric Toothbrushes	3.6 to 742	0 to 4.8	0 to 0.1
Liquid-crystal Display Televisions	1.1 to 3.9	0 to 2.5	0 to 2.2
Massagers/Massage Chairs	81.9 to 500	0.6 to 2.3	0 to 0.1
Power Tools – Corded	784 to 982	8.8 to 31.3	0.3 to 1.3
Power Tools – Cordless	9.0 to 227	0 to 2.2	0 to 0.2
Vacuum Cleaners (Personal/Car)	75.5 to 2,226	0.6 to 23.3	0

Source: Enertech and Sheppard 2013

3.4.2.3 Health-Based Standards for Electric and Magnetic Fields

Government health agencies and non-government scientific bodies have formed a number of scientific review panels to evaluate the large amount of available research conducted on power line EMFs. The International Agency for Research of Cancer (2002), International Commission on Non-Ionizing Radiation Protection (ICNIRP) (2010), National Institute of Environmental

Health Sciences (1999), and similar organizations agree that the weight of evidence cannot establish that EMFs cause adverse health effects. The only scientific and medical studies that demonstrate an adverse biological or health effect are those in which very high levels of electric currents and electric and/or magnetic would be felt as a very weak electric shock. Fields at these high intensities are not found in residential environments near transmission lines or elsewhere where the public has access.

Presently, there are no federal health-based standards for limiting public exposure to EMFs due to a lack of scientific evidence establishing adverse health effects from exposure. However, the American Conference of Governmental Industrial Hygienists (ACGIH), Institute of Electrical and Electronics Engineers (IEEE) International Committee on Electromagnetic Safety, and International Commission on Non-Ionizing Radiation Protection ICNIRP have all recommended science-based exposure limits for EMFs for occupational workers and the general public (**Table 3.4-3**).

Table 3.4-3 Recommended Limits for EMF Exposure

ORGANIZATION	EXPOSURE GROUP	ELECTRIC FIELD	MAGNETIC FIELD
ACGIH	Occupational	25 kV per meter (from 0 Hz to 100 Hz)	10,000 milligauss
ACGIH	Occupational For workers with cardiac pacemakers or similar medical electronic devices	1 kV per meter	1,000 milligauss
IEEE	General Public	5 kV per meter[1] outside ROW and 10 kV per meter within power line ROW[2] (from 1 Hz to 368 Hz)	9,040 milligauss (from 20 Hz to 759 Hz)
ICNIRP	Occupational	8.333 kV per meter	10,000 milligauss
ICNIRP	General Public	4.167 kV per meter	2,000 milligauss

Source: Enertech and Sheppard 2013
[1]At 5 kV per meter induced spark discharges will be painful to approximately seven percent of adults (well-insulated individual touching ground)
[2] Under normal load conditions
Hz = Hertz

3.4.2.4 Existing Conditions

The strength of EMFs created by existing transmission lines were measured at various locations within the project area. Measurements were taken underneath the existing lines as well as at the location where the proposed project would be constructed. **Table 3.4-4** presents the strength of fields recorded within the proposed ROW.

Table 3.4-4 Baseline EMF Conditions within Project ROW

LOCATION	FIELD MEASUREMENTS[1,2]	
	ELECTRIC FIELD (KV PER METER)	MAGNETIC FIELS (MILLIGAUSS)
Alturas 345 kV transmission line near Long Valley Road	0.1 to 0.2	0.6 to 1.0
#102 120 kV transmission line Sunrise Creek Road near Henness Pass/Dog Valley Road	0.1 to 0.4	0.5 to 1.9
#204 25 kV distribution line Henness Pass/Dog Valley Road	0.1 to 0.2	0.1 to 0.3
Alturas 345 kV transmission line with #257 distribution line Peavine Ranch, North Virginia Street	0.1 to 1.0	1.9 to 5.6
#114/#106/#632 120 kV transmission line corridor Verdi Elementary School and Verdi Public Library at Bridge Street	0.1 to 0.5	1.2 to 2.6
#114/#106/#632 120 kV transmission line corridor Verdi Elementary School and Verdi Public Library at ball fields	0.1 to 0.6	0.2 to 4.1
#114/#106/#632 120 kV transmission line corridor Verdi residential area at (west) Bridge Street	0.1 to 0.8	1.4 to 7.2
#114/#106/#632 120 kV transmission line corridor Verdi residential area at Lakeview Drive	0.1 to 0.7	1.5 to 7.3

Source: Enertech and Sheppard 2013

[1] Range of values recorded in the location where the proposed transmission line would be placed. ROW edge is 45 feet from the proposed transmission line centerline with the exception of the Alturas 345 kV transmission line at Peavine Ranch, North Virginia Street. At this location the ROW is constrained, and therefore, the ROW edge is 20 feet from the centerline.

[2] Measurements taken on November 8, 2012 and November 29, 2012

3.4.3 Environmental Consequences

3.4.3.1 Methods of Analysis

Where the proposed transmission line would be placed next to an existing transmission or distribution line, the sum total electric field strength was calculated through computer modeling. This section presents the predicted EMF levels under maximum electrical loads inside the ROW and beyond the ROW edge. In addition to the voltage of the transmission line, the type of pole structure (H-frame structure or single pole structure) also influences the strength of EMFs. H-frame structures create slightly greater EMFs than single pole structures. As a result, six different EMF scenarios are possible along the action alternatives (**Table 3.4-5**).

Table 3.4-5 Power Line Configurations by Alternative

MODELED CONFIGURATION	ALTERNATIVE			
	MITCHELL	PEAVINE	POEVILLE	PEAVINE/ POEVILLE
Proposed Line alone as H-frame	✓	✓	✓	✓
Proposed Line next to Alturas 345 kV transmission line	✓	✓	✓	✓
Proposed Line next to #102 120 kV transmission line	✓	✓		
Proposed Line with 25 kV distribution line under-build	✓	✓	✓	
Proposed Line with 25 kV distribution line under-build next to Alturas 345 kV transmission line			✓	
Proposed Line as H-frame next to #114 and #106 120 kV transmission lines (replacing the de-energized #632 transmission line)			✓	✓

Source: Enertech and Sheppard 2013

3.4.3.2 Effects Indicators

In the absence of health-based exposure limits established by federal or state agencies, effects of the project are compared against exposure limits for the general public recommended by non-governmental organizations (**Table 3.4-3**). The IEEE recommends an exposure limit of 5 kV per meter outside of transmission line ROW, and 10 kV per meter within a transmission line ROW for electric fields and 9,040 milligauss for magnetic fields. The ICNIRP recommends an exposure limit of 4.2 kV per meter for electric fields and 2,000 milligauss for magnetic fields.

3.4.3.3 No Action Alternative

Under the No Action Alternative, construction of the proposed project and subsequent operation and maintenance of the proposed transmission line would not occur. There would be no project-related increase in EMFs or changes to EMF levels from existing transmission or distribution lines shown on **Table 3.4-4**.

3.4.3.4 Mitchell Alternative

Electric field strength and the number of miles associated with each line configuration for the Mitchell Alternative is presented in **Table 3.4-6**.

Table 3.4-6 Strength of Fields for the Mitchell Alternative

LINE CONFIGURATION	MILES	INSIDE ROW[1] MAXIMUM		OUTSIDE ROW[1] MAXIMUM	
		ELECTRIC FIELDS (KV PER METER)	MAGNETIC FIELDS (MILLIGAUSS)	ELECRIC FIELDS (KV PER METER)	MAGNETIC FIELDS (MILLIGAUSS)
Proposed line alone as an H-frame	7.1	2.5	150.7	1.0	42.0
Proposed line as an H-frame next to Alturas 345 kV transmission line (south of the Bordertown Substation)	2.0	2.5	151.1	1.0	41.8
Proposed line as an H-frame next to #102 120 kV transmission line	2.2	2.6	153.2	1.0 outside of the #102/Mitchell corridor; 1.2 in the area between the two lines	46.9 in the area between the two lines
Proposed line as a single pole with 25 kV distribution under-build	0.4	0.5	36.6	0.5	28.1

Source: Enertech and Sheppard 2013

[1] ROW edge is 45 feet from the proposed transmission line centerline

Under all transmission line configurations, the calculated strength of electric fields inside and outside of the ROW is well below the exposure limit recommended by IEEE and ICNIRP for the general public. Calculated magnetic fields are also well below the IEEE- and ICNIRP-recommended thresholds for the general public. Impact from EMFs would be negligible and risk to the health and safety of the public is not expected.

3.4.3.5 Peavine Alternative

Electric field strength and the number of miles associated with each line configuration for the Peavine Alternative is presented in **Table 3.4-7**.

Table 3.4-7 Strength of Fields for the Peavine Alternative

LINE CONFIGURATION	MILES	INSIDE ROW[1] MAXIMUM		OUTSIDE ROW[1] MAXIMUM	
		ELECTRIC FIELDS (KV PER METER)	MAGNETIC FIELDS (MILLIGAUSS)	ELECRIC FIELDS (KV PER METER)	MAGNETIC FIELDS (MILLIGAUSS)
Proposed line alone as an H-frame	7.5	2.5	150.7	1.0	42.0
Proposed line as an H-frame next to Alturas 345 kV transmission line (south of Bordertown Substation)	2.0	2.5	151.1	1.0	41.8

LINE CONFIGURATION	MILES	INSIDE ROW[1] MAXIMUM		OUTSIDE ROW[1] MAXIMUM	
		ELECTRIC FIELDS (KV PER METER)	MAGNETIC FIELDS (MILLIGAUSS)	ELECRIC FIELDS (KV PER METER)	MAGNETIC FIELDS (MILLIGAUSS)
Proposed line as an H-frame next to #102 120 kV transmission line	0.4	2.6	153.2	1.0 outside of the #102/Peavine corridor; 1.2 in the area between the two lines	46.9 in the area between the two lines
Proposed line as a single pole with 25 kV distribution under-build	0.4	0.5	36.6	0.5	28.1

Source: Enertech and Sheppard 2013

[1] ROW edge is 45 feet from the proposed transmission line centerline

The Peavine Alternative has the same type of line configurations as the Mitchell Alternative. The only difference is the length of the line proposed for each configuration. Same as the Mitchell Alternative, EMF levels associated with the Peavine Alternative are well below the IEEE- and ICNIRP-recommended thresholds for the general public. Impact from EMFs would be negligible and risk to the health and safety of the public is not expected.

3.4.3.6 Poeville Alternative

Electric field strength and the number of miles associated with each line configuration for the Poeville Alternative is presented in **Table 3.4-8**.

Table 3.4-8 Strength of Fields for the Poeville Alternative

LINE CONFIGURATION	MILES	INSIDE ROW[1] MAXIMUM		OUTSIDE ROW[1] MAXIMUM	
		ELECTRIC FIELDS (KV PER METER)	MAGNETIC FIELDS (MILLIGAUSS)	ELECRIC FIELDS (KV PER METER)	MAGNETIC FIELDS (MILLIGAUSS)
Proposed line alone as an H-frame	5.4	2.5	150.7	1.0	42.0
Proposed line as an H-frame next to Alturas 345 kV transmission line (south of Bordertown Substation)	5.5	2.5	151.1	1.0	41.8
Proposed line as a single pole with 25 kV distribution under-build	4.3	0.5	37.7	0.5	28.1
Proposed line as a single pole under-build with 25 kV distribution next to Alturas 345 kV transmission line[2]	0.6	0.5	36.4	0.5	27.5

LINE CONFIGURATION	MILES	INSIDE ROW[1] MAXIMUM		OUTSIDE ROW[1] MAXIMUM	
		ELECTRIC FIELDS (KV PER METER)	MAGNETIC FIELDS (MILLIGAUSS)	ELECRIC FIELDS (KV PER METER)	MAGNETIC FIELDS (MILLIGAUSS)
Proposed line as an H-frame next to #114 and #106 120 kV transmission lines (replacing the de-energized #632 transmission line)	2.2	2.9	144.0	2.5 in the area between the Poeville Alternative and #106 line; 0.9 outside of the #114/#106/ Poeville corridor	60.8

Source: Enertech and Sheppard 2013
[1] ROW edge is 45 feet from proposed transmission line centerline with the exception of Alturas 345 kV transmission line at Peavine Ranch, North Virginia Street; At this location, the ROW is constrained, and therefore, the ROW edge is 20 feet from centerline.
[2] Along North Virginia Street, west of Copperfield Drive

The calculated EMFs produced by the Poeville Alternative under all transmission line configurations, inside the ROW and beyond, are well below the IEEE- and ICNIRP-recommended exposure limits for the general public. No exceedances would occur at the Verdi Elementary School, along the Verdi Nature trail next to the Verdi Public Library, or in the residential neighborhood through Verdi. Impact from EMFs would be negligible and risk to the health and safety of the public is not expected.

3.4.3.7 Peavine/Poeville Alternative

Electric field strength and the number of miles associated with each line configuration for the Peavine/Poeville Alternative is presented in **Table 3.4-9**.

Table 3.4-9 Strength of Fields for the Peavine/Poeville Alternative

LINE CONFIGURATION	MILES	INSIDE ROW[1] MAXIMUM		OUTSIDE ROW[1] MAXIMUM	
		ELECTRIC FIELDS (KV PER METER)	MAGNETIC FIELDS (MILLIGAUSS)	ELECRIC FIELDS (KV PER METER)	MAGNETIC FIELDS (MILLIGAUSS)
Proposed line alone as an H-frame	7.7	2.5	150.7	1.0	42.0
Proposed line as an H-frame next to Alturas 345 kV transmission line	2.0	2.5	151.1	1.0	41.8
Proposed line as an H-frame next to #114 and #106 120 kV transmission lines (replacing the de-energized #632 transmission line)	2.2	2.9	144.0	2.5 in the area between the Peavine/Poeville Alternative and #106 line; 0.9 outside of the #114/#106/Peavine/Poeville corridor	60.8

Source: Enertech and Sheppard 2013
[1] ROW edge is 45 feet from the proposed transmission line centerline

The calculated EMFs produced by the Peavine/Poeville Alternative under all transmission line configurations, inside the ROW and beyond, are well below the IEEE- and ICNIRP-recommended exposure limits for the general public. No exceedances would occur at the Verdi Elementary School, along the Verdi Nature trail next to the Verdi Public Library, or in the residential neighborhood through Verdi. Impact from EMFs would be negligible and risk to the health and safety of the public is not expected.

3.4.3.8 Cumulative Effects

The analysis presented in **Sections 3.4.3.4** through **3.4.3.7** presents baseline EMF conditions added to the modeled EMF fields that would be created by the project. The analysis accounted for all existing power lines that the proposed transmission line may have a cumulative effect on EMFs. There are no other power lines within the project area proposed in the reasonably foreseeable future. A summary of cumulative effects of the proposed project with existing power lines is shown in **Table 3.4-10**. The calculated EMFs produced by any of the action alternatives with existing power lines are well below the IEEE- and ICNIRP-recommended exposure limits for the general public. Cumulative effects from EMFs would be negligible and risk to public health and safety is not expected.

Table 3.4-10 Cumulative EMF Conditions within the Project Area

LOCATION	ELECTRIC FIELD WITHIN PROJECT ROW[1] (KV PER METER)		MAGNETIC FIELD WITHIN PROJECT ROW[1] (MILLIGAUSS)	
	BASELINE FIELD MEASUREMENTS MAXIMUM	MODELED FIELD MAXIMUM	BASELINE FIELD MEASUREMENTS MAXIMUM	MODELED FIELD MAXIMUM
Alturas 345 kV transmission line near Long Valley Road	0.2	2.5	1.0	151.1
#102 120 kV transmission line Sunrise Creek Road near Henness Pass/Dog Valley Road	0.4	2.6	1.9	153.2
#204 25 kV distribution line Henness Pass/Dog Valley Road	0.2	0.5	0.3	36.6
Alturas 345 kV transmission line with #257 distribution line Peavine Ranch, North Virginia Street	0.5	0.7	5.6	26.6
#114/#106/#632 120 kV transmission line corridor Verdi Elementary School and Verdi Public Library at Bridge Street	0.5	2.9	2.6	143.9
#114/#106/#632 120 kV transmission line corridor Verdi Elementary School and Verdi Public Library at ball fields	0.6	2.9	4.1	143.9

LOCATION	ELECTRIC FIELD WITHIN PROJECT ROW[1] (KV PER METER)		MAGNETIC FIELD WITHIN PROJECT ROW[1] (MILLIGAUSS)	
	BASELINE FIELD MEASUREMENTS MAXIMUM	MODELED FIELD MAXIMUM	BASELINE FIELD MEASUREMENTS MAXIMUM	MODELED FIELD MAXIMUM
#114/#106/#632 120 kV transmission line corridor Verdi residential area at (west) Bridge Street	0.8	2.9	7.2	143.9
#114/#106/#632 120 kV transmission line corridor Verdi residential area at Lakeview Drive	0.7	2.9	7.3	143.9

Source: Enertech and Sheppard 2013

[1] Range of values recorded in the location where the proposed transmission line would be placed. ROW edge is 45 feet from proposed transmission line centerline with the exception of Alturas 345 kV transmission line at Peavine Ranch, North Virginia Street. At this location, the ROW is constrained, and therefore, the ROW edge is 20 feet from centerline.

3.5 CULTURAL RESOURCES

Data Sources

Cultural resource inventories were conducted for the four action alternative corridors; however, archaeological sensitivity modeling was used to evaluate the potential effects of road widening for the purpose of disclosure in this EIS. The decision to use modeling in lieu of actual field inventories was based on the reasonable assumption that the potential to encounter cultural resources immediately next to the road would be low due to the presence of a pre-existing road and the minimal area of ground disturbance needed for road widening (Garner et al. 2014). Cultural resource inventories of the access routes will be completed as part of the Section 106 process and prior to signing the ROD. The Area of Potential Effects (APE) for cultural resources is a 600-foot-wide corridor centered on the proposed centerline for each transmission line corridor and a 120-foot-wide corridor centered on the existing roads that have been identified for widening. The disturbance corridor along roads would generally not exceed 30 feet, including the travelled way. While new access roads wider than 30 feet would not be expected, occasional widening beyond 30 feet may be necessary in areas where extensive blading and side cuts are required.

Regulatory Framework

The National Historic Preservation Act of 1966, as amended (NHPA), and the Archaeological Resources Protection Act of 1979 are the primary laws regulating preservation of cultural resources. Federal regulations obligate federal agencies to protect and manage cultural resource properties. Section 106 of the NHPA requires that the federal agency permitting the undertaking must “take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register.” Effect is defined in the implementing regulations of Section 106 (36 CFR 800.16(i)) as “alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register.” For projects where it has been determined that the project will result in an “adverse effect” to historic properties, Section 106 compliance is considered satisfied with the execution of a memorandum of agreement (MOA) or programmatic agreement, a legally binding document that describes the lead federal agencies' (in this case, the USFS) process of identifying and evaluating impacts on historic properties, and the plans for resolving adverse effects, in accordance with 36 CFR 800.14(b) and 36 CFR 800.16(t).

To be eligible for the NRHP (36 CFR 60.4), properties must be 50 years old (unless they are exceptionally important) and have national, state, or local significance in American history, architecture, archaeology, engineering, or culture. Historic properties may include places of traditional, religious, and cultural importance. They also must possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of four criteria:

- Criterion A: be associated with significant historical events or trends;
- Criterion B: be associated with historically significant people;
- Criterion C: have distinctive characteristics of a style or type, or have artistic value, or represent a significant entity whose components may lack individual distinction; and
- Criterion D: have yielded or have potential to yield important information.

The purpose of the Archaeological Resources Protection Act of 1979 is to secure the protection of archaeological resources and sites that are on public lands and Indian lands and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources.

The American Indian Religious Freedom Act was passed in 1978 to "protect and preserve for American Indians their inherent right to freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonial and traditional rites."

The Native American Graves Protection and Repatriation Act became law in 1990; the regulations implementing the statute were completed and went into effect in January 1996. This law formally affirms the rights of Indian tribes, Native Alaskan entities, and Native Hawaiian organizations to custody of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony with which they have a relationship of cultural affiliation. In addition, the law and regulations describe procedures designed to ensure that all Americans can derive educational, historical, and scientific value from the remains and objects covered by the statute through public interpretation, documentation, and study.

3.5.1 Affected Environment

Cultural resources are the tangible remains or traces of past human activity identifiable through field survey, historical documentation, and/or oral evidence. The term "cultural resources" can apply to "those parts of the physical environment – natural and built – that have cultural value of some kind to some sociocultural group." This term includes archaeological resources, historic resources, historical objects, Native American cultural items, spiritual places, religious practices, cultural uses of the natural environment, community values, or historical documents (King 1998).

Cultural resources can also include traditional cultural places, such as gathering areas, landmarks, and ethnographic locations. A Traditional Cultural Property (TCP) is a historic property associated with cultural practices or beliefs of a living community that: (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community (Parker and King 1998). This property type may be determined eligible for the NRHP if it meets criteria found in 36 CFR 60.4. Examples of Native American TCPs include places such as traditional landscapes, sacred mountains, and buildings; or areas where plants are collected for food, medicine, basket weaving, sites of ceremony and prayer, burial locations, "rock art" sites, and areas associated with creation stories. Other examples of TCPs include buildings, parks, neighborhoods, or other places required to maintain contemporary cultural traditions.

3.5.1.1 Cultural Context

A number of authoritative overviews and reports (e.g., Delacorte 1997; Elston 1982, 1986, 1994; Elston et al. 1977; Grayson 1993; Jackson et al. 1994; McGuire 2000, 2002; Moore and Burke 1992; Pendleton et al. 1982; Raven 1984; Thomas 1982) summarize the history of archaeological research in this region of the western Great Basin and Northeastern California. A regional framework regarding prehistory, ethnography, and history was also provided in the project-specific cultural resource inventory (Garner et al. 2013). The following brief descriptions of the cultural context from the cultural resource inventory report (Garner et al. 2013).

Terminal Pleistocene and Early Holocene Period (14000 - 7000 BP)

The Terminal Pleistocene and Early Holocene archaeological record is typically marked by various forms of leaf-shaped, lanceolate and often fluted points, and various stemmed points, that make up the "Western Pluvial Lakes Tradition" (Bedwell 1970, 1973), a term used to describe a lifeway focus associated with the receding Pleistocene lakes in the western Great Basin. Reliable radiocarbon dates associated with these points are rare, but some have been obtained which date from approximately 14,000 to as late as 7000 before present (BP) (Willig and Aikens 1988). Two tool complexes are typically found in these early contexts: Clovis and Great Basin Stemmed-series. The Clovis, or Clovis-like, complexes include small to large fluted and square-based spear points, large bifaces, heavy core-tools, backed scrapers, burins, and gravers. Stemmed point complexes appear more frequently in Terminal Pleistocene and Early Holocene contexts; they are perhaps slightly more recent and have a wider geographic distribution. Recent studies suggest a hunting-oriented foraging pattern across broad territories, within which lithic material was obtained directly (Jones and Beck 1999; Jones et al. 2003; McGuire 2002; Milliken and Hildebrandt 1997; Nials 1996).

Post-Mazama Period (7000-5000 BP)

The first of a series of eruptions at Mount Mazama in central Oregon occurred approximately 7700 BP, and eruptions continued for a period of about 300 years. The subsequent ash-fall is found throughout the Great Basin, and provides an important tool for dating archaeological sites. These eruptions coincided with abrupt changes in settlement patterns and tool assemblages that presage Archaic adaptations. These assemblages are more diverse, with greater frequencies of bifaces, scrapers, and a variety of grinding implements. Weaponry technology begins to shift to throwing darts or arrows, replacing the Paleoarchaic thrusting spears.

The eruption of Mt. Mazama also coincided with the onset of the Middle Holocene Altithermal, when lakes and marshes began to recede. Elston (1982) suggested that pre-Archaic lifeways were too specialized to adapt easily to the declining lake-marsh habitats, and settlement systems subsequently crashed. The Archaic pattern then arose in response to the drying habitat.

Early Archaic Period (5000-3500 BP)

Evidence of Early Archaic cultural activity in the western Great Basin is widespread, represented by various split-stem projectile points (e.g., Gatecliff, Bare Creek, Martis). In addition to these are numerous flake tool scrapers, bifacial knives, heavy core tools and, for the first time, abundant ground and battered stone milling equipment. Although few exclusively Early Archaic sites have been investigated, nearly every major cave deposit and many open-air sites contain at least some Early Archaic material (Elston 1982; Pendleton et al. 1982; see also Beck 1995). Even more numerous are hundreds of small Early Archaic upland camps throughout the region.

In both California and the Great Basin, there is a documented increase in the ratio of large to small mammalian faunal remains in archaeological components dated to between 4500 and 1000 BP (Hildebrandt and McGuire 2002; McGuire et al. 2003). This trend is thought to represent the rise of logistical settlement systems. The Early Archaic period witnessed the initial rise of settlement hierarchies in this region of the Great Basin, corresponding to the archaeological equivalents of base camps, field camps, task stations, etc.

Middle Archaic Period (3500-1350 BP)

The Middle Archaic period in the western Great Basin and along the Sierran Front (Elston et al. 1977) witnessed the accelerated elaboration of logistically well-organized adaptive patterns, marked by increasing cultural complexity (Elston 1982, 1986; Thomas 1982). This is manifested in the archaeological record by the amazing richness and variety of textiles and other perishable remains, an explosive increase in rock art, and an increasing range of site types. The sizes, locations, and assemblages of Middle Archaic sites suggest that they served many different purposes, with use as long-term residential bases, smaller serially re-occupied camps, communal hunting/ butchering localities (Pendleton and Thomas 1983), quarries and stoneworking camps (Bloomer et al. 1997), and hunting and gathering stations. A specialized focus on the long-range logistical procurement of large game continues into the Middle Archaic period. Abundant plant remains and carefully fashioned, well-used milling equipment also attest to the rising importance of vegetal resources.

Late Archaic Period (1350-600 BP)

In keeping with the adaptive changes witnessed during the Middle Archaic period, Late Archaic occupations in the western Great Basin show increasing settlement centralization (e.g., Clay et al. 1996; Rosenthal 2000) and subsistence intensification, and a decrease in the area over which groups foraged. Late Archaic deposits marked by Rose Spring and Eastgate-series projectile points are ubiquitous throughout the region and occur in a wider range of settings than do earlier sites. Coinciding with these changes in settlement pattern are numerous technological shifts. House structures become smaller and less substantially built (McGuire 2000), caches are fewer and less elaborate, and many types of perishable artifacts seem to all but disappear from the record (Elston 1982, 1986; Pendleton et al. 1982). The bow and arrow also replace the atlatl as the principal weapon during the Late Archaic, contributing to a major reorganization of flaked stone technologies. Bifaces decrease significantly in size, abundance, and morphological formality, and are replaced by numerous flake tools. Ground stone milling equipment shows a similar trend toward increasingly casual (i.e., unshaped) artifacts that were rarely cached. On balance, then, the shift to more expedient technologies—i.e., disposable tools that were less adaptable to varied circumstances—suggests that Late Archaic populations were less mobile and foraged more intensively over a limited area, obviating the need to transport and/or cache more reliable and specialized tools.

Terminal Prehistoric Period (600 BP-Contact)

Terminal Prehistoric occupation of this region of the western Great Basin is generally thought to be associated with the arrival of Numic-speaking peoples who entered the area from a homeland near the southern Sierra Nevada (Bettinger and Baumhoff 1982; Delacorte 1995; Madsen and Rhode 1994). Insofar as the study area appears to occupy a boundary zone between Washoe and Paiute groups, it is more than likely that this migration had a major effect on prehistoric lifeways in our project area.

With respect to settlement patterns, Late Archaic villages in the Humboldt and Stillwater marshes, the Truckee and Humboldt River drainages, and all along the northern Sierran Front and Honey Lake Valley, are abandoned at this time or have only thin veneers of Terminal Prehistoric material. There is a generally sparse archaeological record for this period. Where they occur, Terminal Prehistoric habitation sites are often situated in entirely different locations than in the Late Archaic. Settlements dating to this time often have a stand-alone quality: they are usually represented by a single house structure found in an isolated context, not tied to larger middens or residential complexes (McGuire 2002). House construction techniques are very informal, often no more than shallow, circular zones of soil discoloration suggestive of very short term, single- or several-season occupations. Their floor assemblages are correspondingly low-density, but heterogeneous, reflecting a range of domestic and subsistence-related tasks consistent with a family band occupation.

Aside from a shift to Desert Side-notched and Cottonwood series projectile points, none of these changes in settlement strategies seems to have been accompanied by significant changes in technology, raw material use patterns, or size of the areas over which people foraged. But if settlement patterns are any indication, Terminal Prehistoric socio-economic organization underwent a major transformation. Earlier band-like groups residing in large villages seem to have been replaced by family or household units living in independent camps, much like those reflected in the ethnographic record. Logistical resource procurement out of centralized villages was replaced simultaneously by a strategy in which independent households moved from one resource area to the next, making more intensive use of the landscape.

Regional Ethnography

Washoe

The Washoe traditionally occupied several chains of large valleys along the eastern slopes of the Sierra Nevada roughly centered on Lake Tahoe. Because the Washoe occupied a diversity of environments (i.e., mountains, foothills, etc.), they had access to many plants and animals that were either lacking or sparse in more arid areas. Washoe settlement and subsistence patterns were strongly influenced by variations in the seasonal abundance and distribution of wild foods.

Permanent settlements were located on high ground close to a reliable supply of fuel and water and with access to multiple biotic communities and resource types.

Given the size and environmental diversity of the Washoe homeland, subsistence activities were highly variable from one season to another, and often one year to the next. Fishing was of vital importance to the Washoe economy, with the numerous lakes and streams furnishing an almost endless supply of food throughout the year. Although less reliable than fishing, hunting was of considerable importance with deer, antelope, and mountain sheep pursued by individual hunters and, in the case of deer and especially antelope, through communal drives (d'Azevedo 1986; Lowie 1939). Small game, especially rabbits and hares, provided yet another important source of meat and a critical supply of skins for winter blankets and robes. Where shallow lakes and marshes furnished suitable habitat, ducks and other migratory waterfowl were also hunted, as were various upland game birds.

Plant foods were even more of a dietary mainstay for the Washoe than fish. Bulbs and roots such as camas, bitterroot, sego lily, and wild onion were collected in the early spring on the valley floors and upland meadows. Somewhat later in the season, attention shifted to various seed-bearing grasses and weedy annuals, which were gathered, processed, and stored in much the same way as that of the Paiute. Still later in the fall, as acorns and pine nuts began to mature, families traveled to the mountains to gather and store nuts for the coming winter.

Northern Paiute

At the time of Euro-American contact, the Northern Paiute occupied a vast, wedge-shaped area encompassing portions of eastern California, central Nevada, central and eastern Oregon, and western Idaho. The Northern Paiute were semi-nomadic foragers, whose settlement and subsistence patterns were closely geared to fluctuations in the seasonal availability and distribution of wild food resources.

Winters were typically spent in multi-family "villages" of from three to perhaps 10 houses located in sheltered areas near adequate supplies of fuel and water. A different pattern prevailed during summer months, when smaller household or family groups shifted residence between a series of more temporary field camps as new resources became available. Subsistence varied depending on the local and seasonal availability of resources. Plants comprised much of the diet from the late spring through the early fall, when a variety of seeds and roots were gathered and stored for winter use. At other times, fishing was of major importance. In more arid country such as the project area, where fish were of limited availability, attention shifted to various greens, shoots, and early ripening seeds that blanketed sunny hillsides and snow-free areas around springs, seeps, and seasonal drainages. Later in the fall, trips might also be made to procure pine nuts.

Hunting was of generally less significance than gathering, but nevertheless provided an important contribution to the Northern Paiute diet (Stewart 1941). Mountain sheep were hunted in the rugged uplands, and deer were pursued throughout the year over much of the area, although fall seems to have been the preferred season. Antelope were traditionally taken by means of communal drives held in the fall or early spring, when large numbers of animals could be driven into corrals at the end of converging fence lines. Where extensive marshes produced suitable habitat, ducks and other migratory waterfowl were captured using a variety of techniques that included nets, decoys, and tule balsas. Many of the same techniques were also employed to hunt sage grouse and collect duck eggs.

History

Overland Trail

Non-native people began traveling through the project area very early in the historic-period, first as trappers and explorers, later as miners and settlers. The first recorded non-native travel route through the project area, a route of the Overland Trail, was established during the summer of 1845 when Caleb Greenwood lead a small party of California emigrants through Dog Valley to bypass the earlier and more difficult Truckee River Canyon route over the Sierra Nevada.

Henness Pass Road

The Henness Pass Road is a major transportation route used in the mid-nineteenth century that connected mining, logging, agriculture, and commerce in western Nevada and eastern California. The pioneering of the route is historically contested with some stating that Patrick Henness established the route in 1849-1850 while others believe Joseph Zumwalt designed the route in 1850 on his way westward to the North Yuba diggings.

Henness Pass Road follows or parallels a number of older historic-era linear trails such as the Old Dutch Flat Road and portions of both the Greenwood Party and California Trails. Henness Pass Road also joins the Overland Emigrant Trail a few miles west of Second Summit (Goodwin 1960).

The construction of the road itself was not stimulated until the discovery of silver and gold in Virginia City and Gold Hill, Nevada, around 1859. After the Comstock silver strike in 1859, a rush back to the east from California began. Improvements to the Henness Pass Road would facilitate this travel between California's northern mining towns and Virginia City in the 1860s. At that time, a combination of efforts put forth by both the Truckee Turnpike Company and the Henness Pass Turnpike Company created a road on which the "elevation was no more than six feet to the hundred" (Byrd 1992). The two turnpike companies worked from opposite directions to eventually connect the road near Jackson's Ranch in California.

Use of the road was at its peak from 1860 to 1868 when it was used by stages and freighters (Byrd 1992). The route also created a vein for passenger traffic as well as mail delivery and sales (Mackey et al. 1993). It was second only to the Placerville/Carson route in the volume of passengers. Traffic became so heavy between California and the Comstock that freighters were restricted to using the road during the day while stages would use the road at night. After the completion of the Central Pacific railroad in 1868, traffic on the road dropped considerably. However, the wagon road network continued to serve as a regional feeder line for freight between Truckee and Verdi.

The road remained an important transportation vein from Verdi into the Sierras. From the time the Central Pacific Railroad was completed until about 1909 the road was used for primarily local traffic. In 1909 it became a segment of the Lincoln Highway connecting the intercontinental interstate with the Sierra and northern California and in the early 1920s segments of the road were part of the Victory Highway. After 1925, the Victory Highway was renamed U.S. 40 and re-routed through the Truckee River Canyon. Around that same time U.S. 40 through Dog Valley again became known as the Henness Pass Road, which is also sometimes referred to as Dog Valley Road.

Logging and Lumbering

Logging was first initiated in the Truckee area after the discovery of the Comstock Lode in 1859. When production in the mines began to fall off in 1867, the lumbering business also began to suffer. However, as the Central Pacific Railroad reached Donner Summit in 1866-1867, a number of mills established operations in the Truckee Basin to supply the railroad with cordwood for fuel, lumber for construction, and ties for the road bed. Truckee soon became a major lumbering center. As timber markets expanded with completion of the Central Pacific, a growing emphasis was placed on the production of other wood products. Eighteen or more sawmills were operating in the Truckee area during the late nineteenth century, along with planning mills, box factories, sash and door establishments, a furniture factory, shingle mills, and charcoal kilns.

Logging and lumbering were the primary activity in Dog Valley in the mid-nineteenth and early twentieth centuries. Logging in Dog Valley began in the 1860s as the demand for lumber increased with the discovery of gold and silver on the Comstock. The only logging railroad in the project area is the Verdi Lumber Company (VLC) standard gauge railroad (Myrick 1962:440; also Waechter et al. 1995:Map III-4). The VLC system traveled north from Verdi through the South Branch of Dog Creek into Dog Valley, across First and Second summits, then west along Davies Creek and northwest to where it split into two branches: one up into Bear Valley and the other up Lemon Canyon. Numerous spur lines of the railroad split off into virgin lumber stands later to be deconstructed and built back up at the next new logging area. A vast network of recorded and unrecorded spurs are scattered across the eastern Sierras.

Verdi Lumber Company Railroad

The VLC operated out of Verdi, Nevada, between 1900 and 1926. It was one of biggest logging and milling operations in western Nevada and eastern California in its day, ranking with the region's largest outfits and equal in size and scope of operations with the contemporaneous Sierra Nevada Wood and Lumber Company/Hobart Estate (Goodwin 1960). Economy dictated that logging railroads be lightly constructed. The tracks were light rails fastened to often loosely placed ties on poorly ballasted roadbeds. Companies were noted for skimping on railroad maintenance, resulting in a high incidence of wrecks. The VLC, in common with many other lumber lines, was noted for this (Myrick 1962).

In August 1901, five miles of railroad and two switchbacks had been laid north through Dog Creek Canyon into Dog Valley (Myrick 1962). At the peak of its use the VLC had approximately 40 miles of operational track and even ran pleasure excursions on the railroad for locals.

As the supply of nearby timber became depleted, the company expanded and extended a standard gauge line through Dog Valley, over Second Summit, and on to Merril in Sardine Valley, a distance of 12 miles, where they connected with the Boca and Loyalton Railroad. With private landholdings cut over and faced with timber shortages, the VLC purchased the first long-term timber contract from the Tahoe National Forest in October 1911.

A massive fire at the Verdi Lumber Company Sawmill in 1926 severely damaged the company's base of operations proving to be the catalyst of deconstruction in 1927. Financial difficulties stemming from the loss of their Verdi sawmill in the disastrous fire, plus the exhaustion of timber resources and increasing competition from other lumber companies (especially from the Hobart Estate), brought the activities of the company to an end (Goodwin 1960; Myrick 1962; Sinnot

1983). After the fire, the company erected a small circular sawmill and resumed logging until mid-summer 1926, in order to complete the logging in Bear Valley without penalty, as required under contract with the USFS (Goodwin 1960). During 1926 and 1927, the company completed the dismantling of more than 40 miles of logging railroad through Dog Valley and westward to the terminus in Lemon and Bear valleys (Goodwin 1960; Myrick 1962). Most of the old VLC railroad grades have since been transformed into modern dirt roads.

Poeville

Poeville is a small historical mining town located on the eastern face of Peavine Mountain. Poeville was also known as Peavine, Peavine City, Poe City, and later Podunk (Poedunk). The town was known as Peavine until 1863 and was re-named Poeville in 1864 after John Poe who discovered copper, gold, and silver veins on the east side of Peavine Peak (Paher 1970). Poe believed he had discovered the next Comstock Lode, as an ore sample as rich as Comstock materials was presented at the state fair in 1864.

By 1868, about 13 veins were being exploited and new Central Pacific train lines running to Sacramento made work in this location viable, but overall income remained low. It was determined that the ore was rich in copper and not gold. Activity peaked in 1873-1874 when Peavine had a few hundred inhabitants, a 10-stamp mill, three hotels, brick and log houses, a toll road, and a post office named Poeville (Paher 1970). The post office operated between September 1, 1874, and March 24, 1878. Major mines in and around Poeville included the Paymaster, Fravel, and Golden Fleece mines. Both the Paymaster and Golden Fleece mines yielded sulfide-rich ores that were nearly impossible to smelt and water was difficult to get to the mines. Because of this and other factors, activity at Poeville ceased and by 1880 the population declined to 15 inhabitants and work was all but done (Paher 1970).

Recreation and the National Forest

By the turn of the twentieth century, land within the project area had become increasingly valuable for residential and recreational purposes. Prior use of NFS lands for grazing or timber production gave way to recreation, as recreation and allied services became the major economic forces shaping growth. This budding recreational economy amplified the rate of development and growth in population, which were further escalated with the establishment during the 1930s of a statewide network of engineered and major routes through the montane regions.

As the Truckee area and the neighboring Tahoe Basin attracted more interest and more tourists, resorts began to appear. Growing numbers of eastern visitors joined the members of San Francisco's elite and the wealthy mining and business interests of the Comstock at the area's best hotels; people of more modest means camped or vacationed in rustic hotels and cottages. The backwoods became increasingly populated by recreationists. The USFS initiated patrols for visitor safety and to respond to the increased fire danger. Fire lookouts were established, along with remote guard stations and ranger stations. Early horse trails were improved and telephone lines were installed, as part of a fairly extensive system which linked outlying USFS facilities with main USFS offices. Improved communications enhanced fire detection and prevention and aided recreational safety.

3.5.1.2 Cultural Resource Inventories

Project-specific cultural resource inventories identified cultural resources within the APE, including sites that are listed on the NRHP, sites eligible for listing on the NRHP, unevaluated sites, and sites that are no longer eligible. Unevaluated sites are assumed to be NRHP-eligible pending further evaluation. Site types encountered in the cultural resource inventories included prehistoric, historic, and multi-component. Prehistoric site types are predominantly lithic scatters and groundstone scatters. Historic site types are predominantly debris scatters but also include a ranch, mining features, roads, fences, a trail, water diversion features (flume/ditches/canals), a culvert/rock wall, and a railroad. The ranch site is the Peavine Ranch in Washoe County, which is listed on the NRHP for its applicability to historic agriculture events between 1850 and 1949 (National Park Service 2013). The multi-component sites are combinations of the above site types, such as a lithic scatter and historic debris scatter.

3.5.1.3 Native American Concerns

The Proposed Action lies within the traditional territory of the Washoe and Northern Paiute represented by the Reno-Sparks Indian Colony, Washoe Tribe of Nevada and California, and Pyramid Lake Paiute Tribe.

The Reno-Sparks Indian Colony disclosed the presence of a potential TCP within the project area. Designation of a TCP is a federal agency action, and no agency has completed a TCP listing in the project area. Therefore, a TCP study was performed consisting of research of published and unpublished ethnographies and history, conducting a series of meetings and interviews with representatives from the Reno-Sparks Indian Colony, Washoe Tribe of Nevada and California, and Pyramid Lake Paiute Tribe; presentations to tribal councils; and focused interviews and field trips with tribal individuals for the Tribes especially knowledgeable about the history of land use and traditions associated with the project area. Meetings and interviews were open-ended but focused on identifying historic properties and potential traditional cultural properties. The study included four tasks: identifying primary contacts, identifying issues and potential properties and areas of concern, and reporting the potential effects of the proposed project and formulating mitigation measures with Tribal input. Additional information on Tribal Consultation can be found in **Section 4.2.3**.

3.5.1.4 Mitchell Alternative

The Mitchell and Peavine alternatives encountered the fewest number of sites that are either eligible for listing on the NRHP or are unevaluated. Unevaluated sites are treated as NRHP-eligible pending further investigation. No NRHP-listed sites are found along the Mitchell Alternative; however, one site has been determined NRHP-eligible with SHPO concurrence.

Approximately 11.1 miles of roads would be widened for construction access for the Mitchell Alternative. Modeling predicts that the Mitchell Alternative would encounter the fewest number of cultural sites along these roads.

3.5.1.5 Peavine Alternative

The Peavine and Mitchell alternatives encountered the fewest number of sites that are either eligible for listing on the NRHP or are unevaluated. Unevaluated sites are treated as NRHP-eligible pending further investigation. No NRHP-listed sites are found along the Peavine Alternative; however, four cultural resources have been determined NRHP-eligible with SHPO concurrence.

Approximately 20.79 miles of roads would be widened for construction access under the Peavine Alternative. Modeling predicts that the Peavine Alternative would encounter more cultural sites along these roads compared to the Mitchell and Poeville alternatives, but would encounter fewer cultural sites compared to the Peavine/Poeville Alternative.

3.5.1.6 Poeville Alternative

One NRHP-listed site occurs along the Poeville Alternative, which is more than any other action alternative. The Poeville Alternative encountered more sites that are eligible for listing on the NRHP or are unevaluated compared to the Mitchell or Peavine alternatives, but would encounter the same number of sites compared to the Peavine/Poeville Alternative. Unevaluated sites are treated as NRHP-eligible pending further investigation.

Approximately 20.2 miles of roads would be widened for construction access under the Poeville Alternative. Modeling predicts that the Poeville Alternative would encounter less cultural sites along these roads compared to the Mitchell Alternative, but would encounter fewer cultural sites compared to the Peavine and Peavine/Poeville alternatives.

3.5.1.7 Peavine/Poeville Alternative

The Peavine/Poeville Alternative encountered the same amount of sites that are either eligible for listing under the NRHP or are unevaluated as the Poeville Alternative. Unevaluated sites are treated as NRHP-eligible pending further investigation. No NRHP-listed sites are found along the Peavine/Poeville Alternative.

The Peavine/Poeville Alternative would require the most road widening mileage at approximately 20.7 miles. Modeling predicts that along these roads, the Peavine/Poeville Alternative would encounter approximately the same number of cultural sites compared Poeville and less than the Peavine and Mitchell alternatives.

3.5.2 Environmental Consequences

3.5.2.1 Methods of Analysis

Assessment of potential effects or impacts on cultural resources is based on the NHPA regulations that define an effect as a direct or indirect alteration to the characteristics of a “historic property” that qualify it for inclusion in the NRHP. Adverse effects diminish the integrity of a property’s location, setting, design, materials, workmanship, feeling, or association.

As defined in 36 CFR 800.5, adverse effects on historic properties include, but are not limited to:

i. Physical destruction of or damage to all or part of the property;

ii. Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary’s Standards for the Treatment of Historic Properties (36 CFR 68) and applicable guidelines;

iii. Removal of the property from its historic location;

iv. Change of the character of the property’s use or of physical features within the property’s setting that contribute to its historic significance;

v. Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;

vi. Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

vii. Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

Within the APE of action alternatives, a comparison of the numbers of NRHP-eligible sites, unevaluated sites, and non-eligible sites potentially impacted between alternatives is presented. Within the APE of roads that would be widened to construct an alternative, a quantified prediction of impacts to sites (of unknown eligibility) was calculated based on sensitivity modeling (Garner et al. 2014).

The following indicators were considered when analyzing potential impacts to historic properties (i.e., NRHP-eligible cultural resources):

- The number of NRHP-eligible or unevaluated sites impacted; and
- The number of modeled sites of unknown eligibility potentially impacted.

3.5.2.2 No Action Alternative

Under the No Action Alternative, construction of the proposed project and subsequent operation and maintenance of the proposed transmission line would not occur; therefore, there would be no impacts to NRHP-eligible, potentially eligible, or unevaluated cultural resource sites from the proposed project.

3.5.2.3 Effects Common to All Action Alternatives

Potential impacts to cultural resources that are common to the action alternatives include the following:

- Direct and indirect impacts to cultural resources;
- Discovery of unanticipated finds during construction;
- Discovery of human remains during construction; and
- Unauthorized artifact collection and vandalism.

Prehistoric and historic sites eligible for listing in the NRHP, are distributed throughout the project area. Traditional Cultural Properties were also identified in the project area, however the USFS in consultation with Tribes and the SHPO concurred that there will be no adverse effects to these resources. Construction of the action alternatives may have direct effects on sites from excavation, grading, and other types of ground surface and subsurface disturbance. In forested communities, trees under transmission line wires would be removed for the life of the project for safety purposes. Logging activities during construction and throughout the maintenance phase of the project may have direct effects on NRHP-eligible sites due to tree falls, skidding, construction of log landings, and trimming/brushing activities. Once constructed, the presence of the transmission line may also have direct effects on the visual setting of NRHP-eligible sites, especially those listed or deemed eligible based in large part on integrity of setting.

Construction of any of the action alternatives may have indirect effects on NRHP-eligible prehistoric and historic sites where ground disturbance results in increased erosion of surrounding landforms, archaeological contexts, and data potential may be altered from the displacement of artifacts and features. Additionally, unauthorized use of construction access roads by the public would increase the potential for public access to archaeological resources. Increased public access might result in unauthorized artifact collection or unintended damage.

Design Features to Avoid or Minimize Direct Effects

All NRHP-listed sites, NRHP-eligible sites, and unevaluated sites would be mitigated, which may include avoidance. Mitigation is a way to remedy or offset an adverse effect or a change in a historic property's qualifying characteristics in such a way as to diminish its integrity. Treatment is the act of mitigating those effects, or how one goes about implementing the mitigation measure(s) agreed upon in consultation. Thus, a mitigation plan for the undertaking may contain several treatment plans, one for each property being adversely affected. Data recovery is a common mitigation measure that, through implementation of a treatment plan, retrieves the important information present within an archaeological site that makes it eligible before the site's integrity is compromised or destroyed. Project specific design features to protect cultural resources (CU 1 through CU 7) are presented in **Appendix B**. Design feature CU 3 requires that a Historic Properties Treatment Plan (HPTP) would be developed in consultation with the California and/or Nevada State Historic Preservation Offices (SHPOs), tribes, and NV Energy for the selected alternative if avoidance of a cultural site identified as eligible or treated as eligible cannot be avoided.

Design Features to Avoid or Minimize Indirect Effects

The potential for soil erosion that may displace artifacts would be minimized through the implementation of Best Management Practices (BMPs) and immediate restoration of project-related surface disturbance. Design features developed for water and soil resources (WA 1 and WA 2) ensure that a SWPPP would be implemented. The effectiveness of erosion controls and the success of revegetation would be monitored and remedial actions would be taken, as necessary.

The implementation of design features developed for recreation resources and transportation (RT 3 through RT 7) would reduce the potential for unauthorized travel on restored roads which, in turn, would reduce the potential for unauthorized artifact collection and vandalism. All new temporary construction access roads would be restored immediately following construction. Restored roads on NFS land would have a physical closure (i.e., barricade) installed immediately to prevent unauthorized vehicle use from occurring on reclaimed roads. The effectiveness of barricades and the success of revegetation would be monitored and remedial actions would be taken, as necessary.

Mitigation

If avoidance of all NRHP-listed properties, NRHP-eligible properties, TCP-eligible and sites with unknown eligibility status is not possible, an MOA and HPTP would be prepared and signed prior to construction. The MOA and HPTP would be developed with the California and Nevada SHPOs, Tribes, and NV Energy. The HPTP would be implemented according to the agreement and would become part of the COM Plan.

3.5.2.4 Cumulative Effects

It is likely, although unknown to what extent, that the construction of the existing utility lines, transportation network, agricultural development, livestock grazing, and urban development within the CIAA have directly impacted unknown cultural resources. In addition to those likely effects, these past and present actions have also impacted the visual setting (i.e., integrity of setting) of cultural resources, especially those sites listed or deemed eligible for inclusion on the NRHP. For example, the Alturas 345 kV transmission line has changed the viewshed of the Peavine Ranch historic property. Other present actions, including existing roads and limited residential development were constructed within the viewshed of the property prior to its inclusion on the NRHP.

Cumulative impacts from any of the action alternatives would be negligible because alternatives include design features when appropriate to minimize impacts to the viewshed of cultural sites, and mitigation measures in the event that cultural sites cannot be avoided. Unknown cultural resources outside of the current APE will continue to be impacted and disturbed due to livestock grazing and possibly unauthorized OHV recreation. According to the Environmental Assessment prepared for the Dog Valley Fuels Reduction and Ecosystem Enhancement Project (USFS 2009b), which is an ongoing resource management activity, there would not be any direct adverse impacts on cultural resources from the project. Reasonably foreseeable future resource management activities that would be conducted by the USFS would be implemented in compliance with Section 106 of the NHPA. Section 106 of the NHPA requires avoidance and/or mitigation of impacts to Historic Properties by federal undertakings.

Mitigation

For federal undertakings within the CIAA, if avoidance of NRHP-listed properties, NRHP eligible properties, and sites with unknown eligibility status is not possible, preparation and implementation of an approved MOA and HPTP would be required.

3.6 WATER RESOURCES AND SOILS

This section provides a discussion watersheds, streams, riparian zones, floodplains, soils, and water quality. The analysis area for water resources and soils consists of the 300- to 600-foot-wide variable-width corridor and the road widening corridor of each action alternative.

3.6.1 Affected Environment

3.6.1.1 Watersheds and Streams

As displayed on **Figure 3.6-1**, the project area spans two major watersheds: Truckee watershed and Honey-Eagle Lakes watershed. Streams within the southern portion of the project area are within the Truckee watershed and include the Truckee River. Streams in the northern portion of the project area are within the Honey-Eagle Lakes watershed, and drain to Long Valley Creek, White Lake, or Silver Lake. The total number of perennial, intermittent, and ephemeral streams of each action alternative is presented in **Table 3.6-1**. There are no streams on public land administered by the BLM within the analysis area of any action alternative.

Table 3.6-1 Number of Streams within Analysis Area of Action Alternatives

STREAM FLOW REGIME	MITCHELL		PEAVINE		POEVILLE		PEAVINE/ POEVILLE	
	NFS LAND	TOTAL	NFS LAND	TOTAL	NFS LAND	TOTAL	NFS LAND	TOTAL
Perennial	1	2	1	3	0	4	0	3
Intermittent	1	1	1	1	0	1	0	0
Ephemeral	7	8	11	16	8	19	9	15
Total	9	11	13	20	8	24	9	18

Source: JBR field investigation; U.S. Geological Survey topographic maps (1967a, 1967b, 1978, 1981); and aerial photography (U.S. Farm Service Agency 2013)

The perennial streams within the analysis areas of the Mitchell and Peavine alternatives include Sunrise Creek and Dog Creek, both of which are within the Truckee watershed. The analysis area of the Peavine Alternative also includes an additional perennial stream, Bull Ranch Creek. Perennial streams within the analysis areas of the Poeville and Peavine/Poeville Alternative include Sunrise Creek, Bull Ranch Creek, and the Truckee River. The analysis area of the Poeville Alternative also includes an additional perennial stream, Jones Creek.

3.6.1.2 Riparian Zones and Wetlands

Intermittent and perennial streams identified in **Table 3.6-1** support wetland riparian zones. The wetland riparian zones of the largest streams are dominated by willow shrubs, while riparian zones of smaller streams are dominated by wetland grasses and forbs (i.e., wet meadow). A few isolated springs and seeps are present outside of stream zones and are generally dominated by grasses and forbs. **Table 3.6-2** shows the acreage of wetlands, which includes the wetland riparian zones and off-channel wetlands that are found within the variable-width corridor and road widening corridor for each action alternative.

Table 3.6-2 Acres of Wetlands within Analysis Area

ANALYSIS AREA	MITCHELL		PEAVINE		POEVILLE		PEAVINE/ POEVILLE	
	NFS LAND	TOTAL	NFS LAND	TOTAL	NFS LAND	TOTAL	NFS LAND	TOTAL
Variable-Width Corridor	0.6	13.7	0.1	13.2	3.9	14.1	1.1	21.8
Road Widening Corridor	1.0	1.1	1.1	1.4	0	0.2	1.1	1.3
Total	1.6	14.8	1.2	14.6	3.9	14.3	2.2	23.1

Source: USFS GIS data (USFS 2005; 2008a) and JBR field investigation

3.6.1.3 Waters of the United States and Waters of the State

Not all streams and wetlands within the analysis area would be considered a water of the United States subject to regulation under the Clean Water Act of 1977, as amended (CWA). In accordance with the definition of a water of the United States (33 CFR 328), stream segments that cross the California and Nevada state line, tributaries of the Truckee River, and wetlands adjacent to these streams would be considered as a water of the United States (**Figure 3.6-2**). Isolated streams and isolated wetlands that are not in proximity or adjacent to a tributary of the Truckee River would not be considered a water of the United States. Therefore, within the analysis area, any stream or wetland that drains toward Lemmon Valley or Cold Spring Valley would not be considered a water of the United States. The Poeville Alternative is the only alternative that contains streams and wetlands that drain toward Lemmon Valley and Cold Spring Valley.

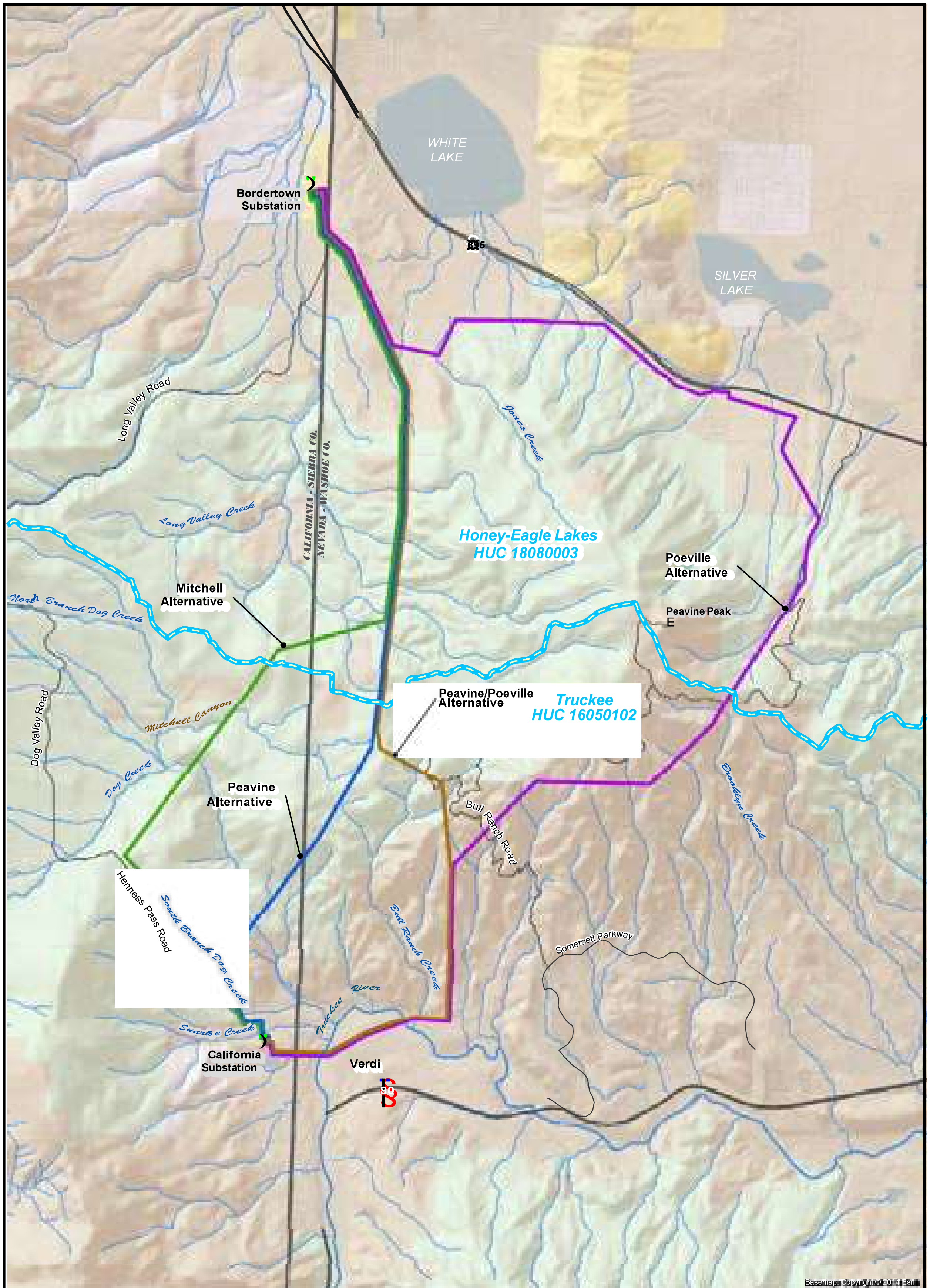
Regardless of their federal status, all surface waters and wetlands within the analysis area would be considered waters of the State. Waters of the State of California are found along the Mitchell and Peavine alternatives, and include Mitchell Creek, Dog Creek, South Branch of Dog Creek, Sunrise Creek, and one unnamed ephemeral channel. The remaining streams within the analysis area, including many unnamed streams, are waters of the State of Nevada.

3.6.1.4 Floodplains

The Federal Emergency Management Agency (FEMA) regulations (44 CFR 59.1) define “special flood hazard areas” as areas of land within a floodplain that are subject to a one percent or greater chance of inundation from a flood in any given year (also referred to as the base flood or 100-year flood). Special flood hazard areas are delineated on flood insurance rate maps by FEMA. Special flood hazard areas within the analysis area have been mapped on FEMA flood insurance rate map panels 06091C500C (2012), 32031C2813H (2013a), 32031C2814H (2013b), and 32031C3013G (2009). These special flood hazard areas are associated with the Truckee River, Dog Creek, and Jones Creek, and several unnamed intermittent and ephemeral streams located east and west of Jones Creek.

3.6.1.5 Soils

According to the Natural Resources Conservation Service (NRCS) (2012), there are more than 100 different soil mapping units within the analysis area. Using soil erosion characteristics, slope, and rock fragment content, the NRCS rates soil units according to the potential for soil loss from unsurfaced roads and trails. The possible erosion hazard rating categories which are used include: slight, moderate, and severe. Most of the soils within the analysis area of each action alternative have been rated as severe erosion hazard (**Figure 3.6-3**). A rating of "severe" indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed (NRCS 2012).



Transmission Line Alternatives

Mitchell
Peavine
Poeville
Peavine/Poeville

Watershed Boundary

USGS Hydrologic Unit
Stream

Land Ownership

U.S. Forest Service
U.S. Bureau of Land Management
Private Land

FIGURE 3.6-1
WATERSHED

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

1 " = 1 mile
0 0.5 1 2 Miles

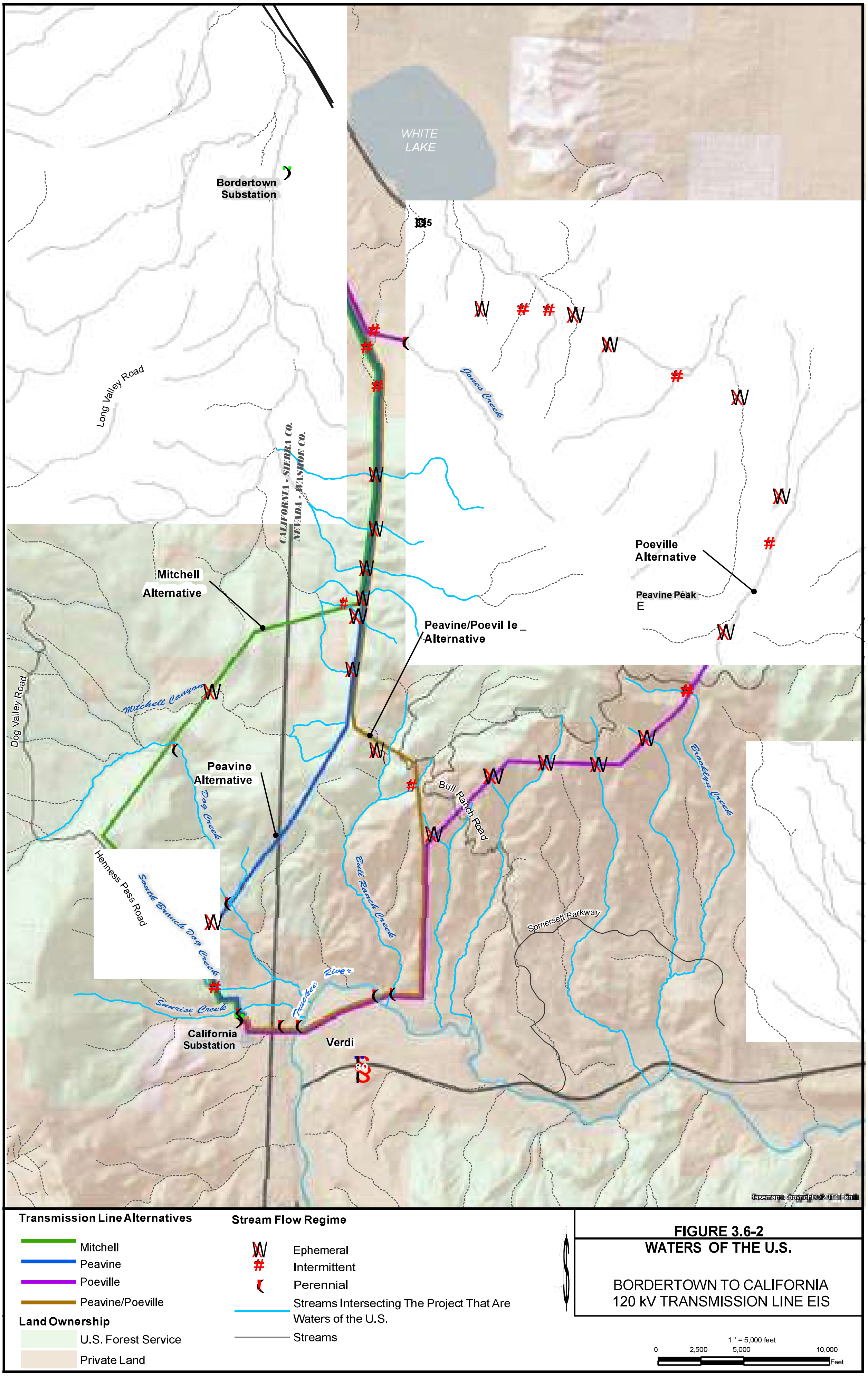


FIGURE 3.6-2
WATERS OF THE U.S.

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

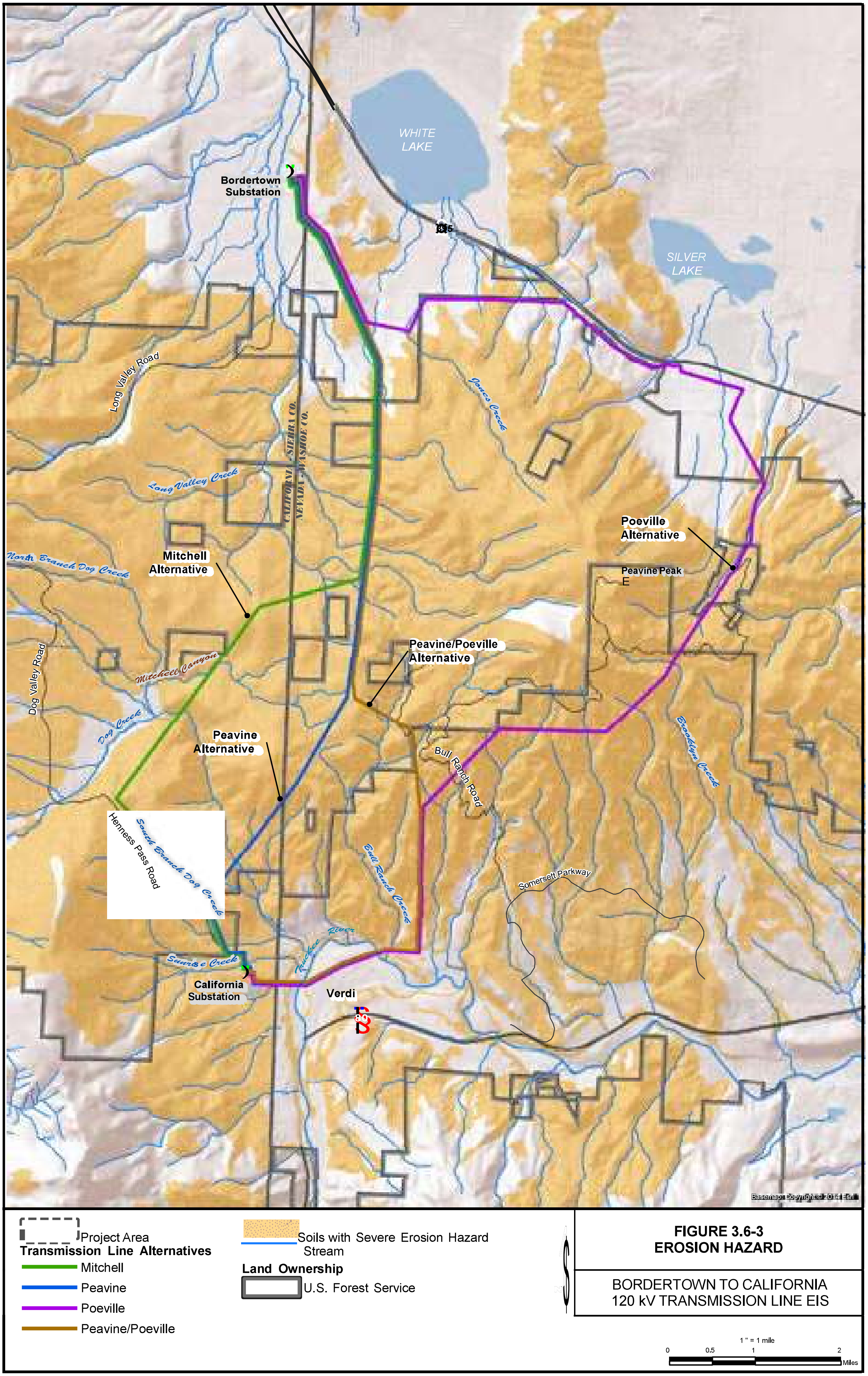


FIGURE 3.6-3
EROSION HAZARD

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

3.6.1.6 Water Quality

Streams within the Dog Creek and Hunter Creek-Truckee River sub-watersheds drain to the Stateline to Idlewild reach of the Truckee River. According to the Nevada Division of Environmental Protection (NDEP) (2012), the Stateline to Idlewild reach (NV06-TR-02_00) is a CWA 303(d)-listed impaired water body. Inclusion on the 303(d) list means the reach does not meet state water quality standards. Water quality standards for beneficial uses of this reach have been met for livestock irrigation, recreation, municipal or domestic supply, industrial supply, and propagation of wildlife. However, since the last reporting period, the reach failed to meet water quality standards for the aquatic life beneficial use category because of high water temperature. The aquatic life of major concern in this reach are all life stages of mountain whitefish, rainbow trout, and brown trout. The Stateline to Idlewild reach was previously listed on the 303(d) list due to high suspended sediment and turbidity, but has since been delisted for this parameter because monitoring has shown that the reach meets water quality standards for sediment and turbidity. All action alternatives either cross the Stateline to Idlewild reach of the Truckee River or cross tributaries that flow into this reach.

The remaining streams within the analysis area are a part of the Headwaters Long Valley Creek, Cold Spring Valley, Lemmon Valley subwatersheds. These streams do not drain into a waterbody that is a CWA 303(d)-listed impaired water body (CWRCB 2010; NDEP 2012).

3.6.2 Environmental Consequences

Methods of Analysis

The potential direct and indirect effects on soils and water resources were analyzed and quantified using the impact indicators listed below.

- Acres of soil disturbance rated as severe erosion hazard;
- Number of constructed fords and unimproved crossings on streams;
- Number of constructed fords and unimproved crossings within wetlands and riparian zones; and
- Acres of waters of the United States disturbed.

Design features listed in **Appendix B** have also been developed to reduce or avoid certain impacts, including impacts to water quality and from soil erosion. The analysis considers impacts of the project after the incorporation of these project design features.

3.6.2.1 No Action Alternative

Under the No Action Alternative, no impacts to soils and water resources would occur as construction of the proposed project and subsequent operation and maintenance of the proposed transmission line would not occur.

3.6.2.2 Effects Common to All Action Alternatives

Potential impacts to soils and water resources that are common to all of the action alternatives include the following:

- Direct and indirect impacts to soils and soil functions;
- Direct and indirect impacts to streams;

- Impacts to riparian zones and wetlands; and
- Impacts to waters of the United States.

The effects of construction, operations, and maintenance discussed below are the same for all action alternatives. However, the acres of soil disturbance and number of stream crossings and the resulting impacts to wetlands would vary with each alternative. It is assumed that the amount of temporary disturbance to soils is an indicator of the potential for soil loss from erosion. Following the discussion of effects common to all alternatives, a summary table comparing the magnitude of effects between alternatives is presented (**Table 3.6-3**).

Construction

Soils

The construction of any of the action alternatives would result in the permanent (long-term) loss of soil substrate in areas displaced by pole structures and at the Bordertown Substation. Installation of new poles would permanently displace an area of soil measuring 23 inches in diameter (0.0003 acre) at each pole. The total amount of soil displacement would vary depending on the type of structure installed (e.g., single-pole, two-pole H-frame, or three-pole dead-end/angle structure). Self-supporting pole structures on concrete foundations, which would only be used where the ROW is constrained, would displace an area of soil measuring 3 to 12 feet in diameter for each foundation. An average of seven pole structures per mile would be expected for any action alternative. All action alternatives would require the expansion of the Bordertown Substation, which would permanently impact up to approximately 3.7 acres of soil substrate. The Bordertown Substation expansion would occur on BLM-administered public land.

Disturbance to soils from construction and recontouring for the purposes of restoration would result in a loss of soil function which may be short-term or long-term. Use of vehicles and heavy equipment may compact soils which could inhibit water infiltration, increase runoff rates, restrict root growth, reduce soil aeration, and possibly affect soil microbiota. Soils at the base of each pole structure would be deliberately compacted to support structures which would cause similar effects. Loss of vegetation would indirectly affect soils.

Design Features to Avoid and Minimize Impacts to Soils

Effects of compaction can be short or long-term; however, construction practices and design features would reduce the potential for long-term effects. Restoration of disturbed areas under all action alternatives would routinely include loosening of compacted soils prior to seeding. To minimize the potential for soil compaction during construction, design feature WA 5 would prohibit the use of heavy equipment when soils are wet.

To recover soil function as quickly as possible, restoration would begin as soon as construction is complete. To encourage rapid re-growth of vegetation, design feature VG 5 specifies that shrub vegetation would be cleared primarily by mowing or chopping vegetation in a manner that leaves root systems intact. Revegetation would be monitored annually and would be measured against success criteria. Under a best case scenario, it would take approximately 3 to 5 years to meet success criteria, at which time, soils would be adequately stabilized. Short-term (i.e., 10 years or less) soil stabilization is expected but the time period would be directly related to the type, intensity, and duration of the disturbance. Revegetation success and soil stabilization on reclaimed access roads would be slow if repeated damage from OHV use occurs. However, the OHV use of restored roads on NFS land would be minimized as much as possible through design features RT 7 and RT 8 which require the effectiveness of blockades to be evaluated and, if necessary, monitored by USFS OHV rangers until restoration is successful.

Streams

At road crossings, ephemeral streams would not likely need constructed improvements, particularly if the streams have a cobble bed, or do not have a steep banks. Where ford crossings are constructed, the side-slopes of the drainage would be laid back to a slope that allows for safe vehicle travel if the original contours are excessively steep and/or unstable and a more stable final contour can be specified. If needed, the slopes and drainage bottoms would be rock-armored to protect the channel bed and bank. Once the transmission line construction is complete, the crossing would be recontoured, de-compacted, stabilized, and seeded with agency-approved seed mixes. Heavy or mechanized equipment could be used, but restoration could be completed by hand if the site is wet or if hand treatment would result in higher success. Where riparian vegetation has been removed (which would be allowed on existing crossings) vegetation would be replaced.

Improved and unimproved stream crossings would disturb the bed and banks of streams which may cause erosion and sedimentation, and impacts to water quality. See discussion below for a description of water quality impacts.

Design Features to Avoid and Minimize Impacts to Streams

Design features that prohibit certain types of construction activities within meadows, wetlands, stream riparian zones, and 100-year floodplains would ensure that streams that have the greatest flow within the analysis area (i.e., perennial streams intermittent streams) are protected. Design feature WA 13 would prohibit new road crossings on perennial streams; SV 3 would prohibit road crossings on streams containing wetland meadows; WA 3 would keep staging areas away from streams; WL 10 prohibits construction within the 100-year floodplain of Dog Creek, Bull Ranch Creek, and the Truckee River; and design feature WA 4 prohibits poles within the 100-year floodplain of any stream or wetland.

Additionally, a number of design features have been developed to ensure temporary stream crossings are properly planned and constructed (design features WA 8 through WA 13). Design features also ensure that impacts to streams would not be long-term. Design feature WA 11 requires that constructed crossings would be monitored such that repairs or remedial measures are promptly implemented, and design features VG 6 and 7 require that disturbances would be successfully restored and stabilized.

Riparian Zones and Wetlands

The transmission line would span riparian zones and wetlands along streams. Ancillary facilities such as staging areas and log landings would be placed outside of streams. However, the widening of existing crossings on streams supporting riparian shrubs and construction of improved and unimproved stream crossings on intermittent streams may cause the loss of woody riparian vegetation which may also meet the criteria of a wetland. Isolated wetlands of any type that are found away from streams would not be impacted because these features are small and can be easily avoided.

Design Features to Avoid and Minimize Impacts to Riparian Zones and Wetlands

Riparian zones and wetlands that would be impacted occur along streams. Design features developed to avoid and minimize impacts to streams would also avoid and minimize impacts to riparian zones and wetlands.

Waters of the United States and Waters of the State

Design features developed to protect streams, riparian zones, and wetlands would prohibit placement of transmission line poles, staging areas, and log landings within streams and wetlands and would generally limit road improvement impacts to ephemeral channels. Unavoidable impacts to non-wetland waters of the United States and waters of the State may occur from construction of a road crossing.

The locations and types of road crossings have not been determined at this time. A delineation of jurisdictional features would be conducted for the selected alternative once the alternative has been engineered and the location of poles and access roads are known. For the purposes of this analysis, it is assumed that all crossings would need improvement. Using a maximum road width of 30 feet and the stream width identified through field work or aerial imagery, an estimate of impacts to waters of the United States is presented in **Table 3.6-3**. Impacts would be allowable under the CWA Section 404 permitting program using Nationwide Permit 12 Construction, Maintenance, and Repair of Utility Lines and Associated Facilities, provided that the project can meet permit conditions. Section 401 Water Quality Certification from Lahontan Regional Water Quality Control Board (LRWQCB) (California) or NDEP would be needed in order for the permit to be valid. Certification means that the project would not violate federal and state water quality standards. In California, the terms of a Section 401 Water Quality Certification would prohibit the permanent placement of armoring material in the stream but would allow temporary placement of armoring for up to 90 days (CWRCB 2012). Additionally, restoration of the stream would need to be completed within 30 days of completion of project construction. LRWQCB and NDEP may require additional conditions to minimize impacts.

For features that are waters of the State only, permits would be needed from NDEP or LRWQCB prior to impacts. Agencies may add permit conditions to minimize impacts.

Indirect effects (e.g., sedimentation) to stream channels that are considered waters of the United States and waters of the State would be the same as impacts to streams discussed above. Impacts would be short-term and minor because design features and any general or special conditions of state and federal permits would be implemented.

Floodplains

Construction, including temporary road crossings, would not require the placement of permanent, above-ground fills within designated special flood hazard areas. No impacts to floodplains would occur under any action alternative.

Water Quality

Construction of the proposed project would cause several types of soil disturbance (i.e., excavation, grading, compaction, etc.) that could subsequently cause localized, short-term water quality degradation. Disturbance of soil during construction would produce loose soil, which, without proper management, could enter nearby streams. The water quality impact of road construction and widening is of particular concern when that road crosses a stream channel, closely parallels a stream channel, or traverses a steep slope. Restoration activities, which include recontouring and reseeding, may also disturb soil that could subsequently cause localized, short-term water quality degradation if sediment is captured by streams.

Implementation of design features (**Appendix B**) would reduce the potential for water quality degradation from accelerated erosion and sedimentation. Design feature WA 1 requires implementation of a Storm Water Pollution Prevention Plan (SWPPP). The objective of a SWPPP is to minimize erosion from project construction work sites and contain sediment. At a minimum, the SWPPP would identify the existing drainage patterns of the construction work sites and ROW/easement area; nearby drainages; sediment and non-sediment pollutant sources that can be reasonably expected; and the erosion and sediment control measures called best management practices (BMPs). The SWPPP includes maps for the project area with locations where specific BMPs would be installed or implemented. The SWPPP is updated and kept onsite throughout the duration of construction. Implementation of the iterative BMP process, and the site-specific application of BMPs are recognized by the Forest Service as the "most efficient means" and "primary tool" to protect soil and water resources from nonpoint sources of pollution (USFS 1988, 2000, 2011a, 2012c). The SWPPP is prepared in accordance with the National Pollution Discharge Elimination System General Construction Stormwater Permit to plan and execute erosion control measures. To ensure the efficacy of erosion controls identified in the SWPPP, inspections would be made at least once per week and before and after rain events for the duration of construction. The implementation of BMPs during project construction is reinforced by design features VG 6, WA 1, and WA 2. Design feature WA 2 ensures that inspections would be made by qualified personnel of NV Energy or its contractors and that maintenance of BMPs would occur on a frequent and regular basis. Examples of BMPs that NV Energy routinely uses to effectively minimize impacts to streams include limiting the clearing of vegetation at the edge of a stream to the minimum area necessary for vehicle passage; installing and maintaining sediment barriers, as necessary, until they are replaced by permanent erosion control devices or restoration of adjacent areas is complete; and, use of permanent waterbars, if needed, on slopes above drainages and on travel routes to minimize sediment flow from adjacent upland into drainages.

Design feature WA 4 prevents construction of pole sites and staging areas within the 100-year floodplain of any stream or within wetlands. This would effectively prohibit construction within very close proximity to perennial streams within the analysis area. Use of existing crossings of perennial streams would be allowed, but new crossings would be prohibited per design feature WA 13. Thus, accelerated sedimentation of perennial streams from construction disturbance within close proximity would not be anticipated.

In accordance with design feature VG 6, all areas of temporary ground disturbance that result from the construction of the project would be restored as required by the land management agency and per any applicable permits. Restoration would include restoring contours to their approximate pre-construction condition, stabilizing the area through seeding, mulching, placement of erosion control fabric, and installing erosion control features. Revegetation may include incorporation of chips into the soil, as needed. Erosion control includes installing cross drains and placing water bars in the road, as needed.

Revegetation would be monitored annually and would be measured against success criteria. Under a best case scenario, it would take approximately three to five years to meet success criteria, at which time, soils would be adequately stabilized. Short-term (i.e., 10 years or less) soil stabilization is expected but the time period would be directly related to the type, intensity, and duration of the disturbance. Revegetation success and soil stabilization on reclaimed access roads would be slow if repeated damage from OHV use occurs. However, the OHV use of restored roads on NFS land would be minimized as much as possible through design feature RT 7 which would require the effectiveness of blockades to be evaluated and monitoring would continue until the restoration is successful. Thus, any accelerated erosion and sedimentation from construction would be short-term until restoration activities are completed.

The potential for degradation of water quality through accidental release of potentially harmful or hazardous materials, such as diesel fuel, gasoline, or herbicides would be low. Because almost all streams crossed by the proposed transmission line within the analysis area are dry for most of the year and construction activities and staging is prohibited within the floodplain, direct contamination of a waterbody by an accidental spill or release of a hazardous material is unlikely. Additionally, implement of other design features provide added protect. For example, WA 1 requires implementation of a SWPPP and would identify the following: where hazardous materials would be stored; where trash would be placed; where motorized equipment would be parked, fueled, and serviced; and where construction materials would be stored. Design feature WA 3 would prohibit the storage of equipment fuels and staging of construction equipment within 300 feet of perennial streams and 150 feet of all other streams. Design feature HM 1 requires a Spill Prevention, Containment, and Countermeasures (SPCC) Plan to be implemented during construction to prevent spills and provide cleanup procedures in the event of a spill. Herbicides would not be used during rain events or immediately following rain events (design feature HE 4). Preparation and mixing of herbicides would occur at least 300 feet from surface waters (design feature HE 5). A spill cleanup kit would be readily available whenever herbicides are transported or stored (design feature HE 6).

Storm water run-off from the project area, specifically, from the analysis area of any action alternative, is not expected to elevate temperatures in the Truckee River because design feature WA 1 is intended to prevent run-off from reaching the river. Stantec (2013) conducted an analysis of the effect of storm water run-off on the 303(d) listing of the Truckee River. A rigorous analysis was not conducted for the Stateline to Idlewild reach, but the following observation was made: "The issue of temperature in the Truckee River is due to heat stress in the summer low flow period to cold water fisheries (i.e., trout). Since rain events are associated with cloud cover, summer rain events can logically be expected to have a cooling influence, however this was not substantiated in this analysis." The creation of storm water detention basins, impoundments, or other storage systems where rainfall and storm water run-off may collect and warm before discharge to streams is not proposed as part of the project.

Operation and Maintenance

Temporary disturbance to soils, streams, or riparian zones and wetlands from maintenance-related repairs may occur, but would be localized and would occur only on an infrequent to rare basis. Restoration, if necessary, would begin as soon as repairs are complete, and would include stabilization of soils.

Impacts to waters of the United States for maintenance would be allowable under the CWA Section 404 permitting program provided that it can meet the conditions of Nationwide Permit 3 for Maintenance (USACE 2012). Nationwide Permit 3 allows for activities related to the repair, rehabilitation, or replacement of any previously authorized structure. Section 401 Water Quality Certification from the LRWQCB or NDEP would be needed in order for the permit to be valid. For features that are waters of the State only, permits would be needed from NDEP or LRWQCB prior to impacts. Agencies may add permit conditions to minimize impacts.

With reclamation of disturbances and implementation of BMPs and design features, impacts to soils, streams, riparian zones, and wetlands would be short-term and negligible. Effective BMPs would prevent impacts to water quality.

3.6.2.3 Comparison of Impacts

A summary of the direct and indirect impacts to water resources and soils from implementation of each action alternative is presented in **Table 3.6-3**. With implementation of the design features described in **Section 3.6.2.2**, impacts from implementation of any of the action alternatives would be short-term and negligible to minor.

Table 3.6-3 Effects by Action Alternative

EFFECTS INDICATOR[1]	MITCHELL		PEAVINE		POEVILLE		PEAVINE/ POEVILLE	
	NFS LAND	ALL LAND	NFS LAND	ALL LAND	NFS LAND	ALL LAND	NFS LAND	ALL LAND
Soils Permanently Lost (acres)	0.07	3.8	0.07	3.8	0.01	3.9	0.03	3.8
Soils Temporarily Disturbed (acres)	176.5	281.7	184.2	302.1	162.2	617.7	127.3	364.3
Number of Stream Crossings (quantity)	7	9	12	16	0	15	11	16
Number of Wetland/Riparian Road Crossings (quantity)	0	2	0	7	2	9	0	8
Waters of the United States Impacted (acres)[2]	0.007	0.007	0.010	0.010	0	0.031	0.010	0.010

[1] Acres and quantity numbers include access roads and road widening areas
[2] Acres of impacts after implementation of design features

3.6.2.4 Cumulative Effects

Surface water quality is considered good for both of the watersheds within the water resources and soils CIAA for sedimentation and turbidity (NDEP 2012) (Goodguide Scorecard 2013). The current good condition of the watersheds suggests that the effects of sedimentation from present actions are short-term or minimal, or both. Reasonably foreseeable future resource management activities would include project design features protecting watershed resources. Reasonably foreseeable future resource management activities would cause some soil disturbance during implementation, but would include BMPs to minimize the potential for soil loss from erosion and may require topsoil to be salvaged. The reasonably foreseeable future Stonegate Master Plan Development on private land would disturb soils and create the potential for soil erosion. However, it be subject to compliance with NDEP regulations and would require a SWPPP to prevent erosion and sedimentation.

The action alternatives would not increase water temperatures or cause accelerated sedimentation of surface waters leading to reduced water quality (see **Section 3.6.2.2**). Because the action alternatives would not impact water quality, they would not contribute to any cumulative effects on water quality that other present and reasonably foreseeable future actions might have.

Effects on soils from the action alternatives, such as soil compaction and function would be remedied during restoration, which would be completed at the end of the 8 to 12 month construction period. Thus, the direct effects on soils from the action alternatives would generally be short-term. These short-term impacts would most likely attenuate before reasonably foreseeable future actions are implemented. Accordingly, the cumulative effect to soils from any of the action alternatives when combined with future actions would be negligible.

3.7 VEGETATION

This section provides a discussion of vegetation resources, including noxious weeds that may occur in the project area and surrounding areas. Special status plant species are discussed in **Section 3.8**. The analysis area for vegetation consists of either the 300- to 600-foot-wide variable-width corridor or the ROW and the road widening corridor of each action alternative.

3.7.1 Affected Environment

The plant assemblages within the project area reflect the unique setting along the western edge of the Great Basin and the eastern edge of the Sierra Nevada. The plant communities occurring within the project area are influenced by elevation, soils, aspect, and past disturbances such as logging, grazing and fire.

Several large-scale fires have burned across the region in the past three decades (USFS 2014f). Wildfire has caused an uneven distribution of tree size and age within the forested communities in the region. Shrub communities have also suffered the repeated effects of fire and have been converted to communities dominated by species that are adapted to disturbance. Following wildfires, vegetation communities may initially be dominated by weeds and annual grasses, such as cheatgrass, which is found in almost all vegetation communities. **Figure 3.2-1** depicts the modern and historic fires which have burned within the region.

Other factors have changed the vegetative communities of the project area, these range from biologic to anthropogenic. Biological disturbances of vegetation communities have occurred from climatic variations (i.e., drought) resulting in insect infestations in forested communities from Jeffrey pine beetle, pine engraver beetle, fir engraver beetle, and mountain pine beetle often resulting in tree mortality particularly in the Dog Valley area. The USFS manages stands of timber for habitat, forest health, fuels reduction, and implement management tools including forest thinning, brush removal, prescribed fire, and firewood sales. Two projects, the Dog Valley Fuels Reduction and Ecosystem Enhancement project (USFS 2010b) and the Beagle Personal Use

Fuelwood Area are currently being implemented along a portion of the Mitchell Alternative; primary actions include thinning overstocked stands of timber (USFS 2014d).

3.7.1.1 Vegetation Communities

Seventeen vegetation communities were identified within the project area. For the purposes of depicting vegetation communities in a readable map format, similar communities have been combined on **Figure 3.7-1**. The total acreage of vegetation communities within the variable-width corridor by land status for each action alternative is listed in **Table 3.7-1**. Descriptions of the most prevalent vegetation communities follow the table.

Table 3.7-1 Acres of Vegetation Communities within the Variable-Width Corridor

VEGETATION	MITCHELL	PEAVINE	POEVILLE	PEAVINE/ POEVILLE
USFS				
Bitterbrush-sagebrush	171.0	228.6	143.2	127.9
Eastside pine	140.8	83.7	--	42.2
Chaparral	97.6	92.7	8.3	90.9
Plantation	66.3	17.5	--	--
Mixed scrub	49.1	27.3	0.1	--
Annual grasses and forbs	19.7	17.7	0.9	8.9
Mixed conifer- white fir	18.1	--	--	--
Aspen	12.8	6.1	0.0	6.3
Snowbrush	9.8	6.2	0.8	6.2
Mountain mahogany	4.7	7.8	11.0	6.0
Low sage	4.2	5.7	3.0	10.4
Ruderal	0.5	0.5	6.0	--
Wet meadow	0.5	--	--	--
Jeffrey pine	0.2	0.8	0.1	12.6
Willow	0.1	0.1	3.9	1.1
Mountain sagebrush	--	--	9.7	--
Big sagebrush	--	0.7	3.9	0.7
Urban/developed	--	--	0.8	--
Totals	595.4	495.4	196.7	313.3
BLM				
Big sagebrush	14.3	14.3	14.3	14.3
Urban/developed	0.7	0.7	0.7	0.7
Bitterbrush-sagebrush	0.2	0.2	0.2	0.2
Totals	15.1	15.1	15.1	15.1
Private Land				
Bitterbrush-sagebrush	86.1	88.1	178.9	105.3
Big sagebrush	18.8	18.8	35.5	18.8
Jeffrey pine	11.4	11.4	10.2	12.5
Wet meadow	10.3	10.3	4.9	12.4
Low sage	6.3	6.3	2.8	11.6
Snowbrush	6.1	6.1	4.2	6.1

VEGETATION	MITCHELL	PEAVINE	POEVILLE	PEAVINE/ POEVILLE
Eastside pine	4.6	3.9	0.6	0.6
Ruderal	4.4	4.4	76.4	16.6
Willow	2.8	2.8	2.9	5.8
Chaparral	2.2	2.2	5.1	7.5
Annual grasses and forbs	1.2	1.2	318.2	167.4
Mountain sagebrush	0.9	0.9	8.4	0.9
Plantation	0.2	0.2	--	--
Mixed scrub	0.1	1.6	58.6	--
Urban/developed	--	--	36.5	7.8
Aspen	--	--	3.4	0.2
Mountain mahogany	--	--	3.8	--
Mixed riparian hardwood	--	--	2.4	2.4
Totals	155.4	158.2	752.8	375.9
Grand Total	765.9	668.5	965.2	704.0

Source: USFS 2005, 2008a; and JBR field surveys

Bitterbrush-Sagebrush Community

On eastside slopes of the northern Sierra Nevada, bitterbrush and upland sagebrushes (such as basin big sagebrush and mountain sagebrush) occasionally mix, forming the bitterbrush-sagebrush community (USFS 2008a). The community is spatially associated most commonly with the eastside pine and the mountain sagebrush communities. On Peavine Peak, the bitterbrush-sagebrush community is mostly present on the mid-elevation slopes down into the surrounding flats.

The bitterbrush-sagebrush community is the most abundant vegetation community within the variable-width corridor of each action alternative (**Figure 3.7-1**). However, the community is less abundant on the south aspect of Peavine Peak where the Poeville and Peavine/Poeville alternatives cross. This area is where wildland fires have notably altered the vegetation communities.

Eastside Pine Community

The eastside pine community is typically found at elevations of 5,000 to 7,000 feet above mean sea level (AMSL) (USFS 2008a). On the eastside of the northern Sierra Nevada, Jeffrey pine and ponderosa pine are the dominant overstory species. The understory is characterized by Great Basin shrubs, forbs and grasses such as big sagebrush, antelope bitterbrush, curl-leaf mountain mahogany, Bloomer's goldenbush, mule-ears, arrowleaf balsamroot, Idaho fescue, and wildrye grasses.

The eastside pine community occurs within the variable-width corridor for each of the action alternatives. However, the community is generally found west of Peavine Peak, and is more common within the Mitchell and Peavine alternatives. Some of this community is managed as timber.

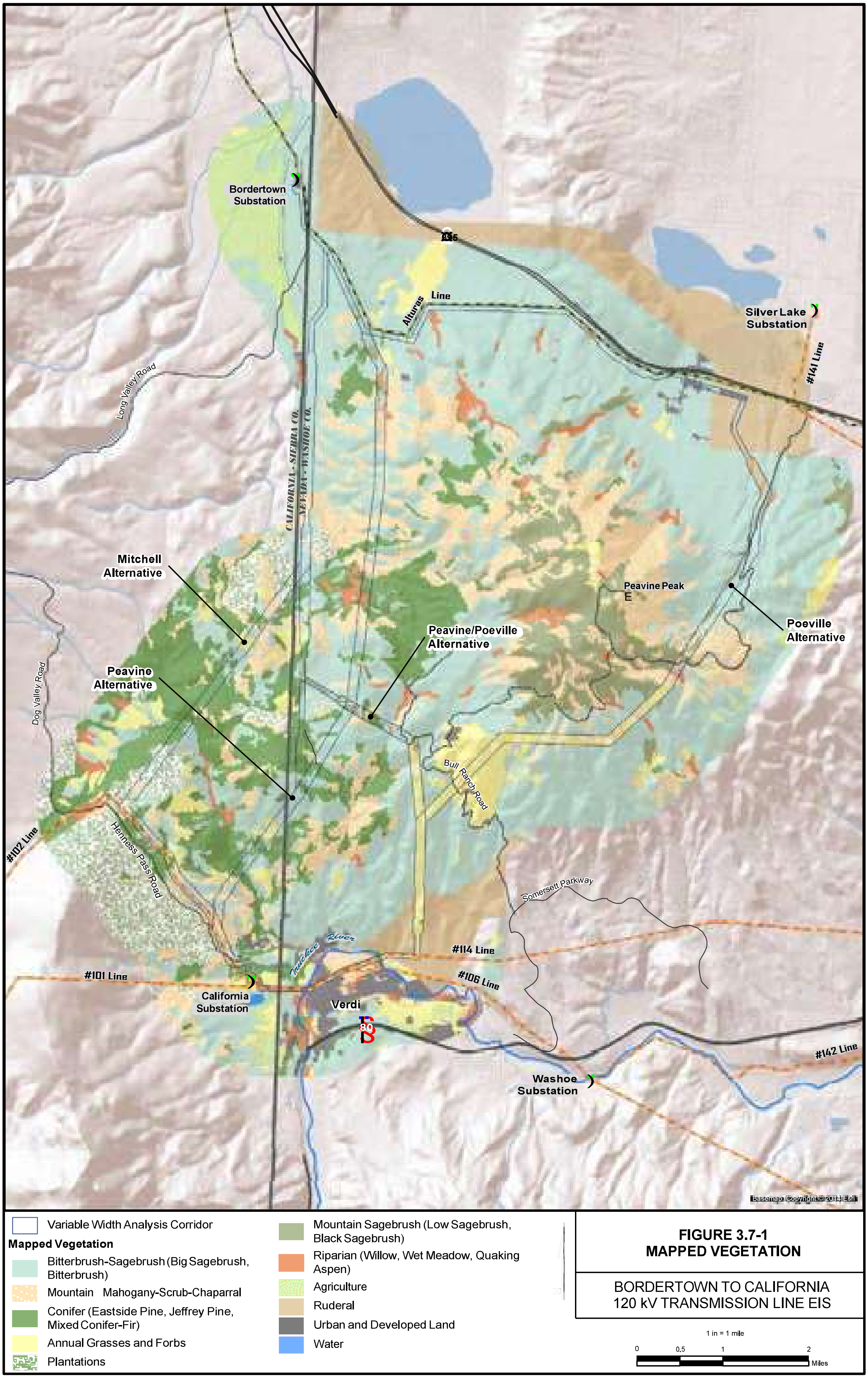


FIGURE 3.7-1
MAPPED VEGETATION

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

Chaparral Communities

The Great Basin-mixed chaparral transition community and the upper montane mixed chaparral community were grouped for purposes of this analysis, forming the chaparral vegetation community. The communities are similar and share many common species. The Great Basin-mixed chaparral transition community, an eastside community, is a mixture of montane chaparral species such as snowbrush, greenleaf manzanita, bitter cherry, chokecherry, and snowberry with an equivalent vegetation cover of Great Basin shrub species such as mountain sagebrush, low sagebrush, desert gooseberry and bitterbrush (USFS 2008a; Nachlinger et al. 1992). The upper montane mixed chaparral community may also include mountain sagebrush and bitterbrush, but the more xeric Great Basin shrub species are typically not present. It occurs at elevations of 6,000 to 7,800 feet AMSL.

The chaparral community occurs within the variable-width corridor of each action alternative being fairly dominant on all but the Poeville Alternative.

Annual Grasses and Forbs and Ruderal Communities

The annual grasses and forbs community and the ruderal community are dominated by noxious weeds and invasive species, and both are particularly common on the dry, south-facing slopes of Peavine Peak. On Peavine Peak, the annual grasses and forbs community occurs at lower elevations, most commonly on more arid slopes and flats with a southerly aspect. The community is generally dominated by cheatgrass, an invasive species, as well as other non-natives or noxious weeds, such as medusahead. The annual grasses and forbs community often occurs as a direct result of wildfire or over-grazing within eastside pine or mixed conifer-fir communities or in areas dominated by sagebrush. The ruderal community is comprised of species that are first to colonize disturbed lands. Within the project area, the ruderal community is dominated by noxious weeds and invasive species, including cheatgrass. Other noxious weeds or invasive species common to the community include Scotch (cotton) thistle, musk thistle, bull thistle, Russian thistle, tumble mustard, and tessellate fiddleneck (Nachlinger et al. 1992).

These communities occur within the variable-width corridor of each of the action alternatives. However, they are more prevalent on the south aspect of Peavine Peak within the boundary of the Verdi Complex wildfires (**Figure 3.2-1**), and are therefore more common within areas of the Poeville and Peavine/Poeville alternatives.

Noxious Weeds and Invasive Species

Within the project area approximately 17 species of weeds, both noxious and invasive, have been documented occurring in large stands (Nevada Natural Heritage Program [NNHP] 2011; USFS 2014d). Of the noxious weed species identified within the area, several are of primary concern due to the degree of impact they have on ecosystem function and the density or size of the existing infestations. These species include: musk thistle, spotted knapweed, yellow star-thistle, bull thistle, medusahead, perennial pepperweed (tall whitetop), Scotch thistle, and tamarisk.

3.7.1.2 Mitchell Alternative

Vegetation communities within the Mitchell Alternative are presented in **Table 3-7-1**; bitterbrush-sagebrush and sagebrush communities combined constitute 37 percent of the vegetation within the variable-width corridor. Forested communities (e.g., eastside pine, aspen, and plantation) contribute to 31 percent of the vegetation within the corridor. Chaparral, mountain mahogany, snowbrush, and mixed scrub combined comprise approximately 21 percent of the vegetation within the corridor. Willow, wet meadow, and aspen communities combined comprise approximately three percent of the vegetation within the corridor.

There are approximately 6.4 acres of mapped noxious weed infestations and 30 infestations of an unknown size (i.e., mapped as a point location) within the variable-width corridor and road widening area for the Mitchell Alternative. The primary noxious weed infestations include diffuse knapweed, medusahead, and Russian knapweed.

3.7.1.3 Peavine Alternative

The Peavine Alternative is primarily comprised of bitterbrush-sagebrush and sagebrush communities at 52 percent within the variable-width corridor (**Table 3.7-1**). Chaparral, mountain mahogany, and scrub comprise approximately 21 percent of the vegetation within the variable-width corridor, while forested communities comprise approximately 15 percent. Willow, wet meadow, and aspen communities combined comprise approximately 2 percent of the vegetation within the corridor.

There are approximately 12.7 acres of known noxious weed infestations and 23 infestations of an unknown size (i.e., mapped as a point location) within the variable-width corridor and road widening areas for the Peavine Alternative. Similar to the Mitchell Alternative, the primary noxious weed infestations include diffuse knapweed, Russian knapweed, and medusahead.

3.7.1.4 Poeville Alternative

Vegetation along the Poeville Alternative is comprised of two main groups of vegetation communities. Bitterbrush-sagebrush and sagebrush comprise 50 percent and annual grasses and forbs and ruderal make up approximately 41 percent of the total vegetation within the variable-width corridor (**Table 3.7-1**). Willow, wet meadow, aspen, and mixed riparian hardwoods communities combined comprise approximately 2 percent of the vegetation within the corridor.

There are approximately 34.3 acres of mapped noxious weed infestations and 115 infestations of an unknown size (i.e., mapped as a point location) within the variable-width corridor and road widening areas for the Poeville Alternative. Because of the length of the alternative, as well as the proximity to suburban and previously burned areas, the Poeville Alternative crosses more diverse weed infestations. The primary infestations are musk thistle, Scotch thistle, and medusahead along the southern portions of the alternative. On the northern portion of the alternative, diffuse knapweed and perennial pepperweed occur, among others.

3.7.1.5 Peavine/Poeville Alternative

The Peavine/Poeville Alternative has bitterbrush-sagebrush and sagebrush communities that comprise approximately 38 percent of the variable-width corridor (**Table 3.7-1**). Annual grasses and forbs and ruderal communities comprise approximately 27 percent of the vegetation within the variable-width corridor. Similar to the Peavine Alternative, the Peavine/Poeville Alternative has chaparral, mountain mahogany, and scrub combined comprising approximately 27 percent of vegetation within the corridor. Willow, wet meadow, aspen, and mixed riparian hardwoods communities combined comprise approximately four percent of the vegetation within the corridor.

There are approximately 30.3 acres of noxious weed infestations and 109 infestations mapped as a point location within the variable-width corridor and road widening areas for the Peavine/Poeville Alternative. Most of the infestations (e.g., musk thistle, medusahead, bull thistle, diffuse knapweed, perennial pepperweed, and Scotch thistle) are located within areas recently burned by wildfires.

3.7.2 Environmental Consequences

Methods of Analysis

The potential direct and indirect effects on vegetation resources were analyzed and quantified using the impact indicators listed below.

- Acres of vegetation community proposed to be restored;
- Acres of vegetation permanently removed;
- Acres of tree cutting needed to maintain safe transmission line clearance; and
- Acres of known noxious weed infestations within the variable-width corridor and road widening corridor as a measure of the potential to spread and/or introduce noxious weeds.

3.7.2.1 No Action Alternative

Under the No Action Alternative, there would be no impacts and losses to vegetation resources as construction of the proposed project and subsequent operation and maintenance of the proposed transmission line would not occur.

3.7.2.2 Effects Common to All Action Alternatives

Potential impacts to vegetation resources that are common to the action alternatives include the following:

- Disturbance or loss of vegetation communities;
- Introduction or spread of noxious weeds and invasive plants; and
- Accidental loss of vegetation from herbicide application.

Construction

Disturbance or Loss of Vegetation Communities

Impacts to vegetation include long-term loss of vegetation where permanent facilities would be constructed and short-term loss of vegetation from construction related disturbances. The expansion of the Bordertown Substation would cause the long-term (permanent) loss of approximately 3.7 acres of bitterbrush-sagebrush community. Additionally, the installation of poles would permanently remove a 0.0003-acre area of vegetation for each pole. On average, pole structures would be placed every 800 feet and the number of pole structures would be proportional to the length of the alternative. The type and amount of vegetation community that would be impacted cannot be determined at this time because the locations of pole structures are not known. However, vegetation communities that are present in the ROW (**Table 3.7-2**) provide an indication of the type and relative abundance of vegetation communities that could be permanently impacted by pole structures.

Table 3.7-2 Acres of Vegetation Communities within the ROW

VEGETATION COMMUNITY[1]	MITCHELL		PEAVINE		POEVILLE		PEAVINE/ POEVILLE	
	NFS LAND	TOTAL	NFS LAND	TOTAL	NFS LAND	TOTAL	NFS LAND	TOTAL
Bitterbrush-sagebrush	25.0	48.1	33.3	56.4	36.1	81.0	20.4	51.9
Eastside pine	23.1	23.7	14.6	15.3	0.0	0.1	6.1	6.3
Jeffrey pine	0.0	2.3	0.1	2.4	0.0	1.6	1.9	3.9
Mixed conifer-fir	3.6	3.6	0.0	0.0	0.0	0.0	0.0	0.0
Plantation	9.9	9.9	2.6	2.6	0.0	0.0	0.0	0.0
Aspen	2.3	2.3	1.1	1.1	0.0	1.2	1.1	1.9
Chaparral	15.1	15.1	14.5	14.5	1.5	1.8	13.7	15.1
Annual grasses and forbs	2.2	2.3	2.5	2.6	0.0	52.2	0.2	30.7
Big sagebrush	0.0	3.7	0.0	3.8	1.2	11.5	0.0	3.8
Great Basin mixed scrub	7.3	7.3	4.7	4.7	0.0	8.8	0.0	0.0
Curl-leaf mountain mahogany	0.9	0.9	1.5	1.5	1.0	1.7	1.1	1.1
Low sagebrush	1.0	2.3	0.9	2.2	0.3	0.7	1.5	3.7
Mountain sagebrush	0.0	0.0	0.0	0.0	1.7	2.4	0.0	0.0
Ruderal	0.2	2.0	0.2	2.0	2.1	20.2	0.0	4.6
Snowbrush	0.5	0.7	0.5	0.7	0.0	0.9	0.5	0.7
Wet meadow	0.0	2.3	0.0	2.3	0.0	0.8	0.0	3.0
Willow	0.0	0.2	0.0	0.2	0.3	1.7	0.1	1.5
Total	91.1	126.7	76.5	112.3	44.2	186.6	46.6	128.2

Source: USFS 2014d
[1] Does not include Urban/Developed cover type

Most of the impacts to vegetation communities would result from the construction of temporary project features through vegetation removal or blading vegetation. As presented in **Table 2.3-1**, loss of vegetation cover would occur at pole sites, wire setup sites, staging areas, widened roads, new access roads, and within line clearance areas. The estimated construction disturbance from each action alternative is presented in **Table 3.7-3**.

Table 3.7-3 Estimated Temporary Construction Disturbance

ALTERNATIVE	TEMPORARY CONSTRUCTION DISTURBANCE (ACRES)
Mitchell	281.7
Peavine	302.1
Poeville	617.7
Peavine/Poeville	364.3

The existing roads that would be widened for construction access are known, and the vegetation communities that would be impacted within road widening areas are shown in **Table 3.7-4**. The locations for other construction activities/areas, such as staging areas and centerline travel roads are not known but would be constructed within the variable-width corridor. The acres of vegetation communities that are present within the variable-width corridor of each action alternative are shown in **Table 3.7-1**. However, the majority of surface disturbance from construction would occur within the ROW/easement. Therefore, the acres of vegetation communities that are present within ROW/easement (**Table 3.7-2**) represents an indication of the type and relative abundance of vegetation communities that could be disturbed by project construction activities.

Table 3.7-4 Acres of Vegetation Communities within Road Widening Corridors

VEGETATION COMMUNITY[1]	MITCHELL		PEAVINE		POEVILLE		PEAVINE/ POEVILLE	
	NFS LAND	TOTAL	NFS LAND	TOTAL	NFS LAND	TOTAL	NFS LAND	TOTAL
Bitterbrush-sagebrush	4.1	10.3	12.9	25.8	1.3	25.7	7.0	22.0
Eastside pine	4.1	4.2	6.9	8.2	0.0	0.1	3.5	3.6
Jeffrey pine	0.0	0.2	0.0	0.2	0.0	0.3	0.0	0.0
Mixed conifer-fir	0.2	0.2	0.4	0.4	0.0	0.0	0.2	0.2
Plantation	0.0	0.0	1.3	1.3	0.0	0.0	0.0	0.0
Aspen	0.8	0.8	0.8	0.8	0.0	0.6	0.8	0.8
Chaparral	0.7	0.7	1.2	1.2	0.2	0.9	0.8	0.9
Willow	1.0	1.0	1.1	1.3	0.0	0.1	1.1	1.3
Annual grasses and forbs	0.0	1.2	0.4	3.4	0.2	6.9	0.2	3.5
Ruderal	0.0	0.2	0.0	2.6	0.0	10.5	0.0	8.1
Mountain sagebrush	0.5	0.7	0.5	0.7	0.4	0.5	0.5	0.7
Big sagebrush	0.0	0.2	0.0	0.3	0.0	0.8	0.0	0.4
Curl-leaf mountain mahogany	0.0	0.0	0.0	0.2	0.2	0.2	0.0	0.0
Great Basin mixed scrub	0.1	0.2	0.0	0.1	0.0	2.5	0.0	2.3
Low sagebrush	0.0	0.0	0.3	0.4	0.1	0.1	0.0	0.0
Snowbrush	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wet meadow	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0
Total[1]	11.5	20.0	25.8	47.0	2.4	49.3	14.1	43.8

Source: USFS 2014d

[1] Does not include vegetation communities within portions of the road widening corridor analysis area located inside of the variable-width corridor

The loss of vegetative cover would be short-term in all areas that are successfully restored (reclaimed and reseeded) following construction. Restoration would follow a detailed restoration plan that would be included as part of the COM Plan. To restore vegetative cover, restoration seed mixes and seeding rates would be tailored to the desired vegetation community, soil substrate, elevation, and land administration/ownership. Restoration success would be monitored until restoration is deemed successful by the USFS. It would likely take approximately three to five years to meet restoration success criteria under optimal conditions, depending on the localized environmental conditions at the restoration site and the type, intensity, and duration of the disturbance. Longer term impacts may occur in less ecologically resilient sites such as south facing slopes, steep slopes, and sites that lack soil may require more than five years or potentially may never be fully restored.

Tree removal within line clearance areas would have long-term impacts to forested communities and forest product resources. The re-growth of trees would not be allowed for the operational life of the project due to safety requirements which require a "tree-free" zone underneath and surrounding the transmission lines. The removal of trees would be a long-term alteration of the species composition and physical structure of forested communities. The forested community would be converted to one that is dominated by shrubs and other groundcover. **Table 3.7-5** presents the acreage of forested community that is within line clearance area and would be affected by tree removal. Note that the acreage of forest communities presented in **Table 3.7-5** is included in the estimated construction disturbance from each alternative, as presented in **Table 3.7-3**.

Table 3.7-5 Acres of Forested Community within Line Clearance Area

VEGETATION TYPE	MITCHELL	PEAVINE	POEVILLE	PEAVINE/POEVILLE
Forested community[1, 2]	41.8	21.4	2.9	12.1

[1] Includes eastside pine, Jeffrey pine, mixed conifer-fir, plantation, and aspen vegetation communities (USFS 2014d)
[2] Transmission line clearance area was assumed to be the width of the ROW/easement, although trees outside the ROW/easement with the potential to fall on conductor wires would also be removed

Despite the minor variations in the acres of vegetation communities that would be cleared from each action alternative, the short-term and long-term impacts would be minor to negligible under any of the action alternatives. Impacts would be minor to negligible because the affected vegetation communities are locally and regionally common, based on the number of acres of each community available within five miles of the variable-width corridor of each action alternative (USFS 2014d). In addition, successful restoration of vegetation communities and effective implementation of design features would reduce impacts to vegetation resources to negligible or minor levels.

Design Features to Avoid or Minimize the Disturbance or Loss of Vegetation Communities

Design features have been developed to protect sensitive riparian vegetation communities (i.e., willow, wet meadow, and quaking aspen), which are the least abundant communities within the analysis area. Design feature WA 13 would prohibit new road crossings on perennial streams. Design feature WA 4 prohibits the placement of poles, staging areas, and fuel storage areas near floodplains and wetlands. Design feature SV 3 provides added protection on NFS land and specifically prohibits construction disturbance within wet meadows.

To ensure the restored vegetation communities would attain the appropriate community composition over time, the success criteria that would be used for reclaimed vegetation would be based upon established reference sites (design feature VG 7).

The short-term and long-term loss of vegetation would be a negligible to minor because all temporary construction disturbances would be restored as soon as construction is completed, and success criteria for the revegetation would be based on pre-established restoration standards.

Very few acres of vegetation would be lost in relation to vegetation communities available in the surrounding landscape. Design features would protect the least abundant and sensitive communities within the analysis area by limiting the type of project features that can be placed within or near willow, wet meadow, and quaking aspen communities. Vegetation communities that would be impacted are fairly abundant within the region based on a review of the acres of vegetation communities available within 5 miles of the variable-width corridor (USFS 2014d).

Introduction or Spread of Noxious Weeds and Invasive Plants

Construction activities could potentially introduce noxious and invasive weeds. Noxious weeds can change soil physiology and chemistry, and out-compete native species, leaving the infested habitats with low species diversity and vulnerable to fires. The removal of native vegetation communities and disturbance of soils would create conditions that facilitate weed infestations. The introduction of noxious and invasive weeds (e.g., seeds or plant parts) could occur from project vehicles, construction equipment, earth materials (e.g., fill dirt, topsoil, etc.), or erosion control installations (e.g., straw bales, wattles, etc.) contaminated with noxious weed seeds. The presence of existing noxious weed infestations within the analysis area would increase the likelihood for materials and construction equipment to be contaminated. Wind, precipitation, and inadvertent transport on public and project vehicles or other vectors, may disperse seeds from these sources into areas where surface disturbance has occurred within the analysis area.

On reclaimed centerline travel roads and other reclaimed access roads, revegetation success and recovery of vegetation communities would be slow if repeated damage from unauthorized OHV use occurs. The combination of disturbed soils and lack of effective vegetation cover would create optimal conditions for infestations of noxious weeds, especially if seeds are brought in by OHVs.

To address the potential for infestations, all temporary construction disturbances would be treated for noxious weeds. The treatment and the subsequent monitoring of the treatment success would follow a detailed weed treatment plan that would be included as part of the COM Plan.

Design Features to Avoid or Minimize the Introduction or Spread of Noxious Weeds and Invasive Plants

To reduce the potential for the introduction or spread of noxious weeds and invasive plants, design features (NW 1 through NW 11) would be implemented prior to, during, and following construction activities. Design features would prohibit the construction of access roads in areas heavily infested with noxious weeds or invasive plants. Prior to construction, weeds within 100 feet of the ROW would be mapped, and treated prior to construction. The treatment of noxious weeds would continue until disturbed areas are successfully reclaimed, which is typically three to five years. During construction, project vehicles and construction equipment would be cleaned with a power washer of all mud, dirt, and plant parts. Materials brought to the project site such as fill material and seed mixes would be certified as weed-free.

To address the potential for unauthorized OHV use of construction access roads that could increase the risk of infestations, design features were developed to discourage unauthorized OHV use. Design features RT 3 and RT 4 require that all new temporary access roads have a physical closure (i.e., barricade) installed immediately following construction. Barricades would be monitored for effectiveness and compliance with the reclamation.

With implementation of a weed treatment plan and design features that ensure that treatment measures are taken during and after construction, the potential for weed infestations would be low. Effects would be minor. Monitoring and continued treatment until success is met would ensure that impacts are short-term.

Effects to Vegetation from Herbicide Application

Non-target vegetation may be inadvertently exposed to herbicide through direct spray, downwind drift, runoff of chemical laden soil, and accidental spills. During herbicide application, non-target vegetation immediately adjacent to noxious weed infestation treatment areas can be exposed to overspray. Exposure would cause damage to vegetation and possibly death of the plant. The magnitude of effects would be dependent on the specific herbicide product, timing of application, the species exposed, and the volume or concentration of chemical exposure.

Design Features to Avoid or Minimize Impacts From Herbicide Application

Design features HE 1 though HE 15 were developed to minimize or avoid effects of herbicide use to non-target or sensitive resources. For example, to minimize the potential for overspray, during spray applications, the spray nozzle would be kept as close to target plants as possible. The potential for drift would be reduced by the use of coarse droplet sizes and prohibiting spray applications when wind speed exceeds five miles per hour. Additional design features exclude herbicide spray applications near streams, meadows, wetlands, and riparian zones.

With implementation of design features, damage to vegetation from direct exposure, drift, and accidental spills would be avoided as much as possible. Where unavoidable, effects would be minor as the affected area would be small and localized. Effects would be short-term because many perennial plants would recover from inadvertent spray.

Operation and Maintenance

Under all action alternatives, new facilities are not anticipated during the operation and maintenance phase of the project, and therefore, additional long-term (permanent) loss of vegetation would not occur. However, temporary disturbance from maintenance-related construction activities to vegetation may occur, but would not be extensive and would occur on an infrequent to rare basis. Each disturbance episode to vegetation would be followed by restoration of vegetation, weed control, and stabilization of soils, if needed. Annual inspections conducted via helicopter or from walking to the pole structures from existing roads are not anticipated to impact vegetation communities.

Removal of trees from within the transmission line clearance area would continue as needed to meet safety standards through the operational life of the project. While actual disturbance from the line clearance activities would be restored, long-term impacts are still anticipated for forested communities due to the removal of the overstory trees that are indicative of forested communities.

Inspections and maintenance activities would have the potential for inadvertent introduction of noxious and invasive weeds from the use of vehicles and equipment contaminated with noxious weed seeds and from temporary surface disturbance. The potential for introduction of noxious weeds during the maintenance phase would be much less than during the construction phase because of the fewer equipment and vehicles that would be needed, areas of ground disturbance would be localized and typically much smaller, and the construction period would be brief.

Design features (**Appendix B**) implemented during construction would also apply to the operations and maintenance phase of the project. With reclamation of disturbances and implementation of BMPs and design features, direct and indirect effects from the loss of vegetation communities would continue to be minimized, and impacts would range from negligible to minor, but would be long-term. Long-term impacts from noxious weed infestations could occur from maintenance of any of the action alternatives but would be negligible due to implementation of design features.

3.7.2.3 Cumulative Effects

Native vegetation communities have been permanently displaced by some roads and trails that comprise the transportation network. To a lesser extent, unauthorized OHV recreation has also resulted in a loss of vegetation communities. Conversion of some native vegetation to infestations of noxious weed and invasive species has also changed the species composition of some vegetation communities. Wildfire within the vegetation CIAA has also caused substantial changes to the composition and condition of the vegetation communities within the CIAA. For example, forested habitat has been not only modified, but in some areas has been entirely lost and converted to shrub and grass habitat following wildfire.

Existing utility lines have also changed the composition and structure of the vegetation communities within the ROW/easements of the utilities. Aerial imagery shows that forest communities have been permanently removed from the ROW/easements of existing transmission lines and pipelines. Vegetation communities within the ROW/easements where forest communities have been removed are now dominated by shrubs and grasses.

The construction or implementation of all of the present actions considered in this analysis may have introduced or contributed to the spread of noxious weeds and invasive species within the CIAA. Present actions that may continue to introduce or contribute to the spread of noxious weeds and invasive species within the CIAA include the maintenance of existing utility lines and roads, OHV recreation (whether authorized or not), and livestock grazing. Colonization of noxious weeds and invasive species within the CIAA often occurs in areas that have burned in wildfires.

Present resource management activities, such as prescribed burns and forest thinning projects such as such as the Dog Valley Fuels Reduction and Ecosystem Enhancement Project (13,056 acres), have impacted vegetation communities by changing the species composition and structure of vegetation cover. Forest plantations have also impacted vegetation communities from changes to the species composition and structure and have created variation in the maturity stages of forest communities. However, the objective of present resource management activities is generally to improve the health of vegetation communities.

reasonably foreseeable future Stonegate Master Plan Development would be expected to disturb some areas of native vegetation communities, although over 25 percent is proposed to be retained as open space. The buildings and impervious areas associated with this development (e.g., buildings, roads, parking lots, sidewalks, trails, etc.) would permanently impact vegetation cover.

Other reasonably foreseeable future actions in the CIAA that would have cumulative effects on vegetation include resource management activities such as Collie Stewardship Sale (11.4 acres) and personal use fuel wood cutting. An approximately 60.2-acre fuel wood cutting area is planned in the Mitchell Canyon area of the CIAA and 20 acres of fuel wood cutting annually is planned in the Dog Valley area. Reasonably foreseeable future resource management activities would generally improve the health of the vegetation communities in the CIAA, especially forested communities.

Under any action alternative, the proposed project would contribute to the loss or alteration of several hundred acres of vegetation, but losses would be minor and short-term, with the exception of trees, which would be long-term. These effects would decrease with time, as restored vegetation becomes established, with the exception of trees. To address noxious weeds and invasive species, design features would require that existing weed infestations be treated and require a number of measures to reduce the potential for infestations to spread. As a result, the proposed project would have minimal contribution to the spread of weeds, and the most likely cause of weed infestations would be other reasonably foreseeable actions other than resource management activities. With the effective implementation of design features and restoration, the cumulative impacts of any of the action alternatives to vegetation would be minor.

3.8 SPECIAL STATUS PLANTS

Special status plants are species that meet one or more of the following criteria:

- Federally-listed, proposed, or candidate for listing, as threatened or endangered;
- Designated as sensitive or species of concern by the USFS;
- Designated as sensitive by the BLM;
- Listed as threatened or endangered by the State of California or State of Nevada;
- Designated as rare by California Native Plant Society (CNPS) in its Inventory of Rare and Endangered Plants of California; and
- Listed as At-Risk with the NNHP.

3.8.1 Affected Environment

Table 3.8-1 presents the special status plants with the potential to occur in the project area. The determination of whether a species has the potential to occur was based on habitat preference (e.g., substrate type, vegetation community, and elevational range) and geographic distribution. Additional species dismissed from further review included those with special status designations in California that had an abundant distribution in Nevada.

Table 3.8-1 Potential Special Status Plants within the Analysis Area

SPECIAL STATUS PLANT	STATUS[1]	HABITAT	KNOWN DISTRIBUTION
Lemmon milkvetch (*Astragalus lemmonii*)	BS CA; CNPS 1B.2; NNHP	Seeps and wetlands within sagebrush scrub vegetation at elevations between 4,265 and 7,218 feet (CNPS 2012).	The nearest known location is Loyalton, California.
Upswept moonwort (*Botrychium ascendens*)	SS; CNPS 2.3; NNHP	Confined to riparian areas in open riparian meadow habitats between 4,700 and 9,000 feet. Generally found with mosses, grasses, sedges, rushes, and other riparian vegetation.	Sierra Nevada east slope; documented occurrence in the Hoover Wilderness.
Dainty moonwort (*Botrychium crenulatum*)	SS; CNPS 2.2; NNHP	Confined to riparian areas, in perennially wet or moist soils at elevations between 4,700 and 9,000 feet. Generally found in dense herbaceous vegetation with mosses, grasses, sedges, and rushes.	Sierra Nevada east slope.
Slender moonwort (*Botrychium lineare*)	SS; CNPS 1B.3	Confined to riparian areas, in perennially wet or moist soils within meadows, seeps and springs at elevations between 4,700 and 9,000 feet. Generally found with mosses, grasses, sedges, rushes, and other riparian vegetation.	Sierra Nevada east slope.
Altered andesite buckwheat (*Eriogonum robustum*)	SS; BS NV; NNHP	Andesitic soil on barren ridges, knolls and steep slopes. Substrate is dry, shallow, highly acidic (pH 3.3-5.5) gravelly clay soils mainly of the Smallcone Series, derived from weathering of hydrothermal sulfide deposits formed in andesite, or sometimes in rhyolitic or granitic rocks (Morefield 2001).	Virginia Range in Storey and Washoe counties and the Carson Range of the Sierra Nevada foothills and Peavine Peak, both areas in Washoe County, Nevada.
Sierra Valley ivesia (*Ivesia aperta* var. *aperta*)	SS; BS CA; BS NV; CNPS 1B.2; NVT	Vernally saturated meadows and ephemeral channels. In Nevada, the populations are restricted to shallow, slow draining soils which are volcanic in origin. These sites may be located in Great Basin scrub, lower montane forests, pinyon-juniper woodlands and vernal pools.	The majority of known populations occur in the vicinity of Sierra Valley. Nearest known population occurs on the northeast flank of Peavine Peak, Washoe County, Nevada (Witham 2000).
Dog Valley ivesia (*Ivesia aperta* var. *canina*)	SS; BS NV; CNPS 1B.1	Endemic to Dog Valley on vernally saturated sites such as meadow flats, ephemeral channels, and abandoned irrigation ditches. Soils typically have a surface layer that is sandy loam and slightly acidic. Subsoils are a clay loam derived from weathered to slightly fractured andesitic rock.	Previously known occurrences were restricted to Dog Valley, Sierra County, California. In 2011, the USFS found the first population known to occur in Nevada on the western flank of Peavine Peak, Washoe County, Nevada.

SPECIAL STATUS PLANT	STATUS[1]	HABITAT	KNOWN DISTRIBUTION
Webber ivesia (*Ivesia webberi*)	BS CA; BS NV; T and CH	Restricted to shallow, clayey soils with a rocky pavement like surface on mid-elevation (4,000 to 5,950) flats, benches or terraces. Occupied sites are sparsely vegetated; associated species include low sage and squirreltail (USFS 2010a; Witham 2000).	Douglas and Washoe counties, Nevada.
Jaw-leaf lupine (*Lupinus malacophyllus*)	SI	Occurs in colonies on dry, rocky hills and sandy or gravelly flats near Verdi, Nevada, at elevations between 4,590 and 5,650 feet. Associated species include big sagebrush, *Eriogonum* sp., and Indian paintbrush.	Endemic to west central Nevada, Washoe, Carson, Lyon, and Douglas counties.
Shevock bristle-moss (*Orthotrichum shevockii*)	SS; BS NV; CNPS 1B.3	Found on underhangs or crevices of granitic rock within pinyon–juniper to Jeffrey Pine forests. It grows in filtered light (Lewinsky-Haapasaari and Norris 1998).	Sierra Nevada east slope and the western edge of the Carson Range.
Altered andesite popcorn flower (*Plagiobothrys glomeratus*)	SS; BS NV	Restricted to altered andesite soil between 4,860 and 6,650 feet (Tiehm 2000). The distribution closely matches that of *Eriogonum robustum*, altered andesite buckwheat.	Endemic to western Nevada, known from the Virginia Range in Storey and Washoe counties; Carson Range of the Sierra Nevada foothills; and Peavine Peak in Washoe County.

[1] Status designations:

SS – Forest Service Sensitive in Region 4
SI – USFS Species of Interest in Region 4
T – USFWS Endangered Species Act of 1973 (ESA) Threatened
CH – USFWS ESA Critical Habitat
BS CA – Bureau of Land Management Sensitive in California
BS NV – Bureau of Land Management Sensitive in Nevada
NVT – listed by the state of Nevada as Threatened
NNHP – designated by the NNHP as At-Risk
CNPS (California Native Plant Society) designations:

1B Plants rare, threatened or endangered in California and elsewhere.
2 Plants rare, threatened or endangered in California, but more common elsewhere.
3 Plants for which more information is needed – a review list.
4 Plants of limited distribution – a watch list.

.1 Seriously endangered in California.
.2 Fairly endangered in California.
.3 Not very endangered in California.

3.8.1.1 Potential Habitat

Field surveys for special status species were conducted within the ROW, the variable-width corridor, and road widening corridors for each action alternative. Special status plant populations were not found in association with any of the action alternatives. (Special status plants were found along the Stateline Alternative, which was eliminated as a viable alternative.)

Field surveys confirmed the presence of potential habitat for a number of special status plants. GIS and interpretation of aerial photo imagery were also used to identify potential habitat. Methods to identify potential habitat specific to each special status species are described in *Specialist Report: Special Status Plants Bordertown to California 120 kV Transmission Line Project* (USFS 2016b). Acres of potential habitat for special status plants are presented in **Tables 3.8-2** and **3.8-3**. Potential habitat is presented for NFS land and private land in order to track the amount of potential habitat that would be protected by design features, which are not always applicable on private land. No potential habitat for special status plants occur on BLM-administered public land.

Table 3.8-2 Potential Habitat within Variable-Width Corridor

SPECIAL STATUS SPECIES	MITCHELL (ACRES)		PEAVINE (ACRES)		POEVILLE (ACRES)		PEAVINE/ POEVILLE (ACRES)	
	USFS	PRIVATE	USFS	PRIVATE	USFS	PRIVATE	USFS	PRIVATE
Upswept, Dainty, and Slender moonwort	1.8	0.3	1.7	0.3	0.8	0	1.8	0
Altered andesite buckwheat	0	0	0	0	0	0.7	0	0.5
Altered andesite popcorn flower	0	0	0	0	0	0.7	0	0.5
Sierra Valley ivesia	<0.1	<0.1	<0.1	<0.1	0	0	<0.1	<0.1
Dog Valley ivesia	1.9	8.9	1.9	8.9	0	0	1.9	8.9
Dog Valley ivesia All area within 1,640 feet of a known population (Occupied habitat)	0	0	35.5	0	0	0	35.5	0
Webber ivesia	1.9	12.6	1.9	12.6	0	1.1	2.0	12.6
Webber ivesia USFWS Critical Habitat (Occupied habitat)	0	0	0	0	0	0	0	0
Jaw-leaf lupine	42.9	309.4	203.0	319.3	148.9	383.8	0	350.3
Shevock bristle-moss	0	0	0	0	0	0	0	0
Lemmon milkvetch	4.51	0	0.6	0	1.2	0.4	1.1	0.4

Note: Potential habitat is not occupied unless otherwise noted

Table 3.8-3 Potential Habitat within Road-Widening Corridor

SPECIAL STATUS SPECIES	MITCHELL (ACRES)		PEAVINE (ACRES)		POEVILLE (ACRES)		PEAVINE/ POEVILLE (ACRES)	
	USFS	PRIVATE	USFS	PRIVATE	USFS	PRIVATE	USFS	PRIVATE
Moonwort	0	0.2	0	0.2	0	0	0	0
Altered andesite buckwheat	0	0	0	0	0	0.6	0	0
Altered andesite popcorn flower	0	0	0	0	0	0.6	0	0
Sierra Valley ivesia	0	<0.1	0	<0.1	0	0	0	0
Dog Valley ivesia	0.1	0.2	0.1	0.2	0	0	0.1	0.2
Dog Valley ivesia All area within 1,640 feet of a known population (Occupied habitat)	0	0	0	0	0	0	0	0
Webber ivesia	0	0.6	0.1	0.6	0	0.6	0.1	0.6
Webber ivesia USFWS Critical Habitat (Occupied habitat)	0	0	0	0	0	0	0	0
Jaw-leaf lupine	0.4	7.5	0.4	7.6	0	0.7	0	6.8
Shevock bristle-moss	0	0	0	0	0	0	0	0
Lemmon milkvetch	0	<0.1	0	<0.1	0	<0.1	0	<0.1

Note: Potential habitat is not occupied unless otherwise noted; acreage does not include area inside the variable-width corridor which is disclosed in **Table 3.8-2**.

Dog Valley ivesia is the only species for which occupied habitat is known within the analysis area. Occupied habitat for Dog Valley ivesia is the area within 500 meters (1,640 feet) of a known population of Dog Valley ivesia. The use of a 500-meter buffer was based on a recent literature review conducted by BLM regarding the use of buffers to protect native pollinators of rare plants (Winder 2012).

3.8.1.2 Species Accounts

No potential habitat for the Shevock bristle-moss was identified within the variable-width or the road widening corridors, and therefore, a species account is not provided for this species.

Upswept, Dainty, and Slender Moonwort

Moonwort ferns have a unique lifecycle compared to other ferns or flowering plants. Moonwort ferns produce spores, which germinate underground. The plants then grow and reproduce below ground and for several years no portion of the plant may be visible above ground (Johnson-Groh et al. 2002; Johnson-Groh and Lee 2002). The above ground portion of all moonwort ferns consists of a single stem. Field surveys confirmed the presence of potential habitat within the analysis area which are areas that are perennially wet or moist. Potential habitat supports riparian vegetation such as aspen or willow communities that have understory of wetland graminoids, mosses, and wetland forbs.

Altered Andesite Buckwheat and Altered Andesite Popcorn Flower

Altered andesite buckwheat is a perennial mat forming plant. The altered andesite popcorn flower is a small upright annual and population numbers fluctuate year to year depending on the amount of precipitation. Both plants are endemic to Nevada and are not known to occur within California. Altered andesite buckwheat is restricted to hydrothermally-altered habitat patches, which occur in a band along and east of the eastern Sierra Nevada. Typical habitat sites are located on barren ridges, knolls, and steep slopes in dry, shallow, acidic (pH 3.3 to 5.5) soils. The popcorn flower grows in similar habitat, though it is slightly less restricted. The nearest known locations of altered andesite buckwheat and altered andesite popcorn flower are located on private land just outside the project area on the southeast flank of Peavine Peak about 1.0 to 1.5 miles to the southeast of the Poeville Alternative at an elevation of approximately 5,500 feet AMSL. Very limited potential habitat for both species was identified.

Sierra Valley Ivesia

Sierra Valley ivesia is a perennial herb in the rose family. Sierra Valley ivesia grows on shallow, vernally saturated, slowly draining, sandy to rocky clay soils derived from mostly andesitic volcanic rock or alluvium. Habitat is found on benches and flats in meadows, seeps, and intermittent drainages in the yellow-pine, mountain sagebrush, and mountain mahogany zones. The elevation range of the species is 6,460 to 7,300 feet AMSL in Nevada and 4,855 to 7,545 feet AMSL in California (CNPS 2012; Morefield 2001). Sierra Valley ivesia is known to occur in Lassen, Plumas, and Sierra counties in California, and Storey and Washoe counties in Nevada. The nearest known population is within the project area, on the northwest flank of Peavine Peak, approximately 1.0 mile east of the Peavine Alternative and 3.0 miles west of the Poeville Alternative. The Ball Ranch populations in Sierra County, California, are also nearby, approximately 4.0 miles west of the Bordertown Substation.

Dog Valley Ivesia

Dog Valley ivesia is a perennial herb and can be distinguished from the Sierra Valley ivesia by its more decumbent stems, larger flowers, and larger petals. Prior to 2011, the nearest known location of Dog Valley ivesia was within Dog Valley approximately 0.25 mile west of the Mitchell Alternative. Within Dog Valley, it is located on alluvial fans associated with the main meadow in Dog Valley and on lower, open slopes in the eastside pine and Jeffrey pine vegetation communities (USFS 2010a). In 2011, botanical surveys conducted by the USFS identified a one-acre population approximately 6.5 miles south of the Bordertown Substation. This population is the only known population in Nevada. For the purpose of this analysis, all areas within 500 meters of any population on NFS land is considered occupied habitat. The use of a 500-meter buffer is based on studies that have determined this is an adequate distance to protect pollinators of rare plants (Winder 2012). Protecting pollinators is an important component in sustaining rare plant populations. The variable-width corridor of the Peavine and Peavine/Poeville alternatives overlap a portion (35.5 acres) of the 500-meter buffer, but do not overlap the area where plants currently exist. Road widening corridors do not overlap the population's 500-meter buffer. Field surveys confirmed potential habitat associated with meadows along the northern portion of the Mitchell Alternative, which has the same alignment as the Peavine and Peavine/Poeville alternatives in that area.

Webber Ivesia

Webber ivesia is a threatened species protected under the federal ESA. Webber ivesia was listed in June 2014 (Federal Register 79:106 pp 31878-31883) and the final rule also included the designation of critical habitat, which is also protected by the ESA. Designated critical habitat occurs within the project area, but not within the variable-width corridor of any action alternative (Federal Register 79:106 pp 32150). In the state of Nevada, Webber ivesia is considered Critically Endangered and is protected by NRS 527.260-527.300.

The habitat for Webber ivesia is restricted to shallow, clayey soils with a rocky pavement-like surface derived from andesitic rock types. Habitat is dominated by low sagebrush (Witham 2000). There are 15 known populations of Webber ivesia in California and Nevada. Ten locations occur across Lassen, Plumas, and Sierra counties, California; four locations are situated to the north and southwest of Reno, Nevada; and one population is in Douglas County, Nevada. The elevation range of known populations is from 3,400 to 6,700 feet AMSL. Botanical surveys conducted by the USFS and JBR in 2011 and 2013 identified five populations approximately 2.7 to 5.5 miles south of the Bordertown Substation on the Nevada side of the state line but none were found associated with the action alternatives. For the purpose of this analysis, all area within 500 meters of any population on NFS land is considered occupied habitat. There is no occupied or designated critical habitat for Webber ivesia within the variable-width corridor or road widening corridors of the action alternatives.

Jaw-leaf Lupine

Jaw-leaf lupine is an annual herb in the pea family, which grows up to several erect stems and has an abundance of pale purple/white, relatively large flowers (Cronquist et al. 1989). The entire plant is soft and hairy. Jaw-leaf lupine often colonizes openings within mixed conifer and sagebrush communities on sandy and/or gravelly flats and foothill slopes at elevations between 4,590 and 5,650 feet AMSL. Like other annual plants, bloom periods are influenced by precipitation. Jaw-leaf lupine has been reported on Peavine Peak within the habitat and elevation range mentioned above (Williams et al. 1992). Jaw-leaf lupine has also been reported outside of the project area near Verdi, Nevada.

Lemmon Milkvetch

Lemmon milkvetch is a slender, prostrate, or loosely matted perennial herb in the pea family. This milkvetch occurs in seeps and wetlands within sagebrush scrub vegetation at elevations between 4,265 and 7,218 feet AMSL (CNPS 2012). The nearest known location of this species is in Loyalton, California over 25 miles north of the analysis area. Lemmon milkvetch does not occur within the project area.

3.8.2 Environmental Consequences

3.8.2.1 Methods of Analysis

The specific indicator used to evaluate effects to special status plants is:

- Impact to special status plant populations (i.e., individuals or group of individuals).

3.8.2.2 No Action Alternative

Under the No Action Alternative, construction of the proposed project and subsequent operation and maintenance of the proposed transmission line would not occur; therefore there would be no impacts to special status plant populations or habitat.

3.8.2.3 Effects Common to All Action Alternatives

Construction

Plant Populations

Potential impacts to special status plant populations (i.e., individual plant or group of plants) include crushing foliage and root systems and uprooting plants during ground disturbing activities. Although no plant populations were found during field surveys, certain special status plants may occur in habitats that have been previously surveyed. Jaw-leaf lupine and altered andesite popcorn flower are spring annuals which are affected by seasonal fluctuation in precipitation and may not appear under dry conditions. Upswept, dainty, and slender moonwort can be difficult to detect as the ferns complete much of their life cycle below the ground, and above ground plant structures are not produced every year.

Design Features to Avoid or Minimize Impacts to Special Status Plant Populations

Design features have been developed to protect special status plant populations (and individual plants) (**Appendix B**). The implementation of design features SV 2, SV 4 through SV 8, and HE 11 would ensure that direct effects to special status plant populations are avoided under any action alternative. Design features SV 7 and SV 8 provide increased protection to Webber ivesia populations that occur on NFS land by prohibiting ground disturbance within 500 meters (1,640 feet) of the population. Design feature SV 1 would ensure that if a previously unknown population is found during construction, work would be halted and appropriate avoidance buffer and other necessary protective measures would be established.

To protect populations of jaw-leaf lupine, altered andesite popcorn flower, and moonwort ferns that were not found during surveys, but may be present in the analysis area, implementation of design feature SV 2 would ensure that field surveys are conducted in potential habitat once an alternative is selected and access roads and pole locations are known. If any of the special status plants are found, SV 5 and SV 6 require that all project related ground disturbance would avoid special status plant populations.

Construction of any action alternative would have no impacts to special status plant populations. None of the action alternatives would have impacts to occupied habitat for Webber ivesia.

Potential Habitat

Disturbance that alters habitat conditions may affect the ability of the habitat to be colonized by special status plants in the future. As described in **Section 3.7 Vegetation**, most of the impacts to potential habitat for special status plants would result from intentional vegetation removal during construction.

The ability of special status plants to colonize potential habitat that has been disturbed is unknown. The successful restoration of potential habitat depends on a number of factors including each disturbed site's localized environmental conditions and ability to exclude weed infestations. The disturbance to potential habitat that is currently unoccupied would have no change to the population size or distribution of currently known special status plants. There would be no effects to special status plant populations.

Operation and Maintenance

During the operation and maintenance phase of the project, new special status plant surveys would be conducted prior to any new disturbance within potential habitat. As during the construction phase, all disturbances would be restored. Design features that protect populations during the construction phase of the project would continue to be implemented during the operation and maintenance phase.

3.8.2.4 Mitchell Alternative

Although potential habitat for six special status plants occur within the analysis area of the Mitchell Alternative (**Tables 3.8-2** and **3.8-3**), no special status plants have not been found during special status plant surveys. Implementation of the Mitchell Alternative would not have impacts to special status plant populations.

3.8.2.5 Peavine Alternative

Potential habitat for six special status plants occur within the analysis area of the Peavine Alternative (**Tables 3.8-2** and **3.8-3**). However, special status plants have not been found during field surveys. The variable-width corridor of the Peavine Alternative contains 35.5 acres of the avoidance buffer area of the Dog Valley ivesia. The avoidance buffer area is the area within 1,640 feet (i.e., 500 meter) of a known population of Dog Valley ivesia where activities that have direct impacts to Dog Valley ivesia are prohibited by design features.

3.8.2.6 Poeville Alternative

Although potential habitat for six special status plants occur within the analysis area of the Poeville Alternative (**Tables 3.8-2** and **3.8-3**), special status plants have not been found during field surveys. Implementation of the Poeville Alternative would not have impacts to special status plant populations.

3.8.2.7 Peavine/Poeville Alternative

Potential habitat for eight special status plants occur within the analysis area of the Peavine/Poeville Alternative (**Tables 3.8-2** and **3.8-3**). However, special status plants have not been found during field surveys. The variable-width corridor of the Peavine/Poeville Alternative contains 35.5 acres of the avoidance buffer area of the Dog Valley ivesia. The avoidance buffer area is the area within 1,640 feet (i.e., 500 meter) of a known population of Dog Valley ivesia where activities that have direct impacts to Dog Valley ivesia are prohibited by design features.

3.8.2.8 Cumulative Effects

The cumulative effects from any of the action alternatives would be negligible because impacts to special status plant populations from the project would only be short-term and indirect.

3.9 WILDLIFE

This section provides a discussion of terrestrial and aquatic biological resources in the project area and surrounding areas. The analysis area for wildlife resources consists of the variable-width corridor and road widening corridor for the action alternatives. Special status wildlife species are discussed in **Section 3.10**.

3.9.1 Regulatory Framework

3.9.1.1 Humboldt-Toiyabe National Forest

The USFS manages land for habitat and wildlife as well as for other resource values. One of the primary ways this is accomplished is through Management Indicator Species (MIS). MIS are identified in the Forest Plan (USFS 1986) as representing a group of species having similar habitat requirements. Essentially, these species are analogs for all other species that might occur within a given habitat. Managing for these species allows the USFS to preserve a diversity of habitats for more common wildlife. USFS biologists are required to periodically monitor species to ensure management directions are sustaining these habitats and species.

The Sierra Nevada Forest Plan Amendment (SNFPA) amended the Forest Plan in 2001 and again in 2004 (USFS 2004). The SNFPA is designed to facilitate a regionally-consistent management of old forest ecosystem resources across USFS management boundaries and as such is called "framework" (e.g., Sierra Nevada Framework). The SNFPA also includes standards and guidelines related to other sensitive resources such as aquatic, meadow, and riparian ecosystems. The goals of the plan as they relate to wildlife resources include:

- Improve quantity and quality of useable habitat available for SNFPA species by increasing density of large trees, increasing structural diversity of vegetation, and improving the continuity and distribution of old forests across the landscape; and
- Protect and restore desired conditions of aquatic, riparian, and meadow ecosystems in Sierra Nevada national forests.

3.9.1.2 Bureau of Land Management Eagle Lake Field Office

The BLM manages habitat for wildlife outlined in the Eagle Lake RMP (BLM 2008b) through a variety of mechanisms. Under the authority of the Federal Land Policy and Management Act of 1976, public land must be managed to protect environmental quality and ecological relationships, and where appropriate, to preserve and protect their natural condition. Additionally, the BLM has signed Memorandums of Understandings with the California Department of Fish and Wildlife (CDFW) and Nevada Department of Wildlife (NDOW), where wildlife and wildlife habitat are managed in cooperation with either of these state agencies. Overall the goals for management of habitat for wildlife are to administer public land in a manner that promotes the recovery, restoration, maintenance, or enhancement of endemic wildlife populations.

3.9.1.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA) (16 USC 703-712) is administered by the USFWS and is the cornerstone of migratory bird conservation and protection in the United States. The MBTA provides that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird" (16 USC 703). However, the

MBTA does not regulate habitat. The list of species protected by the MBTA was revised in March 2010, and includes almost all bird species (1,007 species) that are native to the United States.

3.9.2 Affected Environment

The following presents the habitats available to wildlife within the project area and the species that may or do occur within them.

3.9.2.1 Existing Setting

Wildlife Habitat

For wildlife, vegetation communities are aggregated into general habitat classifications. Available habitat (as defined by vegetation community) on the NFS land, BLM-administered public land, and private land within the variable-width corridor of each action alternative has been previously presented in **Table 3.7-1**.

Bitterbrush-sagebrush habitat is the most widely available habitat within the variable-width corridor for each action alternative. Other prevalent habitats within the variable-width corridor of action alternatives include forest (i.e., eastside pine), chaparral (with mixed scrub), and annual grasses. Aspen and riparian communities comprise less than one percent of the available habitat within the variable-width corridor of any action alternative. Both the Poeville and Peavine/Poeville alternatives have substantial non-native annual grasslands present within the variable-width corridor at 33 percent and 24 percent, respectively. Annual grasses consist primarily of cheatgrass and other non-native species, which are, in part, a reflection of past wildfires, particularly on the south facing slopes of Peavine Peak.

Management Indicator Species

The MIS that occur or are likely to occur within the project area are listed below. A detailed breakdown of the available habitat for each of the MIS is provided in **Table 3.9-3**. Five MIS species are described below. Three of the MIS, northern goshawk, yellow warbler, and Lahontan cutthroat trout (LCT) are described and addressed in **Section 3.10** as special status species.

- Northern goshawk;
- Lahontan cutthroat trout;
- Yellow warbler;
- Yellow-rumped warbler;
- Hairy woodpecker;
- Williamson's sapsucker;
- American marten;
- Mule deer; and
- Macroinvertebrates.

Yellow-Rumped Warbler

Yellow-rumped warblers are considered highly adaptable and can be found in a variety of habitats including coniferous forests, mixed woodlands, deciduous forests, pine plantations, and aspens (Floyd et al. 2007). According to U.S. Geological Survey Breeding Bird Survey information (Sauer et al. 2014), population trends of yellow-rumped warblers in the Sierra Nevada have been stable or declined in some areas between 1966 and 2013 and in Nevada, shows a similar trend, depending on regions. Within the project area, yellow-rumped warblers would likely be found in the mixed conifers stands. Yellow-rumped warblers were detected by the USFS during migratory bird surveys (USFS 2011c) and were noted along the Poeville Alternative in 2012.

Hairy Woodpecker

Hairy woodpeckers are widespread throughout North America and within the general project area, and are associated with deciduous and coniferous woodlands (Jackson et al. 2002). Hairy woodpeckers nest in trees with a minimum diameter of 10 inches and minimum height of 15 feet (Sousa 1987). Across their range, tree diameter of was the characteristic most used to indicate nest use. Within the project area, suitable habitat for this species includes portions of the aspen vegetation community and other areas where large-diameter trees occur. USFS migratory bird surveys in Dog Valley, west of the project area, detected hairy woodpeckers (USFS 2011d).

Williamson’s Sapsucker

Williamson’s sapsuckers are an uncommon species found along the length of the Sierra Nevada where they are considered a year-round resident (Gyug et al. 2012). The species breeds at middle to high elevations, generally from 4,900 to 10,500 feet AMSL in montane mixed deciduous-coniferous forest with aspen as an important nesting substrate (Gyug et al. 2012). Nests are located in fairly large snags (1 to 2.5 feet in diameter) (GBBO 2010), and the availability of trees with heartwood rot is a critical component of breeding habitat (Gyug et al. 2012). The U.S. Geological Survey Breeding Bird survey (Sauer et al. 2014) reports populations in the Sierra Nevada have been stable from 1966 to 2013. Aspen communities, particularly where they occur in proximity to forest communities, provide potential habitat for this species within the project area. Migratory bird surveys conducted in Dog Valley resulted in no detections of Williamson’s sapsuckers; however, these birds have been detected nesting in the Carson Range (Floyd et al. 2007), which is southwest of the project area.

American Marten

American marten are uncommon species found within habitats of late-seral stage forests that are comprised of large live and dead trees, with coarse woody debris and a relatively low and closed canopy. These habitats provide cover for marten as well as habitat for their prey that include squirrels, voles, chipmunks, and wood rats. They also eat fruits and berries, particularly mountain ash (Harris et al. 1997; Jameson and Peeters 1988). The project area provides no habitat for marten. Marten occur west (California Natural Diversity Database 2013) and south of the project area in suitable habitat. Previous USFS surveys in the general area have resulted in no detections of marten (Easton 2013). Because habitat does not occur for American marten, they are not discussed further in this document.

Mule Deer

The majority of the deer that occupy the project area are part of the Verdi sub-herd, which is a sub-group of the larger Loyalton-Truckee Interstate herd. The Loyalton-Truckee Interstate herd is broadly distributed from the east side of Donner Summit, north to Sierra Valley, northeast to the Peterson Range in Nevada, south to Glenshire, California, and east to the western edge of Reno, including Peavine Peak.

A status report produced for the 2014-2015 season indicated the herd was stable and appeared healthy, although the long-term trend in abundance is downward, mostly due to habitat loss and fragmentation (NDOW 2015). The Verdi sub-herd has endured substantial declines largely due to loss of habitat from urban development, wildfires, increased recreation (NDOW 2015), and direct mortality due to collisions with vehicles.

Habitat for mule deer is commonly characterized by areas of thick brush or trees interspersed with openings. Mule deer prefer browsing on new growth of shrubs, forbs, and some grasses. Fawning occurs in moderately dense shrubland and forest, dense herbaceous vegetation, and high-elevation riparian and mountain shrub habitats with available water and forage. Fawn production is closely tied to the abundance of succulent, green forage during spring and summer months.

Mule deer often migrate from lower to higher elevations in spring and summer where water and forage are more available. Migration between seasonal ranges generally occurs along well-established routes (Innes 2013). Seasonal range habitats are broadly defined using the following parameters:

- **Winter** – A mosaic of palatable brush such as bitterbrush, desert peach, and sagebrush, which provides shelter and forage that is free of snow, commonly found at lower elevations;
- **Transitional** – Similar habitat as winter range but is used between summer and winter. These habitats should support sufficient browse and cover such as bitterbrush, sagebrush, and mountain mahogany, or available forbs, commonly found in middle elevations. These habitats are used in mild winters as well;
- **Summer and Fawning** – These habitats are commonly at higher elevations. Fawning habitat generally consists of aspen stands, riparian, or montane chaparral, where succulent browse is available. Cover both for thermal regulation and seclusion of does and fawns is particularly important; and
- **Migratory Corridors** – These are traditional areas where mule deer move between seasonal habitats.

Winter habitat is particularly important to mule deer because these lower elevation brush stands are often snow free and readily accessible for browsing and cover. During winters when significant snowfall occurs at higher elevations, this habitat becomes even more critical. The entire project area supports some type of seasonal range habitat, whether it is transitional, summer and fawning, or winter. The most abundant habitat available to mule deer within the project area is bitterbrush-sagebrush which provides winter, summer, and transitional habitat. Additionally, the Truckee River, bounded by Interstate 80, is considered a critical migratory corridor for the Loyalton-

Truckee Interstate herd as deer move between California and Nevada during the winter and late spring seasons.

The CDFW and NDOW have mapped and refined the seasonal habitats in the management of the Loyalton-Truckee herd as:

- **Summer Use –** That part of the overall range where 90 percent of the individuals are located between spring green-up and the first heavy snowfall;
- **Crucial Winter Use –** Areas within the winter range where 90 percent of the individuals are located when annual snow pack is at its maximum and/or temperatures are at a minimum in the two worst winters out of 10;
- **Winter-Spring High Use –** That part of the winter range where densities are at least 200 percent greater than the surrounding winter range density during the same period used to define winter range in the average five winters out of 10; and
- **Year-Round Use –** An area that provides year-round range for a population of mule deer. The resident mule deer use all of the area all year; it cannot be subdivided into seasonal ranges although it may be included within the overall range of the larger population.

The project area contains seasonal habitat, including crucial winter range habitat that is particularly important for mule deer. The USFS has set aside the Mitchell Canyon Deer Management Area (**Figure 3.9-1**), which includes 2,000 acres for mule deer winter range. The management area is located within the project area, including within areas of the variable-width corridor of the Mitchell and Peavine alternatives. Seasonal closure for motorized vehicles occurs during winter months (November 18 through April 1) to protect deer from disturbance during this period. The Mitchell Canyon Deer Management Area and important habitat areas delineated by the CDFW and NDOW are displayed on **Figure 3.9-1**.

The CDFW and NDOW have radio-collared numerous mule deer from the Loyalton-Truckee herd to study their seasonal movements (data from 2006 through 2012). Based on these studies, mule deer use of the project area is substantially greater within private property adjacent to the Reno urban interface (**Figure 3.9-1**).

Table 3.9-1 summarizes the area of mapped mule deer habitat within the variable-width corridor of each action alternative. Areas that are mapped as Winter-Spring High Use also represent Crucial Winter Use, but are currently utilized more heavily that other Crucial Winter Use areas, as documented by the presence of radio-collared deer.

The NDOW big game status reports for the past several years (NDOW 2011, 2012b, 2013a, 2014, 2015) indicate habitat loss particularly from urban/suburban development, wildfires, and displacement from recreation as critical issues for the Loyalton-Truckee Interstate herd. The NDOW management objectives for the Loyalton-Truckee Interstate herd, which numbers around 1,500 individuals, are "no net loss", meaning any serious impediment to the seasonal movement of deer, substantial removal of crucial winter habitat, or activities that might prevent access to critical seasonal habitat could impact this subset of the Loyalton-Truckee Interstate herd (Cox 2012).

Table 3.9-1 Mule Deer Seasonal Use Habitat within the Variable-Width Corridor

HABITAT	MITCHELL		PEAVINE		POEVILLE		PEAVINE/POEVILLE	
	PUBLIC LAND[1]	PRIVATE LAND	PUBLIC LAND[1]	PRIVATE LAND	PUBLIC LAND[1]	PRIVATE LAND	PUBLIC LAND[1]	PRIVATE LAND
Winter-Spring High Use	0	0	0	0	27.6	415.9	13.2	190.6
Winter-Spring Mule Deer Concentration Areas	0	0	0	0	0	39.7	0	39.7
Crucial Winter Use	152.8	17.5	165.1	21.6	1.33	21.8	0.7	21.8
Summer Use	315.6	12.6	63.4	11.7	13.8	11.7	63.1	11.7
Year-Round Use	149.7	128.9	296	128.6	73.9	147.1	250.3	129.0
Total	618.1	159	524.5	161.9	116.6	636.2	327.3	392.8

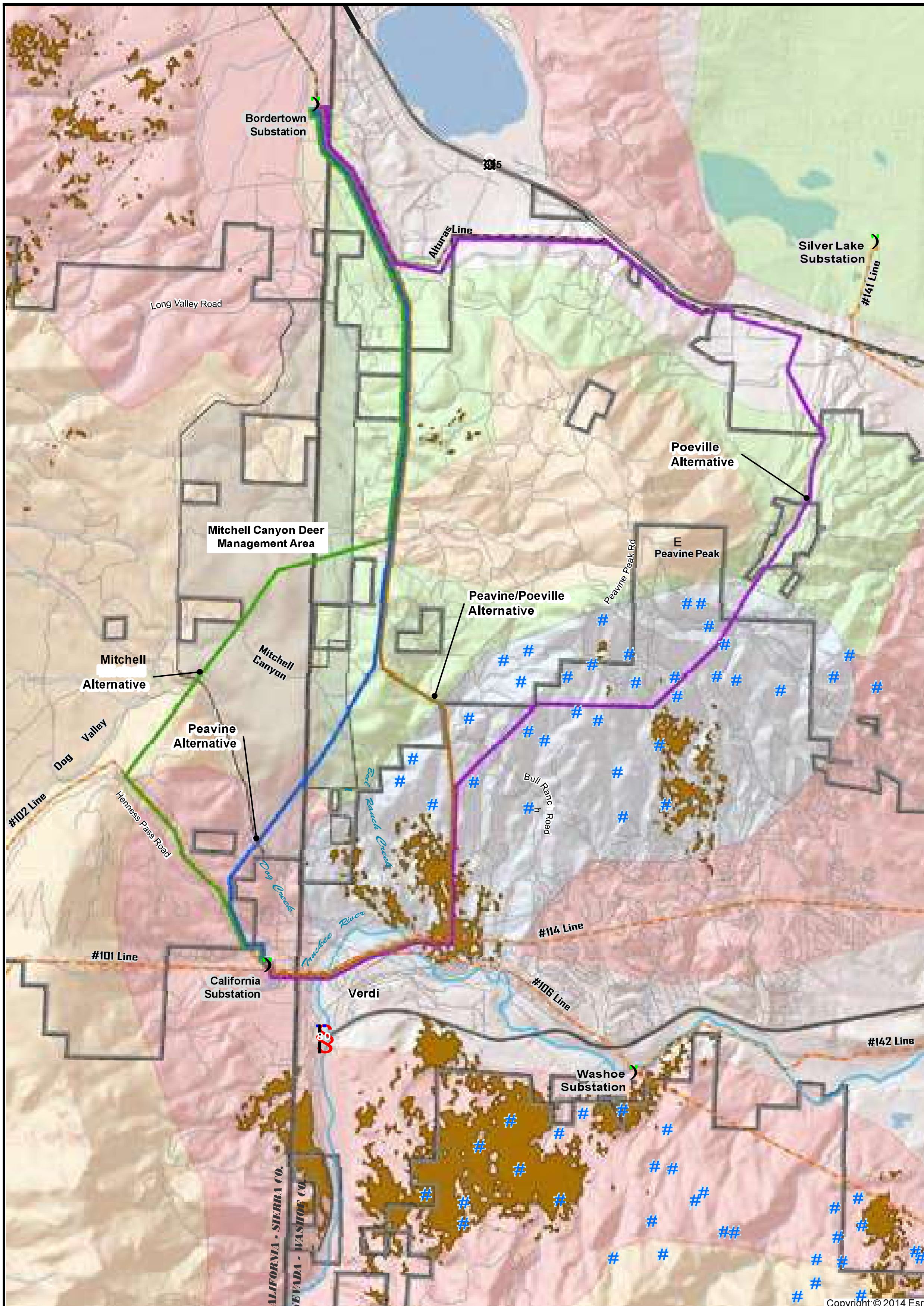
[1] Includes 13.8 acres of Summer Use and 1.3 acres of Crucial Winter Use on BLM-administered land at the Bordertown Substation

Macroinvertebrates

Freshwater benthic macroinvertebrates (benthos) are animals without backbones that are larger than 0.5 millimeter (the size of a pencil dot). These animals live on rocks, logs, sediment, debris, and aquatic plants during some period in their life. The benthos include crustaceans such as crayfish, clams and snails, aquatic worms and the immature forms of aquatic insects such as stonefly, caddisfly, and mayfly nymphs. Macroinvertebrates are an important part of the food chain, especially for fish. Many benthos feed on algae and bacteria, which are on the lower end of the food chain. Some shred and eat leaves and other organic matter that enters the water. Because of their abundance and position in the aquatic food chain, macroinvertebrates play a critical role in the natural flow of energy and nutrients. As macroinvertebrates die, they decay, leaving behind nutrients that are reused by aquatic plants and other animals in the food chain. Macroinvertebrates are present in the Truckee River (Tetra Tech 2007) and are likely present within the other perennial streams found in the project area.

Common Wildlife

A variety of common wildlife species occur within the project area because of the diversity of habitat types that are available. Species presented below either have been documented, are assumed to occur within the project area (NDOW 2012a), or could occur as ascertained using the California Wildlife Habitat Relationship System tool (CDFW 2005a).



Transmission Line Alternatives
- Mitchell
- Peavine
- Poeville
- Peavine/Poeville

Existing Transmission Lines
- 120 kV Transmission Line
- 345 kV Transmission Line
- Existing Roads
- U.S. Forest Service

Wildlife Data
- # Winter Mule Deer Observation Locations (NDOW and CDFW-2010 & 2012 winter surveys)
- Winter - Spring Mule Deer Concentration Areas (NDOW and CDFW-2006 to 2011 aggregate deer collar data)
- Mitchell Canyon Deer Management Area

Mapped Habitat
- Mule Deer Winter Spring High Use (Peavine) (NDOW and CDFW)
- 2014 Mule Deer Crucial Winter (NDOW and CDFW)
- 2014 Mule Deer Year Round (NDOW and CDFW)
- 2014 Mule Deer Summer Use (NDOW and CDFW)

FIGURE 3.9-1
MULE DEER HABITAT

BORDERTOWN TO CALIFORNIA
120 kV TRANSMISSION LINE EIS

1 " = 1 Mile
0 0.5 1 2
Miles

Mammals

Mammalian species, in addition to mule deer, that commonly occur within the bitterbrush-sagebrush and chaparral habitats are badger, bobcat, mountain lion, coyote, and various rodents including California ground squirrel, pocket mice, chipmunks, jackrabbit, cottontail, and yellow-bellied marmot. Within forest and aspen communities (i.e., habitats) black bear, yellow-pine chipmunk, raccoon, striped skunk, meadow jumping mouse, and deer mice occur. Within or adjacent to the Truckee River, North American river otter and weasel are expected to occur.

Birds

The project area is within the Pacific Flyway for migratory birds and within the contact between Great Basin and Sierra Nevada ecosystems. The area supports seasonal habitats for hundreds of birds. Depending on the season, the assemblages of birds occupying the project area would differ; some occurring only in the breeding season, while others utilizing the habitats for seasonal movements or occurring as incidentals. Over a number of years, the USFS has conducted surveys for migratory birds within Dog Valley. The USFS recorded 38 species of birds, representing breeding birds within the sampled habitats (e.g., meadow, forest) (USFS 2011d).

Aspen habitat is favored by a variety of cavity-nesting birds, such as bluebirds, sapsuckers, downy woodpeckers, nuthatches, and chickadees. Species of birds that may occur within the brush and conifer habitat of the project area include: house finch, Bewick's wren, rock wren, Cassin's finch, California quail, horned lark, meadow lark, spotted towhee, dark-eyed junco, northern flicker, Steller's jay, scrub jay, black-headed grosbeak, ruby-crowned kinglet, Brewer's blackbird, and pine siskin.

The Truckee River provides habitat for waterfowl and water dependent birds such as mallard duck, common merganser, wood duck, American dipper, belted kingfisher, heron and swallows.

A number of raptors maybe found within the available habitats. Raptors include red-tailed hawk, American kestrel, sharp-shinned hawk, Cooper's hawk, osprey, northern harrier, northern saw-whet owl, great-horned owl, long-eared owl, and western screech owl, among others.

Some of the birds that may or do occur within the project area are considered sensitive species or birds of conservation concern. Birds considered sensitive species by USFS or BLM are addressed in **Section 3.10**. Birds of conservation concern that may potentially occur within the project area are listed in **Table 3.9-2**.

Table 3.9-2 Migratory Birds of Conservation Concern in the Project Area

COMMON NAME	SCIENTIFIC NAME
Cinnamon Teal	Anas cyanoptera
Lesser Scaup	Aythya affinis
Sooty Grouse	Dendragapus fuliginosus
Snowy Egret	Egretta thula
Prairie Falcon	Falco mexicanus
Band-tailed Pigeon	Patagioenas fasciata

COMMON NAME	SCIENTIFIC NAME
Short-eared Owl	Asio flammeus
Common Poorwill	Phalaenoptilus nuttallii
Calliope Hummingbird	Selasphorus calliope
Rufous Hummingbird	Selasphorus rufus
Lewis's Woodpecker	Melanerpes lewis
Olive-sided Flycatcher	Contopus cooperi
Gray Flycatcher	Empidonax wrightii
Sage Thrasher	Oreoscoptes montanus
Virginia's Warbler	Oreothlypis virginiae
Hermit Warbler	Setophaga occidentalis
Green-tailed Towhee	Pipilo chlorurus
Brewer's Sparrow	Spizella breweri
Sagebrush Sparrow	Artemisiospiza nevadensis

Sources: GBBO 2010; USFWS 2008

Reptiles and Amphibians

The project area provides diverse brush habitat for reptiles and amphibians. Common species expected to occur are: Great Basin rattlesnake, western whipsnake, rubber boa, gopher snake, Sierra garter snake, western yellow-bellied racer, western fence lizard, long-nosed leopard lizard, zebra-tailed lizard, and horned lizards. Amphibians that may occur in riparian and wetland areas include western toad, Sierran tree (chorus) frog, and American bullfrog.

Aquatic Species

A range of fish species may occur in Dog Creek and/or the Truckee River. According to NDOW (2012a), brown trout, Lahontan redside, mountain sucker, mountain whitefish, Paiute sculpin, rainbow trout, speckled dace, and Tahoe sucker occur within the project area.

3.9.2.2 Mitchell Alternative

The Mitchell Alternative, as presented in **Table 3.7-1**, transects the greatest amount of forest and aspen habitats compared with the other action alternatives. Consequently, more species dependent on forested habitat would be likely to occur within its analysis area than the other alternatives. However, there would be less diversity of species dependent on riparian habitat because the Mitchell Alternative does not cross the Truckee River, unlike the Poeville and Peavine/Poeville alternatives. The Mitchell Alternative would cross Dog and Sunrise creeks, both of which provide minimal riparian habitat. Species associated with these habitats are presented above. As with all alternatives, the most dominant habitat type is bitterbrush-sagebrush. The MIS that may occur within the analysis area are yellow-rumped warbler, Williamson's sapsucker, hairy woodpecker, mule deer, and macroinvertebrates.

The analysis area of this alternative contains the most mapped mule deer summer habitat and the second most mapped crucial winter habitat of the alternatives (**Figure 3.9-1**; **Table 3.9-1**). Confidential data provided by NDOW from the collared deer seem to indicate that deer use these habitats as transitional rather than crucial winter as deer were not documented using the habitat as winter-spring high use. The collar data however, do not reflect deer that may occupy the analysis area year-round.

The analysis area has the least amount of fragmented habitat of any alternative, with approximately 79 percent of the area fragmented by roads or trails. The areas with the fewest roads or trails are within Mitchell Canyon and near Dog Creek.

3.9.2.3 Peavine Alternative

Habitats within the analysis area are similar to those of the Mitchell Alternative, but would be fewer because the alternative is shorter in length. The analysis area contains more bitterbrush-sagebrush and less conifer than the analysis area of the Mitchell Alternative. Because the Peavine and Mitchell alternatives coincide along much of their length, similar amounts of chaparral and mixed scrub occur within its analysis area as the Mitchell Alternative. Riparian and stream habitats are crossed at Dog and Sunrise creeks. Species that may occupy these habitats are presented above. The MIS that could occur within the analysis area are yellow-rumped warbler, Williamson's sapsucker, hairy woodpecker, mule deer, and macroinvertebrates.

The analysis area for the Peavine Alternative has the most mapped mule deer year-round use habitat (**Figure 3.9-1, Table 3.9-1**), along with significant crucial winter use habitat, but no data exists for how deer use these habitats. The analysis area does not appear to support winter-spring high use habitat, and habitat is therefore likely more transitional habitat.

The degree of habitat fragmentation within the analysis area and surrounding proximity varies. Less disturbed habitat occurs near Mitchell Canyon and Bull Ranch Creek, and southwest below Dog Creek. However, the habitat along approximately 85 percent of the Peavine Alternative is fragmented by numerous existing roads and trails (**Figure 3.9-1**). Despite this, the analysis area appears to contain less fragmented habitat from existing roads than either the Poeville or Peavine/Poeville alternatives.

3.9.2.4 Poeville Alternative

Habitat within the analysis area of the Poeville Alternative is diverse and includes all of the habitats described in **Table 3.7-1**. The analysis area contains the least amount of forested habitat relative to the other action alternatives. This analysis area has the most bitterbrush-sagebrush and annual grasses and forbs habitats. Riparian habitats are available along three perennial streams: Bull Ranch Creek, Jones Creek, and the Truckee River. As a result, a diversity of species, particularly migratory bird species, may occur within the analysis area. Macroinvertebrates may also occur in association with the perennial streams. Yellow-rumped warblers and mule deer were noted along this alternative during site visits in 2012. Historic mining features located near the Poeville Alternative may provide habitat for bats or other species.

According to NDOW radio-collar data, the analysis area of the Poeville Alternative contains some of the most important and well used mule deer habitat of all of the alternatives. Radio collar data spanning a number of years and seasonal winter surveys indicate mule deer congregate and remain relatively stationary during both winter and spring seasons in habitats within the analysis area. The winter-spring high use habitat primarily occurs on private land (**Figure 3.9-1**; **Table 3.9-1**). The concentration areas total nearly 40 acres within the analysis area. The analysis area also contains year-round habitat both on NFS land and private land and crucial winter habitat on private land.

The analysis area contacts Reno's urban interface and bisects suburban areas along the northern and southern areas (e.g., Verdi), resulting in extensive road networks, including roads and trails that fragment habitat. The Poeville Alternative has approximately 0.4 mile of centerline with little fragmentation southwest of Peavine Peak. However, approximately 97 percent of the alternative has roads or trails along its length that fragments the habitat. Where fewer roads occur, it roughly corresponds to the areas of mule deer concentrations, hemmed in by urban neighborhoods. The distribution line that brings power to the summit of Peavine Peak provides some of the existing road disturbance, particularly on the north slope of Peavine Peak.

3.9.2.5 Peavine/Poeville Alternative

The analysis area of the Peavine/Poeville Alternative contains similar forested habitat as the Peavine Alternative, but joins the Poeville Alternative on private land, where it crosses shrub and annual grass habitats that are on the southern flank of Peavine Peak. The analysis area of the Peavine/Poeville Alternative also contains the same aquatic habitat associated with the Truckee River as the Poeville Alternative. The analysis area contains approximately 16 acres of aspen and willow habitats combined, which is more than either the Peavine Alternative or the Poeville Alternative. Aspen and willow habitats are potentially suitable habitat for a variety of avian species including MIS. The MIS expected to occur within the analysis area would include mule deer, yellow-rumped warbler, Williamson's sapsucker, hairy woodpecker, and macroinvertebrates.

Mule deer seasonal use habitats occur within the analysis area of the Peavine/Poeville Alternative, and the mapped habitats are similar to the Poeville Alternative. For example, within the analysis area, the alternative contains approximately 75 acres of summer use habitat and 379 acres of year-round habitat (**Table 3.9-1**). As with the Poeville Alternative, mule deer winter-spring high use habitat occurs within the analysis area, totaling about 40 acres of mapped deer concentration areas, as defined by collar data (**Figure 3.9-1**).

Fragmentation of habitat from existing roads is greater within the analysis area of the Peavine/Poeville Alternative than the other action alternatives. Beyond the analysis area, some of the habitats are less fragmented, although fragmentation increases in Verdi.

3.9.3 Environmental Consequences

3.9.3.1 Methods of Analysis

The indicators that were used to evaluate effects to wildlife resources are:

- Acres of vegetation communities disturbed but are proposed to be restored;
- Acres of vegetation permanently removed; and,
- Acres of tree cutting needed to maintain safe transmission line clearance.

With the exception of road widening, the specific locations of project elements are unknown. However poles and access roads and the associated habitat disturbance would be within the variable-width corridor, and the majority of the disturbance would occur within the ROW. Thus, the acres of available habitat types that are present within the ROW/easement are used as an indication of the type and relative abundance of habitat that may be impacted.

Additionally, the potential effects on wildlife resources were evaluated by determining the potential for an alternative to:

- Result in a downward trend in populations and/or habitat capability for MIS or other general wildlife species; and,
- Interfere with wildlife movement/migration or important seasonal habitat, particularly for mule deer.

3.9.3.2 No Action Alternative

Under the No Action Alternative, construction of the proposed project and subsequent operation and maintenance of the proposed transmission line would not occur. Thus, there would be no habitat loss, alteration, or fragmentation, and no wildlife disturbances from the existing conditions within the project area. Wildlife mortality incidental to construction and from increased predation and collisions associated with the proposed transmission line would not occur, nor would wildlife disturbance and displacement associated with construction and maintenance noise and activities. Wildlife assemblages would occur as they do currently.

3.9.3.3 Effects Common to All Action Alternatives

The proposed project may impact wildlife by altering migration and movement corridors from increased human disturbance and noise, increasing habitat fragmentation, loss of habitat through vegetation disturbance, and wildlife mortality. Migration corridors are used for annual migratory movement between source areas (e.g., summer and winter habitat). Movement corridors support daily movements, including breeding, resting, and foraging. The ability to migrate and move is essential to the health and survivorship of wildlife.

Construction

Wildlife Displacement and Habitat Removal

During construction, noise and human disturbances may cause wildlife to flee the local area. Displacement from noise and human disturbances would only impact the individuals that occur within or near the proposed ROW/easement as noise would attenuate with increased distance from construction activities. Displacement of individuals could result in loss of health and survivorship if the animals are displaced into low-quality habitat. However, impacts would be temporary and short-term because noise and human disturbances associated with the proposed project would be expected for a period of 8 to 12 months.

For all action alternatives, the surface disturbance required for project construction would result in the loss of available habitat for general wildlife, MIS, and migratory birds. Habitats that may be lost include browse, foraging, and cover habitat, and specifically for avian species, nesting substrate habitat. Mule deer have the greatest potential to be affected from habitat disturbance due to the limited availability of winter range habitat within the project area (**Figure 3.9-1**). **Table**

3.9-3 presents the acres of potential habitat within the proposed ROW/easement that could be altered or lost from project construction activities and identifies the species that may be displaced from these habitats. It is not anticipated that all of the vegetation within the ROW/easement would be cleared for construction.

Removal of Forested Habitats

During construction activities, trees within forested habitats would be removed at wire setup sites, access roads, and road widening areas. Additionally, trees within the transmission line clearance area would be cleared initially during construction, and then repeatedly cleared throughout the operational life of the project to comply with state and federal safety regulations. From the most abundant to least abundant, forested habitats include eastside pine, mixed conifer-white fir, plantation, aspen, and Jeffrey pine. The Mitchell Alternative has the most forested community, while the Poeville Alternative has the least (**Table 3.7-2**).

Design Features to Avoid/Minimize Disturbance to Wildlife and Habitat Removal

Design features (**Appendix B**) were developed to minimize potential impacts to wildlife from noise and human disturbance associated with project construction. To avoid disturbing wintering mule deer, design feature WL 6 precludes construction activities from November 25 through May 25 in areas mapped as crucial winter or winter-spring high use. Design feature WL 3 avoids disturbance to nesting birds by requiring that construction activities occur outside the typical avian breeding season (April 1 to July 31). If construction activities cannot be avoided during this time period, surveys will be conducted immediately prior to construction to locate active nesting areas. For mule deer habitat that would be permanently or temporarily lost from the project, design feature WL 8 requires offsite wildlife habitat improvement. Implementation of the design features would help to minimize direct impacts to wildlife during construction activities.

Design features were also developed to minimize the loss of important habitat types. For example, design features protect meadows, riparian, and riparian woodland areas. Design features prohibit new road crossings over perennial streams and prohibit the placement of poles, staging areas, and fuel storage areas near floodplains (which support riparian vegetation) and wetlands. Design feature SV 3 provides added protection on NFS land by specifically prohibiting construction disturbance within meadows, which would include wet meadows. These habitats are important to wildlife because they provide foraging, fawning, and nesting habitat to many wildlife species.

To minimize impacts to forested communities and large-diameter trees, design feature VG 1 requires that the placement of the ROW would avoid, wherever possible, isolated groups of trees and/or groups of trees with an average diameter at breast height of 24 inches or greater. Large-diameter trees are important to many species, including hairy woodpecker and Williamson's sapsucker, which are both MIS and require large-diameter trees for nesting.

Table 3.9-3 Wildlife Habitats within the ROW/Easement of Alternatives

SPECIES	VEGETATION/ HABITAT	MITCHELL		PEAVINE		POEVILLE		PEAVINE/POEVILLE	
		NFS	PRIVATE	NFS	PRIVATE	NFS	PRIVATE	NFS	PRIVATE
Yellow-rumped warbler, Hairy woodpecker, Williamson's sapsucker, Migratory birds	Mixed Conifer – White Fir Eastside Pine Jeffrey Pine	26.7	2.9	14.7	3	0	1.7	8.0	2.2
Mule deer (summer use), Migratory birds	Willow (Riparian)	0	0.2	0	0.2	0.3	1.4	0.1	1.4
Hairy woodpecker, Williamson's sapsucker, Mule deer (summer use includes Aspen), Migratory birds	Aspen Mixed Riparian Hardwood	2.3	0	1.1	0	0	1.2	1.1	0.8
Mule deer, Migratory birds	Mountain Mahogany Great Basin Mixed Scrub Bitterbrush-Sagebrush Chaparral-Snowbrush Mountain Sagebrush	63.8[1]	8.3	69.5[1]	8.3	55.3[1]	41.3	50.7[1]	18.1
Mule deer (Big sagebrush), Migratory birds	Big Sagebrush Low Sage Annual Grasses and Forbs and Ruderal Urban/Developed	3.4	6.9	3.6	7	3.6	81	1.7	41.1
Macroinvertebrates	Mixed Riparian Hardwood Wet Meadow Water (Perennial Streams)	0 Dog Creek	2.3 Sunrise Creek	0 Dog Creek	2.3 Sunrise Creek	0	0.8 Jones & Bull Ranch Creeks, Truckee River	0	3.0 Bull Ranch Creek, Truckee River

Source: USFS 2014d

[1] Includes approximately 15 acres of Bitterbrush-Sagebrush community on BLM-administered public land at the Bordertown Substation

Most surface disturbance from construction activities would be temporary and vegetation communities would be restored. Design feature VG 7 promotes successful restoration of disturbed habitat by requiring success to be based on reference sites selected by the USFS. To encourage the rapid recovery of vegetation communities that benefit mule deer, VG 5 requires that brush species be cut at ground level to preserve root systems allowing for re-growth. Accordingly, most impacts on wildlife from habitat disturbance would be short-term. Impacts would generally be negligible to minor because only a fraction of available habitat in the project area would be impacted. **Section 3.7.2.2** acknowledges that the loss of vegetative cover would be short-term in all areas that are successfully restored (reclaimed and reseeded) following construction. Wildlife habitat in less ecologically resilient sites such as south facing slopes, steep slopes, and sites that lack soil may require more than five years or potentially may never have all pre-construction wildlife functions fully restored. Certain vegetation communities within habitat designated for mule deer such as annual grasses and forbs and previously burned communities may have difficulty achieving restoration goals successfully within reasonable time-frames. For mule deer the failure to successfully restore target vegetation communities would represent a long-term loss of habitat and may result in more than a minor impact especially if the habitat is winter range. To ensure that impacts to wildlife habitat, particularly mule deer are no more than minor, vegetation that would be permanently lost or temporarily disturbed from the project, would require creation of or improvement of on or offsite wildlife habitat. To achieve this, NV Energy will fund a habitat restoration account that includes the cost of restoring three acres to every one acre of habitat that is permanently or temporarily disturbed. The account will be administered by NDOW or a Sierra Front Wildlife Working Group that would include NDOW, Washoe County, USFS, BLM, City of Reno and other interested participants. Long-term impacts would occur from the loss of forested habitats within the transmission line clearance area. Impacts from the removal trees from forested habitats would be measurable, but the overall impact to wildlife would be minor because the number of trees removed would be few in relation to the existing and available trees within and adjacent to the project area. Given the acres of eastside pine habitat that would be removed from construction and within the transmission line clearance area, impacts on this habitat type would be negligible to minor. Potential impacts to the other forested habitat types would be negligible to minor because between less than one percent and seven percent of these types that are available with the project area would be cleared from any of the action alternatives.

Habitat Fragmentation

Construction of any of the action alternatives has the potential to fragment habitat at varying degrees for most wildlife species. Habitat fragmentation creates altered landscapes that are fundamentally different from those shaped by natural disturbances that species have adapted to over evolutionary time (Franklin et al. 2002). Habitat fragmentation can result from many different types of disturbances, including noxious weed invasions and road development.

Shrub habitats are the most common habitat type within the project area that could be affected by weed infestations. Shrub vegetation communities are particularly susceptible to invasion of non-native plant species when disturbed. When non-native species invade native plant communities, they alter the plant assemblages, the structure of the community, and the succession progression of the native habitat. This in turn alters the wildlife species that may utilize the communities. Mixed conifer-white fir and wet meadow are also at risk following vegetation removal, particularly when source populations of non-native species occur in close proximity. Conversion of habitat to one that is non-native can fragment habitat for many wildlife species that rely on continuous stands of native vegetation for forage and cover. As described in **Section 3.7.2.2**, to address the potential for infestations, all temporary construction disturbances would be treated for noxious weeds. The treatment and the monitoring of the treatment success would follow a detailed weed treatment plan that would be included as part of the COM Plan.

Habitat fragmentation from an increase in road density has recognized effects to wildlife. Rost and Bailey (1979), (as cited in Cox et al. 2009, p. 37) found an inverse relationship to habitat use by deer and elk with distance to roads. This displacement can result in under-use of the habitat near roads while overuse may occur in other locations. Some factors from an increase in road density (i.e., predator use, human use) can result in energetic costs (increased energy expenditure) to deer, particularly during winter when nutritional browse is low and movement through snow increases energetic demand (Parker et al. 1984). These types of disturbances have been described as impacting habitat in a non-linear fashion, and are based on the idea that a road's ecological effects extend many times wider than the road itself and that as road density increases, it correlates to a reduction in wildlife diversity and abundance.

Design Features to Avoid/Minimize Habitat Fragmentation Effects

As described in **Section 3.7.2.2**, design features would be implemented to reduce the threat of noxious weed invasions and limit the amount of habitat that would be fragmented. Design features NW 1 through NW 11 minimize the spread of noxious weeds through identification, avoidance, treatment, monitoring, reduction of vectors, and prevention. The implementation of a weed treatment plan and design features ensure that the potential for habitat fragmentation from weed infestations would be low and any weed infestations are effectively eradicated. The effects to wildlife from habitat fragmentation caused by noxious weed infestations would be temporary to short-term depending on the recovery rate of native vegetation after treatment of the noxious weeds. The viability of wildlife populations would not likely be impacted from noxious weed infestations. Impacts that may occur to wildlife due to habitat fragmentation from noxious weeds attributed to the proposed project would be minor to negligible.

Increased road density resulting from the proposed project would be temporary because all newly created access roads for construction would be restored, as would any road that is widened and used for construction access (see **Section 2.3.2.2**). During construction newly created access roads on NFS land would not be designated on or added to the Motor Vehicle Use Map (USFS 2011b), and therefore increase public accessibly via motorized vehicles would not occur during construction or afterwards when roads are reclaimed. To avoid long-term effects of habitat fragmentation from the construction of new access roads, design features RT 3 through RT 7 would ensure that vegetation communities are not disturbed by unauthorized motorized travel on restored roads. Per design feature RT 6, a signage and monitoring plan would include installing signs notifying the public that construction access roads are closed for restoration and monitoring the effectiveness of barriers.

The viability of wildlife populations, including mule deer, would not likely be impacted from habitat fragmentation. Nor would the impacts result in a contribution to a current or predicted downward trend in habitat capability for MIS. This is supported by the existing wildlife populations continuing to persist within the project areas despite the majority of the habitat being fragmented by existing roads, trails, pipelines, power lines, and other similar linear disturbances.

Summary of Construction Related Impacts

Based on the above analysis, short-term and any long-term potential impacts during construction activities from habitat disturbance, removal, alteration, or fragmentation for most wildlife species, such MIS and migratory birds, would be negligible to minor. This is because the project would impact a minimal amount of existing available habitat relative to the amount of unaffected adjacent habitat. Additionally, design features would be implemented to address and minimize impacts from human disturbance, noxious weeds, habitat removal, and habitat fragmentation. The potential impacts would not result in reduced population viability for wildlife species that may occur within the project area, nor would they diminish habitat suitability for a variety of species. The design features require reduction in habitat disturbance, avoiding sensitive habitats; construction timing restrictions, post-construction restoration and monitoring, off-site or onsite wildlife habitat mitigation, and installing blockades to prevent motorized travel on newly created roads and to ensure these roads are successfully restored.

Operation and Maintenance

A number of long-term impacts may occur to wildlife through the operational life of the proposed transmission line. These impacts include wildlife collisions with the lines and increased predation by raptors due to the increased availability of perches offered by the structures.

Potential for Avian Mortality

Transmission lines pose a threat to avian species through collision with the line during flight. The upper shield wire is the largest threat to birds as it is a smaller diameter than the other lines and likely less visible. Vulnerability to collisions depends on many factors including bird behavior and maneuverability, topography, weather, and power line design and placement. Bird collisions with power lines have been documented for decades, and the risk of collision is considered highest in areas where birds congregate, such as where power lines bisect daily flight paths to meadows, wetlands, and river valleys. Generally, heavy bodied birds such as cranes, swans, pelicans, and waterfowl are considered most at risk of collisions in locations where low-light conditions or other low-visibility situations exist (Avian Power Line Interaction Committee 2012).

The Truckee River provides habitat for waterfowl and shorebirds, where birds making daily trips along the river would encounter lines crossing the river. Existing transmission lines cross the Truckee River and two alternatives (Poeville and Peavine/Poeville) would cross the Truckee River on the east and west sides of Verdi. At the east crossing, the Poeville and Peavine/Poeville alternatives would be placed next to a similar 120 kV transmission line. At the west crossing, the proposed transmission line would replace the existing inactive #632 line. It is unknown if avian mortality occurs to waterfowl or other species that frequent the river where the lines cross; however, the new transmission line crossings of the Truckee River would add very little to the existing aerial constraints.

The proposed project has the potential to cause mortality to individual birds as a result of line-strike. This impact would be considered a long-term minor impact. However, it would not result in reduced population viability for any given species or reduce the species existing distribution, nor would it result in a contribution to a current or predicted downward trend in habitat capability for MIS because the potential for avian collisions would not be increased from either alternative crossing the river.

Power lines have also long been implicated in the electrocution of avian species, particularly large birds such as golden eagles. Avian electrocutions can occur when a bird completes an electric circuit by simultaneously touching two energized parts or an energized part and a grounded part of the electrical equipment. The reason birds may complete an electric circuit can be attributed to two interrelated factors: environmental factors and engineering factors (Avian Power Line Interaction Committee 2006). Environmental factors include weather and season of year, which can influence bird migration patterns and behavior. Engineering factors refer to the ways in which power lines are designed and constructed, such as how far apart conductor wires are spaced. Improperly constructed power lines, especially distribution lines, are one cause of direct mortality for eagle species and can result in electrocution of birds attempting to utilize these structures for perching and nesting (Harness and Wilson 2001). Electrocution of birds is unlikely from newer constructed transmission lines that use avian-safe practices. Likewise, 120 kV lines do not pose a threat via electrocution due to the distance between the conductor lines and/or ground lines. These spans are greater than six feet, which is the average wing span of a golden eagle. No impacts from electrocution hazard are anticipated from operation of the project because NV Energy owns and operates avian safe transmission lines, as well as substations.

Potential for Increased Predation by Raptors

Transmission lines and distribution lines are features that provide perches where perches do not naturally occur. These perch sites may allow for hunting advantages for birds of prey, particularly in habitats devoid of tall features, such as trees or rock outcrops. Artificial perches would likely have the most impact on habitats lacking natural perches. Within these communities some species may avoid the habitats where the perches occur, or they may sustain predation. This impact would be considered a negligible to minor long-term impact. It is not expected to impact enough individuals of one particular species including MIS, or migratory birds to result in the reduction or change of a species' existing distribution. Reduced population viability for any given species is not expected.

Design Features to Minimize Impacts from Operations and Maintenance

No impacts from electrocution hazard are anticipated from operation of the transmission line because the transmission line and substations will be constructed to be avian-safe. To ensure avian safety, design feature WL 9 requires NV Energy to construct the proposed transmission in conformance with *Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006, prepared by the Avian Power Line Interaction Committee* (2006). Applicable design features (**Appendix B**) implemented during construction would also apply during operations and maintenance phase of the project. For example, any access roads created for a maintenance event would be restored and closed with physical barriers in accordance with design features, allowing for the recovery of wildlife habitat. With reclamation of disturbances and continued effective implementation of design features, the potential for long-term impacts to wildlife, particularly mule deer, would be minimized and reduced to minor levels during the operations and maintenance phase of the project.

3.9.3.4 Mitchell Alternative

The Mitchell Alternative is approximately 11.7 miles in length and would cross the most NFS land of all alternatives (8.4 miles). Construction of the Mitchell Alternative would disturb or remove (short-term disturbance) approximately 282 acres of habitat, including tree removal from approximately 42 acres of forested communities from the transmission line clearance area.

Of all the action alternatives, the Mitchell Alternative would impact the most forested habitat, some of which consists of a varying aged plantation community. The forested habitat within this alternative is predominately young with little structural diversity (USFS 2011c). Forested habitat is not likely to support diversity both in species composition or age-class, but may provide transitional habitat for the MIS hairy woodpecker and Williamson's sapsucker. Mule deer and yellow-rumped warblers are known to occur in forested habitat. **Table 3.9-4** displays the amount of forested habitats that would be disturbed. Only road widening disturbance and the total amount of forested communities within the transmission line clearance area (i.e., ROW/easement) are presented because the locations of other project features such as new access roads and staging areas are unknown. While forested habitat would be allowed to recover in areas outside of the transmission line clearance area, impacts to forested habitat within the line clearance area would be considered long-term because trees would be removed for the life of the project.

Table 3.9-4 Mitchell Alternative Tree Removal in Forested Habitats

CONSTRUCTION ACTIVITY/ DISTURBANCE	CLEARING OF HABITATS WITH TREES[1] (ACRES)	
	NFS LAND	TOTAL
Transmission Line Clearance Area[2]	38.9	41.8
Widening Existing Roads[3]	5.1	5.4
Total	44.0	47.2

[1] Includes Eastside Pine, Jeffrey Pine, Mixed Conifer-White Fir, Plantation, and Aspen communities
[2] Transmission line clearance area was assumed to be the 90-foot-wide ROW/easement
[3] Excluding forested vegetation communities within the transmission line clearance area

A total of approximately 777 acres of mule deer habitat is available within the variable-width corridor. The breakdown of habitat types is presented in **Table 3.9-1**. The Mitchell Alternative would impact the most mule deer summer use habitat compared to the other action alternatives. Data from the CDFW and NDOW suggests that much of the habitat is transitional, supporting summer, year-round, and crucial winter habitats. The Mitchell Alternative would not cross winter-spring high use areas. Other types of wildlife that may be impacted from the Mitchell Alternative include habitat for macroinvertebrates and migratory birds associated with riparian habitat surrounding Dog Creek.

As with all of the action alternatives, the majority (78 percent) of the habitats that would be impacted from the Mitchell Alternative are fragmented by existing roads or trails. However, among all alternatives, the Mitchell Alternative has the least amount of fragmented habitat. Habitat relatively free of roads, trails, and other linear features is found in the Mitchell Canyon area to south of Dog Creek; roughly between Mitchell Canyon and the existing #102 transmission line (**Figure 3.9-1**). Restoration of roads would allow the recovery of wildlife habitat and minimize the long-term effects from habitat fragmentation. Additionally, approximately 1.1 miles of unauthorized roads on NFS land that would be widened, would be restored to remove the road in its entirety, reducing the amount of habitat fragmentation along the Mitchell Alternative.

Impacts associated with construction and maintenance of the Mitchell Alternative are not expected to have adverse impacts to MIS and other wildlife species beyond minor to negligible levels.

Impacts are expected to be similar as those presented for all action alternatives (**Section 3.9.2.2**). This alternative would impact the most acres of forested habitat by converting it to shrub habitat. However, the amount of habitat that may be removed from the Mitchell Alternative is minor in relation to existing available habitat in the project area. Approximately 231 acres of habitat loss may be short-term from construction surface disturbance (e.g., centerline, wire pulling, pole sites, etc.) and 46 acres of habitat loss may be long-term (forested habitat removal from pole placement, substation expansion, and line clearance).

Direct and indirect impacts range from negligible to minor with the implementation of design features. Impacts are not anticipated to result in a contribution to a current or predicted downward trend in habitat capability that would reduce existing distribution for any MIS or other wildlife species. Because design features developed for the project would reduce impacts to wildlife to levels that are negligible or minor, mitigation is not recommended, with the exception of habitat for mule deer. For mule deer, the failure to successfully restore target vegetation communities would represent a long-term loss of habitat and may result in more than a minor impact especially if the habitat is winter range.

Mitigation

To ensure that impacts to wildlife habitat, particularly mule deer are no more than minor, vegetation that would be permanently lost or temporarily disturbed from the project, would require creation of or improvement of on or offsite wildlife habitat. To achieve this, NV Energy will fund a habitat restoration account that includes the cost of restoring three acres to every one acre of habitat that is permanently or temporarily disturbed. The account will be administered by NDOW or a Sierra Front Wildlife Working Group that would include NDOW, Washoe County, USFS, BLM, City of Reno and other interested participants (WL 8).

3.9.3.5 Peavine Alternative

Total length of the Peavine Alternative is 10.3 miles and would cross 7.0 miles of NFS land. Despite the Peavine Alternative being the shortest alternative, it would require the most miles of new access roads relative to its length. The construction of the Peavine Alternative would disturb or remove (short term disturbance) approximately 302 acres of vegetation, including tree removal from 21 acres of forested communities from the transmission line clearance area.

The proposed ROW/easement for the Peavine Alternative contains approximately half as much forested habitat as that of the Mitchell Alternative, but has slightly more diverse habitat types than the Mitchell Alternative. Long-term impacts to forested habitat within the transmission line clearance area would be approximately 21 acres less than the Mitchell Alternative. As with all alternatives, shrub habitat is the most abundant, particularly bitterbrush-sagebrush habitat.

Impacts to wildlife from the Peavine Alternative would be expected to be similar as those presented above for all action alternatives (**Section 3.9.2.2**), and would not exceed levels that are minor to negligible. Impacts would be similar to those of the Mitchell Alternative as well, though there would be less potential impacts to forested habitats. As with the Mitchell Alternative, mule deer and yellow-rumped warblers are known to occur within habitats that would be affected. A total of approximately 686 acres of mule deer habitat is available within the variable-width corridor. For mule deer seasonal use, the Peavine Alternative is similar to the Mitchell Alternative in mapped habitat, though it offers more year-round habitat than it does summer use habitat. See **Table 3.9-1** for types of mule deer habitats within the variable-width corridor. As shown on **Figure 3.9-1**, the Peavine Alternative would affect fewer acres of potential habitat of all alternatives and may be preferable for mule deer given the lack of winter-spring high use habitat.

Long-term habitat loss would impact approximately 25 acres, which include habitat lost from pole displacement, expansion of the Bordertown Substation, and the transmission line clearance area. Direct and indirect impacts range from negligible to minor and with the inclusion of design features, impacts are not anticipated to result in a contribution to a current or predicted downward trend in habitat capability that would reduce a species' existing distribution for a MIS or other wildlife species. Because design features developed for the project would reduce impacts to wildlife to levels that are negligible or minor, mitigation is not recommended, with the exception of habitat for mule deer. For mule deer, the failure to successfully restore target vegetation communities would represent a long-term loss of habitat and may result in more than a minor impact especially if the habitat is winter range.

Mitigation

To ensure that impacts to wildlife habitat, particularly mule deer are no more than minor, vegetation that would be permanently lost or temporarily disturbed from the project, would require creation of or improvement of on or offsite wildlife habitat. To achieve this, NV Energy will fund a habitat restoration account that includes the cost of restoring three acres to every one acre of habitat that is permanently or temporarily disturbed. The account will be administered by NDOW or a Sierra Front Wildlife Working Group that would include NDOW, Washoe County, USFS, BLM, City of Reno and other interested participants (WL 8).

3.9.3.6 Poeville Alternative

The Poeville Alternative is longest alternative but would cross the least amount of NFS land. Construction of the Poeville Alternative would disturb or remove (short-term disturbance) approximately 618 acres of vegetation communities (i.e., habitat types). Approximately three acres of forested communities would be removed from within the transmission line clearance area. Impacts are expected to be similar as those presented for all action alternatives (**Section 3.9.3.2**). This alternative would impact the least amount of forested habitat.

A total of approximately 753 acres of mule deer habitat is available within the variable-width corridor. The breakdown of habitat types is presented in **Table 3.9-1**. Construction activities would impact mule deer winter-spring high use habitat, which may result in displacing mule deer from the variable-width corridor. This area is on private land and currently has few established roads. New construction access roads may have minor short-term impacts associated with habitat fragmentation from loss of vegetation communities. As described in **Section 3.9.2.2**, a number of design features would be implemented to prevent motorized use or increased accessibility on new access roads, which would essentially avoid any long-term effects of fragmentation as a consequence of new roads.

Construction and maintenance of the proposed project are expected to result in negligible to minor short- and long-term impacts to MIS and other wildlife. Construction and maintenance is not expected to cause a downward trend in habitat capability that would reduce a species' existing distribution for a MIS or other wildlife species. Because design features developed for the proposed project would reduce impacts to wildlife to levels that are negligible or minor, mitigation is not recommended, with the exception of habitat for mule deer. For mule deer, the failure to successfully restore target vegetation communities would represent a long-term loss of habitat and may result in more than a minor impact especially if the habitat is winter range.

Mitigation

To ensure that impacts to wildlife habitat, particularly mule deer are no more than minor, vegetation that would be permanently lost or temporarily disturbed from the project, would require creation of or improvement of on or offsite wildlife habitat. To achieve this, NV Energy will fund a habitat restoration account that includes the cost of restoring three acres to every one acre of habitat that is permanently or temporarily disturbed. The account will be administered by NDOW or a Sierra Front Wildlife Working Group that would include NDOW, Washoe County, USFS, BLM, City of Reno and other interested participants (WL 8).

3.9.3.7 Peavine/Poeville Alternative

The Peavine/Poeville Alternative is nearly 12 miles long and would cross a variety of wildlife habitats. Along the majority of its length, the Peavine/Poeville Alternative would be located in the exact location that the Peavine Alternative would be located, but because it transitions to the east, less forested habitat and more fire-affected habitat would be crossed. Construction of the Peavine/Poeville Alternative would disturb or remove (short-term disturbance) approximately 364 acres of vegetation communities (i.e., habitat types). Approximately 12 acres of forested communities would be removed from within the transmission line clearance area. Impacts to wildlife from the Peavine/Poeville Alternative would include those common to all action alternatives (see **Section 3.9.2.2**). This alternative would have more impact to forested habitat than the Poeville Alternative, but much less impact to forested habitat than the Mitchell and Peavine alternatives.

Approximately 720 total acres of mule deer habitat is available within the variable-width corridor. The breakdown of habitat types is presented in **Table 3.9-1**. Impacts associated with construction of the project would bisect mule deer winter-spring high use habitat, which could result in displacing mule deer from the corridor. With successful restoration of construction-related surface disturbance and implementation of design features, impacts would be negligible to minor and short-term. Impacts are similar to mule deer as those described under the Poeville Alternative for wintering mule deer. However, the Peavine/Poeville Alternative is anticipated to have minor adverse short-term and long-term impacts to most wildlife species. The impacts would not be expected to result in a contribution to a current or predicted downward trend in habitat capability that would reduce the existing distribution for a MIS or other wildlife species. Because design features developed for the project would reduce impacts to wildlife to levels that are negligible or minor, mitigation is not recommended, with the exception of habitat for mule deer.

Mitigation

To ensure that impacts to wildlife habitat, particularly mule deer are no more than minor, vegetation that would be permanently lost or temporarily disturbed from the project, would require creation of or improvement of on or offsite wildlife habitat. To achieve this, NV Energy will fund a habitat restoration account that includes the cost of restoring three acres to every one acre of habitat that is permanently or temporarily disturbed. The account will be administered by NDOW or a Sierra Front Wildlife Working Group that would include NDOW, Washoe County, USFS, BLM, City of Reno and other interested participants (WL 8).

3.9.3.8 Cumulative Effects

In many parts of the wildlife CIAA, wildlife habitat has been lost or modified due to present actions. The majority of the habitat in the wildlife CIAA has been fragmented by utility lines and existing roads and trails. Fragmented habitats are still functional habitat for wildlife, but are of reduced quality and value than the larger contiguous areas of habitat that existed prior to these actions. Wildfire has caused landscape level changes to the composition and condition of the vegetation communities within the CIAA, which in turn, has contributed to the modification or loss of wildlife habitats. While the effects from most of the present actions have generally been adverse, most of the present resource management activities have directly or indirectly improved habitat quality. In the future, reasonably foreseeable resource management activities would have a neutral or beneficial impact on most wildlife species and habitat quality within the CIAA.

The Loyalton-Truckee Interstate mule deer herd, specifically, the Verdi sub-herd, utilize portions of the wildlife CIAA for movement corridors and Crucial Winter and Winter-Spring High Use habitats. The continuation of some present actions in the future is expected to have an adverse impact on the herd. As described in **Section 3.9.1.1**, NDOW (2015) reported that the long-term trend for the Loyalton-Truckee Interstate herd is declining. The agency also reported that the Verdi sub-herd has endured substantial declines largely due to loss of habitat from urban development, wildfires, increased recreation (NDOW 2012b), and direct mortality due to vehicular collisions. The reasonably foreseeable future Stonegate Master Plan Development would further reduce some areas of year-round mule deer habitat, although the majority of the planned development does not occur within any mapped mule deer habitat. The formation of the Sierra Front Wildlife Working Group made up of NDOW, NV Energy, Washoe County and other interested parties, whose purpose is to reduce impacts to mule deer within the Reno-Washoe County area provides a mechanism to address the decline of the local mule deer herd in the future. The proposed Wildlife Working Group would assist with present and developing actions that would reduce these potential impacts.

The contribution of the proposed project to cumulative wildlife habitat losses would be minor. The primary impacts from any action alternative consist of the loss, modification, and fragmentation of several hundred acres of wildlife habitat. With the exception of forested habitats, impacts to wildlife habitat would be short-term as habitat would be restored following disturbance. Implementation of design features that promote successful restoration of access roads and mitigation for habitats permanently and temporally removed would ensure that loss and fragmentation of mule deer habitat would also be short-term. The modification to forested habitats within the transmission line clearance area would be long-term, but impacts would also be minor. Forested habitat are abundant in the region and reasonably foreseeable resource management activities would have beneficial long-term effects to forested habitats as they are intended to improve forest health and reduce the potential for large catastrophic wildfires.

3.10 SPECIAL STATUS WILDLIFE

Special status wildlife are species that meet one or more of the following criteria:

- Listed, proposed or candidate for listing under the Federal and/or the California ESA as threatened, or endangered;
- Designated by the USFS or BLM as sensitive; and
- Designated by NDOW or CDFW as fully protected and/or species of special concern.

The information presented in this section is summarized from *Specialist Report: Special Status Wildlife Bordertown to California 120 kV Transmission Line Project* (USFS 2016c). Information used for this analysis includes specific data collected for this project as well as past survey data collected by the USFS and NDOW. Project specific surveys included:

- Forest dwelling raptors-reconnaissance surveys mainly within NFS land conducted in June 2011;
- Aspen-dependent species reconnaissance surveys along the Poeville Alternative conducted in August 2012; and
- Golden Eagle helicopter survey conducted in June 2012.

Other data sources included consultation or data queries with USFS, NDOW, USFWS, NNHP, and the California Natural Diversity Database.

3.10.1 Regulatory Framework

Biological resources in the project area are protected and/or regulated by a variety of federal and state laws and policies. The regulatory framework is described in *Specialist Report: Special Status Wildlife Bordertown to California 120 kV Transmission Line Project* (USFS 2016c). Key regulatory mechanisms applicable to the proposed project are discussed below.

Federal Endangered Species Act

The USFWS determines if a species should be listed under the ESA, and whether these species should be listed as candidate, proposed, threatened, or endangered. Endangered means a species that is in danger of extinction throughout all or a significant portion of its range. Threatened species are likely to become endangered in the foreseeable future. The USFWS also maintains a list of species or subspecies (i.e., taxa) that may warrant listing as threatened or endangered and for which the agency has sufficient biological information to support a rule to list as threatened or endangered. These species are referred to as candidate species. Proposed species are species (taxa) for which the USFWS has published a proposal to list as threatened or endangered in the *Federal Register*.

Humboldt-Toiyabe National Forest

The Forest Plan (1986) outlines the management direction of NFS land. The regulations require that the USFS maintain viable populations of all vertebrate wildlife and fish species native to the NFS land and manage for conservation of particular species. USFS sensitive species are plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by:

- Significant current or predicted downward trends in population numbers or density; and
- Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution (FSM 2670.5).

The SNFPA amended the Forest Plan in 2001 and again in 2004 (USFS 2004). The SNFPA is designed to facilitate a regionally-consistent management of old forest ecosystem resources across USFS management boundaries and as such is called "framework" (e.g., Sierra Nevada Framework). The umbrella management also applies to other sensitive resources such as aquatic, meadow, and riparian ecosystems. The goals of the plan as they relate to wildlife resources include:

- Improve quantity and quality of useable habitat available for SNFPA species by increasing density of large trees, increase structural diversity of vegetation, and improve the continuity and distribution of old forests across the landscape; and
- Protect and restore desired conditions of aquatic, riparian, and meadow ecosystems in Sierra Nevada national forests.

Bureau of Land Management

The Eagle Lake Field Office administers portions of land within the project area. The Eagle Lake RMP (BLM 2008b) outlines BLM sensitive species. The BLM Manual 6840.06 E (BLM 2008a) states that native species may be listed as sensitive if they meet certain criteria. The BLM affords these sensitive species the same level of protection as federal candidate species. The BLM's policy for sensitive species is to avoid authorizing actions that would contribute to the listing of a species as threatened or endangered.

California Endangered Species Act

Pursuant to the California ESA, a permit from the CDFW is required for projects that could result in take of a plant or animal species that is state-listed as threatened or endangered. The California ESA defines "take" as an activity that would directly or indirectly kill an individual of a species. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2080.1 consistency determination or a Section 2081 incidental take permit.

California Fish and Game Code -Fully Protected Species

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take of fully protected species. The CDFW has informed nonfederal agencies and private parties that their actions must avoid take of any fully protected species.

California Species of Special Concern

The CDFW maintains a list of species that may be experiencing or formerly experienced population declines or range retractions that may lead to the species qualifying for California ESA protection, or had naturally small populations exhibiting high susceptibility to risk from factors that could lead to declines qualifying the species for protection under the California ESA. Species under this designation are not afforded legal protection.

State of Nevada Sensitive Species

The NDOW maintains a list of species thought to occur in limited numbers, limited distribution, or may be vulnerable to climatic or landscape scale changes. These are listed as both sensitive species by NRS 501.331 or within the Wildlife Action Plan (NDOW 2013b) as Species of Conservation Priority. Some of these species are listed as sensitive by the BLM, USFWS or as a conservation priority bird species. Species under this designation are not afforded legal protection.

3.10.2 Affected Environment

Table 3.10-1 presents the special status wildlife that may have the potential to occur in the analysis area based on a review of species habitat requirements, vegetation maps, and interviews with state and federal biologists. Species that did not have the potential to occur are species that have a known range that do not overlap the region; have no potentially suitable habitat within at least 20 miles of the project area; or have significant barriers between known habitat and the project area. These species are also listed in **Table 3.10-1**, but are not carried forward for analysis.

Table 3.10-1 Special Status Species Potential for Occurrence in the Analysis Area

SPECIAL STATUS WILDLIFE	STATUS[1]	HABITAT	POTENTIAL FOR OCCURENCE[2]
Pygmy rabbit *Brachylagus idahoensis*	*SS*	Restricted to big sagebrush habitats with friable soils suitable for digging burrows; generally in valley bottoms.	Unlikely to occur; area lacks stands of dense big sagebrush and friable soils. Not known to occur in the project area, and are not expected to occur in southern Washoe County (Federal Register 2010).
American badger Taxidea taxus	*SSC*	*Semi and arid shrubland or grassland with friable soils for digging burrows. Forages on pocket gophers, ground squirrels among others.*	*Likely to occur; potentially suitable habitat exists along all alternatives.*
Spotted bat *Euderma maculatum*	SS, *SSC*	Roosts on cliffs ranging in habitats from high elevation to deserts. Foraging habitat are areas with moth abundance.	Could occur; documented along the Truckee River in Nevada and at Smithneck Creek northwest of the project area (Bradley et al. 2006; California Natural Diversity Database 2013). Foraging habitat occurs, some roosting habitat occurs where rock outcrops exist.

SPECIAL STATUS WILDLIFE	STATUS[1]	HABITAT	POTENTIAL FOR OCCURENCE[2]
Townsend's big-eared bat *Corynorhinus townsendii townsendii*	SS, *BS, SSC*	Highly associated with caves and mines. Found primarily in rural settings from deserts to lower, mid to high-elevation mixed coniferous-deciduous forest and has also been reported to utilize buildings, bridges, rock crevices and hollow trees as roost sites (Western Bat Working Group 2005).	Could occur; known to occur in the Truckee River Canyon and around Peavine (Bradley et al. 2006; Western Bat Working Group 2005; Brown and Berry 2002). Suitable habitat exists where rock outcrops or abandoned mine workings occur nearest the Poeville Alternative.
Fringed myotis Myotis thysanodes	*BS*	*Variety of habitats, generally lower elevation. Found roosting in trees, caves, buildings and mines. Forages on small beetles.*	*Could occur; documented west of the project area in California over eight miles west (California Natural Diversity Database 2013).*
Sierra Nevada red fox *Vulpes vulpes necator*	SS, SNF	Habitat of high elevation barren, conifer, and shrub habitats; montane meadows; subalpine woodlands and fell-fields.	Unlikely to occur; suitable habitat is not present in project area (Perrine et al. 2010). Historic sighitings 15 miles west of the project area (*California Natural Diversity Database* 2013) near Dog Valley/Henness Pass Road.
Pallid bat Antrozous pallidus	*BS*	*Found in a variety of habitats from low elevation coniferous forest, woodlands to sagebrush. Forages on large ground dwelling insects but also moths.*	*Could occur; not documented near the project area in Nevada, but has been detected in California about eight miles west (California Natural Diversity Database 2013).*
Dark-nosed small-footed myotis *Myotis melanorhinus*	BS, SSC	Habitat includes a variety of vegetation communities, roosts in caves, mines, and trees. Forages in open areas.	Could occur; documented occuring near the Peavine area (Bradley et al. 2006). Both roosting and foraging habitat occurs in the project area.
Yuma myotis Myotis yumanensis	*BS*	Habitat includes all landscapes including human built ones, roosts in outcrops, caves or buildings, forages primarily on emergent aquatic insects.	*Could occur; documented near the Truckee River (Bradley et al. 2006). Roosting and foraging habitat occur, though likely near water sources.*
Sierra Nevada snowshoe hare Lepus americanus tahoensis	*SSC*	Inhabits mid-elevation riparian brush or young conifer thickets.	*Could occur; potentially suitable habitat occurs within the western portion of the project area.*
Greater sage-grouse *Centrocercus urophasianus*	SS, MIS	Habitat includes large stands of sagebrush, with forb and grass understory, brood rearing habitat includes mesic areas where there is a diversity of forbs and grasses and sagebrush for cover.	Unlikely to occur; not known to occur within the project area (Espinosa 2011). Suitable habitat is low due to numerous fires within sagebrush habitats and human occupation. Closest known lek is 22 miles northeast of the Bordertown Substation.

SPECIAL STATUS WILDLIFE	STATUS[1]	HABITAT	POTENTIAL FOR OCCURENCE[2]
Northern goshawk *Accipiter gentilis*	MIS, SS, SNF, *SSC, BS*	Generally nests within late-seral stage montane forest; and in Nevada commonly nests in aspen.	Could occur; small, isolated patches of marginally suitable nesting habitat occurs along some of the action alternatives. NDOW documented species at location west of the Mitchell and Peavine alternatives (NDOW 2012a). A USFS-designated goshawk Protected Activity Center (PAC) is four miles west of the project area. Goshawks may use portions of the project area for foraging.
Golden eagle *Aquila chrysaetos*	*BGE, BS, FP*	Nests on cliffs and rocky scarps with large expanses of hunting territory. Also nests in conifers when rocks are unavailable.	Known to occur; observed during 2012 surveys, occupied nest is within four miles of project area. Two NDOW-known locations are within 10 miles of project area. Additionally, sightings of nesting golden eagles in conifers have been observed on the slopes of Peavine and within the Carson Range (JBR 2013a).
Bald eagle *Haliaeetus leucocephalus*	*SS, BGE, FP, BS, CE*	Nests in large trees or snags near large bodies of water.	Unlikely to occur; no suitable habitat for nesting within the project area. Foraging habitat is associated with the Truckee River. Documented at Stampede Reservoir over five miles southwest of the project area (*California Natural Diversity Database* 2013).
Northern Harrier Circus cyaneus	*SSC*	*Wide-ranging breeders in Nevada and northeastern California. Forages and nests within open habitats such as meadows and grasslands.*	*Known to occur; documented during golden eagle surveys and during breeding birds surveys in Nevada (Floyd et al. 2007), known to breed throughout northeastern California (Shuford and Gardali 2008).*
Mountain quail *Oreortyx pictus*	SS	Montane shrub and riparian habitat with *Ceonothus* near water sources.	Known to occur; potential habitat occurs throughout the project area, particularly where montane shrubs are present (Floyd et al. 2007).
Swainson's hawk Buteo swainsoni	*SSC, BS, CT*	*Common habitat includes agricultural lands with open foraging habitat, and tall trees for nesting.*	*Could occur; limited suitable habitat occurs near the Bordertown Substation, where large trees associated with ranches provide nesting opportunities. Reported as occuring in the general area by NDOW (2012a).*
Burrowing owl Athene cunicularia	*SSC, BS*	*This small owl nests and roosts within burrows, commonly excavated by fossorial mammals. Habitat is found within open grasslands, or other areas of open areas with sparse vegetation, whether natural or altered.*	*Could occur; potentially suitable habitat occurs in fire affected habitats on Peavine, as well as within the northern portions of the project area, such as near the Bordertown Substation.*

SPECIAL STATUS WILDLIFE	STATUS[1]	HABITAT	POTENTIAL FOR OCCURENCE[2]
Long-eared owl Asio otus	*SSC*	*Generally found within riparian, conifer or other woodland habitats which are open or adjacent to meadows and shrublands. Nest in old corvid or hawk nests in trees or on cliff faces.*	*Could occur; potentially suitable habitat occurs along the western portions of the project area (Truckee River and other riparian). NDOW records indicate these owls have been documented in the area (NDOW 2012a).*
California spotted owl *Strix occidentalis occidentalis*	SS, *SNF, BS, SSC*	Occurs in dense, old-growth, multi-layered mixed conifer forest.	Unlikely to occur; not known to occur in the project area, suitable habitat is absent. Documented approxmately 10 miles west of the project area (*California Natural Diversity Database* 2013).
Flammulated owl *Psiloscops flammeolus (*syn *Otus flammeolus)*	SS	Open coniferous forests, nest in dead trees with existing woodpecker holes.	Could occur; marginally suitable habitat occurs within the aspen and/or older conifer stands along the western portion of the project area. Known to nest in and near goshawk PAC (Easton 2014).
White-headed woodpecker *Picoides albolarvatus*	SS	Mixed conifer forests, with a diveristy of pine species (for seed consumption) and mixed ages, generally nest in dead standing trees.	Known to occur; potentially suitable habitat occurs in patches throughout the project area. Species documented near or within the area during the Nevada Breeding Bird Atlas project (Floyd et al. 2007), and in California along the Mitchell Alternative during USFS reconniassance surveys.
Sierra Nevada willow flycatcher *Empidonax traillii brewsterii*	SNF	Large, dense willow and riparain habiat along meadows and open water.	Unlikely to occur; willow stands lack density, size, and structural diversity. Closest known location is over six miles west along Worn Mill Canyon near Stampede Reservoir (California Natural Diversity Database 2013).
Yellow warbler *Setophaga petechia* (syn. *Dendroica petechia*)	MIS, SSC	Occur along streams or in bushy thickets and willows; sometimes found in montane chaparral; wide ranging.	Could occur; potentially suitable habitat present along vegetated drainages within the project area. Yellow warblers have been recorded near the Truckee River (Floyd et al. 2007; USFS 2011c).
Olive-sided flycatcher *Contopus cooperi*	SSC	These flycatchers are mostly associated with edges, openings, and natural and human-created clearings in otherwise relatively dense forests, but they also occupy semi-open forests.	Likely to occur; suitable habitat occurs where forest habitats are adjacent to roads, meadows or other openings. Have been documented in the Carson Range (Floyd et al. 2007) and during USFS surveys west of the project area (USFS 2012b).
Loggerhead shrike Lanius ludovicianus	*SSC, BS*	*Open arid shrublands, woodlands, mountain mahogany, with a few perches/lookouts.*	*Known to occur; documented during the breeding bird surveys in Nevada on Peavine Mountain. (Floyd et al. 2007)*

SPECIAL STATUS WILDLIFE	STATUS[1]	HABITAT	POTENTIAL FOR OCCURENCE[2]
Northern sagebrush lizard *Sceloporus graciosus*	BS	Sagebrush habitats.	Likely to occur; suitable habitat occurs along nearly all alternatives.
Sierra Nevada yellow-legged frog *Rana sierrae*	E	At lower elevations, breeds in low gradient perennial streams, higher elevations in large waterbodies (those that do not freeze to the bottom in winter).	Unlikely to occur; outside known range. Known to occur approximately 13 miles west of the project area (*California Natural Diversity Database* 2013), and in Nevada within the Lake Tahoe Basin (CDFW 2011). No known historic distribution with the project area.
Lahontan cutthroat trout *Oncorhynchus clarkii henshawi*	T, MIS	Perennial streams and waterbodies on the east side of the northern Sierra Nevada Mountains.	Known to occur; LCT are known to be present in Dog Creek. Dog Creek drains to the Truckee River which is also occupied by LCT.

[1]Status designation

USFWS ESA
E - Endangered
T - Threatened

Humboldt-Toiyabe National Forest
SS - USFS Region 4 Sensitive Species, Carson District
MIS - USFS Toiyabe Management Indicator Species
SNF - Sierra Nevada Framework Focal Species
BGE - Bald and Golden Eagle Protection Act (USFWS)

Bureau of Land Management
BS - Sensitive Species

State of California: California Endangered Species Act
CT - Threatened
CE - Endangered

California Department of Wildlife
SSC - Species of Special Concern
FP - Fully protected

[2] Potential for occurrence definitions

Unlikely to occur: Potentially suitable habitat is present, but species unlikely to be present in the project area because of current status of the species and very restricted distribution. These species are not addressed further.

Could occur: Suitable habitat is available in the project area; however, there are few or no other indicators that the species might be present.

Likely to occur: Habitat conditions, behavior of the species, known occurrences in the project vicinity, or other factors indicate a relatively high likelihood that the species would occur in the project area.

Known to occur: The species, or evidence of its presence, was observed in the project area during surveys or was reported by others.

Sources: NNHP 2012; NDOW 2012a; California Natural Diversity Database 2013; and other sources as cited

3.10.2.1 Species Accounts

Federally-Listed Threatened, Endangered, or Proposed Species

Lahontan Cutthroat Trout

The LCT was listed as an endangered species in 1970. In 1975, the LCT was reclassified as threatened to facilitate management and to allow for regulated angling. In 1995, USFWS released its recovery plan for LCT, encompassing six river basins within LCT historic range, including the Truckee River basin. Critical habitat has not been designated for LCT.

LCT were once the only trout (with one exception) found on the east side of the Sierra Nevada, residing in a variety of cold water streams, from large terminal desert lakes to small mountain lakes, from major rivers to small headwater creeks (Moyle 2002). Historically, LCT were endemic to the physiographic Lahontan basin of northern Nevada, eastern California, and southern Oregon (USFWS 1995). Today, the current distribution is a fraction of the historic range. Some of the formerly occupied streams or lakes have had reintroductions of LCT.

As part of the restoration effort for LCT, various streams have been identified within the Truckee River Basin as having existing populations of LCT or as potential reintroduction sites (USFWS 1995). Recovery objectives associated with these sites include maintaining and improving the hydrology, water quality, and fish passageways of the Truckee River Basin and its tributaries. Two perennial creeks, Dog Creek and Sunrise Creek, flow into the Truckee River where LCT are known to occur. Although listed as an unoccupied waterway in the 1995 Recovery Plan, LCT have been observed in Dog Creek in recent years (Mellison 2013). Threats to LCT include habitat loss, livestock grazing, urban development, mining, water diversion, poor water quality, hybridization and competition with non-native salmonids (USFWS 1995).

Sierra Nevada Yellow-legged Frog

The Sierra Nevada yellow-legged frog (SNYLF) was listed as endangered throughout its range in 2013 (Federal Register 2013a). Critical habitat was designated in 2014 (Federal Register 2014). The SNYLF is endemic to California in the Sierra Nevada and historically occurred in a small portion of Nevada adjacent to and within the Lake Tahoe Basin. The SNYLF historically inhabited ponds, tarns, lakes, and streams in fishless habitats from 4,000 to over 12,000 feet in elevation (Federal Register 2014; Stebbins and McGinnis 2012). SNYLF was the only true frog occurring in high elevation aquatic ecosystems of the Sierra Nevada (Stebbins and McGinnis 2012). Prior to 2007, SNYLF were classified as mountain yellow-legged frogs (Rana muscosa) which generally occur at lower elevations and are now considered the population of frogs of the southern and west slopes of the Sierra Nevada and southern Coast Ranges of California. SNYLF was widely distributed throughout the Sierra Nevada from northern Plumas to southern Fresno counties and it was abundant at many sites into the early 1960s (Federal Register 2014). CDFW biologists believe that 93 percent of the historical populations of SNYLF are extinct, including large groups of populations in the northern Sierra Nevada and other local populations (CDFW 2011). The SNYLF was listed as endangered in 2012 under California's ESA.

The SNYLF is found in streams, lakes and ponds in montane riparian, lodgepole pine, subalpine conifer, and wet meadow habitats (CDFW 2011). Varying descriptions exist for habitat preference, with the northern populations reported to use only streams, while the mid- and southern populations using ponds, lakes, and streams, varying from glaciated bedrock to grassy shores (Federal Register 2014).

The project area does contain lakes or streams with adjacent wet meadow habitats suitable for SNYLF, but SNYLF are not known to occur in or near the project area (California Natural Diversity Database 2015) and the closest known historic and extant populations are approximately 14 miles of west (Sagehen Creek, California) and approximately 15 miles southwest (Independence Creek, California) of the California Substation (California Natural Diversity Database 2015).

Forest Service Sensitive Species

Mammals

The project area contains potential habitat for spotted bat and Townsend's big-eared bat. However, habitat potential is considered marginal within most of the alternatives due to the lack of caves or cave-like structures. Limited roosting occurs along the Poeville and Peavine/Poeville alternatives where rock outcrops and abandoned mine workings occur. The Peavine Alternative has some rock outcrops (USFS 2011c). Townsend's big-eared bats are known to occur in mine shafts on the slopes of Peavine Peak (Brown and Berry 2002).

Spotted Bat

Spotted bats are known from only a half-dozen sites in Nevada (Bradley et al. 2006). They occupy a large range throughout central western North America from southern British Columbia to northern Mexico (Bat Conservation International 2012). They are found in a wide variety of habitats from low elevation desert scrub to high elevation coniferous forest habitats, including sagebrush and riparian habitats. They are closely associated with rocky cliffs and are thought to roost alone. These bats are capable of flying a long distance for foraging, which includes a variety of insects. Foraging habitat are meadows, open coniferous woodland, and forest edges (Bradley et al. 2006). Spotted bat detections within the general area of the project are: in California at Smith Neck Creek (California Natural Diversity Database 2013), over 15 miles to the northwest; and east Reno, likely near the Truckee River (Bradley et al. 2006). The Peavine Alternative crosses a basalt outcrop, which may provide roosting habitat. The remainder of the project area provides little suitable roosting habitat for this bat, but does provide foraging habitat.

Townsend's Big-Eared Bat

Townsend's big-eared bats are found throughout western North America ranging from low desert to high mountain habitats. Distribution is strongly correlated with the availability of caves and abandoned mines. This year-round resident bat is found primarily in rural settings from deserts to lower, mid- to high-elevation mixed coniferous-deciduous forest. These bats were not surveyed for within the project area; but they have been detected within the southwestern (Bradley et al. 2006) and eastern (Brown and Berry 2002) portions of the project area.

Townsend's big-eared bats are moth specialists. Foraging occurs near vegetation and other surfaces and prey is probably gleaned from these surfaces. The project area provides foraging habitat throughout and suitable roosting habitat occurs in the project area within outcrops and abandoned mine workings, which occur across the slopes of Peavine Peak. Some of these workings are in close proximity to the Poeville and Peavine alternatives. Townsend's big-eared bats roost together in relatively small colonies ranging from 15 to 150 individuals depending on the roost site (Bradley et al. 2006). A study of selected adits and shafts on the slopes of Peavine Peak within NFS land, revealed three adits with individual Townsend's big-eared bats (Brown and Berry 2002).

Birds

Sensitive bird species with the potential to occur or are known to occur within the project area are: Northern goshawk; mountain quail; flammulated owl; and white-headed woodpecker.

Northern Goshawk

Northern goshawks are typically associated with late seral or old growth forests, characterized by contiguous stands of large trees and large snags with closed canopies and relatively open understory (Reynolds et al. 1992). On the Carson District, known goshawk nest sites are found in large aspens and conifers with an approximate average canopy cover of 55 to 78 percent (unpublished field data, on file at Carson Ranger District). Within the Sierra Nevada, northern goshawk nesting territories occur in elevations ranging from 2,500 feet AMSL in ponderosa pine habitat through 10,000 feet AMSL in red fir and lodgepole pine habitat or within eastside pine forests. Foraging habitat use probably varies seasonally in response to prey availability. Results from some studies suggest goshawks forage in all forest types, but appear to select forests with a high number of large trees, greater canopy cover with a high basal area, and relatively open understories in which to hunt (Beier and Drennan 1997).

The major threats to goshawks include loss of critical nesting and foraging habitat from land management practices (i.e. vegetation management such as fuels reduction, livestock grazing, etc.), natural events such as fire or wind storms (Reynolds et al. 1992), and human disturbance (Squires and Kennedy 2006), particularly during breeding season.

Goshawks have not been recorded nesting within the project area, including along any of the action alternatives. In the general Dog Valley area, goshawks have been known to nest in two locations. One of these locations is within a USFS-designated northern goshawk PAC. It is located approximately four miles west of the Mitchell and Peavine alternatives, but it has not been active since 2004. Annual USFS surveys are conducted throughout the area and there have been no detections since that time.

Within the project area, pockets of potentially suitable habitat occur along portions of each of the action alternatives (**Table 3.10-2**). Although these pockets are generally considered too small in size (e.g., one to five acres) to support nesting goshawks, anomalous occurrences of goshawks nesting in very small, non-typical habitat types throughout their known distribution have been recorded (Vasquez and Spicer 2005).

Mountain Quail

Mountain quail use a variety of habitat types for nesting such as old growth coniferous forest, mixed montane shrub, regenerating clearcuts, and old burned areas (Gutiérrez and Delehanty 1999). In the Sierra Nevada, mountain quail are found nesting and foraging predominantly in montane chaparral habitat composed of chinquapin, snowbrush, and greenleaf manzanita (Gutiérrez and Delehanty 1999) where they feed on seeds, fruit, and insects.

Nests are often concealed under logs or fallen pine branches, in weeds, shrubs, or at the base of large trees. Mountain quail usually nest within a few hundred yards of water to provide chicks with required water supply after hatching (Gutiérrez and Delehanty 1999).

Mountain quail are known to occur throughout the Carson District. Suitable habitat is present for mountain quail in the project area particularly in areas where montane chaparral is present. Incidental sightings of mountain quail have been detected in the Long Valley area near the northern goshawk PAC (USFS 2011d) and were documented in or near the project area during surveys for the Nevada Breeding Bird Atlas (Floyd et al. 2007).

Flammulated Owl

Flammulated owls nest in a variety of open coniferous forests between 6,000 and 10,000 feet AMSL. Flammulated owls prefer older forests and are often found in association with old growth yellow pine forests mixed with red fir, white fir, and incense cedar (McCallum 1994). In Nevada, flammulated owls have been found nesting within aspens (GBBO 2010) and will occupy stands as small as 125 acres (Dunham et al. 1996). Flammulated owls are secondary cavity nesters and prefer cavities excavated by northern flickers and pileated woodpeckers (Arsenault et al. 2002). Older forests tend to have a higher abundance of snags and live trees with suitable nesting cavities; however, critical to foraging and roosting is a mosaic of habitats. Foraging habitat is generally a well-developed but more open understory and forest/grassland edge habitats (McCallum 1994). These owls forage almost exclusively on insects and other arthropods, mostly moths, beetles, and grasshoppers.

Flammulated owls have been documented on the Carson Ranger District and most recently were detected within aspen and mixed conifers stands in the Long Valley area (Easton 2013). Habitat requirements for flammulated owls are similar to those of the northern goshawk. Limited habitat for these owls occurs in areas of older stands of conifer as well as aspen stands that occur in small patches along some of the action alternatives.

White-Headed Woodpecker

White-headed woodpeckers occur from southern British Columbia, north central Washington, northern Idaho south through Oregon, east of the Cascades, to southern California and west-central Nevada (Garrett et al. 1996). They are known in Nevada from the Carson Range within the Carson Ranger District and Tahoe Basin (GBBO 2010). White-headed woodpeckers are year-round residents and generally are found at elevations between 4,000 and 9,000 feet AMSL in ponderosa pine or Jeffrey pine (eastside) and mixed conifer habitat type (Garrett et al. 1996). Preferred habitat appears to be multi-storied, multi-species forest with large diameter trees, numerous snags and 50 to 70 percent canopy cover (GBBO 2010). However, white-headed woodpeckers are also found in open-canopied conifer stands with nest sites often occurring in relatively open habitat or along forest edges (Garrett et al. 1996).

A pair of white-headed woodpeckers was noted along the Mitchell Alternative in 2011 and was likely nesting within the area (USFS 2011c). Habitat requirements for white-headed woodpeckers somewhat overlap with the northern goshawk and flammulated owl, although white-headed woodpeckers tend to tolerate more open habitat conditions compared to the other two species. Potentially suitable habitat occurs in areas of older mixed conifer and aspen stands, as well as open larger diameter conifers.

Greater Sage-Grouse

The greater sage-grouse is both a USFS and BLM sensitive species and considered a game bird in Nevada. Greater sage-grouse are known obligates of sagebrush habitats, meaning that they require sagebrush for some part of their life cycle. Greater sage-grouse use sagebrush for roosting, cover, and food. During Nevada winters, they select wind-swept ridges with short, scattered black sagebrush (*Artemisia nova*) or low sagebrush (*Artemisia arbuscula*) plants as winter feeding areas (Connelly et al. 2011; Thacker 2010; Young and Palmquist 1992). Despite the fact that this species occurs widely in sagebrush throughout the west, it has undergone a decline in numbers due to a variety of interrelated impacts, from wildland fire affected habitat, habitat fragmentation, and increased predation.

Greater sage-grouse court and mate on traditional communal display grounds called strutting grounds, or leks. Male birds establish territories on the lek and display and vocalize to hold these territories and to attract female birds. Greater sage-grouse utilize springs, streams, and wet meadow habitats as brood-rearing sites, where young birds can find insects and nutritious green vegetation.

As part of the planning effort for this project, habitat maps developed for the Nevada and Northeastern California Greater Sage Grouse Land Use Plan Amendment FEIS (BLM and USFS 2015; Coates et al. 2014) were reviewed to determine if the project area is within identified habitat for the greater sage-grouse. The document outlines four habitat types: Core Habitat, Priority Habitat, General Habitat, and Non-habitat.

- Core Habitat, defined as areas of suitable sage-grouse habitat use found within areas of estimated high space use, also referred to as Preliminary Priority Habitat.
- Priority Habitat, defined as areas that are determined to be highly suitable habitat for sage-grouse that are not contained within the Core Management Areas, referred to as Preliminary General Habitat.
- General Habitat is defined as areas determined to be suitable habitat for sage-grouse, though less suitable than Priority Habitat and not contained within the Core Habitat.
- Non-habitat is defined as areas determined to be unsuitable for greater sage-grouse.

Based on this review, approximately 15 acres of priority habitat (formerly called Preliminary General Habitat) is mapped within the variable-width corridor on public land, while approximately nine acres are mapped within the variable-width corridor on private land. Only General Habitat and Non-habitat vary by alternative. These habitats overlay forested habitats and highly disturbed areas. No Core Habitat occurs within 20 miles of the project area.

The closest historic lek is known from the Cold Springs area, which is greater than seven miles north of the Bordertown Substation. According to Shawn Espinosa with NDOW (Espinosa 2011), the amount of human disturbance and other land alterations both in the project area and the surrounding areas, have decreased habitat quality for sage-grouse that may have historically once occupied the project area. According to Espinosa, these areas were always considered to be on the fringe of the distribution for sage-grouse. The nearest known population was last seen in the late 1970s, near Cold Springs, prior to the construction of large housing developments in the area. NDOW (Freese 2015) has indicated the closest known active lek is located in the Dog Skin Mountains, approximately 22 miles northeast of the Bordertown Substation.

BLM Sensitive Species

Mammals

A number of mammal species are listed by the BLM Eagle Lake Field Office as sensitive. The BLM indicated that six species of BLM sensitive bats could occur in the project area: long-eared myotis, fringed myotis, pallid bat, dark-nosed small-footed myotis, Yuma myotis, and Townsend's big-eared bat (described above). For nearly all species of bats, the most common habitat is foraging habitats associated with riparian or wet areas. Four species of bats can be found roosting in trees: long-eared myotis, pallid bat, small-footed myotis, and fringed myotis. All have the potential to be found roosting in rock outcrops, caves, or mines, which are limited within the action alternatives.

Long-eared Myotis

Primarily a bat of forests, where older trees provide roosting sites beneath bark or within cavities, occasionally uses crevices in cliffs and buildings This is one of the most wide ranging bats, occurring from Alaska to Mexico (Bat Conservation International 2012; Bradley et al. 2006). Long-eared myotis usually form maternity colonies of up to 200 females. The species hibernates in winter and become active with onset of warm weather, spring to fall.

Fringed Myotis

Fringed myotis appear to be most common within oak and pinyon-juniper habitats (Bradley et al. 2006), but may occur conifer forest, scrub, and sagebrush. Believed to hibernate in winter becoming active with onset of warm weather. They forage primarily on beetles and moths, though non-flying insects have been documented.

Pallid Bat

The pallid bat inhabits low desert shrubland, juniper woodlands, and grasslands. Pallid bats most commonly occur in low, dry regions with rock outcrops, usually near water, and roost in rock crevices, buildings, rock piles, tree cavities, shallow caves, and abandoned mines (NatureServe 2012; Bradley et al. 2006). Their primary food sources are crickets, grasshoppers, beetles, scorpions, and spiders.

Dark-nosed (Western) Small-footed Myotis

The taxon has been split; leaving the species in Nevada and California as the small-footed dark-nosed myotis, Myotis *melanorhinus* (Bat Conservation International 2012). This species of bat occurs west of the Rockies in varied habitats, most common in pinyon-juniper communities (Bogen et al. 1998).

Yuma Myotis

The Yuma myotis inhabits riparian areas, scrublands, deserts, and forests and is commonly found roosting in bridges, buildings, cliff crevices, caves, mines, and trees. Its primary diet is emergent aquatic insects such as caddis flies, midges, and small moths and beetles (Bradley et al. 2006). Believed to be migratory in Nevada; most active in Nevada with warm weather, spring to fall.

Birds

Golden Eagle

Golden eagles inhabit wide open terrain, both agricultural and shrub covered with suitable nest features. Generally rock outcrops, crags, and cliffs are selected as nesting substrate and occasionally conifers. Nest sites are normally located with expansive views of their home range territory, which is generally large. Like other long-lived species, golden eagles have a low reproductive rate, with their productivity linked to prey abundance and seasonal weather. Their primary prey base are rabbits and hares, especially black-tailed hares (jack rabbits) (Kochert et al. 2002). Golden eagles are not a forest species and are uncommon within them. However, where forests provide a suitable nesting substrate adjacent to suitable foraging habitat, golden eagles can occur (Ryser 1995). The project area provides roosting, foraging, and nesting habitat for golden eagles. Two golden eagle nests were located during surveys; both are over three miles from any action alternative (JBR 2013a). A pair of golden eagles were seen in 2012 soaring over the Poeville Alternative as well.

Swainson's Hawk

Swainson's hawks are strongly associated with large nest trees such as cottonwoods, oaks or others adjacent to grassland or agricultural lands (Floyd et al. 2007). They are long-distance migrants and nest later than most raptors. They prefer tall trees adjacent to foraging habitat. In western Nevada, they are generally found near ranches with trees. Over most of the species' range, breeding Swainson's hawks show a strong dependence on ground squirrels, voles, or other abundant small mammal prey. Territory density appears to be positively associated with the availability of specific regional prey such as ground squirrels and voles. Following the breeding season, this species shifts from foraging on small mammals to insects (e.g., grasshoppers and crickets) (Woodbridge 1998). The project area provides little nesting habitat for these hawks, but they could occur during migration or during dispersal.

Burrowing Owl

Burrowing owls require open habitat with existing burrows dug by ground squirrels, kit fox, or other fossorial mammals usually in open areas with good surrounding visibility. Burrowing owls are present in northern Nevada in the spring and summer months and winter in the southwestern states (Poulin et al. 2011). Habitat is extremely limited along the action alternatives, with potentially suitable habitat available within the Long Valley grassland and open habitats and in burned areas around the Bordertown Substation.

Loggerhead Shrike

Loggerhead shrikes are commonly found in arid open country and shrublands with higher perches suitable for searching for prey. They occur where shrubby but open habitat is suitable, on the Poeville and Peavine alternatives. They are widely dispersed across Nevada, but are less so across California (Floyd et al. 2006; Reuven 1996).

Other Species

Sagebrush Lizard

In California, this subspecies occurs in the Great Basin desert east of the Sierra Nevada and in the northeast corner of the state. It ranges north into eastern Washington and east into southern Idaho, Montana, Wyoming, Nebraska, Utah, Colorado, Arizona, and New Mexico. In Nevada, it is wide ranging within sagebrush habitats. Found in sagebrush and other types of shrublands, mainly in the mountains (at higher elevations than the western fence lizard). Sagebrush lizard prefers open areas with scattered low bushes and lots of sun (Stebbins and McGinnis 2012). All action alternatives have some potentially suitable habitat.

California Species of Special Concern

Mammals

Sierra Nevada Snowshoe Hare

This subspecies of snowshoe hare occurs in the mid- to higher elevations of the Sierra Nevada from Mount Lassen to Mono County in California. In Nevada, they have been documented in the Lake Tahoe region (Hall 1995; Collins 1998). They prefer riparian habitats with thick brush with downed logs and access to conifer branches for browsing during the winter months when other browse is buried under snow (Collins 1998). Limited habitat for this species occurs within the project area.

American Badger

American badgers are large members of the weasel family and are powerful diggers for construction of dens or the acquisition of prey (e.g., ground squirrels). They prefer open grasslands, open shrub habitats or treeless habitats with friable soil and suitable prey (Jameson and Peeters 1988). In the project area they could occur outside forested habitats, particularly on the slopes of Peavine Mountain or within the Bordertown area.

Birds

Northern Harrier

Widely distributed across treeless landscapes, generally seen gliding above foraging habitat in search of voles, mice, and other prey sources. Commonly found nesting within wetlands, marshes or riparian areas where vegetation can conceal nests. Species nests on the ground, usually in dense vegetation (Shuford and Gardali 2008). Known to occur within the project area.

Long-eared Owl

These owls are strongly associated with riparian woodlands with dense vegetation; however foraging habitat is almost exclusively open terrain. Primary prey are voles or other nocturnal rodents. They typically nest in trees utilizing a previously built nest, occasionally nests within cavities of trees or rock outcrops (Marks et al. 1994). In California, they have a limited distribution across the state.

Yellow Warbler

The yellow warbler is found almost exclusively in riparian habitat, notably those with dense willow thickets; a common victim of nest parasitism by brown-headed cowbirds. Yellow warblers breed in the Sierra Nevada and Great Basin in areas that support willows or other dense riparian habitat (Floyd et al. 2007). They are summer residents on the Carson Ranger District. Yellow warblers were noted during the Nevada Bird Atlas breeding bird surveys within a portion of the project area (near Verdi) (Floyd et al. 2007) and during migratory bird surveys for a project in Dog Valley. Yellow warblers are closely tied to riparian habitats that contain willow, alder, and elderberry components for nesting. However, non-breeders (migrants) may be found in mixed conifer habitat associated with riparian areas or conifer stands that contain substantial amounts of brush (Lowther et al. 1999). Portions of the project area contain riparian vegetation potentially suitable for yellow warblers such as willow, alder, and bitter cherry; however, the riparian habitat is likely too small and too open to support breeding habitat.

Olive-Sided Flycatcher

A bird of conifer forests, nesting along forest edges and openings both natural and human made. Nesting territories are large and strongly defended. Territories generally have a large tree (tall) or snag from which the flycatchers sing or catch flying insects (Altman and Sallabanks 2012). Olive-sided flycatchers were noted during nesting bird surveys west of the project area near Dog Valley (USFS 2012b) and have been documented in the Carson Range (Floyd et al. 2007).

3.10.2.2 Mitchell Alternative

Table 3.10-2 presents the habitats within the ROW and the special status species that may occur within or adjacent to the Mitchell Alternative. Among all alternatives, the Mitchell Alternative has the least amount of fragmented habitat from roughly Mitchell Canyon area to south of Dog Creek. The Mitchell Alternative has the most conifer habitat (e.g. mixed conifer, eastside pine, and Jeffery pine communities) available as potential habitat for special status species. Based on field surveys, the conifer habitat likely does not support enough diversity both in species composition or age-class for some of the special status bird species. However, these habitats could provide transitional habitat for flammulated owl and foraging habitat for northern goshawk where aspen stands and conifer forests intermix or where roads provide corridors through dense forests. This alternative is four miles east of a northern goshawk PAC. Riparian habitat surrounding Dog Creek may provide habitat for yellow warblers, but it is likely that the habitat patch size is too small or not diverse enough for nesting. This habitat also may provide foraging opportunities for bat species, although roosting habitat was not identified during the reconnaissance surveys. LCT are known to occur within Dog Creek as well.

Most of the special status species that could occur within the project area would be incidental or occur as a result of dispersal. The Mitchell Alternative has suitable mountain quail nesting habitat and golden eagle forging habitat. Potential habitat for the northern sagebrush lizard, American badger, loggerhead shrike, burrowing owl, northern harrier, and olive-sided flycatcher occurs in patches.

3.10.2.3 Peavine Alternative

Habitat components and potential species are similar to those presented under the Mitchell Alternative (**Table 3.10.2**); however, the length of the Peavine Alternative is shorter. The Peavine Alternative has the second most potential habitat for special status conifer-dependent species. However, the conifer habitats are unlikely to support nesting habitat for most sensitive bird species (e.g., flammulated owl, northern goshawk, olive-sided flycatcher), but could support dispersal habitat or incidental occurrences because these birds may be found within a variety of habitats outside nesting season.

Given the habitats bisected by the Peavine Alternative are similar to those of the Mitchell Alternative, the same special status species could also occur as described in **Section 3.10.2.2**.

3.10.2.4 Poeville Alternative

Habitat crossed by the Poeville Alternative is diverse and includes all habitats described in **Table 3.10-2**. However, the alternative crosses the least amount of conifer habitat. Therefore, occurrences of conifer-related species such as northern goshawk, white-headed woodpecker, and flammulated owl would likely be only incidental. The Poeville Alternative provides potential habitat for Townsend's big-eared, fringed myotis, and dark-nosed small-footed myotis bats on private land where mine workings occur. Shrub habitat may also provide nesting, foraging, and cover habitat for mountain quail, American badger, loggerhead shrike, and northern sagebrush lizard. On private land, three perennial streams are crossed; Bull Ranch Creek, Jones Creek, and the Truckee River. These areas could support riparian dependent species such as the yellow warbler, depending on the vegetation complexity and patch size; as well as potential nesting habitat for northern harrier and long-eared owl. The Truckee River supports LCT and foraging habitat for bat species. Golden eagles are expected to occasionally forage within the brush and open habitats of this alternative.

3.10.2.5 Peavine/Poeville Alternative

Table 3.10-2 presents the habitats within the ROW and the special status species that may occur within or adjacent to the Peavine/Poeville Alternative. This alternative has habitat similar to both the Peavine and Poeville alternatives, though it likely has limited habitat for roosting bats and fewer acres of habitat for conifer-dependent species, particularly compared to the Peavine Alternative (10.2 acres of conifer vs. 17.5 acres for Peavine). Similar to Poeville, the Truckee River and Bull Ranch Creek provide foraging habitat for bat species, as well as potential riparian habitat for long-eared owl, northern harrier, and aquatic habitat for LCT. Montane and sagebrush habitats encompass the second greatest acres of all the alternatives. These habitats could support species such as American badger, mountain quail, golden eagle, loggerhead shrike, and sagebrush lizard. As with the Poeville Alternative, other special status species that could occur along this alternative would likely occur as incidentals.

Table 3.10-2 Special Status Species Wildlife Habitats within the ROW of Alternatives

SPECIES ANALYZED	VEGETATION /HABITAT	MITCHELL		PEAVINE		POEVILLE		PEAVINE/POEVILLE	
		USFS	PRIVATE	USFS	PRIVATE	USFS	PRIVATE	USFS	PRIVATE
Northern goshawk, Flammulated owl, White-headed woodpecker, Olive-sided flycatcher	Mixed Conifer Eastside Pine Jeffrey Pine	26.7	2.9	14.7	3.0	0	1.7	8.0	2.2
Yellow warbler, Northern goshawk, Flammulated owl, Snowshoe hare, Northern harrier	Willow-Willow Scrub (Riparian)	0	0.2	0	0.2	0.3	1.4	0.1	1.4
Yellow warbler, Northern goshawk, Flammulated owl, Long-eared owl, Bat species (foraging), Sierra Nevada Snowshoe hare, Northern harrier, Olive-sided flycatcher	Aspen Riparian Mixed Hardwood	2.3	0	1.1	0	0	1.2	1.1	0.8
Mountain quail, Golden eagle (Mountain sagebrush for foraging), American badger, Loggerhead shrike, Sagebrush lizard	Mountain Mahogany Snowbrush Great Basin Mixed Scrub Bitterbrush Bitterbrush-Sagebrush Chaparral Mountain Sagebrush	63.8[1]	8.3	69.5[1]	8.3	55.3[1]	41.3	50.7[1]	18.1

SPECIES ANALYZED	VEGETATION /HABITAT	MITCHELL		PEAVINE		POEVILLE		PEAVINE/POEVILLE	
		USFS	PRIVATE	USFS	PRIVATE	USFS	PRIVATE	USFS	PRIVATE
Golden eagle (foraging habitat), American badger, burrowing owl, Swainson's hawk (w/ large nesting trees)	Big Sagebrush Low Sagebrush Annual Grasses, Ruderal Urban and Developed	3.4	6.9	3.6	7.0	3.6	81.0	1.7	41.1
Bat species, LCT	Riparian Mixed Hardwood Wet Meadow Water Water	0 Dog Creek	2.3 Sunrise Creek	0 Dog Creek	2.3 Sunrise Creek	0	0.8 Jones Cr., Bull Ranch Cr, Truckee River	0	3.0 Bull Ranch Cr., Truckee River

Source: USFS 2014d

[1] Includes approximately 15 acres of Bitterbrush-Sagebrush community on BLM-administered public land at the Bordertown Substation

3.10.3 Environmental Consequences

3.10.3.1 Methods of Analysis

Potential effects on special status wildlife species were evaluated by determining the potential for an alternative to:

- Result in a loss of population viability or a trend toward federal listing for USFS Sensitive wildlife; or
- Disturbance to federally-listed species: LCT.

3.10.3.2 No Action Alternative

Under the No Action Alternative, there would be no impacts to special status wildlife or their habitats from the proposed project and subsequent operation and maintenance of the transmission line. There would be no increase in ground disturbance, habitat removal, or disturbance from the existing conditions. Wildlife assemblages would occur as they do currently.

3.10.3.3 Effects Common to All Action Alternatives

A Biological Assessment, which evaluated impacts to federally listed species has been prepared and available upon request from the USFS. A Biological Evaluation, evaluating impacts to USFS sensitive species has also been prepared and is available upon request from the USFS. Both of these documents have been incorporated by reference into this Final EIS.

The construction and operation of the proposed transmission line would not result in a barrier for, or restrict the range of, special-status species. However, project construction may impact wildlife by altering migration and movement corridors from human disturbance and noise; removing, altering, or fragmenting habitat, or cause direct wildlife mortality from construction related equipment. When the line is operational, a number of long-term on-going impacts may occur. These include collisions with the lines and increased predation by raptors due to the increased availability of perches offered by the structures. The mechanisms of impacts and design features that would be implemented to avoid and minimize them are described in **Section 3.9.2.2**. These impacts and design features would be the same for special status species.

The amount of each vegetation community that occurs within 5 miles of the proposed transmission line is presented in *Specialist Report: Vegetation Resources Bordertown to California 120 kV Transmission Line Project* (USFS 2014d). As the report shows, suitable habitat for the species presented in **Table 3.10-2** is abundant within the surrounding proximity of the proposed ROW/easement. Thus potential impacts from displacement and habitat disturbance is anticipated to be negligible due to the abundance of adjacent undisturbed habitat available for special status wildlife.

Federally Listed Species

As described in **Section 3.10.1**, the only federally listed species that is known to, likely to, or could occur within the project area is LCT. The potential impacts to water quality (i.e., aquatic habitats) would be addressed primarily through implementation of a SWPPP and BMPs, restoration of project disturbances, and implementation of design features (**Appendix B**) specific to minimizing impacts to water resources and soils (see **Section 3.6.2.2, Water Resources and Soils**). Design features address the potential for erosion and sedimentation from temporary road crossings by ensuring that stream crossings are properly planned and constructed. Design feature WA 13 would prohibit new road crossings on perennial streams; WA 3 would keep staging areas away from streams and WA 4 prohibits poles within the 100-year floodplain of any stream or wetland.

Design feature WL 10 was specifically developed to avoid or minimize effects to LCT:

> WL 10: To limit the potential for impacts to aquatic resources, particularly to Lahontan cutthroat trout, pole sites or roads will not be placed within the 100-year floodplain in drainages occupied by Lahontan cutthroat trout, specifically Dog Creek and the Truckee River. During construction, no soil disturbing activities will occur within the 100-year floodplain of either drainage.

Under all action alternatives, with the restoration of project disturbances, effective BMPs, and implementation of design features that include avoidance of LCT habitat, there would be no anticipated effects to LCT. As described in **Section 3.6.2.2**, the action alternatives would not be expected to increase surface water temperatures or accelerate sedimentation of surface waters containing trout or otherwise.

Forest Service Sensitive Species

Pockets of aspens and conifers which may support anomalous occurrence of nesting Northern goshawk, flammulated owl, or white-headed woodpecker occur in the project area. Therefore, as a measure of extra caution, design feature WL 2 requires that surveys be conducted for these species prior to construction to locate any nesting activity. If nesting is detected, a designated PAC would be delineated and no construction activities may occur between April 15 through September 30. Pole construction would need to be designed to avoid the PAC.

3.10.3.4 Mitchell Alternative

Construction of the Mitchell Alternative would permanently remove 3.8 acres of vegetation cover (i.e., wildlife habitat). Approximately 3.7 acres of the permanent loss would be at the Bordertown Substation. The remaining 0.1 acre would be associated with vegetation cover displaced by proposed pole structures. The exact location of permanent ground disturbance associated with the placement of pole structures is unknown; however, it is known that all pole structures will be located within the proposed ROW/easement. Approximately 281.7 acres of vegetation communities (i.e., habitats) may be temporary removed from construction activities. Temporary construction disturbance may occur anywhere within the variable-width corridor, but would generally be located within the ROW/easement because this is where pole structures would be located.

Table 3.10-2 indicates the potential habitat for special status wildlife species that could be impacted by the Mitchell Alternative. This alternative has the most acres of forested habitat (29.6 acres) that would be converted to shrub habitat as a result of construction and maintenance. Impacts are expected to be similar as those presented for general wildlife (**Section 3.9.2.2)**. **Section 3.9.2.3** describes short- and long-term impacts to wildlife habitats for the Mitchell Alternative, which would also be applicable to special status wildlife.

Direct and indirect impacts range from negligible to minor and with the inclusion and implementation of design features. Impacts are not anticipated to result in a contribution to a current or predicted downward trend in habitat capability that would reduce a species existing distribution, result in a species trend toward federal listing, or result in a jeopardy determination for an ESA species.

3.10.3.5 Peavine Alternative

Construction of the Peavine Alternative would permanently remove 3.8 acres of vegetation. Approximately 3.7 acres of the permanent loss would be at the Bordertown Substation. The remaining 0.1 acre would be associated with vegetation cover displaced by proposed pole structures. The exact location of permanent ground disturbance associated with the placement of pole structures is unknown; however, it is known that all pole structures will be located within the proposed ROW/easement. Approximately 302.1 acres of vegetation communities (i.e., habitats) may be temporary removed from construction activities. Temporary construction disturbance may occur anywhere within the variable-width corridor, but would generally be located within the ROW/easement because this is where pole structures would be located.

Table 3.10-2 indicates the potential habitat and special status wildlife species that could be affected by the Peavine Alternative. The Peavine Alternative contains less forested habitat, approximately half that of the Mitchell Alternative (17.7 acres), but overall has slightly more diverse habitat types than along the Mitchell Alternative. As with all alternatives, brush habitat is the most abundant, particularly bitterbrush-sagebrush habitat. Impacts are expected to be similar as those presented for general wildlife (**Section 3.9.2.2**). **Section 3.9.2.4** describes short- and long-term impacts to wildlife habitats for the Peavine Alternative, which would also be applicable to special status wildlife.

Direct and indirect impacts for the Peavine Alternative would be the same as those described under the Mitchell Alternative.

3.10.3.6 Poeville Alternative

Construction of the Poeville Alternative would permanently remove 3.9 acres of vegetation. Approximately 3.7 acres of the permanent loss would be at the Bordertown Substation. The remaining 0.2 acre would be associated with vegetation cover displaced by proposed pole structures. The exact location of permanent ground disturbance associated with the placement of pole structures is unknown; however, it is known that all pole structures will be located within the proposed ROW/easement. Approximately 617.7 acres of vegetation communities (i.e., habitats) may be temporary removed from construction activities. Temporary construction disturbance may occur anywhere within the variable-width corridor, but would generally be located within the ROW/easement because this is where pole structures would be located.

Table 3.10-2 indicates the potential habitat and special status wildlife species that could be affected by the Poeville Alternative. Impacts are expected to be similar as those presented for general wildlife (**Section 3.9.2.2**). **Section 3.9.2.5** describes short- and long-term impacts to wildlife habitats for the Poeville Alternative, which would also be applicable to special status wildlife. While **Table 3.10-2** shows that all alternatives have foraging habitat for bats, only the Poeville Alternative has adits or other mine workings either within or adjacent to the variable-width corridor. These features are not expected to be impacted as a result of project construction.

Direct and indirect impacts for the Poeville Alternative would be the same as those described under the Mitchell Alternative.

3.10.3.7 Peavine/Poeville Alternative

Construction of the Peavine/Poeville Alternative would permanently remove 3.8 acres of vegetation. Approximately 3.7 acres of the permanent loss would be at the Bordertown Substation. The remaining 0.1 acre would be associated with vegetation cover displaced by proposed pole structures. The exact location of permanent ground disturbance associated with the placement of pole structures is unknown; however, it is known that all pole structures will be located within the proposed ROW/easement. Approximately 364.3 acres of vegetation communities (i.e., habitats) may be temporary removed from construction activities. Temporary construction disturbance may occur anywhere within the variable-width corridor, but would generally be located within the ROW/easement because this is where pole structures would be located.

Table 3.10-2 indicates the potential habitat and special status wildlife species that could be affected by the Peavine/Poeville Alternative. Impacts are expected to be similar as those presented for general wildlife (**Section 3.9.2.2**). **Section 3.9.2.6** describes short- and long-term impacts to wildlife habitats for the Peavine/Poeville Alternative, which would also be applicable to special status wildlife.

Direct and indirect impacts for the Peavine/Poeville Alternative would be the same as those described under the Mitchell Alternative.

3.10.3.8 Cumulative Effects

Cumulative effects to special status wildlife have generally consisted as habitat impacts, which have been the same as described under the cumulative effects to wildlife (**Section 3.9.2.7**).

3.10.3.9 Cumulative Effects

Implementation of a Fire Prevention Plan, maintaining the required vegetation clearance within the ROW, and high-speed relay equipment to de-energize the proposed transmission line in a failure would reduce the risk of wildfire. Fuels reduction that has occurred from present resource management activities, particularly the Dog Valley Fuels Reduction and Ecosystem Enhancement Project (USFS 2009b) and would continue to occur from reasonably foreseeable future management activities. Where the Mitchell and Peavine alternatives overlap, the Dog Valley Fuels Reduction and Ecosystem Enhancement Project, design feature FP 2 would require vegetation clearing to be consistent with the methods and criteria used for the fuels reduction project. The cumulative effects from any of the action alternatives would be negligible.

3.11 WILDFIRE

For the purposes of this analysis, the wildfire analysis area has been defined as the area within two miles of the proposed transmission line centerline of the action alternatives, as well as the area within two miles of the California and Bordertown substations. This analysis area was used because it captures the wildfire history and access to the transmission line alternatives.

3.11.1 Affected Environment

3.11.1.1 Wildfire History

Approximately 9,657 acres of the analysis area (15 percent) has burned in wildfires in the 13 years from 2000 to 2013 (BLM 2014a; CAL FIRE 2012) (**Table 3.11-1**). Large portions of the analysis area were also burned in wildfires occurring earlier than 2000, as shown on **Figure 3.2-1**.

Table 3.11-1 Fire History in the Analysis Area (2000-2013)

YEAR	NAME	ACRES IN ANALYSIS AREA[1]	TOTAL ACRES BURNED[1]
2000	Unknown/Unnamed	17	17
2000	Seneca Fire	493	1,109
2000	Peavine Fire (2000)	10	10
2000	Mitchell Canyon Fire	604	604
2001	Peavine Fire (2001)	66	66
2003	Red Rock Fire	118	118
2003	Robb Fire	1,356	2,197
2004	Verdi Fire	1,080	1,080
2004	Summerset Fire	14	14
2006	Verdi Fire	5,661	5,661
2007	Balls Canyon Fire	238	4,368
Total		9,657	15,244

Source: BLM 2014a; CAL FIRE 2012
[1]This data contains only fires that were over 10 acres

The causes of wildfires within the analysis area include lightning, smoking, equipment use, debris burning, campfires, and arson (CAL FIRE 2012). Existing transmission lines occur within the analysis area, but according to the data, none of the past wildfires have been linked to being caused directly or indirectly by transmission lines. The BLM (2014a) data does not provide information of the cause of wildfires.

3.11.1.2 Wildfire Risk Rating

The Healthy Forests Restoration Act of 2003 was enacted to reduce hazardous fuels on public land for the protection of communities, watersheds, and certain other at-risk lands from catastrophic wildfire. The Wildland-Urban Interface as defined by the Healthy Forests Restoration Act is the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels (National Wildfire Coordinating Group 2012).

Communities in Washoe County and the city or Reno have been assigned a fire risk rating of low, moderate, high, or extreme, based on a scoring system. To arrive at a score for the community, five primary factors that affect potential fire hazard were assessed: 1) community design; 2) construction materials; 3) defensible space; 4) availability and capability of fire suppression resources; and, 5) physical conditions such as topography (Washoe County 2005). All private land in Nevada that is within the analysis area with the exception of the Silver Lake community, north of U.S. Highway 395 has a fire risk rating of moderate or high (Washoe County 2005). The communities of Verdi and Mogul, Nevada, are both adjacent to NFS land and are identified as Wildland-Urban Interface communities (Washoe County 2005). The fire risk rating for the communities of Verdi and Mogul is moderate. Within California, the fire risk rating is designated as "fire hazard severity zone", and the possible ratings include moderate, high, and very high (CAL FIRE 2007). The rating is essentially a measure of the likelihood of burning and how it burns, for example the intensity, speed, and embers produced. Portions of the Verdi community located in Sierra County, California, are within moderate, high, and very high fire hazard severity zones. Other private land in California within the analysis area is also within moderate to very high fire hazard severity zones (CAL FIRE 2007).

Power lines are generally considered to be critical infrastructure and to be at risk from wildland fire when they occur in Wildland-Urban Interface settings. Power lines through areas that cross NFS land adjacent to Wildland-Urban Interface settings are also generally considered critical infrastructure. The *Nevada Community Wildfire Risk/Hazard Assessment Project for Washoe County* (Washoe County 2005) inventoried fire hazards in Wildland-Urban Interface communities, including utility corridors. In Verdi, a lack of vegetation maintenance and clearing in power line corridors was noted. In Mogul, the vegetation was maintained, but the report indicated a 15-foot clearing would be better.

3.11.1.3 Existing Accessibility

There are approximately 95 miles of designated NFS roads and motorized trails within the analysis area (USFS 2011b). Based on an analysis of aerial photography, there is an additional approximately 323 miles of existing roads within the analysis area that occur on either private land or within a ROW owned by the state or county. The analysis area is accessible for firefighting efforts through a combination of these roads and trails and from overland foot travel or aircraft.

3.11.2 Environmental Consequences

Methods of Analysis

Direct and indirect effects were analyzed by evaluating the potential for increased risk of wildfires from the proposed transmission line.

3.11.2.1 No Action Alternative

Under the No Action Alternative, construction of the proposed project and subsequent operation and maintenance of the proposed transmission line would not occur. Thus, there would be no new areas of wildfire hazard or increase in threat of wildfire.

3.11.2.2 Effects Common to All Action Alternatives

Construction activities including hot exhaust pipes on vehicles coming in contact with dry vegetation, sparks from equipment striking rocks, use of explosives for blasting, or workers smoking have the potential to cause a fire.

A Fire Prevention Plan would be included in the COM Plan and implemented during construction (design feature FP 1, **Appendix B**). A Fire Prevention Plan specifies the types of firefighting suppression equipment required during construction, such as shovels, fire extinguishers, and water trucks. Smoking, welding and grinding, and other potential sources of ignition would be allowed in designated areas only and restricted during elevated fire ratings and during red flag warnings.

Fire prevention measures would minimize the potential for construction activities to cause a fire and would include the appropriate response to minimize the amount of damage and keep the fire small.

The transmission line may be a potential source of wildfire ignition if vegetation comes into contact with the conductors. In forested communities, trees falling onto the transmission line or wind blowing a conductor into trees may create a flashover to ground and cause a fire. Vegetation clearing limits are required to be maintained during the operational life of the proposed transmission line (California Public Resources Code 4293 and NAC 704.450). This would reduce the potential for the conductors and any trees to come into contact. Further, if an energized conductor were to fall to the ground and create a line-ground fault, high-speed relay equipment is designed to sense that condition and actuate circuit breakers to de-energize the line in less than a tenth of a second. This safety measure reduces the risk of fire from high voltage transmission lines.

3.11.2.3 Cumulative Effects

Implementation of a Fire Prevention Plan, maintaining the required vegetation clearance within the ROW, and high-speed relay equipment to de-energize the proposed transmission line in a failure would reduce the risk of wildfire. Fuels reduction that has occurred from present resource management activities, particularly the Dog Valley Fuels Reduction and Ecosystem Enhancement Project (USFS 2009b) and continue to occur from reasonably foreseeable future management activities. Where the Mitchell and Peavine alternatives overlap the Dog Valley Fuels Reduction and Ecosystem Enhancement Project, design feature FP 2 would require vegetation clearing to be consistent with the methods and criteria used for the fuels reduction project. The cumulative effects from any of the action alternatives would be negligible.

3.12 AIR QUALITY

3.12.1 Affected Environment

The air quality analysis area has been defined as Sierra County, California and Washoe County, Nevada. Air quality in the analysis area is governed by the Washoe County Health District Air Quality Management Division and the Northern Sierra Air Quality Management District.

The Clean Air Act (CAA) established the National Ambient Air Quality Standards (NAAQS) for seven criteria pollutants. In addition to the NAAQS, the CAA designated authority to each state regulating agency (i.e., California Air Resources Board [CARB] and NDEP) to implement more stringent air quality standards in order to preserve state-specific ambient air quality. The federal and state-specific ambient air quality standards for criteria pollutants are listed in **Table 3.12-1**. The NAAQS and/or the state standards are concentration levels measured or predicted in the local climate. These levels can be measured using monitoring equipment or predicted with air dispersion modeling using the project-related emission rates, topography, local meteorological data, and other parameters. The USEPA has developed a definition for a level of significance, given in 40 CFR 52.21, which will be used to determine if air dispersion modeling is required for this project analysis.

Table 3.12-1 National and State Ambient Air Quality Standards

POLLUTANT	PRIMARY/ SECONDARY	AVERAGING TIME	CARB LEVEL	NDEP LEVEL	USEPA LEVEL[1]	FORM
Carbon monoxide (CO)	Primary	8 hour	9 ppm	9 ppm	9 ppm	Not to be exceeded more than once per year
		1 hour	20 ppm	35 ppm	35 ppm	
Lead	Primary and secondary	Rolling 3 month average	-	-	0.15 μg/m^3	Not to be exceeded
		30-day average	1.5 μg/m^3	1.5 μg/m^3	-	Not to be exceeded
Nitrogen dioxide (NO_2)	Primary	1 hour	180 ppb	100 ppb	100 ppb	98th percentile, averaged over 3 years
	Primary and secondary	Annual	30 ppb	53 ppb	53 ppb	Annual mean
Ozone (O_3)	Primary and secondary	8 hour	0.070 ppm	0.075 ppm	0.075 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
		1 hour	0.09 ppm	0.10 ppm*	-	* Lake Tahoe Basin only
Particulate matter 2.5 microns or less diameter ($PM_{2.5}$)	Primary	Annual	12 μg/m^3	-	12 μg/m^3	Annual mean, averaged over 3 years
	Secondary	Annual	-	15 μg/m^3	15 μg/m^3	
	Primary and secondary	24 hour	35 μg/m^3	35 μg/m^3	35 μg/m^3	98th percentile, averaged over 3 years
Particulate matter 10 microns or less diameter (PM_{10})	Primary and secondary	24 hour	50 μg/m^3	150 μg/m^3	150 μg/m^3	Not to be exceeded more than once per year on average over 3 years
		Annual	20 μg/m^3	50 μg/m^3	-	Annual arithmetic mean
Sulfur dioxide (SO_2)	Primary	1-hour	250 ppb	75 ppb	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	3-hour	-	1,300 μg/m^3	0.5 ppm	Not to be exceeded more than once per year
	Primary	24-hour	0.04 ppm	365 μg/m^3	-	Not to be exceeded
	Primary	Annual	-	80 μg/m^3	-	Not to be exceeded

Source: USEPA 2012, NAC 445B.22097, CCR Title 17, 70200

[1] Units of measurement:

ppm = parts per million

ppb = parts per billion

μg/m^3 = micrograms per cubic meter

The closest ambient air quality monitoring site to the project area is located in Reno, Nevada. The monitoring site is located in both a residential neighborhood and a commercial growth area and monitors PM_{10}, $PM_{2.5}$, O_3, CO, SO_2, and NO_2 (**Table 3.12-2**). The levels from this monitoring site show relatively high concentrations of pollutants compared to the levels seen in rural areas characterizing the majority of the project area. The higher levels are due to urbanization and vehicular traffic near the monitoring station. The NDEP Bureau of Air Pollution Control typically considers rural areas to have negligible ambient concentrations of gaseous pollutants and a PM_{10} concentration of 10.2 μg/m^3.

Table 3.12-2 Reno, Nevada, Ambient Monitoring Data

MONITOR, POLLUTANT (DATA COVERING RANGE OF YEARS)	AMBIENT YEARLY CONCENTRATION	PERCENT OF LOWEST NAAQS
PM_{10} 24-hour (2010-2012)	18 μg/m3	36.0%
$PM_{2.5}$ 24-hour (2010-2012)	6.2 μg/m3	17.7%
CO 1-hour (2010-2012)	0.3 ppm	1.5%
O_3 1-hour (2010-2012)	0.03 ppm	33.3%
NO_2 1-hour (2010-2012)	15.7 ppb	15.7%
SO_2 1-hour (2011-2012[1])	0.5 ppb	0.7%

Source: Schnieder 2014

[1] Monitoring began midway through December 2010

Pursuant to the CAA, USEPA developed a designation system to describe the air quality in a given area based on emission levels for each criteria pollutant. Areas classified as In Attainment are areas in which a monitored pollutant has not exceeded the NAAQS. A Non-Attainment classification represents an area in which a monitored pollutant has exceeded the NAAQS. An Unclassifiable designation is used when the area does not have sufficient data for classification.

Sierra County, California, is in Attainment or Unclassifiable for all criteria pollutants according to the USEPA (40 CFR 81.305). Although Sierra County meets USEPA's air quality standards for PM_{10}, the CARB classifies Sierra County as a Non-Attainment county for PM_{10} based on the agency's more stringent ambient air quality standards that have been in place since 1992. Washoe County, Nevada, was designated as Non-Attainment for PM_{10} by the USEPA in 1990 and reclassified as serious Non-Attainment in 2001 (USEPA 2013a). The Washoe County Air Quality Management Division has requested a reclassification of the county based on new monitoring data (**Table 3.12-2**) showing low levels of PM_{10} in Reno, Nevada, but the USEPA has yet to respond.

3.12.2 Environmental Consequences

3.12.2.1 Methods of Analysis

The potential direct and indirect impacts on air quality were analyzed and quantified using the impact indicator listed below.

- Emissions of criteria pollutants (CO, lead, NO_2, O_3, PM_{10}, $PM_{2.5}$, and SO_2) anticipated from construction, operation, and maintenance of the proposed project.

Emissions were tabulated for fugitive and mobile emissions. These emissions were then used to determine the level of analysis needed to describe the impact to the ambient air quality.

Impact magnitude was separated into the following four possible levels:

- **Negligible –** no measurable change in existing ambient air quality. Emissions are below the USEPA-defined levels of significance as per 40 CFR 52.21;
- **Minor –** a small measurable change in existing ambient air quality. Emissions are above the USEPA-defined levels of significance as per 40 CFR 52.21, but an air dispersion modeling analysis predicts that project-related emissions are below the NAAQS for all criteria pollutants;
- **Moderate –** a moderate measurable change in existing ambient air quality. The air dispersion modeling analysis predicts that project-related emission are at or near the NAAQS for one or more criteria pollutant; and,
- **Major –** a large, easily measurable change in existing ambient air quality and project-related emissions exceed the NAAQS for one of more criteria pollutant.

Design features listed in **Appendix B** have been developed to reduce or avoid certain impacts, including impacts on air quality. The analysis considers impacts of the project after the incorporation of these project design features.

3.12.2.2 No Action Alternative

Under the No Action Alternative, construction of the proposed project and subsequent operation and maintenance of the proposed transmission line would not occur; therefore there would be no project-related dust or exhaust emissions to affect existing air quality within the analysis area.

3.12.2.3 Effects Common to All Action Alternatives

Construction

Engine exhaust from construction equipment and personal vehicles that the construction workforce would use to commute to the project area would directly generate emissions of all the criteria pollutants, with the exception of O_3. However, the NO_2 emissions from exhaust may naturally react with other pollutants in the atmosphere to form O_3 (California Office of Environmental Health Hazard Assessment 2007). Emissions of lead would be negligible, if measurable at all, because modern fuels are manufactured as unleaded. A list of the equipment that may be required for construction of the proposed project is provided in **Table 2.3-2**. The level of emissions of criteria pollutants would directly relate to the type of equipment, engine size, and the length of time the equipment is used. The length of time that equipment is used was considered to be directly correlated with the length of the action alternative. Construction equipment would be equipped with manufacturer recommended catalytic converters and/or other appropriate mufflers and emission controls. In addition to engine exhaust, equipment and vehicle brakes would also generate brake dust (i.e., PM_{10} and $PM_{2.5}$ emissions).

Surface disturbance required for construction activities would remove vegetation cover and loosen soils. Wind and the operation of equipment over loose, bare soils would generate fugitive dust (i.e., PM_{10} and $PM_{2.5}$ emissions). The level of PM_{10} and $PM_{2.5}$ emissions generated from construction surface disturbance would depend on the acreage of surface disturbance anticipated for each action alternative. A COM Plan would be developed prior to construction of the selected alternative and would include a Dust Abatement Plan that describes construction measures and practices that would be implemented to control dust emissions. All action alternatives would require a surface area disturbance permit and a fugitive dust control plan from the local air quality agency, Rule 226 for Sierra County and Section 040.030 for Washoe County, in order to minimize fugitive dust from land disturbances.

Emissions of criteria pollutants generated from project equipment and vehicles would be temporary and last for the duration of the construction period. Construction of the proposed project is anticipated to occur over a period of 8 to 12 months, depending on weather. Construction surface disturbance would be restored following completion of project construction. Restoration of vegetation cover would prevent continued emissions of fugitive dust associated with exposed soils and wind erosion. Thus, construction of the proposed project would result in temporary impacts to ambient air quality.

Design feature AQ 1 (**Appendix B**) would limit project equipment and vehicles to speeds of 20 miles per hour or less when travelling on unpaved roads or on unpaved surfaces in the ROW/easement. Low travel speeds reduce fuel consumption and limit dispersal of fugitive dust. Design feature AQ 2 would require construction surface disturbance to be watered, as needed, to control fugitive dust emissions. Per design feature AQ 4, excavation and grading activities would be suspended when instantaneous gusts of wind in excess of 50 miles per hour and visible dust persist that create a health hazard to neighboring property owners or visibility hazard to vehicular traffic. Design feature AQ 5 includes five measures to reduce equipment emissions from construction vehicles. These measures include: 1) tuning engines to manufacturers specifications; 2) not allowing equipment to idle for more than five minutes; 3) not tampering with equipment to increase horsepower; 4) using control devices on equipment such as particulate traps and oxidation catalysts; and 5) using diesel fuel that has a sulfur content of 15 ppm or less.

With implementation of design features, temporary construction impacts on ambient air quality would be negligible for fugitive emissions for all action alternatives. Impacts from gaseous emissions would be negligible because of the relatively short construction period and manufacturer-installed control equipment, as well the reduced fuel consumption from design feature AQ 1.

Operation and Maintenance

Operation and maintenance of the proposed project would result in temporary direct impacts to ambient air quality. Direct impacts would be from the exhaust and fugitive dust emissions generated by equipment and vehicles used during annual inspections of the transmission line and from removal of trees within the transmission line clearance area, as needed. Annual inspections would be conducted via helicopter or from walking to the pole structures from existing roads. Unexpected repairs may also require equipment and ground disturbance resulting in gaseous exhaust and fugitive dust emissions. Maintenance-related construction activities may occur, but would not be extensive and would occur on an infrequent to rare basis. Any emissions from operation and maintenance activities would be much less than emissions generated from construction activities because much less ground disturbance and equipment would be needed for maintenance or repairs. Impacts on ambient air quality would be negligible for all action alternatives and would be temporary for the duration of the maintenance or repair activities.

3.12.2.4 Effects by Action Alternative

Table 3.12-3 lists the maximum predicted emission levels during construction from all project-related sources (from mobile sources and ground disturbance) for each of the action alternatives and the comparison to the USEPA-defined significant emission rates. The proposed project would not include any stationary emission sources, as all construction equipment would move off-site once construction is complete.

Table 3.12-3 Maximum Predicted Emission Levels By Alternative

ALTERNATIVE	PM TON/YR	PM_{10} TON/YR	$PM_{2.5}$ TON/YR	SO_2 TON/YR	NO_2 TON/YR	CO TON/YR	GHG[1] (CO_2E)[2] TON/YR
TOTAL FUGITIVE EMISSIONS							
Mitchell	11.6	4.0	0.6	N/A	N/A	N/A	N/A
Peavine	10.2	3.5	0.5	N/A	N/A	N/A	N/A
Poeville	17.8	6.1	0.9	N/A	N/A	N/A	N/A
Peavine/Poeville	11.8	4.0	0.6	N/A	N/A	N/A	N/A
TOTAL GASEOUS EMISSIONS							
Mitchell	1.8	1.5	1.2	1.4	21.1	5.6	941.5
Peavine	1.6	1.3	1.1	1.2	18.6	5.0	828.8
Poeville	2.8	2.3	1.9	2.1	32.4	8.7	1,449.0
Peavine/Poeville	1.8	1.5	1.3	1.4	21.5	5.7	957.6
TOTAL PREDICTED EMISSION LEVELS							
Mitchell	13.4	5.5	1.8	1.4	21.1	5.6	941.5
Peavine	11.3	4.8	1.6	1.2	18.6	5.0	828.8
Poeville	20.6	8.4	2.8	2.1	32.4	8.7	1,448.5
Peavine/Poeville	13.6	5.6	1.8	1.4	21.5	5.7	957.6
USEPA THRESHOLDS CFR TITLE 40, PART 52.21: SIGNIFICANT EMISSION RATES							
	25	15	10	40	40	100	25,000
***DE MINIMIS* LEVELS CFR TITLE 40, PART 92.153: GENERAL CONFORMITY**							
	N/A	70	N/A	N/A	N/A	N/A	N/A

[1]See **Section 13.3** for discussion of GHG emissions

[2] When quantifying GHG emissions, the different global warming potentials of GHG pollutants are usually taken into account by normalizing their rates to an equivalent CO_2 emission rate (CO_2e)

Project-related emissions are below the USEPA-defined significant emission rates in 40 CFR 52.21 and the *de minimis* levels described in 40 CFR 93.153 for pollutants in Non-Attainment areas. Under any action alternative, the proposed project would not exceed the significant emission rates. Therefore, a more in-depth air dispersion analysis is not required to demonstrate compliance with the NAAQS for any of the criteria pollutants. In addition, the project is not subject to a general conformity determination due to predicted project emissions falling below the *de minimis* levels described in 40 CFR 93.153. Under any action alternative, the proposed project would not exceed NAAQS.

3.12.2.5 Cumulative Effects

As stated in **Section 3.12.1**, Sierra County is in Attainment for all criteria pollutants and Washoe County is in Attainment for all but PM_{10} according to the USEPA (2013a). California has designated Sierra County in Non-Attainment for PM_{10} based on more stringent ambient air quality standards. Major sources of PM_{10} emissions in Sierra County and Washoe County include motor vehicles, residential wood stoves, industrial processes, construction dust, windblown dust, street sand, prescribed burns, and open burning (Washoe County 2012b). Wildfires are also noted to be a major source of PM_{10} emissions in the county when they occur.

The present actions which correlate with one or more of the aforementioned major sources of PM_{10} emissions in Sierra County and Washoe County include OHV recreation, maintenance and use of the existing transportation network, urban development, and mining. Prescribed burns which have occurred within the CIAA as part of present resource management actions no longer contribute to PM_{10} emissions because the burns have been completed and the fires extinguished. The prescribed burns which would occur as part of reasonably foreseeable future resource management activities would incrementally increase PM_{10} emissions in the CIAA. Potential future wildfires would also have incremental increases in PM_{10} emissions. Increased PM_{10} emissions from reasonably foreseeable future actions and from potential future wildfires would be short-term for the duration of the action or the wildfires. The loss of vegetation from wildfire may increase the amount of loose soil, and PM_{10} emissions may increase for months to several years after the fire from windblown dust.

The effects to air quality from construction of any of the action alternatives would be limited to fugitive dust emissions and equipment exhaust emissions. These emissions would occur primarily during construction of the proposed project, but also to a much lesser degree during maintenance activities. The COM Plan would include a Dust Abatement Plan to reduce fugitive dust emissions. Design features AQ 1 through AQ 5 would be implemented during construction to further reduce fugitive dust emissions and equipment exhaust emissions. Construction, operation, and maintenance of the proposed project would not result in emissions of criteria pollutants at levels that exceed the federal or county thresholds for attainment when combined with existing and anticipated emissions from present and reasonably foreseeable future actions.

3.13 CLIMATE CHANGE

When sunlight reaches the Earth's surface, it can either be reflected back into space or absorbed by the Earth. Once absorbed, the planet releases some of the energy back into the atmosphere as heat (USEPA 2014c). Gases that trap heat in the atmosphere are called GHGs (USEPA 2014b). The GHGs that may contribute to global climate change include carbon dioxide (CO_2), methane, carbon monoxide, nitrogen dioxide, and several other trace gases and aerosols (USEPA 2014c).

CO_2, produced largely from combustion of fossil fuels, is the primary GHG emitted through human activities (USEPA 2014b). The uptake of CO_2 by vegetation, especially forest communities, plays an important role in moderating the CO_2 concentration in the atmosphere. In forest communities, carbon is continuously cycled between the forest ecosystem and the atmosphere. As plants photosynthesize and grow, CO_2 is removed from the atmosphere and carbon is stored in living biomass. Woody tissue in trees contains a lot of stored carbon. This storage of carbon in plants is called sequestration. Generally, through burning of stored carbon in vegetation and wood products, carbon can be released back to the atmosphere.

3.13.1 Regulatory Framework

In January 2009, the USFS Washington Office released a document titled "Climate Change Considerations in Project Level NEPA Analysis" (USFS 2009a). This document provides initial USFS guidance on how to consider climate change in a project-level NEPA analysis, and it was therefore considered in this EIS. Also considered in this EIS is CEQ's draft guidance memorandum on the ways in which Federal agencies can improve their consideration of the effects of GHG emissions and climate change in their NEPA evaluations.

The 2009 Washington Office document (USFS 2009a), acknowledges that "some proposals will not have cause-effect relationships to GHG or the carbon cycle, or are at such minor scale that direct effects would be meaningless to a reasoned choice among alternatives." Similarly, the 2010 CEQ draft guidance memo notes that "in many cases, the GHG emissions of the project action may be so small as to be a negligible consideration." As with any environmental impact, GHG emissions and carbon cycling should be considered in proportion to the nature and scope of the federal action in question and its potential to either affect emissions or be affected by climate change impacts.

On August 2016, final guidance was released by the CEQ to standardize how agencies should consider the effects of GHG emissions and climate change on NEPA reviews. That is, the guidance is intended to ensure the analysis of potential effects is commensurate with the extent of the effects of the Proposed Action. Unlike the previous draft guidance, the final guidance does not provide a threshold quantity of GHG emission to decide whether or what extent to consider climate change impacts. Rather, CEQ now recognizes that single actions will have an incremental contribution to global concentrations and climate change results from the incremental addition of GHG emissions from millions of individual sources which collectively have a large impact on a global scale (CEQ 2016).

3.13.2 Affected Environment

Earth's average temperature has risen by 1.4 degrees Fahrenheit (°F) over the past century, and is projected to rise another 2 to 11.5°F over the next hundred years (USEPA 2014a). According to the USEPA (2013b), the climate of the southwest, including Nevada and California, is changing. Over the last century, the average annual temperature has increased about 1.5°F. The average annual temperature is projected to rise an additional 2.5 to 8°F by the end of the century. Warming in the southwest is projected to be greatest in the summer (USEPA 2013b). According to the University of California at Davis (2015), maximum summer temperatures in the Lake Tahoe Region may rise by 8°F by the end of the century.

Future warming is projected to produce more severe droughts in the region, with further reductions in water supplies. Climate change is projected to result in later seasonal snow, less snow coverage, earlier wet snow avalanches, and generally shorter snow seasons. Projected increases in drought, wildfire, invasive species, and pests, as well as changes in the geographic ranges of species, will likely threaten native forests and other ecosystems in the Southwest (United States Global Climate Change Research Program 2009).

3.13.3 Environmental Consequences

3.13.3.1 Methods of Analysis

The potential direct and indirect impacts on climate change were analyzed and quantified using the impact indicator list below:

- Tons of GHG emissions from construction and maintenance of the proposed transmission line.

3.13.3.2 No Action Alternative

Under the No Action Alternative, construction of the proposed project and subsequent operation and maintenance of the proposed transmission line would not occur; therefore, there would be no GHG emissions from the project's construction equipment. Trees and other vegetation within the proposed ROW would not be cut and loss of associated carbon sequestration would also not occur from the No Action Alternative. The No Action Alternative would have no impact to climate change.

3.13.3.3 Effects Common to All Action Alternatives

Engine exhaust from construction equipment and personal vehicles that the construction workforce would use to commute to the project area would directly generate emissions of GHG. The amount of GHG emissions would directly relate to the types of equipment and the length of time the equipment is used. A list of the equipment that may be required for construction of the proposed project is provided in **Table 2.3-2**. The length of time that equipment is used was considered to be directly correlated with the length of the action alternative.

Construction equipment would be equipped with manufacturer-installed emission controls and the use of construction vehicles would need to comply with design feature AQ 5 which list practices that would be implemented to reduce emissions. Emissions of GHG generated from project equipment and vehicles would be temporary for the duration of construction. maintenance activities such as patrolling the line and vegetation removal from the line would use fossil fuels.

Surface disturbance required for construction activities would remove vegetation cover. The cutting of vegetation would cause the temporary loss of carbon sequestering until vegetation is restored. Under the transmission line wires, the loss of carbon sequestration from cutting of trees would be long-term and permanent.

Under any action alternative, the proposed project would release low levels of GHG and would contribute to some loss of carbon cycling. The specific detectable effect on climate change on a global scale is unknown, but is expected to be insignificant.

Climate change would not be anticipated to have any effects on the proposed project. Construction of the project would take 8 to 12 months. Measurable changes to the climate would not be expected over a period of 8 to 12 months. The proposed transmission line would be operated regardless of current and potentially changing weather and climate conditions. No changes to operational and maintenance procedures would be anticipated due to climatic conditions.

3.13.3.4 Effects by Action Alternative

Table 3.13-1 lists the maximum predicted GHG emissions during construction for each of the action alternatives. In addition to generated GHG emissions, reduction in carbon sequestering is also anticipated. The acreage of forested community anticipated to be cut from implementation of each action alternative, which represents the long term loss of carbon sequestering, is also presented.

Table 3.13-1 GHG Emissions and Loss of Carbon Sequestering From Construction

ALTERNATIVE	GHG CH_4 EMISSIONS TONS/YEAR	GHG N_2O EMISSIONS TONS/YEAR	GHG CO_2 EMISSIONS TONS/YEAR	GHG CO_2E EMISSIONS TONS/YEAR	FOREST COMMUNITY LOST[1]
Mitchell	0.04	0.006	938.1	941.5	42 acres
Peavine	0.03	0.005	826.1	828.9	21 acres
Poeville	0.06	0.01	1,443.5	1,448.5	3 acres
Peavine/Poeville	0.04	0.006	946.3	949.6	12 acres

[1] Includes eastside pine, Jeffrey pine, mixed conifer-fir, plantation, and aspen vegetation communities (USFS 2014d)

[2] Transmission line clearance area was assumed to be the width of the ROW/easement, although trees outside the ROW/easement with the potential to fall on conductor wires would also be removed

The Mitchell, Peavine, and Peavine/Poeville alternatives have fewer GHG emissions than the Poeville Alternative because these alternatives are much shorter than the Poeville Alternative. However, due to the lack of forested community, the Poeville Alternative has the fewest losses to carbon sequestering. GHG emissions would be occur during construction and would be temporary. Loss of carbon sequestering would occur during construction, but effects would be longer term because trees would not be allowed to grow back under the transmission line conductors for the life of the project. Despite differences presented in **Table 3.13-1**, impacts are so small that an action alternative would have a negligible incremental contribution to global climate change.

3.13.3.5 Cumulative Effects

Present actions that generate GHG emissions and contribute to climate change include the transportation network, OHV recreation, fuels reduction projects, and energy consumption at residences and commercial establishments. The actions are anticipated to continue into the reasonably foreseeable future. Fuels reduction projects are intended to improve forest health and reduce catastrophic wildfire, which would ultimately lead to greater carbon sequestration. The reasonably foreseeable future Stonegate Master Plan Development would require construction equipment that generates GHG emissions. This project would also remove existing vegetation cover, but may replace it with landscape trees that provide slightly greater carbon sequestration. The Stonegate Master Plan Development would also increase population density in the area, which would increase vehicle traffic. The increased vehicle traffic would have an incremental increase of GHG emissions.

The cumulative effects to climate change from construction of any of the action alternatives would be limited to an incremental amount of GHG emissions from equipment exhaust emissions and an incremental loss of carbon sequestration from tree removal. Project-related GHG emissions would occur primarily during construction of the proposed project, but also to a much lesser degree during maintenance activities.

3.14 RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY OF THE ENVIRONMENT

This section discusses the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity. Specifically, this section compares the degree to which the action alternatives would sacrifice the productivity of a resource value that might benefit the environment in the long term, for the value of increased transmission reliability from the short-term use of NFS land and BLM-administered public land for the proposed transmission line. Short-term uses refer to the resource effects that occur from use of the ROW for operational life of the proposed transmission line. Long-term productivity refers to the productivity of environmental resources after the operational life of the proposed transmission line.

Construction of the proposed project, under any action alternative, would cause adverse impacts that would either cease upon completion of the construction phase or would attenuate over time. Impacts that would be cease when construction is completed include soil disturbance, fugitive dust emissions, vehicle and equipment emissions, noise, and wildlife displacement. Vegetation and wildlife habitat would take years to recover after construction is completed. Forest communities within the transmission line clearance area would have tall trees removed for the operational life of the project.

No significant decreases in the productivity of the project area due to project construction activities would be expected, as the majority of surface disturbance would be restored. Major repairs associated with project maintenance activities would be expected to result in similar impacts as construction activities, but would be infrequent, shorter in duration, and generally lesser in intensity. Thus, no significant decreases in the productivity of the project area due to project maintenance activities would be expected.

The proposed transmission line and associated modifications at the substations may exist for decades and longer. Over the long term, several decades to approximately one-hundred years, natural environmental balances are expected to be restored. Many of the effects discussed in this chapter are considered to be temporary (occurring only during construction activities), and many of the other impacts are considered short-term.

Over the operational lifetime of the proposed project, under any action alternative, long-term adverse impacts associated with land use (including private property value and uses), and visual resources would occur. These long-term impacts are analyzed in each resource issue area in **Sections 3.2** through **3.13**.

3.15 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Section 1502.16 of NEPA requires the environmental document to include a discussion of "any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented." An irreversible commitment of resources occurs when resources are used, consumed, destroyed, or degraded during project construction and operation and cannot be reused or recovered. An irreversible commitment effectively removes the option of future resource use. Irretrievable commitments of resources occur when there are long-term losses of resource production or use. These losses are not permanent and can be reversed in the long term if project facilities or land uses change.

The irreversible and irretrievable commitments of resources resulting from the proposed project would be similar among the action alternatives. These commitments are presented in **Table 3.15-1**.

Table 3.15-1 Irreversible and Irretrievable Commitments of Resources

RESOURCE	IRREVERSIBLE COMMITMENTS	IRRETRIVABLE COMMITMENTS	EXPLANATION
Visual Resources	No	Yes	Impacts on visual resources would occur through the operational life of the project. After operations, the pole structures and conductors could be removed and forest communities would be permitted to grow within the ROW/easement clearance area. Thus, the action alternatives would have irretrievable commitments, but no commitments that would be irreversible.
Land Use and Private Property	No	Yes	Loss of some land uses within the ROW/easement would occur in areas, particularly on private land where the proposed transmission line would not be located within an existing utility corridor. These land uses may be restored after the operational life of the project. Thus, the action alternatives would have irretrievable commitments of land uses for the operational life of the project. There would not be any irreversible commitments of land uses.
Public Health and Safety	No	No	There would be no irreversible or irretrievable commitments of public health and safety from the action alternatives.
Cultural Resources	Yes	Yes	The goal of the project is to avoid and/or minimize irreversible and irretrievable effects to historic properties that are eligible or potentially eligible for listing on the NRHP. Historic properties located along the power line corridor and access routes will be avoided wherever possible and/or treated through implementation of a HPTP. Should avoidance prove infeasible there may be irreversible effects to the integrity of a historic property. When irreversible effects are unavoidable the USFS will consult with the tribes and California and Nevada SHPOs along with NV Energy to mitigate the loss of the historic property. Cultural resources are finite and if destroyed are irretrievable.

RESOURCE	IRREVERSIBLE COMMITMENTS	IRRETRIVABLE COMMITMENTS	EXPLANATION
Water Resources and Soils	No	Yes	No irreversible or irretrievable commitments to water resources would be anticipated. Irretrievable commitments of soils would occur in areas where pole structures are installed.
Vegetation	No	Yes	Forest communities cleared from within the transmission line clearance area for the operational life of the project would be an irretrievable commitment of forest vegetation.
Special Status Plants	No	No	No irreversible or irretrievable commitments of special status plant populations or individuals would be anticipated.
Wildlife	No	Yes	Wildlife displacement from loss of forested habitat within the transmission line clearance area would persist through operation of the project. Following the operational life of the project, forest communities would be permitted to grow within the clearance area. Thus, wildlife displacement would be an irretrievable commitment.
Special Status Wildlife	No	Yes	Special status wildlife displacement from loss of forested habitat within the transmission line clearance area would persist through operation of the project. Following the operational life of the project, forest communities would be permitted to grow within the clearance area. Thus, special status wildlife displacement would be an irretrievable commitment.
Wildfire	No	No	The action alternatives would not have any irreversible or irretrievable commitments related to wildfire.
Air Quality	No	No	Emissions from project construction and maintenance activities would be temporary and not exceed federal or state air quality standards. Air quality would return to existing conditions after completion of activities.
Climate Change	No	Yes	Under the transmission line wires, the loss of carbon sequestration from cutting of trees would be for the operational life of the project.

In addition to the resource commitments identified in **Table 3.15-1**, construction and maintenance of the proposed project would require an irreversible commitment of energy as it relates to the fossil fuels needed for construction and maintenance equipment and vehicles. An irreversible commitment of construction materials would also be required from any of the action alternatives. However, energy consumption to manufacture the construction materials would not be anticipated because these materials would continue to be produced regardless of implementation of any of the action alternatives.

3.16 CONFORMANCE WITH APPLICABLE LAWS, REGULATIONS, POLICIES AND EXECUTIVE ORDERS

This EIS has been prepared in accordance with the applicable laws, regulations, policies, and executive orders listed in **Table 3.16-1**. A brief explanation or statement of conformance is provided in the table.

Table 3.16-1 Applicable Laws, Regulations, Policies, and Executive Orders

LAW, REGULATION, POLICY, OR EXECUTIVE ORDER	STATEMENT OF CONFORMANCE
2014 California BLM and State Historic Officers Protocol Agreement (BLM 2014b)	Section 106 of the NHPA, as it pertains to the BLM-administered public land in the project area, was implemented in accordance with the California BLM and State Historic Officers Protocol Agreement (BLM 2014b).
American Antiquities Act of 1906 (as amended)	Design features (**Appendix B**) have been developed to prohibit the collection or disturbance of archeological sites encountered during construction. All prior cultural resource surveys and any potential future cultural resource surveys for the proposed project would be conducted by qualified archaeologists under a permit issued by the USFS.
American Indian Religious Freedom Act of 1978	Native American Tribes were consulted to determine the presence of American Indian religious sites. See tribal consultation summary (**Section 4.2.2**).
Archeological Resource Protection Act of 1979	Design features (**Appendix B**) have been developed to prohibit the unauthorized collection or disturbance of previously unidentified archeological sites encountered during construction or maintenance of the project.
Bald and Golden Eagle Protection Act of 1940 (as amended)	The proposed project would not result in the "take" of bald eagles or golden eagles. All of the action alternatives would be in conformance with the Bald and Golden Eagle Protection Act of 1940, as amended.
BLM Manual 6500: Wildlife and Fisheries Management (1988)	Design features (**Appendix B**) have been incorporated into the proposed project to avoid or minimize impacts to wildlife and fisheries as much as feasible.
BLM Manual 6840: Special Status Species Management (2008a)	Design features (**Appendix B**) have been incorporated into the proposed project to avoid or minimize impacts on BLM special status species.
Clean Air Act of 1979 (as amended)	The proposed project would be compliant with the CAA of 1979, as amended, because emissions of criteria pollutants would be below the NAAQS (see **Section 3.12**). Other air pollution problems addressed in the CAA, such as acid rain or depletion of the ozone layer are not relevant to the proposed project.
Clean Water Act of 1977 (as amended)	The discharge of pollutants from a point source would not occur under any of the action alternatives. All impacts to waters of the United States would be permitted under Section 404 of the CWA.

LAW, REGULATION, POLICY, OR EXECUTIVE ORDER	STATEMENT OF CONFORMANCE
Endangered Species Act of 1973 (as amended)	The proposed project would not jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The proposed project would not result in the "take" of any listed species or species proposed for listing. See agency consultation summary (**Section 4.2.1**).
Executive Order 11988 (floodplains)	The proposed project would not require occupancy within the 100-year floodplain. The proposed project would not modify the flood flow retention capability of the 100-year floodplain (see **Section 3.6.2.2**).
Executive Order 11990 (wetlands)	Compliant with Executive Order 11990, design features (**Appendix B**) have been developed to minimize impacts to wetlands on NFS land and BLM-administered public land.
Executive Order 12898 (environmental justice)	Compliant with Executive Order 12898, the USFS has completed an environmental justice analysis. A summary of the analysis conclusions is provided in **Section 3.1.1.2**.
Executive Order 13007 (American Indian sacred sites)	Native American Tribes were consulted to determine the presence of American Indian sacred sites. See tribal consultation summary (**Section 4.2.2**).
Executive Order 13175 (consultation and coordination with Indian Tribal Governments)	Consultation with Native American Tribes was conducted in accordance with Executive Order 13175. See tribal consultation summary (**Section 4.2.2**).
Executive Order 13186 (Migratory Bird Treaty)	Pursuant to Executive Order 13186, the potential effects of the proposed project on migratory birds are evaluated in **Section 3.9**. Design features (**Appendix B**) have been developed to avoid impacting nesting migratory birds during construction.
Federal Land Policy Management Act of 1976	In accordance with the Federal Land Policy Management Act of 1976, this EIS evaluates the proposed project in terms of its conformity with the Eagle Lake RMP (BLM 2008b) and its potential effects on the various resources contributing to the multiple uses for which the BLM-administered public land in the project area is managed.
Historic Sites Act of 1935	The potential effects of the proposed project on historic properties listed on the NRHP or eligible for such listing have been evaluated. See SHPO consultation summary (**Section 4.2.3**).
Memorandum of Understanding to Promote the Conservation of Migratory Birds (BLM and USFWS 2010)	Pursuant to the Memorandum of Understanding to Promote the Conservation of Migratory Birds (BLM and USFWS 2010), the potential effects of the proposed project on migratory birds are evaluated in **Section 3.9**. Design features (**Appendix B**) have been developed to avoid impacting nesting migratory birds during construction.
Migratory Bird Treaty Act of 1918 (as amended)	Design features (**Appendix B**) have been incorporated into the proposed project requiring pre-disturbance migratory bird nesting surveys if surface disturbance is unavoidable during the migratory bird nesting season. The proposed project would not result in the "take" of migratory birds, their eggs, or their nests.

LAW, REGULATION, POLICY, OR EXECUTIVE ORDER	STATEMENT OF CONFORMANCE
National Bald Eagle Management Guidelines (USFWS 2007)	The proposed project would not result in the "take" of bald eagles or impact bald eagles. All of the action alternatives would be in conformance with the guidelines.
National Forest Management Act of 1976	In accordance with the National Forest Management Act of 1976, this EIS evaluates the proposed project in terms of its conformity with the Forest Plan (USFS 1986) and its potential effects on the various resources contributing to the multiple uses for which the NFS land in the project area is managed.
National Historic Preservation Act of 1966 (as amended)	In accordance with Section 106 of the NHPA, the potential effects of the proposed project on historic properties listed on the NRHP or eligible for such listing were evaluated prior to signing the ROD. See agency consultation summary (**Section 4.2.3**). The Forest Service is currently in the process of preparing an MOA and an HPTP pursuant to the NHPA.
Native American Graves Protection and Repatriation Act of 1990	Design features (**Appendix B**) require the procedures of the Native American Graves Protection and Repatriation Act of 1990 be implemented in the event that Native American human remains are encountered during construction. Native American Tribes would be consulted in the event that Native American human remains are encountered.

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CHAPTER 4 CONSULTATION AND COORDINATION

This section presents a summary of public participation in the scoping process and development of the EIS; a list of the persons, groups, agencies, or tribes consulted in the preparation of the EIS; a list of preparers; and the distribution list.

4.1 PUBLIC PARTICIPATION SUMMARY

4.1.1 Public Scoping and Meetings

The NOI was published in the *Federal Register* (Volume 76, Number 224) on November 21, 2011, thus initiating the public scoping period at the beginning of the EIS process to identify potential issues and concerns associated with the Proposed Action (i.e., Stateline Alternative) (see **Section 2.11.1**). The NOI provided dates, times, and locations of public scoping meetings and where to send scoping comments. A copy of the NOI is included in the EIS Scoping Summary Report dated May 15, 2012 (USFS 2012c).

Concurrent with the release of the NOI, the USFS issued a press release notifying local newspaper, television and radio media of the intent to develop an EIS and hold scoping meetings. Newspapers included the *Reno Gazette-Journal*, *Sierra Sun* and *Sierra County Prospect*. A one-page fact sheet was developed and made available at the front counter of the Humboldt-Toiyabe National Forest Supervisor's office in Sparks, Nevada.

The USFS developed a Scoping Notice as a means to inform the public through the mail about the project and encourage attendance at public scoping meetings. The notice provided dates and times of public scoping meetings and contacts for information and submittal of scoping comments. The Scoping Notice was mailed to individuals and organizations consisting of property owners in the project area, government agencies, and interested parties on November 14, 2011, and February 2, 2012. The second mailing was needed to inform residents near the California Substation that were inadvertently missed during the November mailing.

Public scoping meetings were held on December 6, 2011, December 8, 2011, and February 23, 2012. The first meeting was in Cold Springs, Nevada, and the other two meetings were held in Verdi, Nevada. Each meeting was held using an open house format where attendees were encouraged to walk around, meet representatives from the USFS, JBR (third-party contractor who would assist in developing the EIS), and NV Energy, view poster boards, and review aerial imagery of the alternatives. Although some attendees did not record their name on the scoping meeting sign-in sheets, sign-in sheets recorded 13 participants during the December 6, 2011, meeting, 21 participants during the December 8, 2011, meeting, and 26 participants during the February 26, 2012, meeting.

To inform the community of the project and encourage participation in the EIS process and public scoping meetings, the USFS also gave a short presentation to the Sierra County Board of Supervisors, Washoe County Commission, Reno City Council, and several neighborhood advisory boards. Presentations that were made after the December 2011 scoping meetings included a short summary of comments heard during scoping meetings.

4.1.2 Scoping Response

The USFS accepted written scoping comments by mail, e-mail, hand-delivery, and at public scoping meetings throughout the scoping period November 21, 2011, through March 5, 2012. Over 450 separate comments were compiled from 75 comment documents (e.g., letters, cards, e-mail). The majority of comments received were from individuals; however, comments were also received from government agencies, non-governmental organizations, and tribes. Scoping comments are summarized in the EIS Scoping Summary Report dated May 15, 2012 (USFS 2012c).

4.1.3 Draft EIS Public Meetings

A Notice of Availability of the Draft EIS was published in the *Federal Register* on December 12, 2014 (Federal Register Volume 79, Number 239) beginning the 45-day public comment period. Concurrently, a notice identifying the availability of the Draft EIS and the commencement of the public comment period was mailed to agencies that were cooperators on the project; as well as interested organizations, businesses, and individuals. The USFS hosted one public meeting on January 13, 2015, in Reno, Nevada. Twenty-six attendees signed in at the meeting. In addition, the USFS made a presentation to the North Valleys Citizen Advisory Board summarizing conclusions of the Draft EIS on February 9, 2015.

4.1.4 Draft EIS Responses

The USFS accepted written comments throughout the comment period from December 12, 2014, through January 26, 2015. Over 178 comments were compiled from 38 comment letters (e.g., letters, cards, and e-mails). The majority of comments received were from individuals; however, comments were also received from government agencies, non-governmental organizations, and tribes. Additions and revisions are reflected in this Final EIS in response to comments received on the Draft EIS. The responses to all comments are found in **Appendix D**. Public comment letters are available for viewing through the USFS website:

https://cara.ecosystem-management.org/Public//ReadingRoom?Project=36656

4.1.5 Public Participation Opportunities

Notification of the proposed project was originally published on the USFS Schedule of Proposed Actions (SOPA) on November 21, 2011. The SOPA is a list of proposals that will begin or are undergoing environmental analysis and documentation by the USFS. The SOPA listing for the proposed project included a link to a project website, which the USFS created to make project information more accessible to the public:

http://www.fs.usda.gov/goto/htnf/bordertownline

The project website includes links to project maps, the Scoping Notice, the Preliminary Plan of Development, technical reports, as well as links to instructions on how to file a formal objection in accordance with the USFS objection regulations.

4.2 CONSULTATION SUMMARY

4.2.1 Endangered Species Act Section 7 Consultation

Consultation with the USFWS is required under Section 7 of the ESA. Section 7 directs all federal agencies to use their existing authorities to conserve threatened and endangered species and, in consultation with the USFWS, to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. Section 7 applies to management of federal lands as well as other federal actions that may affect listed species, such as federal approval of private activities through the issuance of federal permits, licenses, or other actions.

Informal consultation included a written request to the USFWS, as required in 50 CFR 402.12(c), for a list of threatened, endangered, and proposed species known or likely to occur in the analysis area (File No. 2012-SL-0230; Consultation Tracking Number: 08ENVD00-2013-SLI-0355; and Event Code: 08ENVD00-2015-E-00421, July 23, 2015). Three species were included on the list: Cui-ui (*Chasmistes cujus*), Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi),* and Webber ivesia (*Ivesia webberi*). Additionally, conversations among the USFS staff, consultants, and USFWS staff occurred throughout the analysis process. Prior to the listing and designation of critical habitat for Webber ivesia, the USFS botanist coordinated and consulted with the USFWS botanist, sharing survey results and conducting field visits to populations and unoccupied potential habitat found in the project area. Design features to protect Webber ivesia (Section 1.2.2) were developed in coordination with the USFWS. The USFS determined that the Agency Selected Alternative would not affect Lahontan cutthroat trout, cui-ui, and Webber ivesia, and would not affect critical habitat for Webber ivesia.

4.2.2 Tribal Consultation

Consultation between the USFS and Native American Tribes is in accordance with the NHPA, the American Indian Religious Freedom Act, the Native American Graves Protection and Repatriation Act, Executive Order 13007 (American Indian sacred sites), and Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments). Executive Order 13175 states, "Each agency shall have a process to ensure meaningful and timely input by Tribal officials in the development of regulatory policies that have Tribal implications."

In letters dated November 10, 2011, the USFS sent a draft NOI and Scoping Notice to the Reno-Sparks Indian Colony, the Washoe Tribe of Nevada and California, and the Pyramid Lake Paiute Tribe. The USFS met with the Washoe Tribe of Nevada and California on February 22, 2011, and the Reno-Sparks Indian Colony on August 8, 2011, to discuss the project during face-to-face consultation meetings. At the request of the Reno-Sparks Indian Colony, the USFS hosted a field trip to the project site on July 10, 2012. On January 16, 2015, at the request of the Washoe Tribe of Nevada and California, a field trip was made to the project site. In 2015, USFS provided a project updates by mail, phone, and/or e-mail to the Tribes and requested continued consultation.

In a letter dated February 27, 2015, the Reno-Sparks Indian Colony disclosed the presence of a potential TCP within the project area. Designation of a TCP is a federal agency action, and no agency has completed a TCP listing in the project area. With input from the Reno-Sparks Indian Colony, the Washoe Tribe of Nevada and California, and the Pyramid Lake Paiute Tribe, the USFS conducted an ethnographic study, identifying potential sites and evaluating potential effects of the Peavine/Poeville Alternative. From March 2016 through October 2017, the USFS requested input from the Tribes, requesting reviews of the draft report and concurrence on a determination of no adverse effects to TCP-eligible sites.

By October 2017, the Tribes reached concurrence with USFS's determination of effects of the Peavine/Poeville Alternative. USFS will seek tribal input on the development of the HPTP. The USFS will continue tribal consultation through the completion of the NEPA process.

4.2.3 National Historic Preservation Act Section 106 Consultation

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. Historic properties are properties that are included in the NRHP or that meet the criteria to be eligible for inclusion in the NRHP. A Cultural Report for the transmission line corridors and an addendum addressing road widening corridors were submitted to the Nevada and California SHPOs for consultation and concurrence. Concurrently, a ethnographic report evaluating potential effects of the Agency-Preferred Selected Alternative to TCP-eligible sites was submitted. The California and Nevada SHPOs concurred with the determination of eligibility and effects on October 20, 2017, and November 17, 2017, respectively. A copy of the letters from the California and Nevada SHPO are available in the project record.

4.3 DISTRIBUTION OF THE FINAL EIS AND DRAFT RECORD OF DECISION

This Final EIS and a draft ROD are being made available to the public and agencies for a 45-day objection period, initiated by publication of a legal notice in the Reno Gazette Journal, newspaper of record. This Final EIS and the draft ROD are also available online at:

http://www.fs.usda.gov/goto/htnf/bordertownline

Hard copies of the Final EIS and the draft ROD are available for review at the following locations:

Northwest Reno Library
2325 Robb Drive
Reno, Nevada 89523

Verdi Library
270 Bridge Street
Verdi, Nevada 89439

North Valleys Library
1075 North Hills Boulevard, #340
Reno, Nevada 89506

4.4 LIST OF REVIEWERS, CONTRIBUTORS, AND PREPARERS

The USFS Interdisciplinary Team members and other representatives from cooperating agencies were responsible for reviewing the EIS and are listed in **Table 4.4-1**.

Table 4.4-1 USFS and Cooperating Agency Interdisciplinary Team

NAME	LOCATION/OFFICE	ROLE
Lead Agency – USFS Humboldt-Toiyabe National Forest		
Marnie Bonesteel	HTNF Supervisor's Office	USFS Project/Interdisciplinary Team Lead
Jim Winfrey	HTNF Supervisor's Office	NEPA Specialist
Maureen Easton	Carson Ranger District	Wildlife, Special Status Wildlife, Noxious Weeds
Amanda Brinnand	Carson Ranger District	Vegetation, Forest Product Resources
Troy Jorgenson	Carson Ranger District	Roads and Transportation
Dave Reis	HTNF Supervisor's Office	Visual Resources
Nancy Brunswick	Forest Service	Visual Resources
Sally Champion	Carson Ranger District	Water Resources and Soils
Elizabeth Bergstrom	Carson Ranger District	Special Status Plants (2011 to 2015)
Timothy Kellison	Carson Ranger District	Special Status Plants
Daniel Morris	Carson Ranger District	Recreation
Michael Wilde	Carson Ranger District	Wildfire and Fuels Management
Joseph Garrotto	Carson Ranger District	Cultural Resources (2011 to 2015)
Kalie Crews	Carson Ranger District	Cultural Resources
Cooperating Agency – Bureau of Land Management		
Jill Poulsen	Eagle Lake Field Office	BLM Project Lead (2011 to 2016)
Daniel Ryan	Eagle Lake Field Office	BLM Project Lead
Cooperating Agency – Nevada Department of Wildlife		
Mark Freese	Reno, Nevada	Wildlife, Special Status Wildlife
Cooperating Agency – Truckee Meadows Planning Agency		
Sienna Reid	Reno, Nevada	Alternatives, Land Use
Cooperating Agency – Sierra County		
Brandon Pangman	Downieville, California	Alternatives, Land Use
Cooperating Agency – Washoe County		
Bill Whitney	Reno, Nevada	Alternatives, Land Use
Cooperating Agency – City of Reno		
Vern Kloos	Reno, Nevada	Alternatives, Land Use

Stantec Consulting Services Inc., formerly JBR Environmental Consultants, Inc., is a third-party contractor for this EIS. Stantec and its subcontractors (**Table 4.4-2**) prepared resource specialist reports detailing the affected environment, analyzing impacts to these resources from the No Action Alternative and action alternatives.

Table 4.4-2 Third-Party Contractor Preparers

NAME	LOCATION	ROLE/RESOURCE	EDUCATION	YEARS' EXPERIENCE
Stantec Consulting Services Inc.				
Nancy Kang	Reno, Nevada	Project Manager, Water Resources and Soils, Vegetation, Special Status Plants	B.S., Botany	27
Greg Brown	Sandy, Utah	Assistant Project Manager	B.S., Natural Resource Management	25
George Dix	Reno, Nevada	Visual Resources, Recreation, Vegetation, Wildfire and Fuels Management, Cumulative Effects, GIS analysis, (2011 to 2016)	B.S., Environmental Resource Management	12
Wendy Broadhead	Reno, Nevada	Wildlife, Special Status Wildlife	B.S., Plant Science; B.A., Anthropology; B.A., Art	29
Steven Morton, AICP	Reno, Nevada	Land Use and Private Property, Roads and Transportation	B.A., General Studies	14
Catherine Schnurrenberger	Reno, Nevada	Vegetation, Special Status Plants	M.S., Hydrology; B.S., Range and Wildlands Science	28
Aaron Hoberg, EIT	Reno, Nevada	Air Quality (2011 to 2015)	B.S., Chemical Engineering	8
Tracy Shane	Elko, Nevada	Vegetation (2014)	M.S., Environmental and Natural Resource Sciences; B.S., Animal Science	16
Jenni Prince-Mahoney	Mount Aukum, California	Cultural Resources	NEPA Specialist Certification; B.A., Anthropology	25
Jason Trook	Reno, Nevada	GIS analysis, mapping, data management	M.S., Geography; B.A., Anthropology; GIS Certification	14
Christine Johnson	Reno, Nevada	GIS analysis, mapping, data management	B.S., Geology	33

NAME	LOCATION	ROLE/RESOURCE	EDUCATION	YEARS' EXPERIENCE
Nick Faust	Sandy, Utah	GIS analysis, mapping, data management	B.S., Geography	5
Allison Araya	Reno, Nevada	GIS analysis, mapping	Bachelors of Environmental Design, Architecture	8
Far Western Anthropological Research Group, Inc.				
D. Craig Young, PhD	Carson City, Nevada	Cultural Resources	Ph.D., Anthropology M.A., Anthropology	29
Vickie Clay	Carson City, Nevada	Cultural Resources	M.S., Quaternary Studies (Archaeology, Quaternary Geology) B.S. Geology (Anthropology Minor)	40
Albert Garner	Carson City, Nevada	Cultural Resources	B.S., Anthropology	12
Enertech Consultants				
Christopher Hooper	Campbell, California	Electric and Magnetic Fields	B.A., Computer Mathematics	31
Asher Sheppard Consulting				
Asher Sheppard, PhD	Santa Rosa, California	Electric and Magnetic Fields	Ph.D., Physics M.S., Physics	41
Electrical Consultants, Inc.				
Crystal Kuntz, PE, MBA	Billings, Montana	Purpose and Need	Master of Business Administration B.S., Civil Engineering	19
Dave Leary, PE	Billings, Montana	Purpose and Need	M.S., Electrical Engineering B.S., Electrical Engineering	22

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CHAPTER 5 REFERENCES, ACRONYMS, GLOSSARY, AND INDEX

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5.2 ACRONYMS AND ABBREVIATIONS

°F	Fahrenheit
$\mu g/m^3$	Micrograms Per Cubic Meter
ACGIH	American Conference of Governmental Industrial Hygienists
AMSL	Above Mean Sea Level
APE	Area of Potential Effect
BLM	Bureau of Land Management
BMP	Best Management Practice
BP	Before Present
CAA	Clean Air Act
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIAA	Cumulative Impact Analysis Area
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon-Dioxide Equivalent
COM	Construction, Operation, and Maintenance
CPUC	California Public Utilities Commission
CWA	Clean Water Act of 1977, as amended
EIS	Environmental Impact Statement
EMF	Electric and Magnetic Fields
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
Forest Plan	Toiyabe Forest Plan, as amended
FSH	Forest Service Handbook
GHG	Greenhouse Gases
GIS	Geographic Information System
HPTP	Historic Properties Treatment Plan
Hz	Hertz
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEEE	Institute of Electrical and Electronics Engineers
JBR	JBR Environmental Consultants, Inc.
KOP	Key Observation Point
kV	Kilovolt
LCT	Lahontan Cutthroat Trout
LRWQCB	Lahontan Regional Water Quality Control Board
MBTA	Migratory Bird Treaty Act of 1918
MIS	Management Indicator Species
MOA	Memorandum of Agreement
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code

NDEP	Nevada Division of Environmental Protection
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NFMA	National Forest Management Act
NFS	National Forest System
NHPA	National Historic Preservation Act of 1966, as amended
NNHP	Nevada Natural Heritage Program
NO_2	Nitrogen Dioxide
NOA	Notice of Availability
NOI	Notice of Intent
NPDES	National Pollution Discharge Eliminating System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRS	Nevada Revised Statutes
O_3	Ozone
OHV	Off-Highway Vehicle
PAC	Protected Activity Center
$PM_{2.5}$	Particulate Matter 2.5 Microns
PM_{10}	Particulate Matter 10 Microns
ppb	Parts Per Billion
ppm	Parts Per Million
RMP	Resource Management Plan
ROD	Record of Decision
ROW	Right-of-Way
SHPO	State Historic Preservation Office
SPPC	Spill Prevention, Control, and Countermeasure
SNFPA	Sierra Nevada Forest Plan Amendment
SNYLF	Sierra Nevada Yellow-Legged Frog
SO_2	Sulfur Dioxide
SOI	Sphere of Influence
SOPA	Schedule of Proposed Actions
SUP	Special Use Permit
SWPPP	Storm Water Pollution Prevention Plan
TCP	Traditional Cultural Property
TMRPA	Truckee Meadows Regional Planning Agency
USC	United States Code
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VLC	Verdi Lumber Company
VQO	Visual Quality Objective
VRM	Visual Resources Management

5.3 GLOSSARY

Ambient air. Any unconfined portion of the atmosphere; the outside air.

Analysis Area. The geographical context used for the analysis of direct and indirect effects on an environmental resource.

Best Management Practices (BMPs). Term used to describe a type or types of water pollution control. The term is often used with reference to the techniques, measures, or structural controls used to manage the quantity and improve the quality of stormwater runoff from construction sites.

Centerline travel road. Construction travel route between pole sites, which ideally will be located along the center of the ROW. To avoid steep terrain, the centerline travel road may be sited anywhere within the variable-width corridor.

Construction, Operation, and Maintenance (COM) Plan. Comprehensive guide used during construction, as well as for operation and maintenance of a transmission line that includes key contacts; maps of the transmission line alignment and ancillary facilities; access maps, copies of permits and associated permit conditions; and specific implementation plans for restoration, fire prevention, emergency response, protection of cultural resources, protection of sensitive species, protection of wetlands and streams, stormwater pollution prevention, fencing, and weed management.

Designated road. An NFS road that is designated for motor vehicle use pursuant to 36 CFR 212.51 on a motor vehicle use map.

Designated trail. An NFS trail that is designated for motor vehicle use pursuant to 36 CFR 212.51 on a motor vehicle use map; also referred to as a motorized trail in this EIS.

Diameter at Breast Height (DBH). The diameter of a standing tree trunk as measured approximately 4.5 feet above ground surface.

Easement. The right to use the real property of another, public or private, for a specific interest or purpose, such as for power lines, water pipelines, and other utilities.

Ephemeral stream. Stream channel that contains water only during and immediately after precipitation events.

Forested habitat. Type of wildlife habitat dominated by trees consisting of aspen, mixed conifer-fir, plantation, eastside pine, and/or Jeffery pine.

Forest product resources. Commodities of economic or other value that are obtained from harvesting trees, such as sawtimber, firewood, and Christmas trees.

Forest road or trail. A road or trail wholly or partly within or adjacent to and serving NFS land that the USFS determines is necessary for the protection, administration, and utilization of the NFS land and the use and development of its resources.

Getaway. The segment of a power line between a substation facility and the first pole structure from the substation. A getaway is essentially the segment of a power line that enter/exits a substation facility.

Habitat. The area, place, or natural environment in which an organism or biological population normally lives or occurs. A habitat is made up of physical factors such as soil, moisture, range of temperature, and availability of light as well as biotic factors such as the availability of food and the presence of predators.

Historic Properties Treatment Plan (HPTP). A treatment is a physical intervention carried out to achieve a historic preservation goal. Methods include preservation, rehabilitation, reconstruction, and restoration. A Historic Properties Treatment Plan is a document that outlines the specific treatments that will be implemented for a particular historic property or properties.

Insulator. A material with negligible electrical or thermal conductivity, such as glass or porcelain.

Interdisciplinary Team. Group of USFS resource or subject matter specialists from various disciplines that are assembled to address effects of proposed land-management actions or decisions.

Intermittent stream. Stream that contains water seasonally during wet portions of the year.

Memorandum of Agreement (MOA). A document that outlines agreed-upon measures that the agency will take to avoid, minimize, or mitigate the adverse effects to historic properties. After a Memorandum of Agreement is executed, the agency proceeds with its undertaking under the terms of the agreement. The Memorandum of Agreement plays a critical role in documenting a federal agency's commitment to carry out and conclude their responsibilities under Section 106 of the National Historic Preservation Act.

Motorized trail. See "Designated trail".

NFS road. A forest road other than a road which has been authorized by a legally documented ROW held by a state, county, or other local public road authority.

NFS trail. A forest trail other than a trail which has been authorized by a legally documented ROW held by a state, county, or other local public road authority.

Occupied habitat (in reference to Dog Valley ivesia or Webber ivesia). For population occurrences on NFS land, the area where the species is present and a 500-meter buffer from the edge of the occurrence. The 500-meter buffer would accommodate pollinators associated with the occurrence.

Perennial stream. Stream that typically contains water continuously, throughout the year.

Potential habitat (in reference to Webber ivesia). Low sage plant communities with specific habitat attributes including the presence of a rocky pavement surface; presence of an argillic soil horizon; plant community composition and presence of associated plants; topographic position of the site; and, known elevation range of the species.

Project Area. General geographical location where the proposed project would occur.

Restoration. The process of returning or bringing back the original, former, or normal state or conditions of a site.

Right-of-way (ROW). An easement, lease, permit, or license that grants the right of access or a designated use, such as power line or water pipeline, to cross over, under, or through the land of another, including public or private lands.

Ruderal species. A plant that is adapted to disturbance, such as fire.

Storm Water Pollution Prevention Plan (SWPPP). A site-specific document that identifies the potential sources of stormwater pollution, describes stormwater control measures, such as best management practices (BMPs), to reduce or eliminate the identified pollutants, and that also identifies procedures operators will implement to comply with specific permit conditions. A SWPPP can be provided for a number of circumstances, but the most common is to address stormwater pollutants and runoff during construction activities.

Transmission line clearance area. The area beneath and to either side of overhead conductors and power poles from which trees and other obstructions must be removed to provide the clearance required by federal and state regulations.

Unauthorized road or trail. A road or trail that is not a forest road or trail or an authorized temporary road or trail and that is not included in a forest transportation atlas.

Under-build. Construction method in which a transmission line and a lower voltage distribution power line are strung on the same pole structures, with the distribution line being placed below the transmission line, lower on the pole structures.

Variable-Width Corridor. Area centered on the proposed transmission line in which all new access roads, pole sites, wire setup sites, staging areas, skid trails and landings, and all other construction-related surface disturbance would occur other than disturbance for widening existing roads. The corridor would measure 300 feet wide where slopes are 10 percent or less, and 600 feet wide where slopes are greater than 10 percent.

Watershed. Area of land that contains a common set of streams and rivers and topography that all drain surface water into a single larger body of water, such as a larger river.

5.4 INDEX

APPENDIX A

PROPOSED TRANSMISSION LINE AND SUBSTATION MODIFICATIONS

Proposed Transmission Line

Single pole structures would be approximately 65 to 90 feet tall, dependent on terrain and obstructions (**Figure A1**). The two-pole H-frame structures would consist of two poles connected by an “X-brace". A horizontal cross-arm member would be mounted above the "X-brace" and would support the electrical transmission conductors (**Figure A2**). The three-pole dead end/angle structures would consist of three inline poles. The electrical transmission conductors would be connect to insulators attached directly to the pole structure and the conductor jumper around the poles on a horizontal cross-arm member mounted to the three poles (**Figure A3**). The two-pole H-frame structures and the three-pole dead end/angle structures would be approximately 50 to 90 feet tall, depending on terrain or obstructions. Support structures taller than 90 feet may be required at isolated locations to accommodate road crossings, unique geographical features, or other existing overhead utilities. Weathered steel, characterized by a stable, rust-like finish that closely resembles the color of wood poles, would be used for all pole structures.

The pole structures would carry double bundled aluminum conductor steel-reinforced cables that are approximately 1.1 inches (954 thousand circular mils) in diameter. All conductor wires would be at least 22 feet above the ground surface. A shield wire approximately 0.375 to 0.75 inch in diameter would be placed along the top of each pole to protect the transmission line from lightning. Copper ground wires would be affixed to each pole and connected to ground rods that would be buried in the excavation for each pole. The ground wires and rods would enable all of the poles to be electrically grounded. The transmission line would be designed and constructed to meet or exceed the requirements of the National Electric Safety Code; Nevada Administrative Code 704.450: Regulation of Public Utilities, which adopts National Electric Safety Code by reference; and California Public Utilities Commission General Order Number 95: Rules for Overhead Electric Line Construction (State of California, 1998)[1].

Proposed Substation Modifications

The Bordertown Substation would be partially rebuilt and modified with the addition of new components in order to accommodate the transmission line, resulting in approximately 3.7 acres of expansion on BLM-administered public land. **Figure A4** illustrates the changes that would occur at the Bordertown Substation.

To accommodate the new transmission line, parts of the California Substation would be rebuilt and new components would be added. A new 120 kV bus would be constructed at the substation and a new 120 kV transmission line terminal, including all associated switches, telecommunications and protections would be installed. All needed modifications would be accommodated within the existing fenced area of the substation, and the footprint of the existing substation would not be expanded. **Figure A5** illustrates the changes that would occur at the California Substation; however, the exact layout would depend on the selected alternative.

[1] State of California. (1998). *Rules for Overhead Electric Line Construction*. Prescribed by the Public Utilities Commission of the State of California.

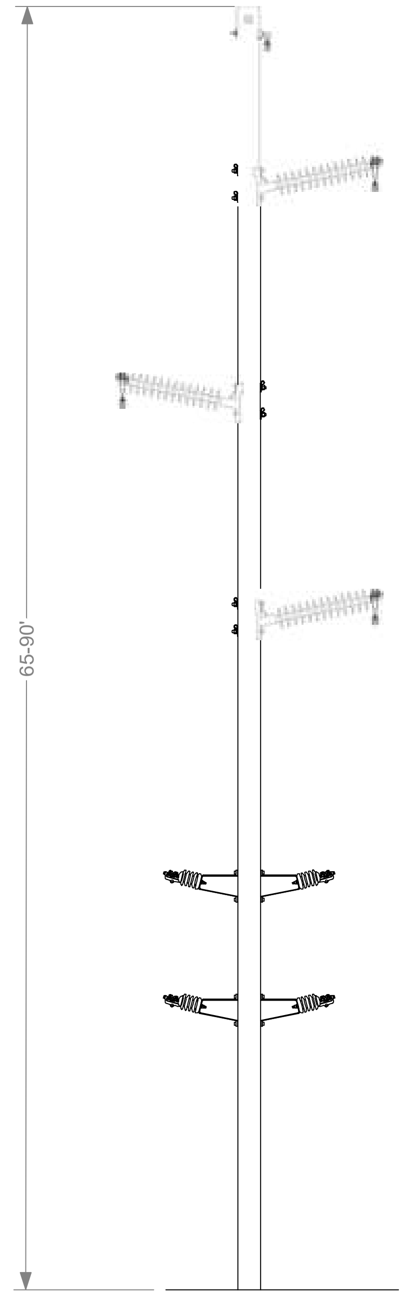

Figure A1
Single Pole Structure Illustration
Bordertown to California
120 kV Transmission Line EIS

X:\NV\Clients\NV_Energy\Bordertown_to_California_EIS\MXDs\EIS\Chapter_1\Figure A-2 H-Frame Structure Illustration.mxd Revised: 1/10/2014

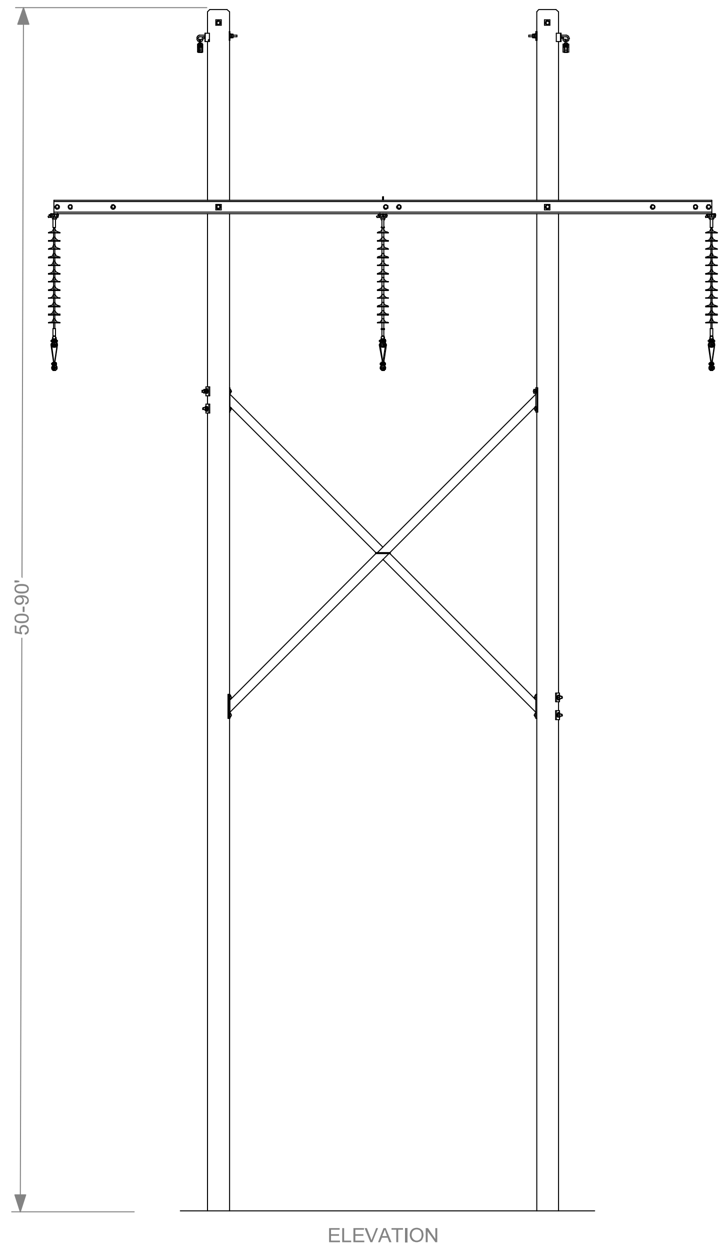

Figure A2
H-Frame Structure Illustration
Bordertown to California
120 kV Transmission Line EIS

X:\NV\Clients\NV_Energy\Bordertown_to_California_EIS\MXDs\Figure A-3 Pole Dead end Angle Structure Illustration.mxd   Revised: 1/10/2014

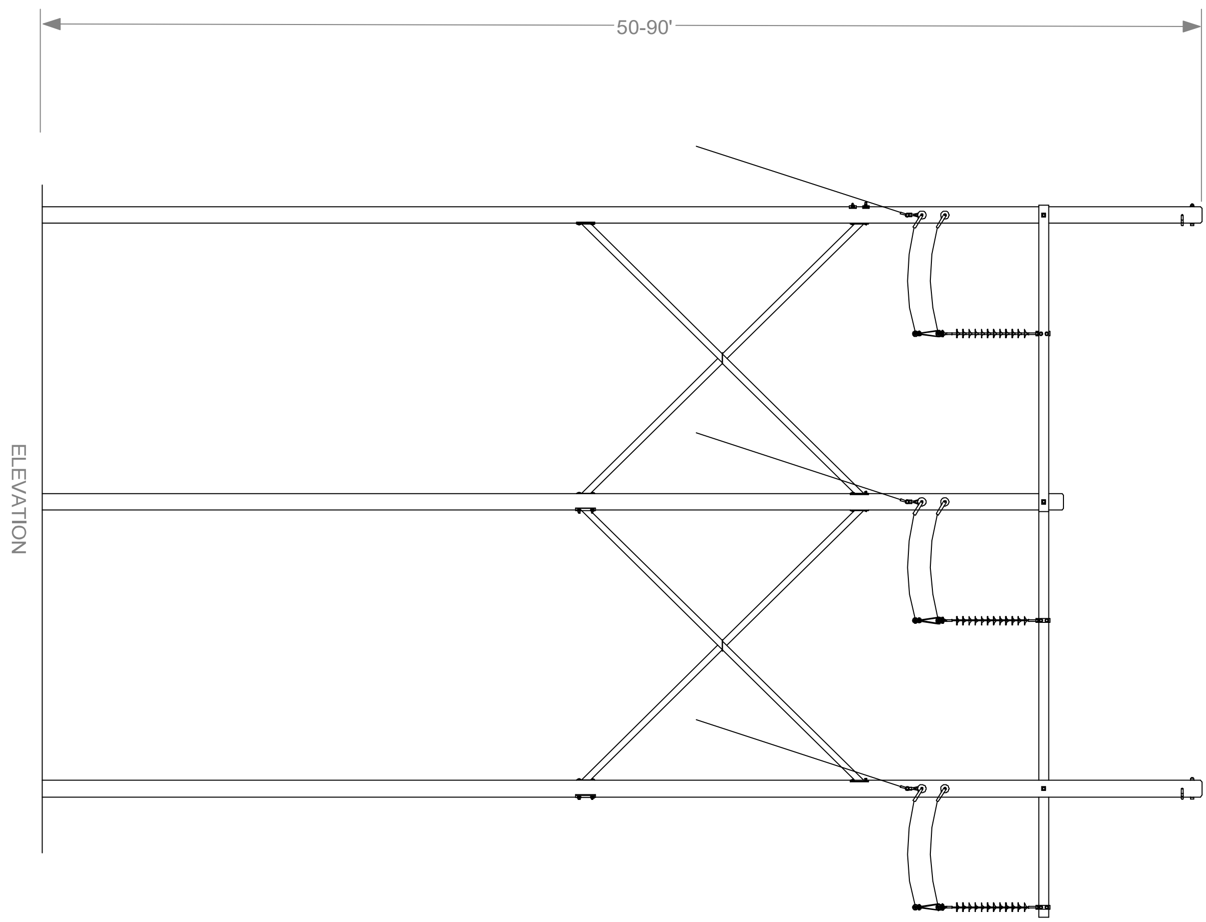

Figure A3
3-Pole Dead-end/Angle Structure Illustration
Bordertown to California
120 kV Transmission Line EIS

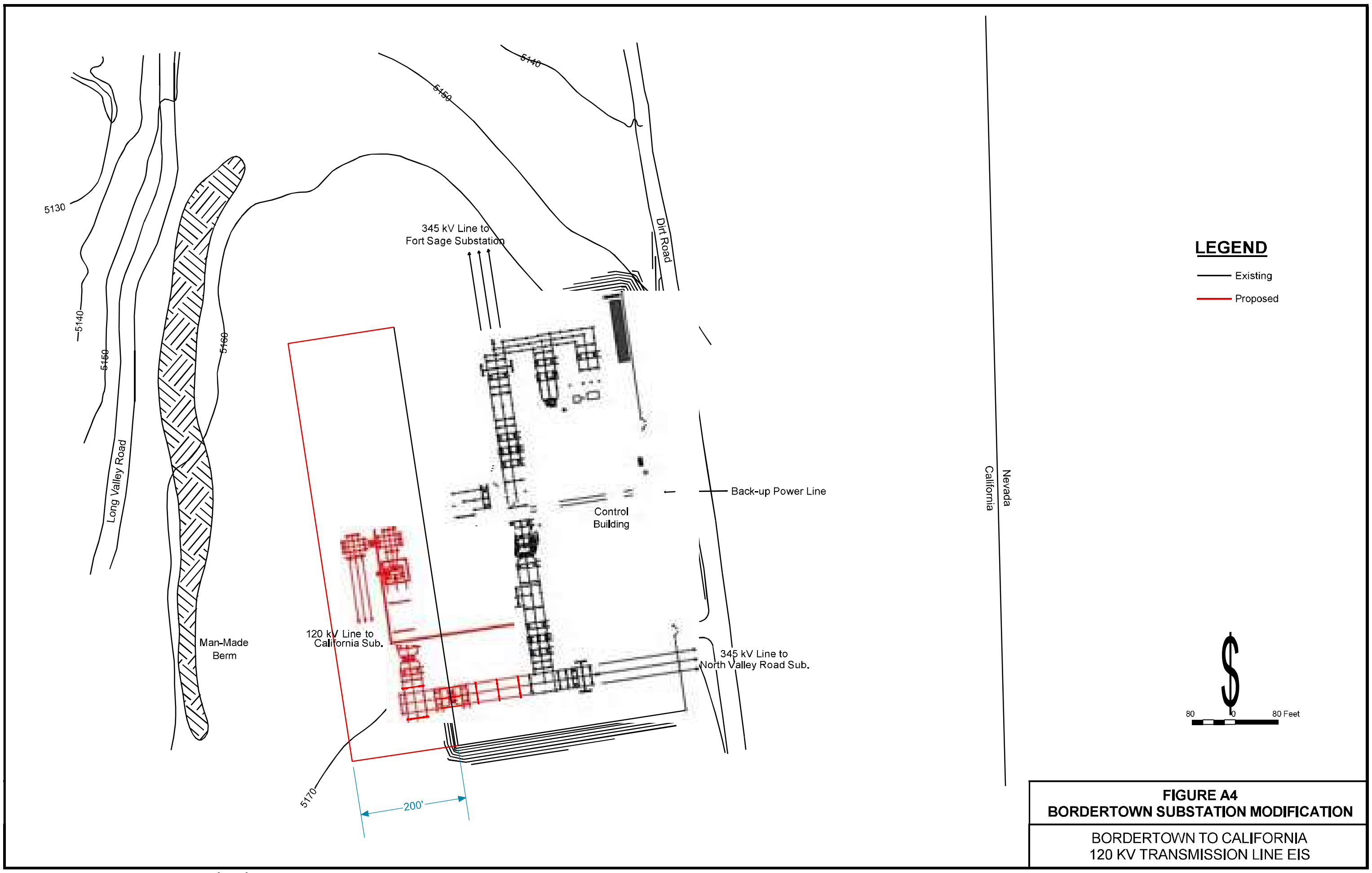

FIGURE A4
BORDERTOWN SUBSTATION MODIFICATION

BORDERTOWN TO CALIFORNIA
120 KV TRANSMISSION LINE EIS

Source: NV Energy, 2013; Modified by JBR Consultants, Inc., 2014

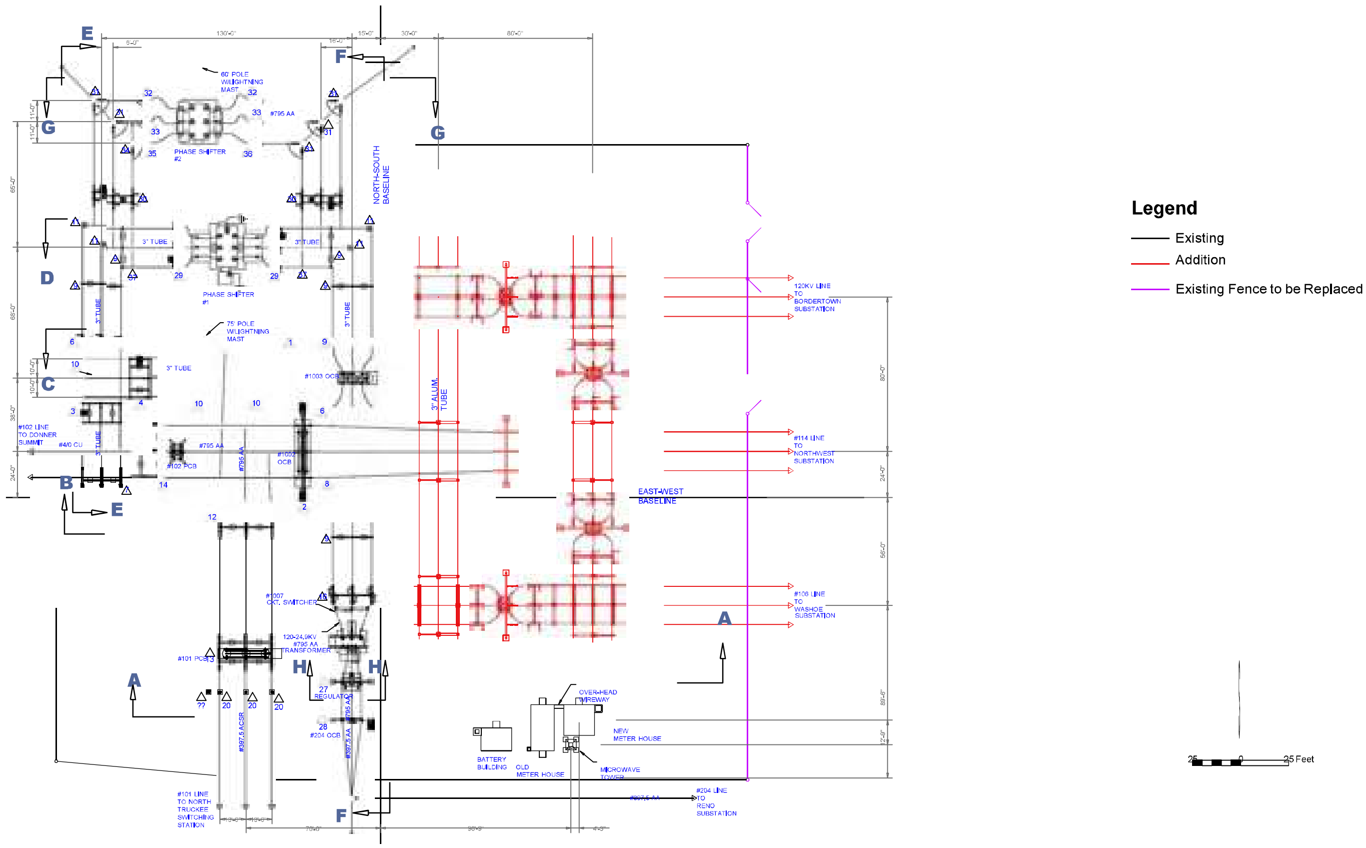

Figure A5
California Substation Modification
Bordertown to California
120 kV Transmission Line EIS

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APPENDIX B

PROJECT DESIGN FEATURES

1.0 PROJECT DESIGN FEATURES

1.1 DESIGN FEATURES COMMON TO ALL ACTION ALTERNATIVES

Under any of the action alternatives, project design features will be implemented during construction and maintenance to reduce environmental impacts. Design features that will be implemented specific to an alternative are listed in **Section 1.2.**

General Practices (GP)

GP 1. All environmentally sensitive areas (i.e., culturally sensitive areas, meadows, and special status plant populations) will be temporarily fenced during construction for avoidance.

GP 2. Prior to construction, all construction personnel will be instructed on the protection of sensitive biological and cultural resources that have the potential to occur on-site by qualified personnel.

GP 3. Construction activities may require temporary access through existing fences and gates on public and private land. Fencing will be replaced when construction activities are completed. Replacement fencing will be built to agency or landowner specifications, consistent with the fencing that was removed. During construction, fences with open gates will remain open and fences with closed gates will remain closed. Fences crossed during construction will be braced and secured prior to cutting the fence to prevent slackening of the wire.

GP 4. If blasting is required within proximity to the Kinder Morgan buried gas pipeline located next to Dog Valley/Henness Pass Road between Verdi and "Summit One", NV Energy will coordinate with Kinder Morgan and use a qualified licensed blaster.

GP 5. Concrete wash out stations will be pre-approved and the water will be captured and disposed off National Forest System Lands and at an approved facility.

GP 6. Long-term equipment staging and storage areas will not be located on NFS land.

GP 7. Near sensitive receptors (i.e., occupied residences), noise-generating activities (e.g., blasting) will be limited to Monday through Friday from 7:00 a.m. to 7:00 p.m. Otherwise, work may occur 12 hours per day any day of the week.

GP 8. Annual inspection will be made via helicopter or from the ground by walking to pole structures from existing roads.

GP 9. Signs, flagging, or other readily visible markings will be used to indicate the presence of guy wires to reduce the potential for people and wildlife to run into the wires.

Noxious Weeds (NW)

NW 1. Noxious weeds occurring on either the Nevada or California State list will be mapped and the full extent of the population will be treated prior to and following construction. Inventory and treatment areas will extend 100 feet from the ROW and all ground disturbed by project activities. Project disturbances include roads proposed for widening, construction access roads, equipment and material staging areas, and vegetation removal, including skid trails and landings.

NW 2. Monitoring and continued treatment in areas that were treated prior to construction will commence the first full growing season after project implementation. Weed treatment will continue until disturbed areas are successfully restored (see restoration criteria). Weed treatment will continue during maintenance activities and within the ROW.

NW 3. All equipment utilized off of existing roads and motorized trails will be cleaned with a high-pressure power washer of all mud, dirt, and plant parts. Following cleaning, equipment will be inspected for plant parts (e.g., leaves, stems, seeds). Equipment will be cleaned and inspected again prior to re-entry if it leaves the project site. Equipment will be inspected and cleaned again before moving from an area within the project area with known noxious weed species. Inspections will be completed and documented by qualified personnel such as a USFS noxious weed specialist or USFS botanist.

NW 4. When cut and fill is required to create log landings, topsoil will be stockpiled and covered to prevent weeds from establishing in the soil. This topsoil will be re-spread during restoration of the landings.

NW 5. Staging areas will not be located in weed infested areas. Staging areas will be inspected by qualified personnel for pre-approved use to reduce the risk of introducing noxious weeds into the project area.

NW 6. Construction of access roads will not occur in areas heavily infested with noxious or invasive weeds.

NW 7. Restoration seed mixes will be certified as weed-free.

NW 8. All gravel and/or fill material will be certified as weed-free.

NW 9. NV Energy will coordinate with other county, state and federal agencies to address and treat landscape level infestations of invasive plant species.

NW 10. For invasive plants that can be effectively controlled through grubbing or manual removal, methods that prevent seed spread or re-sprouting will be used. If flowers or seeds are present, the weed will be pulled carefully to prevent seeds from falling and will be placed in an appropriate container for disposal. If flowers and seedheads are not present or are removed and disposed of as described above, the invasive plant may be pulled and placed on the ground to dry out.

NW 11. The appropriate method of control specific to the type of noxious weed will be used. Specific methods will be identified in the COM Plan.

Vegetation (VG)

VG 1. Placement of the ROW will avoid wherever possible, isolated groups of trees and/or groups of trees with an average diameter of dominant and co-dominant trees greater than 24 inches at breast height (dbh) as directed/approved by the USFS Silvilculturist.

VG 2. All trees measuring 8 inches or greater in dbh that need to be removed shall be identified and marked for removal by a USFS Forester or Silviculturist prior to felling on NFS land.

VG 3. For trees measuring 8 inches or greater in dbh, stump height shall not exceed 12 inches above ground level on the uphill side or 12 inches above natural obstacles. Trees less than 8 inches in dbh, stump heights shall not exceed 6 inches above ground level on the uphill side or 6 inches above natural obstacles.

VG 4. Trees identified for removal will be whole tree yarded to log landings for disposal. Permits and/or contracts shall be issued prior to felling any trees greater than 8 inches dbh. All logs and slash will be removed from NFS land within 6 weeks to reduce insect and disease infestations. Woodchips not needed for restoration will also be removed from NFS land within 6 weeks.

VG 5. Where removal of vegetation other than trees is unavoidable, the vegetation will be cut at ground level to preserve the root structure and allow for potential sprouting.

VG 6. All areas of temporary ground disturbance that result from the construction or maintenance of the project will be restored as required by the land management agency and per any applicable permits. Restoration will include restoring contours to their approximate pre-construction condition, stabilizing the area through seeding, mulching, placement of erosion control fabric, and installing erosion control features. Revegetation may include incorporation of chips into the soil, as needed. Erosion control includes installing cross drains and placing water bars in the road, as needed.

VG 7. Successfully restored areas will be defined as:

Reference sites will be pre-established and approved by the USFS. Reference sites will include plant communities that are representative of the ecological site and must include plant communities that are in a late-seral and ecologically functioning condition. Appropriate reference sites will be determined by collecting baseline cover data to indicate plant succession and community structure.

VG 8. Project implementation will comply with conditions in Lahontan Water Quality Control Board timber harvest waiver.

Herbicide Use (HE)

HE 1. Herbicides will be used in accordance with label instructions, except where project design features describe more restrictive measures. An herbicide use plan will be developed and included in the COM Plan.

HE 2. Prior to the start of application, all spray equipment will be calibrated to insure accuracy of the delivered amounts of herbicide. Equipment used during herbicide application will be regularly inspected to insure it is in proper working order.

HE 3. Herbicide spray applications will not occur when wind velocity is 5 miles per hour or greater to further minimize the potential for drift.

HE 4. Herbicide applications will not be conducted during rain or immediately following rain when soil is saturated or runoff or standing water is present. Application will occur only under favorable weather conditions, defined as:

a) 30% or less chance of precipitation on the day of application based upon National Weather Service weather forecasting for the Reno area;

b) If rain, showers or light rains are predicted within 48 hours, the amount of rain predicted shall be no more than ¼ inch of rain; and

c) Rain does not appear likely at the time of application.

HE 5. Preparation of herbicides for application, including mixing, filling of wands and rinsing of spray equipment, will take place outside of wetlands, meadows, riparian zones, wells and springs, and other sensitive sites, and more than 300 feet from surface water. Herbicide preparation will occur only on level, disturbed sites such as the interior of landings.

HE 6. A spill cleanup kit will be readily available whenever herbicides are transported or stored. A spill kit will be carried by the applicator at all times when using the wicking application method.

HE 7. Low nozzle pressure (<25 pounds per square inch), and a coarse spray (producing a median droplet diameter of >500 microns) will be used in order to minimize drift during herbicide applications.

HE 8. Prior to treatments in areas of concentrated public use, the public will be notified about upcoming herbicide treatments via posting signs.

HE 9. The herbicide spray nozzle will be kept as close to target plants as possible (within 20 inches) while achieving uniform coverage in order to limit overspray and drift to non-target vegetation.

HE 10. Where riparian vegetation communities occur, herbicide application will be limited to directed foliar spray or wiping methods and spray will be directed away from native vegetation.

HE 11. Herbicide treatments will not occur within 500 feet of sensitive plant occurrences.

HE 12. Herbicide application within wet meadows will be limited to treating invasive plant infestations that occupy less than 100 square feet. Herbicide applications will be limited to wiping techniques with aminopyralid, chlorsulfuron, and glyphosate and treatment of the following high priority species: Canada thistle (*Cirsium arvense*), yellow star thistle (*Centaurea solstitialis*), Russian knapweed *(Acroptilon repens)* or tall whitetop (*Lepidium latifolium*) which are difficult to eradicate with non-chemical means. Meadows will be surveyed for special status plant species prior to any chemical treatments and will be monitored post-treatment to determine effects to non-targeted vegetation.

HE 13. Herbicide application will not occur within the established buffers for aquatic features shown in **Table B-1**.

Table B-1 Minimum Buffers (ft) for Herbicide Application Near Aquatic Features

Herbicide	Application Method	Dry Aquatic Features	Streams[1] or Ditches with Water[2]	Wetland or Meadow
Aminopyralid	Spot & directed foliar spray	25	25	100
	Wiping	15	150	15
Chlorsulfuron	Directed foliar spray	25	100	100
	Wiping	15	15	15
Glyphosate	Directed foliar spray or drizzle	0	25	25
	Cut stump or wiping	0	15	15
Imazapic	Directed foliar spray	25	75	75
Triclopyr (TEA)	Directed foliar spray	25	75	75
	Wiping or cut stump	15	15	15
Clopyralid	Spot & directed foliar spray	25	50	50
	Wiping	15	15	15

[1]As measured from the edge of the stream channel. If a defined channel is not present (draws do not have defined channels), measurement is from the bottom of the feature.
[2]As measured from the edge of the wet area or the meadow vegetation, whichever is greater. Limited conditions allowing for herbicide application within meadows are described in HE 17.

HE 14. Herbicide application is limited to targeted treatments directed at the plant (spot treatments of the immediate area surrounding the plant are allowed with aminopyralid and clopyralid, only) using a backpack sprayer; broadcast spray methods that dispense chemical over a non-localized area will not be used.

HE 15. Avoid application of Aminopyralid and Clopyralid sprayed mulch materials on revegetation sites.

Forest Health (FH) - Insects and Disease

FH 1. To reduce the build-up or residual tree mortality by pine engraver beetles (*Ips pini*), and reduce fuel loading the following measures shall occur:

a) e Trees greater than 3 inches diameter at breast height (dbh) (whether in accessible or inaccessible areas) shall be removed (after proper permitting) to established log landings. Slash shall be chipped and hauled off of NFS land for disposal. All logs and slash shall be removed from NFS lands within 6 weeks of cutting. Any incidental breakage during whole-tree yarding that is 3 inches in diameter or greater shall be lopped and scattered to within 18 inches of the ground in open areas.

b) Timing: In areas where material 3 inches or greater in diameter is left on site, cutting shall only occur from August 1 through December 31. Material must be lopped and scattered to within 18 inches of the ground in open areas. There are no timing restrictions for dead trees or species other than pine.

Water Resources and Soil (WA)

WA 1. As a part of the COM Plan, SWPPP will be prepared to minimize erosion from the project construction worksites and to contain sediment. The SWPPP will be prepared in accordance with the National Pollutant Discharge Elimination System (NPDES) General Construction Stormwater Permit. At a minimum, it will identify the existing drainage patterns of the construction work sites and ROW/easement, nearby drainages and washes, potential pollutant sources other than sediment, and erosion and sediment control measures and BMPs that will be implemented to protect stormwater runoff. The SWPPP will include maps with locations for erosion and sediment control measures, and BMPs. The SWPPP will be kept on site throughout the duration of construction.

WA 2. Erosion and stormwater controls will be inspected on the ground at least once every seven days and within 24 hours of a storm event of 0.5 inch or greater. Weather forecasts and data available from the National Weather Service in Reno will be used to determine total precipitation associated with a storm event. Qualified personnel of NV Energy or its contractors with specific training in erosion and sediment control will perform the inspections.

WA 3. Construction equipment staging areas, and storage of equipment fuels will not be located within 300 feet of perennial streams or within 150 feet of intermittent and ephemeral streams. Staging areas and fuel storage will also not be located within 150 feet of wetlands or other water feature.

WA 4. Pole sites and staging areas will not be constructed within the 100-year floodplain of any stream or within wetlands.

WA 5. Construction equipment will not be operated on unstable soils or on soils too wet to adequately support equipment in order to prevent rutting, puddles on soil surface, or runoff of sediments directly into water bodies.

WA 6. Topsoil removed from foundation holes will be separated and stockpiled at the edge of active work areas to salvage the seed bank.

WA 7. Water drafting (i.e. water withdrawal) from streams will not be permitted. Water shall be provided by truck for dust abatement and other project needs.

Temporary Stream Crossings

WA 8. Improvements to any existing road crossing will be designed to minimize surface disturbance.

WA 9. Crossings will be located where the stream channel is narrow, straight, and uniform, and has stable soils and relatively flat terrain. Stream crossings will be oriented perpendicular to the stream channel. All stream crossings will be designed and installed such that sufficient load-bearing strength for the expected equipment is provided.

WA 10. Stream crossings will be designed for a normal range of flows for the site, and crossings that must remain in place during high runoff seasons will be stabilized. However, all crossings will be temporary and will be removed at the end of the construction season. The water body profile and substrate will be restored when the crossing is removed.

WA 11. Stream crossings will be regularly monitored to evaluate the condition. Any repairs or improvements to the crossings identified during monitoring will be promptly addressed.

WA 12. Surface drainage and roadway stabilization measures will be used to disconnect the access road from the stream in order to avoid or minimize water and sediment from being channeled into surface waters and to dissipate concentrated flows.

WA 13. On perennial streams, existing crossings will be utilized and no new crossings will be constructed.

Plants and Sensitive Plant Communities (SV)

SV 1. If any Forest Service or BLM sensitive plant or federal- or state-listed species are identified during construction activities, the USFS will be contacted within 24 hours. Depending on the plant species appropriate protective measures will be implemented.

SV 2. Prior to construction, once access roads and pole locations are known, the following tasks will be completed for areas where surface disturbance is planned:

a. Pre-construction surveys for jaw-leaf lupine, andesite popcorn flower, and moonwort ferns;

b. Mapping and flagging of sensitive plant species, wetland areas, and noxious weeds; and

c. Noxious weed infestations will be treated according to design features NW1 and NW 2.

SV 3. There will be no new access roads or widening of existing roads for construction access through meadows. This measure will also protect potential habitat for special status plant populations that are found in wetland and meadow habitats, such as Dog Valley ivesia.

SV 4. Poles, staging areas, and line clearance areas, and any project-related ground disturbance will avoid all special status plant populations.

SV 5. Where existing roads are used for travel to the project site (but not widened), any road maintenance within 100 feet from special status plant populations will focus on avoiding impacts. A permanent physical barrier, such as lining the roads with rock or fencing the road corridor, will be constructed to prohibit vehicle access to sensitive plant populations and contain travel within the existing road corridor.

Webber Ivesia and Dog Valley Ivesia

SV 6. Construction of new access roads (i.e., spur roads and centerline travel roads) and widening of existing roads and motorized trails will not occur within 500 meters (1,640 feet) of populations of Dog Valley ivesia (*Ivesia aperta* var. *canina*) and Webber ivesia (*Ivesia webberi*) occurring on NFS land. Allowable maintenance of roads within these habitat areas that do not require widening include blading and installation of erosion control measures. Construction of new temporary access roads and widening of existing roads and motorized trails will not occur within 200 feet of other special status plant populations that occur on NFS land. Within these buffer distances, travel and road maintenance on existing roads and motorized trails may be permitted but road improvements including widening of the existing travelled way are prohibited.

SV 7. The transmission line will be excluded from the occupied habitat unit for Webber ivesia populations occurring on NFS land. (Occupied habitat includes the low sage habitat where the plants are present and a 500-meter buffer from the edge of the occurrence. The 500-meter buffer would include low sage and adjacent shrub steppe habitats to accommodate pollinators associated with the rare plant community).

SV 8. Techniques to span over Webber ivesia potential habitat (i.e., unoccupied suitable habitat) will be evaluated with a USFS botanist. Unavoidable pole placement within habitat will require use of a helicopter. Access roads will not be constructed within potential habitat. Potential habitat includes low sage plant communities with specific habitat attributes: presence of a rocky pavement surface, presence of an argillic soil horizon, plant community composition and presence of associated plants, topographic position of the site, and, known elevation range. Areas defined as potential habitat will require the 500-meter buffer.

Wildlife and Sensitive Wildlife Species (WL)

WL 1. If any Forest Service or BLM sensitive wildlife or plant species are identified during pre-construction surveys or during construction activities, work in the general area of the identified species will be halted until a USFS biologist or other qualified biologist is consulted to determine an appropriate buffer and other protective measures. The USFS will be notified within 24 hours of the discovery of the species. Buffer distance will be established in consultation with the USFS on a case by case basis depending on species and type and magnitude of construction activity. If avoidance is infeasible, consultation with the USFS, and at its discretion, any cooperating agencies will be contacted prior to continuing work in the immediate area of the species. The same process will be implemented in the event that any federal- or state-listed species are discovered on public land, with the discovery being reported to the USFS or BLM, depending on the respective land administration.

WL 2. If appropriate, additional surveys for Northern goshawk and flammulated owl or other Forest Service sensitive species will be conducted prior to construction by a qualified biologist approved by the USFS. Coordination with the USFS will be conducted prior to commencing surveys to determine appropriate survey methodology, timing, and survey area. If nesting is detected the Forest Service will be contacted within 24 hours and Forest Plan standard and guidelines (USFS 2004) will be implemented. A designated Protected Activity Center (PAC) will be delineated around the nest site. Within the PAC no construction activities may occur during the "Limited Operating Period" April 15th- September 30th. Pole construction will need to be designed to span the PAC.

WL 3. To reduce potential disturbance to migratory birds, construction will occur outside the typical avian breeding season (April 1 to July 31). If construction activities cannot be avoided during this time period, surveys will be conducted immediately prior to construction to locate active nesting areas.

WL 4. If active avian nests are located on NFS land or BLM-administered public land, they will be flagged and avoided until after the breeding period. NV Energy will coordinate with the USFS or BLM biologist to determine appropriate time frames for resuming construction.

WL 5. Excavations deep enough to potentially entrap wildlife species will be covered and fenced at night or when unattended to prevent livestock or wildlife from falling in. All covers will be secured in place and strong enough to prevent breakage by wildlife.

WL 6. To avoid impacts to wintering mule deer, construction will not occur from November 25 through May 25 within areas mapped as crucial winter or winter-spring high deer use, including the Mitchell Canyon Deer Management Area. Non-ground disturbing activities, such as surveying, staking, or resource driven activities (e.g., cultural surveys, biological surveys), may occur within this time frame.

WL 7. To aid in providing browse for wintering mule deer, post construction revegetation in areas mapped as crucial winter and winter spring high use habitat will include seed mix of brush species preferred by mule deer (i.e., bitterbrush, mountain big sagebrush, mountain mahogany, serviceberry, snowberry, and Wyoming big sage) as well as appropriate forbs and grasses.

WL 8. To ensure that impacts to wildlife habitat, particularly mule deer are no more than minor, vegetation that would be permanently lost or temporarily disturbed from the project, would require creation of or improvement of on or offsite wildlife habitat. To achieve this, NV Energy will fund a habitat restoration account that includes the cost of restoring three acres to every one acre of habitat that is permanently or temporarily disturbed. The account will be administered by NDOW or a Sierra Front Wildlife Working Group that would include NDOW, Washoe County, USFS, BLM, City of Reno and other interested participants.

WL 9. To protect raptors such as hawks and eagles from electrocution, transmission line and pole structures will be constructed in conformance with the guidelines contained in Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006, prepared by the Avian Power Line Interaction Committee (2006).

WL 10. To limit the potential for impacts to aquatic resources, particularly to Lahontan cutthroat trout, pole sites or roads will not be placed within the 100-year floodplain in Dog Creek, Bull Ranch Creek, and the Truckee River. During construction, no soil disturbing activities will occur within the 100-year floodplain of these streams.

Cultural Resources (CU)

CU 1. If previously unidentified cultural resources are found, work will be halted immediately within a minimum distance of 300 feet from the discovery and a USFS archeologist will be notified to determine protective measures. Additional details will be outlined in the Inadvertent Discovery Plan as part of the Memorandum of Agreement between identified parties.

CU 2. Per Section 106 of the National Historic Preservation Act, surveys for cultural resources will be conducted for any areas where surface disturbance is planned that were not included in the initial baseline studies.

CU 3. Cultural sites identified as eligible and sites treated as eligible for inclusion on the National Register of Historic Places will be avoided. If avoidance of cultural resources is not possible, an appropriate Historic Properties Treatment Plan will be required for the selected alternative. The Plan will allow for mitigation of potential adverse effects to the Historic Properties.

CU 4. An USFS approved archeologist will work with construction crews when crews are within 600 feet of the boundary of a known eligible historic cultural site. Tribal monitors may also be working with construction crews as cultural resource monitors.

CU 5. Cultural resources monitors will assess avoidance measures and monitor disturbance activities in culturally sensitive areas.

CU 6. Per the Inadvertent Discovery Plan, if human remains are encountered during construction activities, all work within 300 feet of the remains will halt and the USFS will be notified immediately.

CU 7. Per the Inadvertent Discovery Plan, if the remains are Native American, USFS or BLM, whichever agency has jurisdiction, will follow the procedures set forth in 43 CFR 10, Native American Graves Protection and Repatriation Regulations and notify the appropriate Native America Tribe(s) immediately. If the Native American human remains are located on state or private land, the appropriate SHPO will be notified immediately. In Nevada, Native American human remains are protected under the provisions of the Protection of Indian Burial Sites section of the Nevada Revised Statutes (NRS) in Chapter 383. The Nevada SHPO will consult with the Nevada Indian Commission and notify the appropriate Native American Tribe. Procedures for inadvertent discovery are listed under NRS 383.170. If the discovery of Native American human remains is made on State or private land in California, the California SHPO and the Native American Heritage Commission will be contacted. The Native American Heritage Commission will provide the name of a Most Likely Descendent who will then make recommendations for treatment and disposition of the remains and associated items.

Hazardous Materials and Waste (HM)

HM 1. A Spill Prevention, Control, and Countermeasure Plan (SPCC) will be implemented during construction to prevent any spills. The SPCC, which will include cleanup procedures, will become part of the COM plan.

Recreation/Roads/Transportation (RT)

RT 1. The use of any roads or trails will require compliance with the Carson Ranger District Motor Vehicle Use Map (MVUM), including any restrictions for seasonal use.

RT 2. All new temporary access roads and all improvements to existing roads will comply with: 1) The Forest Service National Supplements to the FP-03 (USFS, 2010); 2) the USFS Road Construction Handbooks (FSH 7709.56 and FSH 7709.57); and, 3) the Forest Plan.

RT 3. All new access roads (i.e., spur roads and centerline travel roads) specifically constructed for this project will be re-contoured and reclaimed and will have a physical closure installed to prevent motorized access immediately following the completion of construction and restoration. The types of closure and design specification used will be approved by the USFS prior to installation.

RT 4. Physical barriers such as boulders or natural features designed to harmonize with the natural environment of the surrounding area will be installed to prevent unauthorized vehicle use from occurring on restored roads. The use of gates or other such structures for this purpose will be avoided unless determined necessary by the USFS.

RT 5. Maintenance activities which cause a road to be opened to unauthorized vehicles or damage to restoration improvements will need to be assessed and barriers reinstalled as needed at the expense of NV Energy.

RT 6. Restored roads will require a signage and monitoring plan implemented by NV Energy for compliance with the closure which will include inspecting the barricade areas to determine the effectiveness of the blockades at preventing unauthorized motorized vehicle use of the restored access roads. Signs will notify the public that construction access roads are closed and are being restored. Signs will be replaced by NV Energy if vandalism occurs to the signs.

RT 7. If unauthorized vehicle use occurs on restored roads, barricades and reclamation will be monitored for effectiveness and remedial measures taken. Monitoring will continue until disturbed areas are successfully restored.

RT 8. Public access will be maintained with minimal delays during the construction and maintenance of the project. If there are traffic delays, NV Energy will post delay information at National Forest portals.

RT 9. All construction vehicle movement will be restricted to the transmission line ROW/easement, pre-designated access roads, public roads, and private roads. All existing roads will be left in a condition equal to or better than their preconstruction condition.

Visual Resources (VI)

VI 1. Non-specular conductors will be installed to reduce visual impacts.

VI 2. The number of new poles will be minimized by increasing the pole span length on NFS land where the area is designated as Partial Retention for Visual Quality Objectives as terrain allows.

Fire Prevention and Response (FP)

FP 1. Fire Prevention Plan will be implemented during construction activities to prevent and suppress fire. The Fire Prevention Plan will be included in the COM Plan.

Air Quality (AQ)

AQ 1. Vehicle and equipment speeds will be limited to 20 miles per hour on unpaved roads and on the ROW/easement.

AQ 2. All areas subject to ground disturbance will be watered as needed to control dust.

AQ 3. Paved roads will be swept if visible soil material is tracked onto them by construction vehicles.

AQ 4. Excavation and grading activities will be suspended when winds (instantaneous gusts) exceed 50 miles per hour and visible dust persists that creates a health hazard to neighboring property owners and/or visibility impacts to vehicular traffic.

AQ 5. In order to reduce construction equipment emissions, engines on construction-related vehicles will:

a) Be tuned to the engine manufacturer's specification in accordance with an appropriate time frame;

b) Not be idle for more than five minutes (unless it is necessary for the operating scope of the equipment and operation);

c) Not be tampered with in order to increase engine horsepower;

d) Include particulate traps, oxidation catalysts and other suitable control devices on all construction equipment used at the project site; and

e) Use diesel fuel having a sulfur content of 15 parts per million or less, or other suitable alternative diesel fuel, unless such fuel cannot be reasonably procured in the market area.

1.2 DESIGN FEATURES SPECIFIC TO ALTERNATIVES

1.2.1 MITCHELL ALTERNATIVE

Water Resources

WA 14. In order to minimize impacts to Dog Creek, existing crossings will be improved and no new road crossings will be constructed.

Recreation

RT 10. Concurrent with construction restoration, physical barriers will be installed within the ROW area where Henness Pass/Dog Valley Road will be crossed. The barriers will be installed on the east side of the road to prevent the ROW area from being utilized for motorized travel after construction in completed. Signs will be installed to notify the public that the area is closed and under restoration. The type and design of the barriers will be approved by USFS prior to installation.

Fire Prevention and Response

FP 2. To protect forest resources and the transmission line from wildland fire, fuels reduction activities will take place along the transmission line where the Mitchell Alternative overlaps the USFS' Dog Valley Fuels Reduction and Ecosystem Enhancement Project. Fuels reduction activities will reduce canopy bulk density and interlocking crowns; remove ladder fuels; and increase the height to live crown on residual crowns. Treatment areas will occur within the 300 to 600 foot "variable-width corridor" where botanical and cultural baseline surveys have been conducted.

Trees will be thinned from below and any trees with evidence of disease or insect-infestation will be removed. Ladder fuels are described as any live or dead tree or shrub that would allow a fire to climb up from the landscape or forest floor into the tree canopy. Shrubs will also be removed from underneath the drip line of residual trees. In areas where the shrub canopy cover is greater than 60 percent outside the drip line of trees, 10 percent to 50 percent of the shrubs will be removed or mowed, leaving a mosaic pattern (e.g., 10 percent of the shrubs will be removed within a site with 60 percent shrub cover; 40 percent of the shrubs will be removed within in a site with 90 percent shrub cover).

1.2.2 Peavine Alternative

Plants and Sensitive Plant Communities

SV 9. Placement of a pole structure within the 500-meter buffer for Dog Valley ivesia may be unavoidable with the selection of the Peavine Alternative. The pole placement will be contained to the edge of the buffer to reduce potential impacts to the plant. In addition, an existing unauthorized road that currently traverses through occupied Dog Valley ivesia habitat will be closed to motorized use. Closing this road will help offset potential impacts to the Dog Valley ivesia population from the pole placement activity.

Recreation

RT 10. Concurrent with construction restoration, physical barriers will be installed within the ROW area where Henness Pass/Dog Valley Road will be crossed. The barriers will be installed on the east side of the road to prevent the ROW area from being utilized for motorized travel after construction in completed. Signs will be installed to notify the public that the area is closed and under restoration. The type and design of the barriers will be approved by USFS prior to installation.

Fire Prevention and Response

FP 2. To protect forest resources and the transmission line from wildland fire, fuels reduction activities will take place along the transmission line where the Peavine Alternative overlaps the USFS' Dog Valley Fuels Reduction and Ecosystem Enhancement Project. Fuels reduction activities will reduce canopy bulk density and interlocking crowns; remove ladder fuels; and increase the height to live crown on residual crowns. Treatment areas will occur within the 300 to 600 foot "variable-width corridor" where botanical and cultural baseline surveys have been conducted.

Trees will be thinned from below and any trees with evidence of disease or insect-infestation will be removed. Ladder fuels are described as any live or dead tree or shrub that would allow a fire to climb up from the landscape or forest floor into the tree canopy. Shrubs will also be removed from underneath the drip line of residual trees. In areas where the shrub canopy cover is greater than 60 percent outside the drip line of trees, 10 percent to 50 percent of the shrubs will be removed or mowed, leaving a mosaic pattern (e.g., 10 percent of the shrubs will be removed within a site with 60 percent shrub cover; 40 percent of the shrubs will be removed within in a site with 90 percent shrub cover).

1.2.3 PEAVINE/POEVILLE ALTERNATIVE

Plants and Sensitive Plant Communities

SV 9. Placement of a pole structure within the 500-meter buffer for Dog Valley ivesia may be unavoidable with the selection of the Peavine/Poeville Alternative. The pole placement will be contained to the edge of the buffer to reduce potential impacts to the plant. In addition, barriers will be placed to prevent use of an existing unauthorized road that currently traverses through occupied Dog Valley ivesia habitat. Barricading this road will help offset potential impacts to the Dog Valley ivesia population from the pole placement activity.

APPENDIX C

VISUAL SIMULATIONS

KOP 1 (California Substation – South)
Existing Conditions

KOP 1 (California Substation – South)
Visual Simulation

KOP 2 (California Substation – West)
Existing Conditions

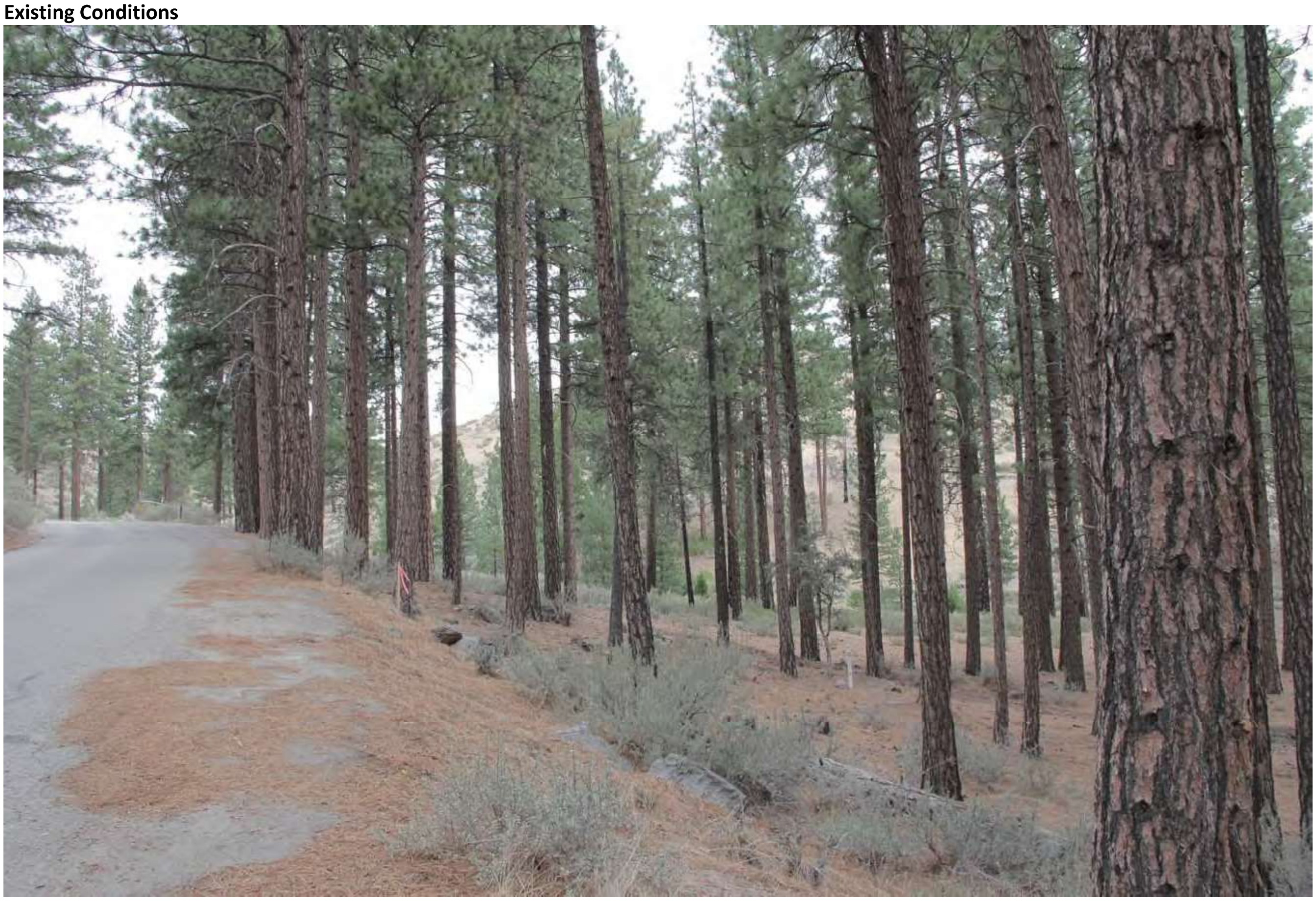
KOP 2 (California Substation – West)
Visual Simulation

KOP 3 (Henness Pass/Dog Valley Road)
Existing Conditions

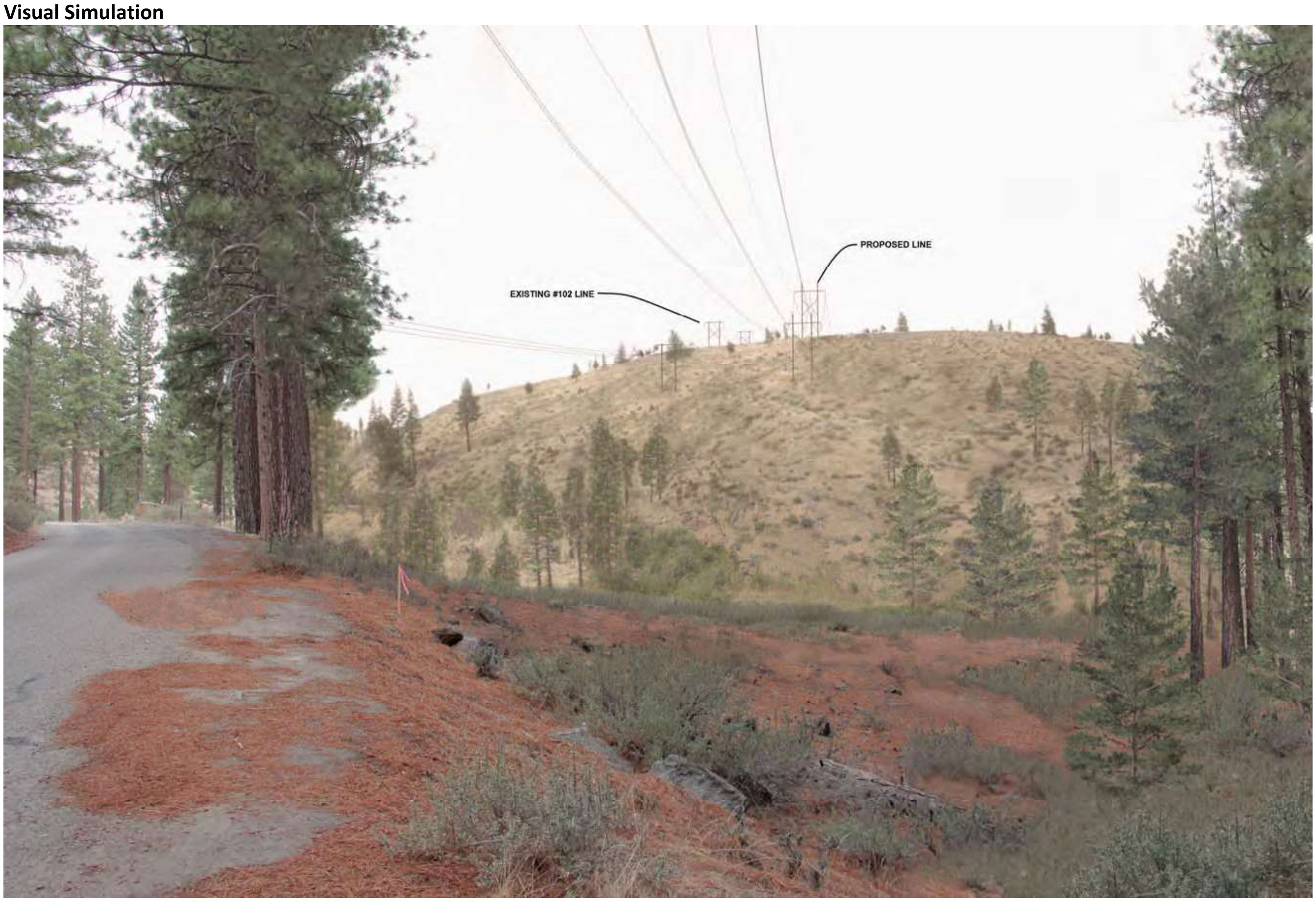
KOP 3 (Henness Pass/Dog Valley Road)
Visual Simulation – Mitchell Alternative

KOP 3 (Henness Pass/Dog Valley Road)
Visual Simulation – Peavine Alternative

KOP 4 (Forest Boundary - West)
Existing Conditions



KOP 4 (Forest Boundary - West)
Visual Simulation



KOP 5 (Forest Boundary)
Existing Conditions

KOP 5 (Forest Boundary)
Visual Simulation

KOP 7 (Forest Route 41192 – North)
Existing Conditions

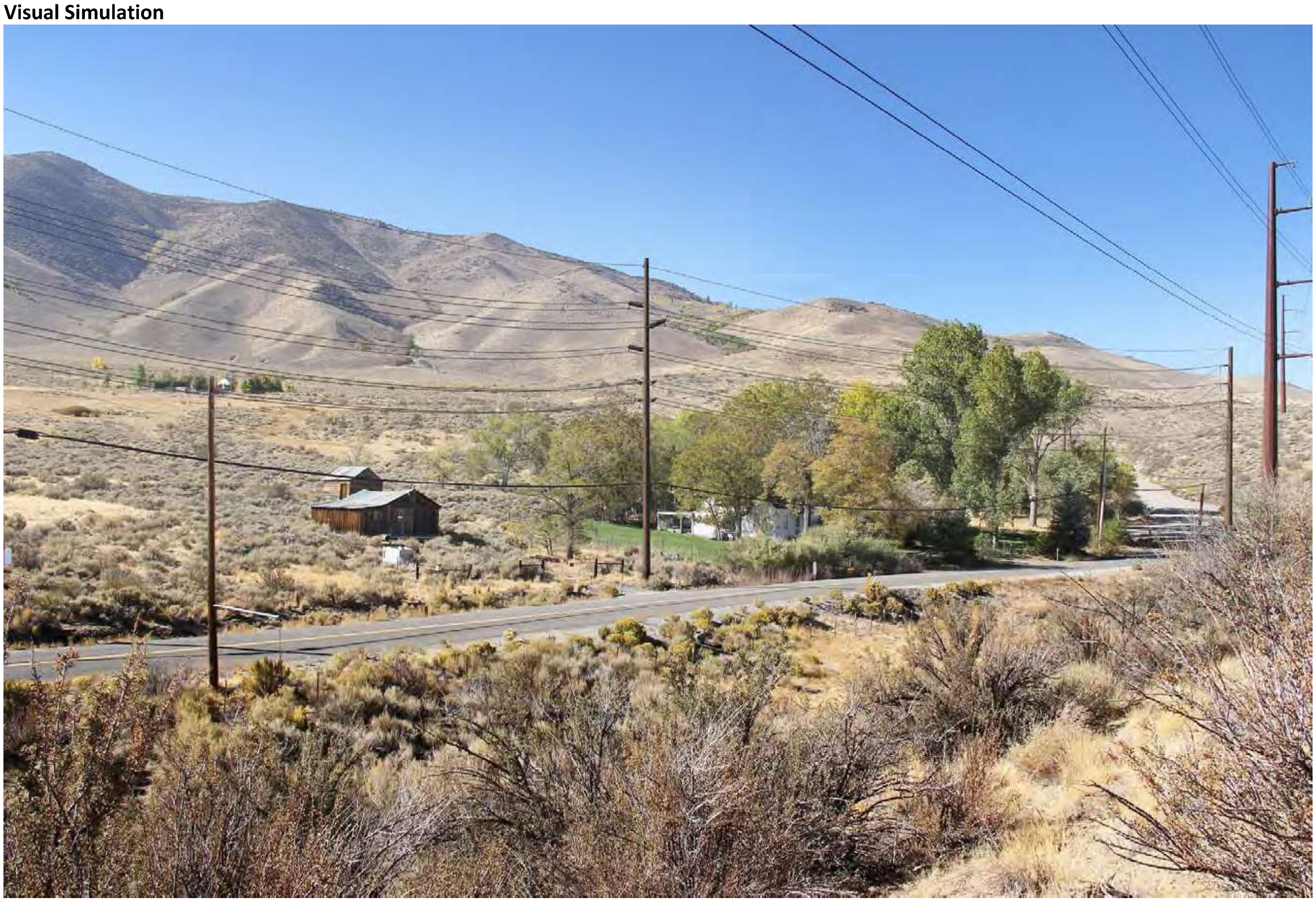
KOP 7 (Forest Route 41192 – North)
Visual Simulation

KOP 9 (Peavine Ranch)
Existing Conditions

KOP 9 (Peavine Ranch)
Visual Simulation

KOP 10 (Peavine Ranch – Southwest)
Existing Conditions

KOP 10 (Peavine Ranch – Southwest)
Visual Simulation



KOP 11 (Peavine Road)
Existing Conditions

KOP 11 (Peavine Road)
Visual Simulation

KOP 12 (Stead Trailhead)
Existing Conditions

KOP 12 (Stead Trailhead)
Visual Simulation

KOP 13 (Trail Drive – East)
Existing Conditions

KOP 13 (Trail Drive – East)
Visual Simulation

KOP 14 (Trail Drive – West)
Existing Conditions

KOP 14 (Trail Drive – West)
Visual Simulation

KOP 15 (Truckee River Bridge)
Existing Conditions

KOP 15 (Truckee River Bridge)
Visual Simulation

KOP 16 (Verdi Library Parking Lot – West)
Existing Conditions

KOP 16 (Verdi Library Parking Lot – West)
Visual Simulation

KOP 17 (Verdi Library Parking Lot – East)
Existing Conditions

KOP 17 (Verdi Library Parking Lot – East)
Visual Simulation

APPENDIX D

RESPONSE TO COMMENTS ON THE DRAFT EIS

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
Averett	Linda	1	7	The south face of Peavine Mountain is visible from the entire valley. Obviously, informed citizens do not wish to live near them, nor do they wish to view them.	The visual effects analysis for the Poeville Alternative is in Section 3.2.4.4. The Poeville Alternative would follow or replace an existing utility corridor for approximately 12.6 miles (70 percent of its length) where repetition of common form, line, color, and texture elements minimize the degree of visual contrast introduced by the project. In its immediate vicinity, the proposed line is readily visible, but it would not be visible from the entire valley. As distance increases from the transmission line, the line becomes less noticeable. Visual simulations demonstrate this. See KOP 15 from the Truckee River bridge where there Poeville Alternative would be placed within an existing utility corridor and KOP 7 and KOP 12 where the alternative would not follow a utility corridor. A number of similar transmission lines that serve Reno including the Alturas 345 kV line; and those located above Caughlin Ranch, along the Truckee River Corridor and on the Mt. Rose fan that are not visible from the entire valley because distance makes the transmission line too small to be seen.
Averett	Linda	1	8	So too, should any future lines in the area be underground.	An undergrounding alternative is infeasible for long distances, especially in steep terrain that occurs over most of the project area, and may have greater impacts to other natural resources. This alternative was considered but eliminated from detailed study (see Section 2.11.15). Undergrounding for short distances may be feasible if it is required as mitigation.
Averett	Linda	1	9	The Poeville Alternative seems to be the least favorable alternative. An alignment near the California/Nevada border or near the existing lines to the east would seem to be far superior choices, even if not the cheapest.	Comment noted. The Mitchell, Peavine, and Peavine/Poeville Alternatives are near the California/Nevada border and are analyzed as viable alternatives in the EIS.

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
Averett	Linda	1	10	I am a property owner and northern Nevada resident who will be impacted by the final decision as to the Bordertown 120 KV transmission line. As a Nevada Realtor, I am very aware of the negative effect on property values that exposed power lines, such as those proposed, have on a property, as well as surrounding properties.	Impacts to private property value are addressed in Section 3.3.4.2. Included in the analysis is the study conducted by Warren & Schiffmacher (2007) which evaluated property values in south suburban Reno to determine the impacts to private land from the construction of a 120 kV transmission line.
Averett	Trent	2	3	The Scoping Notice dated November, 2011, stated "the project would consist of the construction and operation of approximately 10 miles of new 120 kV overhead transmission line." Yet by choosing the Poeville Alternative as the preferred alternative the scope of this project has nearly doubled in size from the originally stated scope.	The Scoping Notice identified the Stateline Alternative as the Proposed Action and the Mitchell, Peavine, and Poeville Alternatives as other action alternatives. The Stateline Alternative was submitted to the USFS as part of NV Energy's application as a possible route that appeared to have the least constraints (see Constraint Study available through the project website). Plant surveys conducted along the Stateline Alternative during the preparation of the DEIS found Webber ivesia, a plant in the rose family that is listed by the US Fish and Wildlife Service as Threatened. This made the Stateline Alternative infeasible as the transmission line could not be constructed to span the occupied or critical habitat. The Proposed Action has not changed, it just became technically infeasible to construct along the Stateline Alternative. The Scoping Notice described the Poeville Alternative as the longest route.
Averett	Trent	2	4	By building twice as much overhead transmission line than is required this will ensure that this power line is visible from virtually the entire Truckee Meadows Valley.	The Poeville Alternative maybe visible from a variety of locations in west Reno, however as distance increases from the line, it becomes less visible within the Truckee Meadows Valley. There are many transmission lines around the Truckee Meadows that are not visible from everywhere in the Valley. Also see response to comment 27-11.
Averett	Trent	2	8	Please reconsider the stated preferred alternative of the Poeville Alternative and choose the much cheaper, less disturbing, and viewshed preserving alternatives such as the Mitchell Alternative, Peavine Alternative, or the All Private Land Alternative.	Comment noted.

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
Averett	Trent	2	11	Your letter dated December 2, 2014 states that per the Humboldt-Toiyabe Forest Plan the Poeville alignment was identified as the agency preferred alternative. The letter states, "to manage all utility, road and transmission corridors and when utility right of way applications are received, the first priority will be to utilize existing corridors." However, this statement seems to be in conflict with the logic provided for denying the All Private Land Alternative of Section 2.10.5 of the DEIS. This section states that the All Private Land Alternative was eliminated from consideration because "This alternative would unavoidably use the same corridor..."	While the All Private Land Alternative would utilize existing corridors, which would be in accordance with direction provided in the Humboldt-Toiyabe Forest Plan, it would not meet the project purpose and need. Additionally, undeveloped land is not available along its entire length. The Poeville Alternative would meet the project purpose and need, because it avoids the #141 and #142 transmission line corridors exiting the North Valley Road Substation. In the West Reno area, these lines cannot be reasonably avoided. The #141 line turns into the #114 line and #142 turns into the #106 line. The Poeville Alternative parallels both the #106 and #114 lines for 2.2 miles. Powerlines are constrained to a corridor to avoid existing development. This is the only reasonable way to approach/exit the California Substation to the east. However, this is a small percentage of the total length of the alternative and makes use of an existing utility corridor easement.
Averett	Trent	2	12	It is stated that the Poeville Alternative would utilize existing utility corridors more than any of the other action alternatives. But this is achieved by building substantially more miles of new transmission lines than the other proposed alternatives. Per Table 2.11-1 of the DEIS the Poeville alignment will accomplish the goal by building 75%, or 7.7 additional miles of new transmission line compared to the Peavine Alternative. 190 new transmission line poles would be built compared to just 109 for the Peavine Alternative. Short term disturbance is 628 acres for the Poeville Alternative compared to 302 acres for the Peavine Alternative. The brunt of the disturbance is on privately held landowners. 69% of the total disturbed acreage for the Poeville Alternative will be on private land compared to only 29% of the total disturbed acreage for the Peavine Alternative.	Comment noted.

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
Averett	Trent	2	13	In addition to the Visual Resource Issue, I further agree with the items of the issue summary on pages ES-ii and ES-iii of the DEIS. All private properties proximate to this transmission line will undoubtedly experience a loss in value. Additionally, public health and safety will be negatively affected as a result from electric field and magnetic field from the transmission line.	Impacts to private property value are addressed in Section 3.3.4.2. Impacts from electric and magnetic fields are addressed in Section 3.4.3. The measured and calculated electric and magnetic fields associated for all alternatives are below recommended exposure levels for the general public within, at the edges of, and beyond the transmission line ROW.
Averett	Trent	2	14	I agree with all of the issues identified on page 1-8 of the DEIS. Specifically, I am concerned with the potential of unauthorized off-highway vehicle (OHV) use and noxious and invasive weed infestations that will certainly result from disturbing so much property.	Most ground disturbance would be temporary and restored following construction (see Section 2.3.2.1). All construction access roads will be re-contoured and reclaimed (see Section 2.3.2.2). To prevent unauthorized access immediately following restoration, project design features RT 3 and RT 4 require blockades on roads. Additionally, on NFS land, code of federal regulation 36 CFR 212.51 prohibits unauthorized motorized travel on roads not designated for such use on the Carson District Motor Vehicle Use map. Restoration, design features, and enforcement of the Motor Vehicle Use map are anticipated to prevent unauthorized OHV use. Numerous project design features (Appendix B) have been developed to prevent the introduction or spread of weeds. Design features require treatment of noxious weeds prior to construction, and continued monitoring and treatment following construction. Additionally, construction equipment must be washed to remove any noxious weed sources prior to entering the work site.

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
Rosenauer	Michael	3	1	The current lines use wood standards which blend into the area as much as one can expect from a power line. Larger standards will simply stick out more and make a bad situation worse.	Section 3.2 addresses visual impacts of the proposed transmission line, and visual simulations showing realistic interpretations of the pole structures are provided in Appendix C. New steel poles would be a dark brown color to mimic wood. Where existing H-frames are replaced, replacement steel poles would be similar in design and height. Where a distribution line is replaced, new poles would be taller in order to safely accommodate the underbuild.
Rosenauer	Michael	3	4	Finally, from the very beginning, this line has been pitched to provide additional reliability to the Somersett and Northwest areas of Reno. However, neither of these areas is burdened at all with the line. Both are over the ridge to the east and will have neither their views impacted nor their home values.	The purpose and need for the proposed transmission line is described in Section 1.3, which is to provide reliable bulk transmission capacity to the west Reno and Verdi areas by providing backup of the #141 and #142 transmission lines. A routing alternative through the Somersett and Northwest areas of Reno were considered (see Section 2.11 6).
Rosenauer	Michael	3	8	The USFS is still following the mandate to use existing rights of way where possible so the underlying policy objectives are met.	Per the Toiyabe Forest Plan, when applications for utility ROW are received, the first priority will be to utilize existing corridors. Within the project area, this includes federally designated portions of the West-Wide Energy Corridor and regionally designated utility corridors. Per Section 368 of the Energy Policy Act of 2005, West-wide Energy Corridors on federal land are locations preferred by federal land management agencies for energy transport projects. Another internal directive that the USFS must follow is USFS Manual (FSM) 2703 which does not allow the approval of any special use applications that can be reasonably met on non-Federal or other Federal lands unless it is clearly in the public interest (FSM 2703).
Rosenauer	Michael	3	15	If this line were deemed to be imperative, I would bring it into the Verdi substation from the north in the existing alignments across the western and northern shoulders of Peavine Peak. These disrupt fewer people do not impact home values as much, and place the electromagnetic impacts away from residential areas.	The impacts of the Mitchell, Peavine, Poeville, and Peavine/Poeville Alternatives on property value and EMF are disclosed in the EIS. The length of each alternative that would be located within existing utility corridors is also identified in Section 3.3.4.2.

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
Rosenauer	Michael	3	16	I am directly impacted by the proposed plan. While my first desire would be that the line not be built, that possibility may not be tenable for a variety of reasons.	Comment noted.
Rosenauer	Michael	3	17	If the line must be constructed, I must object to the selection of the Poeville alignment. While I understand that it is best to use existing alignments, the selected one is pretty full as it runs through the residential area of Verdi near Hanson and Prickly Pear.	Through the residential area of Verdi, the Poeville and the Peavine/Poeville Alternatives would replace the existing, inactive 60 kV #632 distribution line in its exact location, and parallel the existing #114 and #106 lines to the California Substation. The existing #632-line H-frame pole structures would be replaced with new H-frame pole structures, and there would be little change between existing and proposed condition. See visual simulations for the Verdi Library (KOP 16).
Rosenauer	Michael	3	18	Moreover, it is unfair to those who purchased and established their homes in the area to subject them more to the effects of electro-magnetic influences, not to mention additional fire hazard, construction inconvenience, dust, dirt, trucks, etc. While I am sensitive to the fact that easements exist for the existing alignment, it does not mean that it is right to maximize them.	Effects from electro-magnetic fields, fire hazard, accessibility, and dust have been considered. Section 3.4.3 describes that increases in EMF would be below exposure limits established for the general public. The Roads and Transportation Specialist Report, available on the project website, evaluated traffic delays and accessibility issues due to construction and concluded that impacts would be short-term and negligible. Design features were developed to minimize fire hazard and fugitive dust emissions (Appendix B).
Rosenauer	Michael	3	19	They are not subject to the electro-magnetic influences of high energy lines or any residual noise from them such as buzzing and wind deflection. They carry no increased fire danger, risk of trucks needing access for repair, etc. As such, the burden is not being shared by those who benefit. Those who benefit should have to weigh if they want their values decreased, their views impacted, etc. They should have to decide whether the benefit of having more reliable electrical service outweighs the burdens of these enumerated impacts	Comment noted.
Russell	James	4	2	I am for the building of the power line as we and future generations will need the power. Just wanted to give my support.	Comment noted.

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
Jensen	Richard	5	6	We feel that the existing Poeville alignment be used. This existing alignment provides minimum environmental impact on the area and minimal financial impact on the value of properties, both USDA, BLM and private.	Comment noted.
Selcer	John	6	1	I oppose the transmission line over my 3 pieces of property on Peavine Mountain (Poeville). This is patented mining property and being denied the use of my own property will prohibit me from recovering the gold and silver under the proposed site.	Impacts to private property value are addressed in Section 3.3.4.2. To minimize the loss of property value, NV Energy would purchase easements based on the appraised value of the land.
Averett	Stan	7	2	To suggest that the referred alignment outlined in the draft document could be altered to utilize the existing Poeville Alternative alignment from the Bordertown Substation to the Northern border of parcel 081-150-01 where it meets Peavine Peak Road 41641. Then the alignment might follow the alignment of the Peavine Peak Road to the west to the south-west corner of parcel 081-060-28. Then the alignment may continue in a south-west bearing and connect to the alignment of the 41132 NFS designated road until the northern border of parcel 081-170-09. The alignment could follow the northern border of 081-170-09 and then turn south and follow the western boundary of parcel 038-010-05.	The Toiyabe Forest Plan's established standards and guides include avoiding NFS land for uses that can be accommodated on private land. The Poeville Alternative was developed to use existing utility corridors as much as possible. The suggested alternative would not be substantially different than the Poeville Alternative except that it would cross more NFS land and other private lands. Accordingly, the suggested alternative was considered and eliminated from detailed consideration in Section 2.11.20.
Averett	Stan	7	3	This project is suggested as a benefit for the public and yet the majority of the burden is being placed on me and neighboring property owners.	Comment noted.
Averett	Stan	7	4	First and foremost, it is stated, and should be clear and understood that, I do not agree, approve, or in any other way suggest that the Poeville alignment is a viable, recommended, suggested, inferred, or otherwise accepted alternative for the currently considered connection of the Cold Springs substation to the Verdi substation. This project is not in the interest of neighboring property owners, be they any property owner ranging from individual residential property owner to undeveloped property owner.	Comment noted.

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
Maloney	Teresa	8	1	To invite public comment at this point in the process is frustrating to the affected property owners. If our opinion really mattered, I believe we would have been invited to be part of the process before the decision was made rather than being asked to react to a decision that has already been made	Public comment was first invited when the Notice of Intent to prepare and EIS was published in the Federal Register. This occurred on November 21, 2011. The USFS held public scoping meetings in December 2011 and February 2012, and mailed scoping notices to property owners in the project area, government agencies, and interested parties. A summary of the public comment opportunities for this project is provided in Section 4.1. A decision for this project has not been made yet. The USFS identified the Poeville Alternative as the agency preferred alternative and asked for public comment on the Draft EIS. An agency selected alternative will be disclosed in the Draft Record of Decision.
Maloney	Teresa	8	2	I am opposed to the Poeville route.	Comment noted.
Gustafson	Danielle	10	1	I totally support the most recent proposal to use the Poeville line to provide reliable bulk transmission capacity to the west Reno area. This is the most environmentally friendly manner and makes the most sense, being that there are already existing lines along this route. It will not destroy land in the Long Valley area, near Bordertown and will not cut the valley in half; destroying National Forests, wildlife, plant species and causing erosion.	Comment noted.
Gustafson	Danielle	10	2	It's always been my understanding that the policy of corridor sharing favors the placement of new transmission lines within or next to existing infrastructure.	Comment noted.
Gustafson	Danielle	10	3	The Poeville alignment is the only option. It takes advantage of the routing within the existing transmission lines and reduces the miles across the National Forest System.	Comment noted.
Averett	Trevor	11	1	Poeville alignment will disturb 800% more acreage than the Mitchell (10.3 total acres) and Peavine (10.6 total acres) alternatives.	Comment noted.

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
Averett	Trevor	11	2	Table 3.10-2 also indicates that the Poeville alignment will have a much larger impact on mountain quail, golden eagle, American badger, loggerhead shrike, and sagebrush lizard.	Section 3.10.2 concludes that the Poeville Alternative is not expected contribute to a loss of population viability or a trend toward federal listing for Forest Service Sensitive wildlife.
Averett	Trevor	11	3	The Poeville alignment will disturb a total of 96.6 acres while the Mitchell alternative will disturb a total of 72.1 acres (75% of Poeville), the Peavine alternative will disturb a total of 77.8 acres (81% of Poeville) and the Peavine/Poeville alternative will disturb a total of 68.8 acres (71% of Poeville).	Comment noted.
Averett	Trevor	11	4	"…other special status species such as avian, terrestrial mammals, or bat species, could be affected by construction of the project". Furthermore, Section 3.10.2.5 states that the Poeville alternative is the only alternative that has potential bat habitat.	Regardless of the alternative action alternatives, negligible to minor direct and indirect impacts are expected to special status species. See response to comment 11-2.
Averett	Trevor	11	5	Even though the Mitchell alternative has the most acres of forested habitat, Section 3.10.2.3 states "the amount of habitat removed for the project is minor in relation to existing available habitat" and "impacts are not anticipated to result in a contribution to a current or predicted downward trend in habitat capability".	Regardless of the alternative, construction and maintenance of any alternative are expected to have negligible to minor direct and indirect impacts to wildlife. See Wildlife Section 3.9.2.2.
Nykaza	Larry	12	2	As a property owner in the Bordertown area, I agree with using the Poeville Alternative. What makes more sense, using an existing corridor where power lines are already present or constructing a new corridor through National Forest land, where the terrain is more difficult?	Comment noted.
Cardenas	Marisa	15	2	I am opposed to the Poeville Alternative as it is currently proposed. This route disrupts the most acreage of any of the routes, affects the largest number of property owners, and is the longest of all of the choices.	Comment noted.

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
Whitney	Bill	17	1	A reliable supply of bulk transmission capacity to the west Reno area is important and the connection is needed but the USFS should be careful to not be so focused on its policy of placing new transmission lines within existing corridors and keeping them off land managed by the USFS that it overlooks superior alternatives.	Comment noted.
Whitney	Bill	17	3	The south side of Peavine Peak is visible from much of the developed portion of the Truckee Meadows and a 120Kv transmission line will be more visually intrusive in that regard.	See response to comment 27-11.
Whitney	Bill	17	6	From where the Poeville Alternative connects with the existing #114 line then turns west it crosses some undeveloped lands that will be developed within the jurisdiction of the City of Reno. This residential development will be at a much higher density than what exists in the vicinity presently thus compounding the potential negative impacts from the transmission line.	Key Observation Point 15 provided a visual analysis within close proximity to theWest Meadows Estates Development that recently broke ground and is under construction. In addition, The Poeville and Peavine/Poeville Alternatives would cross the northwestern portion of the development and replace the existing, but inactive #632 line within an existing utility corridor that also contains other existing transmission lines.
Whitney	Bill	17	10	The Poeville Alternative will be more disruptive during construction and during future maintenance/repair activities to the all existing residents along the route. These same residents will not have the concern over the potential impact to their home values from an additional transmission line.	Impacts to private property value are addressed in Section 3.3.4.2.

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
Whitney	Bill	17	11	Washoe County wishes to thank the Humboldt-Toiyabe National Forest and its staff for the opportunity to have the County participate as a Cooperating Agency in this process. The County Commission signed the MOU with the USFS in December of 2011. We understand that EIS analysis take a long time but it's also important for the USFS to understand that within that 3-year time frame that things have also changed at Washoe County. The majority of the County Commission that signed the MOU has been replaced with other elected officials to include the District Five Commissioner that represents the majority of the Bordertown to Verdi area. The County Manager has changed as well as other key staff. This information is being included here so the USFS will understand that these comments have not been officially reviewed or approved by the Washoe County Commission. So as to not confuse USFS staff the present "Planning and Development Division" was formerly called "Community Development" back in 2011. What has not changed is the county staff person that is named as the "Cooperator Administrative Contact" in the MOU.	Comment noted.
Whitney	Bill	17	12	The Poeville Alternative raised "red flags" with Commissioners and Management from the start and was seen as problematic for many reasons. The Peavine/Poeville alternative, while a more direct route, is still undesirable compared to the other three alternatives that run generally along the CA/NV border. The USFS should use the information gathered through the EIS process to determine which alignment is superior between the Mitchell; Stateline and Peavine Alternatives.	Comment noted. Table 2.12-2 summarizes the results of the EIS analysis and compares alternatives by key issue and environmental effects. Just to clarify, the Stateline Alternative is no longer a viable action alternative and has been dismissed from further consideration as described in Section 2.11.1.

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
Whitney	Bill	17	13	The Poeville Alternative should not be considered the preferred alternative because it suffers from multiple negative drawbacks/impacts: It is approximately twice as long as the other alternatives and at an approximate cost of one-million dollars a mile to construct will be that much more of a burden to rate-payers.	Comment noted.
Anderson	Vernon	18	1	Of the four proposed alternatives, the one furthest east is the least objectionable to me.	Comment noted.
Anderson	Vernon	18	2	While the power company's reason to build is to increase reliability, it is clear to most that "potential future growth" is the main reason. And, if future growth is West Reno is desired, let the developers pay for it and try to sell it the residents of West Reno. And of course, since the annexation, West Reno now goes to the California State line.	Section 1.3 describes the purpose and need of the proposed transmission line. Compliance with North American Electric Reliability Corporation (NERC) standards are mandatory, and the Federal Energy Regulatory Commission) may assess substantial civil penalties for violations of NERC standards.
Saicheck	Arthene	19	2	I have a concern of the gusts of 60 mph plus winds coming down off of Peavine Mountain toward the freeway that the power lines and/or poles are not blown down the hill onto My house, and start a fire and/or destroying my fencing +/or property.	The line would be designed to meet or exceed the National Electric Safety Code, which includes loading and strength requirements for overhead lines due to weather related events such as wind and ice loadings. The Public Utilities Commission of Nevada has adopted this code for the State of Nevada (NAC 704.450).
Saicheck	Arthene	19	3	I am concerned about how they the poles will look; the Alturas line along 395 at Lemmon Valley and Golden Valley green paint is chipping off and ugly.	Detailed illustrations of the pole structures are provided in Appendix A. Visual simulations showing realistic interpretations of the pole structures are provided in Appendix C. The poles would not be painted; steel poles come as a patina brown or wood color.
Saicheck	Arthene	19	4	I am concerned about the endangered species and tree removal especially the flammulated owl and conifers and Aspen.	See response to comment 11-2.
Saicheck	Arthene	19	5	The high pitched sound from the Alturas Line causes ringing in my ears, after I have turned off the TV, radio to go to bed, I hear ringing in my ears overnight, making sleeping difficult, ever since the Alturas line went in.	The Alturas line is an existing transmission line and is outside the scope of analysis for this project. However, the EIS has been revised to discuss noise (Section 3.1.1.2). The addition of the proposed 120 kV line would add noise levels of 30 decibels, which is very quiet and comparable to a whisper.

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
Saicheck	Arthene	19	6	Will lines detach from poles in winds and gusts? Lightning strike failure, structural failure, start fire! Are the lines going to be far enough apart to not slap together?	Wherever possible, transmission lines are placed to prevent a transmission line falling onto a second transmission line. The distance between the Alturas line and the Poeville Alternative is a minimum of 90 feet to prevent contact with each other. For a short segment along North Virginia Street, the Poeville Alternative is constrained by existing development and is within toppling distance of the Alturas line. However, on both transmission lines, if an energized conductor were to fall to the ground, high speed relay equipment is designed to de-energize the lines in less than 0.1 second to prevent fire potential.
Saicheck	Arthene	19	7	HEALTH risks with electromagnetic lines causing cancer EMC can wash out radio emergency broadcasts warning weather or fire; the white noise drowns out radio frequency/frequencies.	See Specialist Report: Electric and Magnetic Field Evaluation for Proposed Bordertown to California 120 kV Transmission Line (Enertech 2013) for an assessment of scientific research on EMF health risks. EMF at higher voltage than the proposed project can cause white noise (radio static). However, with the 120 kV line, interference with broadcasts from AM and FM stations is not expected.
Saicheck	Arthene	19	8	Concern (include) 60 mph winds off Peavine, health concerns & ringing in ears. Are the metal poles conductive?	See response to comment 19-2 regarding wind. The EIS now includes Section 3.1.1.2 that discusses corona noise (i.e., noise produced by power lines). Pole structures would be constructed of steel, which is a conductive material. However, the conductor cables would be mounted on insulators that prevent electric current from being conveyed to the pole structures. If an energized conductor were to fall to the ground and create a line-ground fault, high speed relay equipment is designed to de-energize the line in less than 0.1 second. This should prevent any stray arcing to ground objects.

Last Name	First Name	Letter #	Comment #	Comment Text	Response Text
McGathey	Louis	20	9	I own property at 8900 Peavine Peak Road. My concerns are: Securing active mining property; and the existing right of way is 10 feet for the pole line road and they want to extend that to 300 feet; and the easement in which AT&T not the power company, how is this allowable with the consent of the private land owners;	Construction activities may require temporary access through existing fences and gates on public and private land. Security issues would be minimized through the implementation of design feature GP 3 (Appendix B). Design feature GP 3 requires that fencing will be replaced when construction activities are completed. Replacement fencing will be built to agency or landowner specifications, consistent with the fencing that was removed. During construction, fences with open gates will remain open and fences with closed gates will remain closed. A variable-width study corridor, 300 to 600 feet-wide was used for analysis purposes only. However, the easement needed for construction, maintenance, and operation of the proposed line would be up to 90 feet in most cases, except where an underbuild of an existing line would occur and the easement could be as narrow as 40 feet. NV Energy would enter into negotiations with the private landowner prior to the purchase of an easement.
McGathey	Louis	20	10	…and how will this affect the people who work there and vegetation; who will this impact the mine tunnels under the existing pole line road; and who is responsible for theft and damage to the property crossed to access the pole line road; and what about liability for fire as well?	Along Peavine Peak Road, the Poeville Alternative would be constructed as a single pole underbuild (Figure A1). Table 3.4-8 shows that EMF levels would be below recommended thresholds inside and beyond the transmission line ROW. Therefore, risks to health and safety of the public, including those who work at the mine, are not expected. Impacts to vegetation are described in Section 3.7.2.2. Except where the vegetation is displaced by a pole, or permanently lost at the Bordertown Substation expansion area, all disturbances to vegetation would be restored. The implementation of design features developed for recreation resources and transportation (Appendix B, RT 3 through RT 7) require that temporary construction access roads be restored immediately following construction. Restored roads on NFS land would have a physical closure (i.e., barricade) installed immediately to prevent unauthorized vehicle use from occurring on reclaimed roads. This would reduce the potential for unauthorized travel on restored roads which,

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					in turn, would reduce the potential for trespass onto private property where theft and damage may occur.
Churchill	David	21	1	I object to the proposed Poeville Alternative. It would affect my property and why I purchased it.	Comment noted.
Flanagan	Janice	22	1	I feel the Forest Service should use ONLY existing corridors for overhead transmission lines	Comment noted.
Flanagan	Janice	22	6	All transmission lines should be undergrounded. This cuts down on forest fires from broken lines; stops the unsightly poles and lines from intruding on our forests; and stops fallen poles and lines in storms. I know the undergrounding is more expensive, but over the life expectancy of the project, this would be minimal	An undergrounding alternative was considered but eliminated from further analysis (see Section 2.11.15).
Morris III	George	23	5	If this project will occur on private land, the project will require a Timberland Conversion and Timber Harvest Plan as per the following: California Code of Regulations, per section 1103, and Public Resources Code 4581 requires a Timberland Conversion Permit and/or Timber Harvest Plan be filed with the California Department of Forestry and Fire Protection if the project involves the removal of a crop of trees of commercial species (regardless of size of trees or if trees are commercially harvested). The Timberland Conversion Permit shall address the following: a. The decrease in timber base in the county as a result of the project. b. The cover type, including commercial species, density, age, and size composition affected by the project. c. The ground slopes and aspects of the area affected by the project. d. The soil types affected by the project. e. Any significant problems that may affect the conversion.	California Code of Regulations, 14 CCR § 1104.1(c) exempts public and private utilities from the Timberland Conversion Permit and the Timberland Harvest Plan requirements for construction and maintenance of gas, water, sewer, oil, electric and communications rights of way. California Public Resources Code 4584 provides an exemption for the cutting or removal of trees for the purpose of constructing or maintaining a right-of-way for utility lines. Table 1.9-1 identifies an exemption under these regulations that will be necessary for the proposed transmission line.

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Carolan PG, CHG	Jim	24	1	Construction Permitting: 1) If Project construction activities involve more than 10,000 sq. ft., but less than one acre of land disturbance, General Waste Discharge Requirements for Small Construction Projects, Including Utility, Public Works, and Minor Streambed/Lakebed Alteration Projects in the Lahontan Region, Excluding the Lake Tahoe Hydrologic Unit, Board Order No. R6T-2003-0004 is required. These Waste Discharge Requirements (WDRs) may be downloaded from the following webpage: http://www.waterboards.ca.qov/lahontan/board decisions/adopted_orders/2003/docs/r6t-2003-0004_small_const_wdr.pdf.	Project construction activities are expected to result in more than 10,000 square feet of disturbance. See Table 1.9-1, which identifies applicable permits that would be obtained before a special use permit from the USFS would be considered valid.
Carolan PG, CHG	Jim	24	3	Please include maps that clearly show areas of floodplains, wetlands, and the ordinary high water mark of any waterbodies where work will occur, if any. For example, if describing improving a watercourse crossing at a re-designated motorized route, clearly show the existing structure in relation to the creek, floodplain, or any associated wetlands. Floodplains and other such features should be delineated by a qualified hydrologist, and the map should be of a scale so that they can be identified in the context of the project area (e.g., 1 inch equals 40 feet). Include a legend or key on all maps so that features can be readily identified.	Design features HE 5, HE 12, SV 2, SV 3, WA 3, WA 4, and WA 14 are included in the EIS to avoid 100-year floodplains, wetlands, and meadows. Construction of road crossings may occur within the ordinary high water mark of ephemeral stream channels. The analysis of impacts to ephemeral streams was conducted without a map with the recommended level of detail (Section 3.6.2.2). After pole locations are known, access roads can be planned. A Construction, Operation, and Maintenance (COM) Plan would be prepared for the selected alternative that would this level of detail prior to construction.
Canfield	Skip	25	1	As part of the DEIS - Bordertown 120 kV Transmission Line, please consider the cumulative visual impacts from development activities (temporary and permanent).	Section 3.2.4.6 analyzes the cumulative effects of the proposed transmission line when combined with the present and reasonably foreseeable future actions, including development.

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Canfield	Skip	25	2	Utilize appropriate lighting: Utilize consistent lighting mitigation measures that follow "Dark Sky" lighting practices. Effective lighting should have screens that do not allow the bulb to shine up or out. All proposed lighting shall be located to avoid light pollution onto any adjacent lands as viewed from a distance. All lighting fixtures shall be hooded and shielded, face downward, located within soffits and directed on to the pertinent site only, and away from adjacent parcels or areas. A lighting plan should be submitted indicating the types of lighting and fixtures, the locations of fixtures, lumens of lighting, and the areas illuminated by the lighting plan. Any required FAA lighting should be consolidated and minimized wherever possible.	There are no new light sources proposed with this project.
Canfield	Skip	25	3	The project may be subject to BWPC permitting. Permits are required for discharges to surface waters and groundwater's of the State (Nevada Administrative Code NAC 445A.228). BWPC permits include, but are not limited to, the following: • Stormwater Industrial General Permit • *De Minimis* Discharge General Permit • Pesticide General Permit • Drainage Well General Permit • Temporary Permit for Discharges to Groundwater's of the State • Working in Waters Permit • Wastewater Discharge Permits • Underground Injection Control Permits • Onsite Sewage Disposal System Permits • Holding Tank Permits Please note that discharge permits must be issued from this Division before construction of any treatment works (Nevada Revised Statute 445A.585).	Table 1.9-1 in the EIS has been revised to specifically identify applicable permits. There are no wells, underground injection, sewage, or holding tanks proposed with this project.

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Canfield	Skip	25	4	Additionally, the applicant is responsible for all other permits that may be required, which may include, but not be limited to: • Dam Safety Permits- Division of Water Resources • Well Permits- Division of Water Resources • 401 Water Quality Certification – NDEP • 404 Permits- U.S. Army Corps of Engineers • Air Permits- NDEP • Health Permits- Local Health or State Health Division • Local Permits- Local Government	Applicable permits are listed in Table 1.9-1. There are no dams or wells proposed with this project.
Canfield	Skip	25	5	One of the proposed routes crosses the Truckee River in two locations in the Verdi Area. NV Energy will be required to obtain an easement for the new line, should they select that alternative. Additionally, NV Energy has several other lines crossing the Truckee in that same area without benefit of any authorizations or easements. NDSL will require, as part of the granting any easements for the new line, NV Energy applying for and securing easements for their existing lines.	Table 1.9-1 has been revised to include Nevada Division of State Lands easement for aerial crossing over the low water mark of the Truckee River.
Loverin	Jan and Jim	26	4	The residents of Long Valley are concerned about the expansion of the Bordertown substation and the impact it will have on our area.	The EIS analyzes the expansion of the Bordertown Substation.

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Loverin	Jan and Jim	26	5	With the proposed expansion now, we are asking for expanded landscaping to mitigate any further visual impacts to Sierra County road 570 and Long Valley. We are proposing the following: 1. Extend the north side of existing berm approximately 500-700 feet. In the first paragraph of the attached Agreement, 20 cottonwood trees were planted in the ravine north of the substation. These trees were not irrigated and died, leaving the substation exposed. 2. Plant 30 IRRIGATED evergreen # 1 quality, 15 gallon trees on the newly extended berm. 3. We would like to amend the current agreement to include a 5 year guarantee for the newly planted trees; after the 5 year period, if 15% of the trees die from either manmade or natural circumstances, NV Energy will replace them with original # 1 quality stock. 4. Use a dull anti-glare finish on all tower structures.	The proposed expansion of the Bordertown Substation is on BLM-administered public land designated as Visual Resource Management (VRM) Class III. The analysis of visual effects concluded that the proposed expansion would conform to the objectives of VRM Class III. The materials used in the expansion would be similar to those currently in use and new components would not be taller than existing structures, making the visual contrast negligible. Inside the substation, the existing 345 kV termination structures are the tallest components (80 feet tall to the top of the lightning mast). The termination structures for the proposed 120 kV line would be no taller than 60 feet tall to the top of the lightning mast. New 345 kV and 120 kV bus work would be 16 to 33 feet tall, and would be generally out of view because the expansion would be constructed on the east side of the existing man-made berm. The steel poles that will be used for the proposed transmission line will weather to a dark brown, matte color that will appear the same color as the pole structures used for the Alturas 345 kV transmission line, which are also anti-glare. Thus, for the transmission line, the visual contrast will also be negligible. Because visual contrast will be negligible, additional mitigation was deemed unnecessary.

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von Seggern	David	27	1	The preferred alternative (Poeville Alternative) has 18.0 new miles of transmission line, a fact which is clear on the accompanying maps. Of the 18.0 miles, 12.6 will be shared with an existing corridor, leaving 5.4 miles to be constructed in the new corridor across Peavine Mountain. The Mitchell Alternative leaves 7.1 new miles of corridor while the Peavine Alternative leaves 7.5 miles of new corridor. We agree that the preferred alternative has the least new corridor, thus satisfying the policy that the USFS should choose a path which utilizes existing corridors best. Yet this only saves 1.7 and 2.1 miles when compared to the Mitchell and Peavine Alternatives. What tradeoffs are made to minimize the number of miles to become new utility corridor?	Table 2.12-2 provides a summary and comparison of the impacts (i.e., tradeoffs) that will be made from implementation of any of the action alternatives, including the Poeville Alternative.
von Seggern	David	27	2	The preferred alternative puts a power line on the part of Peavine Mountain facing the built-up portions of Reno and surrounding areas.	Visual impacts of the Poeville Alternative are assessed in Section 3.2.4.4. Photo simulations KOP 9 through 17 in Appendix C show expected post-construction conditions along the Poeville Alternative. See response to comments 2-4 and 27-11.
von Seggern	David	27	3	We also point out that much of the route across Peavine for the preferred alternative will require temporary roads	All alternatives will require construction of temporary roads. Table 2.12-1 compares miles of temporary roads needed for each alternative.
von Seggern	David	27	4	Will require construction on often fairly high slopes	Section 3.6.1.5 and Figure 3.6-3 identify that steep slopes occur throughout the analysis area. Section 3.6.2.2 describes that implementation of design features (Appendix B) would reduce the potential for water quality degradation from erosion and sedimentation.

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von Seggern	David	27	5	Will disturb many intermittent stream channels	Although the Poeville Alternative has more impacts to intermittent channels, the impacts to intermittent channels would be minor under any of the action alternatives (Section 3.6.2.2). Although the impacts would not be long-term, impacts are addressed primarily through BMPs, restoration of project disturbances, and implementation of design features specific to water resources and soils (Appendix B). Any improved crossing would be monitored such that repairs or remedial measures are promptly implemented.
von Seggern	David	27	6	To gain a small decrease in number of miles of new corridor, the impacts of the preferred alternative need to weighed more carefully against per-mile impacts of the other alternative routes.	Using per-mile impacts is not appropriate for all resource issues as it would make certain resource impacts on the Poeville Alternative appear smaller. However, a comparison of impacts across all alternatives is presented in Table 2.12-2.
von Seggern	David	27	7	The preferred alternative has more stream crossings than the other alternatives according to Table 2.11-1, and this needs to be weighed.	See response to comments 27-5 and 27-6.
von Seggern	David	27	8	It is not clear that NV Energy will actually be able to clear the hurdles of all the private land permitting, the issuance of new Special Use Permits by the City of Reno, Regional Plan Amendment, and the required NDEP permits.	Once a Final Record of Decision is issued, NV Energy would be responsible for obtaining all of the necessary private land easements and other required permits. All necessary permits and authorizations will be required as conditions of approval for the permit issued by the USFS.
von Seggern	David	27	9	Visual impacts are of prime concern to us. Development on the higher slopes and higher elevations around the Truckee Meadows has always brought our scrutiny. We feel that the VQO (Visual Quality Objectives) analysis is flawed.	See response to comments 27-10 and 27-11.

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von Seggern	David	27	10	The KOP (Key Observation Points) on map 3.2-1 are not adequately distributed. For the Mitchell or Peavine Alternatives, none of the KOP's are really within the scenic areas along the routes.	KOPs, the specific points with critical views of the proposed project, were identified based upon areas of high visual sensitivity, angle of observation, number of viewers, public access, length of time the project is in view, relative project size, season of use, and light conditions. KOPs were established at the southern and northern ends of the Mitchell and Peavine Alternatives because these areas have the most number of viewers, most public access, and are generally used during all seasons. Other, more interior sections of the Mitchell and Peavine Alternatives are located in less developed areas, and generally do not have the above listed criteria that KOPs are based upon.
von Seggern	David	27	11	For the preferred alternative (Poeville) the KOP's are along the route, but this does not adequately capture the full visual impact of a power line on the side of Peavine which can be seen from wide portions of the valley below and other key observation points off the route. Moreover, due to the lack of vegetation on the south and east sides of Peavine Mountain, the visual impact is especially great.	Typically, any given project or action will be visible from many locations in the landscape. KOPs are not established at every possible location from which a project or action may be visible. KOPs are established as sensitive receptor sites based upon areas of high visual sensitivity, angle of observation, number of viewers, public access, length of time the project is in view, relative project size, season of use, and light conditions. KOP 15 was selected as an ideal location to analyze the potential visual impacts of the Poeville Alternative as it traverses the south side of Peavine Peak because: 1) it is among the closest locations that the public can get to this portion of the Poeville Alternative without trespassing on private land; and, 2) it is next to the Truckee River, a major recreational attraction in the region. While the Poeville Alternative would be visible from many other locations in the Truckee Meadows south of Peavine Peak, the angle of view would generally be very similar to that of KOP 15. In February 2015, the USFS visited additional locations in the valley, such as the trailhead for Hunter Creek Trail, the Cabela's retail store, and the Somersett community. Photos from these locations show that the visual contrast of the Poeville

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					Alternative within the characteristic landscape would not be different than what was determined from KOP 15. Photographs from each location visited in February 2015 are available in the Project Record.
von Seggern	David	27	13	Impacts on forest habitat are also a big concern of ours. Although the preferred alternative would disturb or remove the most actual acreage of vegetation (Section 3.9.2), this vegetation is mostly of the low shrub and tree species when compared to the coniferous forests in the other routes on the west side of Peavine Mountain. Here, again, a weighting factor needs to be put on the acreage amounts of disturbance or removal. This weighting factor needs to account for the drier climate on the east and south sides of Peavine Mountain which makes recovery of vegetative communities difficult and definitely very long-term, with a high probability of invasive weeds and grasses.	As explained in Section 2.1.1, each alternative was developed to address a resource concern or maximize an opportunity, such as utilizing existing utility corridors or use of burned land. Recognizing the value of forested communities, the Peavine Alternative was developed specifically to minimize crossing of pine forest communities. Impacts to vegetation communities are further described in Section 3.7.2.2. The USFS recognizes that less ecologically resilient sites such as south facing slopes and steep slopes on Peavine Mountain may not be successful. As mitigation, for every acre of habitat that is not successfully restored in 5 years, 2 acres of habitat will be restored to benefit wildlife. With regard to weed infestation, risks are minimized through the implementation design features (Appendix B) which requires that a weed treatment plan be developed and that treatment measures are taken during and after construction.
von Seggern	David	27	14	Basically, we do not support any of the proposed alternatives. In particular, the preferred alternative has a number of issues that we believe should be reexamined before preparing a final EIS. We realize that the USFS draws on regulations and policies to support the preferred alternative, but some of these instances may involve interpretations.	Comment noted. See response to comment3-8.
Sanderson Port	Patricia	28	1	The Department of the Interior has received and reviewed the subject document and has no comments to offer. Thank you for the opportunity to review this project.	Comment noted.

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Martin	P. P.	29	1	Enclosed is a copy of drawing 485012WCRD (LS-12/13), sheets 1 through 34; drawing 485012CFWC (LS-12), sheets 18 through 132; drawing 485055REFA (LS-55), sheets 1 through 8; which respectively depict the general alignment of Kinder Morgan's (KM) active 10-inch, 8-inch, and 6-inch high pressure refined petroleum products pipelines. Also shown within the above drawings is Line Section 13, (LS-13), KM's 6-inch out of service pipeline. In the interest of public safety and for pipeline protection, the following provisions must be considered in the design and subsequent construction of improvement near KM's pipelines: 1. Adherence to applicable provisions enumerated in the enclosed copy of (a) L-OM200- 29 "Guidelines for Design and Construction" relating to proposed projects affecting Kinder Morgan pipelines and (b) copy of Information Bulletin #03-001, issued from the Office of the (California) State Fire Marshal concerning encroachments within and adjacent to pipeline easements. 2. Exact pipeline location can only be determined by pothole at maximum 50 feet intervals (or as required by the on-site KM representative). The pothole work must be performed by hand excavation and in the presence of a pipeline representative. 3. Notify KM Area Manager, Gary Kulaszewski (775) 358-6971), at least two weeks prior to commencement of work. Mr. Kulaszewski will arrange for a pipeline representative to be present during work near the pipelines. To avoid delays in response to future correspondence, please refer to File Reference #11030.	NV Energy is aware of Kinder Morgan's (KM) concerns regarding potential damage to the pipeline. A copy of the KM comments has been forwarded to NV Energy and would be included in a COM Plan. Design feature GP 4 was developed specific to blasting in the vicinity of KM's pipeline.

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Mabe	Rene	31	13	The Final EIS should either include a project design feature that places the power line underground for a distance of approximately 1450 feet, located within the strip of NDOT/NV Energy property between the frontage road and US 395.	Although undergrounding alternative was considered but eliminated from detailed study (Section 2.11.15), undergrounding short segments of the line as mitigation in front of the Peavine Ranch have not been dismissed.
Mabe	Rene	31	17	Additional direct/indirect impacts to the Peavine Ranch that have not been disclosed. Construction activities and associated vibrations at such a close proximity to fragile historic structures could result in foundation or other structural failure. The 85-foot disturbance radius for two of the eight power poles will remove my septic tank, leach field, and propane tank. There are no provisions to prevent staging areas, transmission wire setup sites, or widening of the road from occurring on the Peavine Ranch. Wire setup sites are approximately 600 feet radius in size (DEIS, Table 2.3-1, page 2-9).	Design feature CU 3 requires that a Historic Properties Treatment Plan (HPTP) be developed in consultation with the California and/or Nevada State Historic Preservation Offices (SHPOs), tribes, and NV Energy for the selected alternative if avoidance of a cultural site identified as eligible or treated as eligible cannot be avoided. A Memorandum of Agreement and HPTP would be prepared and signed prior to the record of decision and implemented according to the agreement and would become part of the Construction, Operations, and Maintenance Plan.
Mabe	Rene	31	18	The Poeville Alternative does not consider avoidance of the Peavine Ranch, excavation and other ground disturbing activities will result in the destruction and degradation of NRHP listed historical resources. There are no provisions in place to protect the historic buildings from becoming permanently damaged or destroyed from direct or indirect construction activities i.e. associated vibrations that may result in foundation or other structural failures.	See response to comment 31-17.
Mabe	Rene	31	19	3) Irreversible and irretrievable loss of cultural resources: Page 3-141, Table 3.14-1 states "The action alternatives would not have any irreversible or irretrievable commitments of cultural resources". This is a false statement as it relates to my historic property and the implementation of the Poeville Alternative, identified by the line officer as the Preferred Alternative	Table 3.15-1 has been revised to state that there may be irreversible effects to the integrity of a historic property. There may be short-term effects to setting, but those would be retrievable if the power line was removed. When irreversible effects are unavoidable the USFS will consult with the tribes and California and Nevada SHPOs along with NV Energy to mitigate the loss of the historic property.

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Mabe	Rene	31	20	The old growth trees that provide shade and screening were noted as a component of the character of the property's physical features within the property's setting that contributed to its historic significance and listing in the NRHP. The long-term loss of these trees would constitute an irretrievable commitment that is not disclosed within the DEIS.	The loss of the cottonwood trees would be an irretrievable commitment of vegetation resources, not a loss of the historic Peavine Ranch. Any effect to an element of the historic setting would be addressed in the Memorandum of Agreement and HPTP if needed to comply with Section 106 of the National Historic Preservation Act.
Mabe	Rene	31	25	The FEIS should produce an unbiased, third party study that evaluates the loss of property value and how it impacts private property owners, state and local government's tax revenue, and how it will affect the fair market value of the affected 130 parcels of private land.	The Warren & Schiffmacher LLC (2007) study was conducted in the Reno area and based on a 120 kV transmission line. Site specific valuation of private property will be done by qualified appraisers along and for the approved alternative.
Mabe	Rene	31	26	The document did not disclose how the Poeville Alternative affects the visual context as it relates to the NVRCMA. The discussion of foreground of the landscape at KOP 9 and KOP 10 on pages 3-13 and 3-14 was inadequate to assess the impact on the historic and open space values of the Peavine ranch.	Potential adverse effects to all historic properties were documented and disclosed during the Section 106 process for the Bordertown Project. There may be adverse effects to the site if the Poeville Alternative is selected. If the Poeville Alternative is selected, an MOA and HPTP will be developed to mitigate adverse effects to the site. One of the major points to be considered will be the visual impacts of the nearby pole placement/installation as well as the lines supported by the pole. Furthermore, placement, height, and landscape compatibility of the pole(s) will need to be considered as well. In fact, the installation of taller poles may itself mitigate new and past impacts by concentrating the lines at a single height. Detailed visual simulations specifying all possible visual obstructions will be necessary to help refine any mitigation measures pursued on behalf of this resource. In addition to the measures for the specific visual impacts of any physical poles, additional “landscape” work could be pursued to improve the condition of the area around Peavine Ranch. Public outreach and an additional emphasis on regional historical research, possibly focusing on the ranching/agricultural theme, could also be coupled with any mitigation measures to bolster the historical significance of Peavine Ranch and

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					the early ranching and agricultural history of the Truckee Meadows.
Mabe	Rene	31	27	To be consistent, the undergrounding option should be pursued to avoid impacts on the private property	See response to comment 31-26.
Mabe	Rene	31	29	The resulting report states, "electric fields ranged from 0.007 kV/m to 1.007 kV/m near the 345 kV transmission line. Trees and bushes were present along the residential driveway which provided shielding of the electric field" (EMF Evaluation for Proposed Bordertown to California 120kV Transmission Line, page 41, 2013). In the fall of 2014, NV Energy insisted in removing the shrubs and trees along my fence line (beneath #257 distribution line) that were providing this shielding. In addition, they topped a fir tree that was the last of the three planted as mitigation for shielding and visual impacts from the construction of the 345kV Alturas line. I contend that the shielding that was present during your data collection has been removed and the existing measurements may be higher today.	Electric fields were modeled for single pole structures with an underbuild and the modeled results are below the exposure limits recommended by the American Conference of Governmental Industrial Hygienists, Institute of Electrical and Electronics Engineers, and International Commission on Non-Ionizing Radiation Protection within the proposed ROW. EMF was measured in front of the shrubs and trees where there is no influence from shielding. Electric fields were below the recommended exposure limits.
Mabe	Rene	31	30	"Trees and buildings can significantly reduce ground level electric fields by shielding the nearby area" (page 3-31). In addition, specific design features for the Poeville Alternative mitigating impacts to the cultural and visual resources of the Peavine Ranch included additional landscaping and planting of trees. This proposal has merit; however, it is in direct conflict with the requirement of the proposed action that requires tree removal within the 90-foot ROW plus any tree outside the ROW that may have the potential to fall on the transmission line wire (Table2.3-1, page 2-9).	Design features or mitigation measures would need to be in compliance with power line safety regulation and code, but would not preclude planting trees or vegetation a safe distance outside of the right-of-way to improve visual screening, if feasible. Additional mitigation will be identified in a MOA, if a MOA is needed to comply with Section 106 of the National Historic Preservation Act.

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Mabe	Rene	31	31	I was unable to find any reference within the DEIS or EMF report that addressed the noise emitted by the power lines and how adding the 120kV will add to the noise pollution emitted by the Alturas 345kV line. The Alturas power line currently emits a constant buzzing sound. However, when fog, rain, or snow is present, a loud and constant popping noise occurs.	The EIS now includes Section 3.1.1.2 that discusses corona noise (i.e., noise produced by power lines).
Mabe	Rene	31	32	The disclosure of stray voltage/current impacts was not address in the DEIS and was given a one sentence statement in the EMF specialist report. As a landowner with three metal driveway gates directly beneath the proposed 120kV line, the distribution line, and within 60 feet of the 345kV Alturas pole, I would like to know what the proposed risk to my family is from stray voltage and currents. The DEIS did not disclose this information.	The EMF technical report discusses spark discharges and electric shocks. The proposed project would not create conditions where stray current or stray voltage would occur. If an energized conductor were to fall to the ground and create a line-ground fault, high speed relay equipment is designed to de-energize the line in less than 0.1 second. This safety feature would reduce potential for any stray arcing to ground objects.
Mabe	Rene	31	33	The DEIS discloses the width of the proposed Right of Ways (ROW) as 90-foot-wide. (DEIS, page 2-1 and Table 2.3-1, page 2-9). However, the Electric and Magnetic Field Evaluation report specifies the 90-foot ROW would only be necessary for the H-frame configuration and the single pole would require a 40-foot wide right-of-way (page 78). To avoid confusion when discussing mitigation and impacts associated with long-term ROWs, the FEIS should clarify and disclose the ROW width required on each private parcel so that landowners can better determine how this project affects them.	The EIS has been revised to clarify that the right-of-way would be reduced to 40 feet wide in constrained areas where single pole structures are used. Tables 3.4-4 through 3.4-10 have been revised to clarify the distance to the ROW edge used in the analysis.
Mabe	Rene	31	34	The Peavine Ranch consists of six private land parcels. The parcel located to the east of the historic buildings was purchased by my family after the NRHP listing and was not evaluated for eligibility at the time of the Alturas project. SHPO is currently evaluating the parcel to determine eligibility of the historic component for inclusion in an amendment to the NRHP listing for the Peavine Ranch. The change in the NRHP site boundary will affect your analysis within the FEIS.	Per Section 106 of the National Historic Preservation Act, the Cultural Resource Report for the Bordertown Project considers all potential adverse effects of the project on historic properties, including Peavine Ranch. See response to comment 31-26.

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Mabe	Rene	31	35	Provide at least one viable alternative that would result in avoidance of the Peavine Ranch historical resources.	See response to comment 31-48.
Mabe	Rene	31	36	Please include a project design feature that places the power line underground for the distance of approximately 1450 feet, located within the strip of NDOT/NV Energy property between the frontage road and US 395. This mitigation would not be cost prohibitive as it is for a limited distance, level in terrain, and within the existing NDOT ROW for Hwy 395.	See response to comment 31-13.
Mabe	Rene	31	38	The Poeville Alternative violates the terms of the existing Memorandum of Agreement (Memorandum of Agreement) issued for the Alturas Transmission Line 106 compliance: The DEIS proposes actions that would violate the terms of the (Memorandum of Agreement) that was issued in compliance with the programmatic agreement and Section 106 of the National Historic Preservation Act (NHPA) regulations (36 CFR 800) for the Alturas Transmission Line Project. The Poeville alternative proposes to utilize the existing utility corridor as the Alturas line. Cultural resources protected or mitigated under this existing Memorandum of Agreement cannot be negated by the addition of the new 120kV line within the same utility corridor. Site avoidance, data recovery, component evaluation, marker construction, recordation and landscaping were specific compliance items of the Memorandum of Agreement for the Peavine ranch property (SHPO, 1998). The Peavine Ranch was listed in the NRHP after this Memorandum of Agreement was completed. The construction of this proposed transmission line would constitute an adverse impact to this site and nullify the mitigation that the 1998 Memorandum of Agreement put in place.	The implementation of the Poeville Alternative is considered a separate undertaking from the Alturas project. A Memorandum of Agreement (MOA), if a MOA is needed to comply with Section 106 of the National Historic Preservation Act, will be developed specific to the proposed project that will include additional mitigation measures and a Historic Properties Treatment Plan (HPTP) to mitigate impacts to the historic property.

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Mabe	Rene	31	39	Adverse direct, indirect, and cumulative impacts to NRHP site are not mitigated with alternative route adjustment, design features, or proposed mitigation.	See response to comment 31-26.
Mabe	Rene	31	40	The DEIS stated that the "Peavine Ranch Northside of U.S. 395" Alternative was dropped from further consideration: "To address the concerns about effects to the historic setting of the Peavine Ranch, the USFS consulted with the SHPO to develop mitigation measures. Concerns would be addressed through implementation of design features for the Poeville Alternative. Consequently, this alternative was dismissed because it would not be economically practical to construct the proposed transmission line across U.S. Highway 395 if there are no mitigation benefits to gain from doing so."	The rational for dismissal of the Peavine Ranch North Side of US 395 was re-considered in the EIS as not technically practical and Section 2.11.13 has been revised accordingly.
Mabe	Rene	31	41	According to the design features on page 2-21, "to avoid impacts to private property and historic setting of Peavine Ranch, the Poeville Alternative was moved to the perimeter of the Peavine Ranch property." Adjusting the line to the perimeter does not diminish the direct adverse impacts listed above. Page 2-21, 2.8.3 is entitled "Peavine Ranch Off Property Route Adjustment". However, the adjustment described in the paragraph and maps show that the line was moved to the perimeter of the Peavine Ranch. This wording is misleading to the public. This places the line directly on the property, in the path of the historic dump, and in close proximity of the historic buildings. The new ROW requirements would dictate the removal of brush and old growth trees that were described as part of the historic context when it was listed as an NRHP site.	The name of the alternative in Section 2.8.3 has been revised to Peavine Ranch Property Route Adjustment to clarify the modification of the route. The purpose of moving the line was to avoid splitting the parcel and to follow an existing distribution line.

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Mabe	Rene	31	42	The justification for dropping this alternative from further study is erroneous. I believe this is still a viable alternative to mitigate the impacts to the Peavine Ranch. If the Agency does not analyze the environmental effects of this route deviation, then it will not be considered as a viable solution for mitigation during the 106-consultation process.	See response to comment 31-40.
Mabe	Rene	31	43	The DEIS, on page 3-141 and Table 3.15-1, states that it is in conformance with the Archeological Resource Protection Act of 1979. "Design features (Appendix B) have been developed to prohibit the collection or disturbance of archeological sites encountered during construction or maintenance of the project." This statement is false as the construction of the transmission line on the Peavine ranch will not be able to avoid the destruction and disturbance of the historic resources on the property	Additional mitigation will be identified in a MOA, if a MOA is needed to comply with Section 106 of the National Historic Preservation Act. Table 3.16-1 (previously 3.15-1) has been revised to state, "Design features (Appendix B) have been developed to prohibit the unauthorized collection or disturbance of previously unidentified archeological sites encountered during construction or maintenance of the project."
Mabe	Rene	31	44	CU 8 - CU 11 attempt to mitigate the visual impacts of the alternative. These measures require the placement of power lines 25 feet higher on the pole, but do not indicate if a larger or taller pole would be necessary to provide this height. It is unknown if the impacts of this mitigation would actually cause a larger "foot print" on the ground.	Single pole structures proposed along Peavine Ranch would be between 65 to 90 feet tall and would not be taller or larger than the typical pole shown on Figure A1 in the EIS. Furthermore, specific mitigations for historic properties will be addressed in the MOA and HPTP. Interested and affected parties will be invited to participate in the process.
Mabe	Rene	31	45	CU 12 proposes mitigation measures that include an off-site historical marker discussing ranching in the general area. An interpretive marker was erected at the intersection of Red Rock Road and Virginia Street as mitigation for the Alturas Transmission Line. There is no further need for another marker.	Comment noted. Specific mitigations for historic properties will be addressed in the MOA and HPTP. Interested and affected parties will be invited to participate in the process.
Mabe	Rene	31	47	The Project Design Features specific to protecting cultural resources state that "cultural sites identified as eligible for inclusion on the NRHP would be avoided (Appendix. B, CU 3, page B-8).	Design feature CU 3 also includes the preparation of a HPTP if impacts to a listed or eligible site are unavoidable.

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Mabe	Rene	31	48	The Poeville Alternative does not offer an alternative to avoid direct impacts to the Peavine Ranch, which is the only NRHP listed site within the entire planning area.	Correct, however, there are three alternatives considered in the EIS (e.g., Mitchell, Peavine, Peavine/Poeville Alternatives) that avoid the Peavine Ranch.
Mabe	Rene	31	49	…or analyze the previously dropped alternative location on the Northside of U.S. 395.	See response to comment 31-40.
Mabe	Rene	31	50	The National Historic Preservation Act regulations defines adverse effects as those that can diminish the integrity of the property's location, setting, design, materials, workmanship, feeling, or association. The proposed ROW, which requires the removal and maintained absence of old growth trees and shrubs, impacts the NRHP listing by diminishing site integrity of setting, design, feeling and association. The DEIS does not evaluate the effects resulting from the physical destruction or damage to this historic property; the alteration of the property; the change of the character or physical features within the property's setting that contributes to its historic significance; or the audible elements (refer to issue 6c below) that diminish the integrity of the properties significant historic features. The DEIS did not disclose how the Poeville Alternative affects the visual context as it relates to the NRHP listing. The discussion of foreground of the landscape at KOP 9 and KOP 10 on pages 3-13 and 3-14 was inadequate to assess the impact on the historic and open space values of the Peavine Ranch	See response to comment 31-26.

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Mabe	Rene	31	51	The loss of property value and the resulting loss of state, county, and city tax revenues was not addressed within the DEIS: Land Use and Private Property Value was identified as one of the three key issues addressed within the DEIS. According to page 3-28, "The existence of a 120kV transmission line adjacent to vacant and undeveloped property may have negative impacts on property values between 10% and 15%". If the land values decrease, so does the total assessed tax value; resulting in a reduction of tax revenues. The DEIS does not assess the economic impacts this may present to the state and local governments nor the communities that they serve.	Section 3.3.4.2 has been revised to include a discussion of tax revenue impacts.
Mabe	Rene	31	52	The DEIS makes reference to the Warren and Schiffmacher LLC. Power Line Study stating, "Impacts on the property values of private properties developed with an existing house would be negligible." (page 3-29). This is a bold statement to make in the document without providing access to the Warren and Schiffmacher report for review.	The 2007 study conducted by Warren and Schiffmacher LLC was posted on the project website and has been provided to the commenter.
Mabe	Rene	31	53	Before the completion of the Final EIS, NV Energy should provide you with an engineering report, evaluating where the direct impacts would occur (pole placement, area of disturbance…)"	Once the agency selected alternative is identified in the Final EIS and Draft ROD, NV Energy will begin engineering, design, and the COM Plan. The COM Plan would include maps of the alignment and ancillary facilities; access maps, copies of permits and associated permit conditions; and specific implementation plans for restoration (including habitat restoration), fire prevention, emergency response, HPTP, protection of sensitive species, protection of wetlands and streams, stormwater pollution prevention; fencing, and weed management. Prior to its implementation, the COM Plan will be reviewed and approved by the USFS.
Mabe	Rene	31	54	Placement of the above ground lines on the north side of HWY 395 should be fully evaluated in the FEIS as the direct impacts to this NRHP site have not been mitigated with proposed project design criteria and the Agency has not justified the dropping of this Alternative.	See response to comment 31-40.

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Sysum	Scott	32	1	Following our review of the DEIS, we are concerned with the lack of sufficient information to determine the extent of direct, indirect and cumulative impacts to air and water resources. Due to these concerns, we have rated the DEIS as Environmental Concerns - Insufficient Information (EC-2).	EIS Section 3.6, Water Resources and Soils, and Section 3.12, Air Quality have been revised to include requested information.
Sysum	Scott	32	2	We recommend that the Final EIS include estimates of the proposed project's direct and indirect air emissions, and demonstrate how the project would comply with Clean Air Act General Conformity requirements and section 404 of the Clean Water Act.	Section 3.12 of the EIS has been revised to include estimates of the proposed project's direct and indirect air emissions. In addition, Sections 3.12 and 3.6 have been revised to describe how the project will comply with Clean Air Act General Conformity Requirements and Section 404 of the Clean Water Act, respectively.
Sysum	Scott	32	3	The Draft EIS does not provide any estimates of emissions of criteria pollutants or greenhouse gases for the construction or life of the project, nor does it demonstrate compliance with the General Conformity requirements of the Clean Air Act.	Section 3.12 and 3.13 has been revised to include estimates of the proposed project's direct and indirect air emissions, including emissions of criteria pollutants and greenhouse gases and how it will comply with the General Conformity requirements of the Clean Air Act.
Sysum	Scott	32	4	The Draft EIS states: "The potential direct and indirect impacts on air quality were analyzed and quantified using the impact indicator listed below: "Emissions of criteria pollutants (CO, lead, N02, 03, PM10, PM2.5, and S02) anticipated from construction, operation, and maintenance of the proposed project, and whether these emissions exceed the NAAQS." No mention is made of the need to comply with California Ambient Air Quality Standards established by the California Air Resources Board. California has set standards for certain pollutants, such as particulate matter and ozone that are more protective of public health than are the NAAQS. California has also set standards for some pollutants that are not addressed by federal standards.	Section 3.12 of the EIS has been revised to include compliance with the California Ambient Air Quality Standards.

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Sysum	Scott	32	5	As noted on page 3-22 of the Draft EIS, the proposed project may traverse sections of the community of Verdi area, which is developed with residential properties, and would be located an unspecified distance from an elementary school and library. Sensitive receptors, especially children are more sensitive to health impacts from PM10, PM2.5 and toxic air emissions.	Section 3.12.2 has been revised to describe new design features to address impacts to air quality, and how implementation of design features would reduce temporary construction impacts on ambient air quality to negligible for all action alternatives.
Sysum	Scott	32	6	Quantify; Emissions - In the Final EIS, provide estimates of criteria pollutant emissions from potential construction activities and operation of the proposed project and discuss the timeframe for release of these emissions over the lifespan of the project. Consider the direct, indirect, and cumulative impacts of the proposed project's air emissions, and describe mitigation measures that would minimize these emissions and impacts.	Section 3.12 of the EIS has been revised to include estimates of the proposed project's emissions of criteria pollutants from construction activities and operation activities. These estimates are used in the evaluation of the projects potential direct, indirect, and cumulative impact on air quality.
Sysum	Scott	32	7	General Conformity -Using the emissions estimates, determine whether the emissions would be below or above *de minimis* levels established pursuant to the Clean Air Act. If emissions would be above *de minimis* levels, perform a general conformity determination.	Section 3.12 of the EIS has been revised to include estimates of the proposed project's direct and indirect air emissions, including emissions of criteria pollutants and greenhouse gases and how it will comply with the General Conformity requirements of the Clean Air Act. Emissions are anticipated to be below *de minimis* levels.
Sysum	Scott	32	8	Specify Emission Sources - The Final EIS should specify the emission sources, by pollutant, from mobile sources, stationary sources, and ground disturbance. This source-specific information should be used to identify appropriate mitigation measures and areas in need of the greatest attention.	Section 3.12 of the EIS has been revised to specify the emission sources, by pollutant, from mobile and stationary sources, as well as ground disturbance.

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Sysum	Scott	32	9	Equipment Emissions Mitigation Plan - The EPA suggests the Final EIS include an EEMP. An EEMP would identify actions to reduce diesel particulates, carbon monoxide, hydrocarbons, and NOx associated with construction activities. We recommend that the EEMP require that all construction-related engines: • Are tuned to the engine manufacturer's specification in accordance with an appropriate time frame. • Do not idle for more than five minutes (unless it is necessary for the operating scope of the equipment and operation). • Are not tampered with in order to increase engine horsepower. • Include particulate traps, oxidation catalysts and other suitable control devices on all construction equipment used at the project site. • Use diesel fuel having a sulfur content of 15 parts per million or less, or other suitable alternative diesel fuel, unless such fuel cannot be reasonably procured in the market area. • Include control devices to reduce air emissions. The determination of which equipment is suitable for control devices should be made by an independent Licensed Mechanical Engineer. Equipment suitable for control devices may include drilling equipment, generators, compressors, graders, bulldozers, and dump trucks.	Project design features (Appendix B) have been revised to include additional features to reduce emissions and minimize impacts to air quality. These design features include: tuning engines to manufacturer's specifications; not allowing engines to idle unnecessarily for more than 5 minutes; not tampering with engines to increase horsepower; including particulate traps, oxidation catalysts and other suitable control devices; and, using diesel fuel with a sulfur content of 15 parts per million or less. These design features are comprehensive of any measures that would be included in an emissions mitigation plan. Accordingly, a separate emissions mitigation plan is not necessary.
Sysum	Scott	32	10	Fugitive Dust Control Plan - The Final EIS should identify the need for a Fugitive Dust Control Plan to meet the requirements of the Northern Sierra Air Quality Management District Regulation II Rule 226 and State of Nevada requirements for a Surface Area Disturbance Dust Control Plan.	Section 3.12 of the EIS has been revised to identify the need for a Fugitive Dust Control Plan to meet the requirements of the Northern Sierra Air Quality Management District Regulation II Rule 226 and State of Nevada requirements for a Surface Area Disturbance Dust Control Plan.

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Sysum	Scott	32	11	Consider a mitigation measure that would provide advanced notification to sensitive receptors of the potential effects of PM10 and PM2.5, as well as toxic air contaminants. We recommend that such notification be provided concurrently with advanced notification of construction for noise impacts.	Air quality impacts to sensitive receptors were determined to be negligible therefore mitigation is not warranted. See response to comment 32-5. As a courtesy, NV Energy sends notices to property owners adjacent to the ROW prior to construction.
Sysum	Scott	32	13	Include the results of a jurisdictional delineation in the Final EIS, and describe the status of consultations with the Army Corps of Engineers regarding a CWA Section 404 permit, and the Proposed Project's compliance with the 404 (b)(1) Guidelines. The Final EIS should quantify potential impacts to waters of the U.S. to the best extent possible and disclose any uncertainty in the quantification methodology.	A jurisdictional delineation will be conducted on the selected alternative once the alternative has been engineered, and the location of poles and access roads are known. The project has been designed to have conductors and poles span all streams, regardless of jurisdictional status. The classification of potentially jurisdictional streams and identification of flow regime (i.e., perennial, intermittent, and ephemeral) was included in the Specialist Report: Water and Soils Bordertown to California 120 kV Transmission Line Project (USFS 2014h), which allowed for the planning of avoidance and minimization measures. The EIS has been revised to include a map of potential Waters of the U.S. (Figure 3.6-3) and Section 3.6.2.3 and Table 3.6-3 includes an estimate of potential Waters of the U.S. impacts in acres based on a review of aerial imagery.
Sysum	Scott	32	14	To the extent any aquatic features that could be affected by the project are determined not to constitute waters of the United States, the EPA recommends that the Final EIS characterize the functions of such features and discuss mitigation. Under Executive Order 11990 Protection of Wetlands, the Final EIS should specifically discuss mitigation opportunities for impacts to non-jurisdictional wetlands.	Section 3.6.1.3 has been revised and clarifies that Waters of the State that may not meet the criteria of Waters of the U.S. are limited to isolated wetlands and ephemeral channels. A new subsection has been added to Section 3.6.2.2 to include Waters of the U.S. and Waters of the State. Except for two non-jurisdictional wetlands on the Poeville Alternative, no impacts would occur to wetlands. Impacts to ephemeral channels are assessed in Section 3.6.2.2 under stream impacts.
Sysum	Scott	32	15	Agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated greenhouse gas emissions, and the implications of climate change for the environmental effects of a proposed action.	Section 3.13 has been revised to evaluate the potential effects of the proposed project on greenhouse gases, as indicated by its estimated greenhouse gas emissions, and the implications of climate change for environmental effects of the proposed project.

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Sysum	Scott	32	16	The DEIS provides only summary conclusions regarding potential GHG emissions associated with the proposed project and how climate change may influence the potential impacts of the action alternatives. Recommendation: Provide additional information in the Final EIS regarding potential GHG emissions, consistent with the recent CEQ guidance	Section 3.13 of the EIS has been revised to include analysis of potential greenhouse gas emissions, consistent with the final CEQ guidance (2016). GHG emissions loss of carbon sequestering have been quantified for each alternative.
Sysum	Scott	32	17	On p. 3-56, the Draft EIS states: "The potential for soil erosion would be minimized through design features (Appendix B) that require the effective implementation of BMPs and restoration of temporary project-related surface disturbances." Although the design features for the project are listed, the BMPs are not identified.	Although not specifically identified in the EIS, site specific BMPs are described in the standard BMP handbooks used in California and Nevada. The SWPPP would include the of use of BMPs from the following standard references for Washoe County: • The Truckee Meadows Construction Site Best Management Practices (BMP) Handbook, June 2008 Update, prepared by Kennedy/Jenks Consultants, KJ 0795014 • Nevada Contractors Field Guide for Construction Site Best Management Practices (BMPs), December 2013 The SWPPP developer would use BMPs from the following standard references for Sierra County: • California Storm Water Best Management Practices (BMPs) Handbook, Construction BMP Online Handbook, California Stormwater Quality Association. • Department of Transportation (CA) has this option: Storm Water Quality Handbooks, Project Planning and Design Guide, Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual, Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation, March 2003.

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Sysum	Scott	32	18	Also on page 3-56, the Draft EIS states: "To minimize the potential for soil compaction during construction, design feature SO 1 would prohibit the use of heavy equipment when soils are wet." The design feature SO 1 is missing from the list of Project Design Features in Appendix B.	Design Feature SO 1 was replaced with a similar design feature, WA 5, which prohibits operation of equipment on soils too wet to support equipment in order to prevent ruts. The EIS has been revised accordingly.
Sysum	Scott	32	20	Please send a hard copy of the FEIS to this office at the above address (mail code ENF-4-2) when it is officially filed with EPA's electronic EIS submittal tool: e-NEPA.	Comment noted. The EIS will be sent to the provided address as requested.
Sysum	Scott	32	21	The discharge of fill to a water of the U.S. requires a Clean Water Act section 404 permit from the U.S. Army Corps of Engineers. In order to be permitted under section 404, the proposed project must be the Least Environmentally Damaging Practicable Alternative and must comply with the 404 (b)(I) Guidelines, which require that projects first avoid, then minimize, and, finally, mitigate any impacts to waters of the U.S.	Table 3.6-3 has been revised to present potential impacts to Waters of the U.S. Impacts range from 0.007 acre for the Mitchell Alternative to 0.031 acre for the Poeville Alternative. Impacts from any alternative are considered temporary and minor. While the Poeville Alternative has slightly greater potential impacts to Waters of the U.S. than other alternatives, the selection of the Poeville Alternative would comply with the Section 404(b)(1) Guideline because impacts are not significant. The preamble to the Section 404(b)(1) guidelines explains "where there is no significant or easily identifiable difference in impact, the alternative need not be considered to have "less adverse" impact" (Guidelines for Specification of Disposal Sites for Dredged or Fill Material. Rule, 40 Federal Register 230, pp 85339). Avoidance and minimization are the intent of design features developed for water resources and vegetation. The design features are in Section 3.6.2.2 and Appendix B of the EIS.

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Sysum	Scott	32	22	The Draft EIS indicates that waters of the U.S. may be present within the analysis area, but that no jurisdictional delineation has been completed (p.3-52). A jurisdictional delineation would enable the applicant to use the flexibility inherent in transmission line design (e.g., the ability to adjust tower placement and access roads) to determine which alignment constitutes the LEDPA. In the absence of an approved jurisdictional delineation, we are unable to determine whether or not the section 404 requirements would be met.	See response to comment 32-13.
Sysum	Scott	32	23	In the Final EIS, identify the BMPs that would be required by the listed design features. Update the list of Project Design Features in Appendix B of the Final EIS to include design feature SO 1.	See response to comment 32-18 and 32-17.
Morgan	Scott	33	1	The State Clearinghouse submitted the above named Draft EIS to selected state agencies for review. The review period closed on January 26, 2015, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.	Comment noted.
Freese	Mark	34	3	We agree with and support the project design features listed in Appendix B.	Comment noted.

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Freese	Mark	34	4	We recommend adding a design feature/requirement that all acres permanently disturbed will be offset at a 3:1 ratio to address mule deer habitat loss impacts. In addition, acres that are rehabilitated that do not meet the success criteria after 5 years should be offset at a 3:1 ratio. As discussed in previous comment letters and the draft EIS, substantial impacts have occurred to the Truckee Loyalton Interstate Herd. As such and in order to achieve our "no net loss" objective, we recommend that all permanent impacts be offset to prevent further habitat loss for mule deer.	The EIS has been revised to include a new design feature and an additional mitigation measure. Design feature WL 8 requires that NV Energy set up a habitat restoration account and fund restoration of habitat based on the number of wildlife habitat permanently and temporarily disturbed. Section 3.9.2 has been revised to state that the failure to successfully restore target vegetation communities would represent a long-term loss of habitat and may result in more than a minor impact to mule deer especially if the habitat is winter range. The EIS has been revised to include the suggested mitigation for the habitat that is not successfully reclaimed after 5 years. Mitigation would ensure that long-term minor impacts would be reduced to negligible.
Webster	Michael & Shernaaz	35	1	The Websters live and own property in Verdi, Nevada and California, including an undeveloped parcel in Dog Creek canyon. The Websters regularly recreate in the vicinity of, and will be directly affected by, several of the alternatives routes of the transmission project.	Direct effects to recreation would be anticipated from any of the action alternatives. A detailed discussion of the potential direct effects to recreation from each action alternative is provided in *Specialist Report: Recreation Bordertown to California 120 kV Transmission Line Project*, on the project website: http://www.fs.usda.gov/goto/htnf/bordertownline.
Webster	Michael & Shernaaz	35	6	As the most eastward route the Poeville alternative passes through the least amount of actual forested land and thus its construction will presumably have the least impact on vegetation and wildlife. The alternative routes instead pass through heavily wooded areas that would necessarily suffer much more extensive impact and vegetation loss if a corridor were constructed.	Comment noted.

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Webster	Michael & Shernaaz	35	7	The existing Poeville line already includes actual lines or space for lines that are currently not in use, and thus could potentially be used for this project without the need to construct new lines. This further suggests that the Poeville route will have much less impact than adding an entirely new route that will pass through large tracts of USFS land.	Comment noted. The Poeville Alternative would utilize approximately 12.6 miles of existing utility corridor. Approximately 4.9 miles of the Poeville Alternative would be constructed with an underbuild of an existing distribution line. Approximately 2.2 miles of the Poeville Alternative would replace existing H-frame poles, and approximately 5.4 miles would consist of entirely new pole structures outside of an existing utility corridor. Figures 2.1-1 through 2.1-3 show utility corridors and segments where an existing distribution line would be replaced with a single pole underbuild.
Webster	Michael & Shernaaz	35	12	Potential for New Roads and Encroachments. Construction of the power line along new routes - in particular the Peavine and Peavine / Poeville alternatives will necessarily create new roads and access points into the forest which will promote encroachments by off road vehicles and hunters. In turn this will lead to increased fire risk and potential poaching and trapping, as well as increased trespassing on private lands adjacent to the forest.	All construction access roads constructed on NFS land will be re-contoured and reclaimed (Section 2.3.2.2). Project design feature RT 3 and RT 4 require blockades on roads to prevent unauthorized access immediately following restoration (Appendix B). Additionally, on NFS land, Code of Federal Regulation (36 CFR 261.13) prohibits unauthorized motorized travel on roads that have not been designated for such use. Restoration, design features, and the Motor Vehicle Use Map are anticipated to prevent unauthorized OHV use and any potential subsequent indirect effects of unauthorized OHV use, such as poaching. Poaching and trespass are also both prohibited under state and local laws.
Webster	Michael & Shernaaz	35	14	Particular action alternatives will have adverse effects to specific known cultural resources.	Per Section 106 of the National Historic Preservation Act (NHPA), the Forest Service has taken into account the effects of the Bordertown Project on historic properties. All NRHP-listed sites, NRHP-eligible sites, and unevaluated sites would be mitigated, which may include avoidance. Adverse effects to historic properties will be mitigated as outlined in a HPTP.

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Webster	Michael & Shernaaz	35	17	Most of the power needs are not in Verdi but to the east in Reno and far removed from Verdi. Future development may lead to building a new substation closer to Reno. The Poeville route remains closest to the population center and thus to future potential changes in the power grid. The remaining alternatives instead require traversing miles of forest to reach a substation that is miles from the center of power consumption.	Section 1.3 describes the purpose and need of the proposed transmission line. Compliance with North American Electric Reliability Corporation (NERC) standards are mandatory, and the Federal Energy Regulatory Commission) may assess substantial civil penalties for violations of NERC standards. For clarification, a new substation would not improve reliability or provide redundancy to the 120 kV system that supplies power to the West Reno/Verdi area (See Section 2.11.8). A substation is used to convert power to a different voltage and is needed to regulate or reduce electric voltage to levels that can be conveyed to the customer.
Webster	Michael & Shernaaz	35	21	Of the alternatives evaluated the Websters strongly support the decision of the USFS to adopt the Poeville alternative as the preferred route for the proposed Bordertown to California transmission line, for the following reasons: 1. USFS Priorities. As noted in the DEIS, the Poeville route is the only alternative considered that is consistent with Humboldt-Toiyabe Forest Plan specifying that "the first priority will be to utilize existing corridors." The remaining 3 alternatives all would require extensive construction of new corridors and consequent extensive destruction of the forest. The Poeville alternative minimizes new environmental damage by following corridors where the environmental damage has already been done.	Comment noted. The Poeville Alternative is the agency preferred alternative. A selected alternative will be disclosed in the Draft Record of Decision. Following an objection period, a Final Record of Decision will be issued. None of the alternatives identified in the EIS are inconsistent with the Forest Plan or require a Forest Plan amendment. The Forest Plan does not require use of existing utility corridors; however, it encourages use of existing corridors since the disturbance has already occurred there and access has been established to the corridor.

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Webster	Michael & Shernaaz	35	22	2. Protecting the Forest. The USFS should give much higher priority to preserving and protecting the forest than to accommodating the business interests of a for-profit company. Power lines can be moved, but once the forest is lost the damage is irreparable. Thus, any potential additional costs to NV Energy of the Poeville route should carry little weight compared to the environmental costs to our dwindling natural resources. The Poeville route traverses the smallest distance through the national forest and thus by this criterion alone clearly has the least impact on the forest.	Comment noted. Resource comparisons between alternatives are in Section 2.12 of the EIS.
Webster	Michael & Shernaaz	35	23	Fire Risk. Of the alternatives considered, the Poeville route offers the best access and least fuel in the event of a fire. The Caughlin Ranch fire of 2011 made it evident that power lines present a real fire risk. Fighting the Caughlin fire was difficult, and will be many times more difficult along the routes that are much more heavily forested. In particular, near Verdi, the Peavine route runs through regions with dense growth with minimal access roads. The USFS recently developed a long-term plan for fire mitigation in the Dog Valley area. At their presentation of this plan in Verdi, it was noted that the Dog Creek Canyon was not included in the plan because the canyon is steep and inaccessible. The Peavine route traverses this canyon and thus runs through parts of the forest that the USFS had already decided were too difficult to address for fire concerns. The Peavine route therefore combines some of the worst access and highest fuel density in the area. Moreover, these problems are in areas that are very close to homes and private property in Verdi, and to areas where homes have been lost to past forest fires such as the Crystal Peak fire of 1994.	Construction and operation of the proposed transmission line, regardless of the action alternative, would have some risk of wildfire (see Section 3.11.2.2). Regardless of the alternative, the risk of ignition and size of wildfire would be expected to be minimized by a Fire Prevention Plan, maintaining vegetation clearance within the right-of-way, and high-speed relay equipment to de-energize the transmission line in less than 0.1 second in the event of a failure. A design feature was developed for the Mitchell and Peavine Alternatives to require fuels reduction inside of the variable-width corridor and would tie into the Dog Valley Ecosystem project boundary. Approximately 261.9 acres of area that would be treated for the Mitchell Alternative would overlap the Dog Valley Ecosystem project boundary. Approximately 43.4 acres of area that would be treated for the Peavine Alternative would overlap the Dog Valley Ecosystem project boundary. The impact would be the same for all action alternatives.

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Webster	Michael & Shernaaz	35	24	Wildlife Impact. The Dog Creek canyon is one of the most pristine regions of the Dog Valley area because of poor access, and a unique ecosystem because of the year-round creek. Such creeks are a rarity in the area, and Dog Creek supports an abundant variety of wildlife. The USFS should make preservation of this ecosystem a very high priority. The Peavine alternative runs directly over the creek in a steep and heavily wooded area. Construction of this route would introduce erosion, non-native species, and increased human traffic along the creek, including hunting, fishing, and trapping, and thus will adversely impact the flora and fauna.	The USFS considered characteristics of Dog Creek Canyon in its evaluation of project effects (Sections 3.9.2.3 and 3.9.2.4). Design features (Appendix B) have been developed to minimize impacts to forested communities, water and soil resources, wildlife, vegetation, special status species, etc. such that short term and long-term impacts from any alternative, including the Peavine Alternative, would be negligible to minor.
Webster	Michael & Shernaaz	35	25	General Visual Impact. The proposed Peavine route will run very close to and bisect existing neighborhoods in Verdi, and run perpendicular to the canyons in Verdi so that the lines will be at a high elevation. It will pass through hills that are visible from miles away throughout long stretches of the Highway 80 corridor. It will be visible up close from nearly every location in Verdi. The scars they will create will thus impact nearly all of the residents of Verdi.	Section 3.2.4.3 and Visual Simulations in Appendix C disclose the potential visual impacts of the Peavine Alternative from multiple representative locations,. Although hills and landforms may be visible from miles away, distance from the proposed transmission line would generally be expected to diminish its visual contrast with the surrounding landscape.

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Webster	Michael & Shernaaz	35	26	Future Development. NV Energy is likely to expand on any routes developed under the present action. In an article in the January 2, 2012 issue of the Reno Gazette, a spokesperson for NV Energy noted that the power line will allow additional growth in the western Reno and Verdi areas. In addition, NV Energy appears to view the line as facilitating wind and solar generation projects in the Bordertown area. Thus the USFS needs to consider not only the impact of the current proposal but the broader long term impact, on the area and the forest, of the development the line will promote. In particular, adding a new corridor now will open this corridor to further expansion in the future under the pretext that this corridor now meets the USFS Plan of "utilizing existing corridors." Once a new line is permitted along the Peavine, Mitchell, or Peavine/ Poeville routes, it will likely become NV Energy's preferred route for future expansion. As these routes are expanded with additional lines, poles, and construction, the negative effects on the forest will continue to expand.	The proposed transmission line may accommodate additional population growth, but it would not be anticipated to induce population growth. The proposed transmission line does not include the construction of any residential structures, the generation of power, or employment opportunities that may otherwise attract people to the area. The cumulative effects analysis addresses the impacts from past, present and reasonably foreseeable future actions. At the time of this EIS, there are no additional future transmission lines proposed on NFS land in the reasonably foreseeable future. Thus, the EIS does not address future transmission lines. The Council on Environmental Quality's Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations acknowledges that an EIS must identify all the indirect effects that are known, and make a good faith effort to explain the effects that are not known but are reasonably foreseeable. The guidance states that the agency is not required to engage in speculation.

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Webster	Michael & Shernaaz	35	27	Multi-state regulatory requirements of multiple agencies. The Poeville alternative has the advantage that all new corridors will remain in Nevada. The 3 alternatives all involve major new corridors within the state of California. NV Energy must also obtain necessary permits from the California Public Utilities Commission ("CPUC") and the California Department of Fish and Game ("DFG"). See NV Energy Study, at 28-29. As a result of these discretionary approvals, the CPUC and DFG will have to undertake extensive analysis under the California Environmental Quality Act ("CEQA") of the transmission line. It is unclear from the report and NV Energy Study how the USFS and these California agencies intend to coordinate the CEQA and NEPA analysis, particularly when consideration by these agencies and their obligations under CEQA may impose greater constraints on the alternatives selected by NV Energy for study. Moreover, it may be that California agencies may choose a different set of alternatives than included in the present analysis or arrive at different conclusions regarding the significance of impacts and mitigation requirements. Since these decisions may drive the ultimate feasibility and / or preference of various alternatives, the USFS should consider whether it could arrive at a fully informed decision absent vital input from the CEQA process.	California state and local agencies are required to comply with CEQA, and the USFS is required to comply with NEPA. Joint NEPA and CEQA documents are encouraged, but not required. The CPUC determined early in the project that they would not be a CEQA lead agency and it does not regulate NV Energy. NV Energy does not have customers in California. California state and local agencies will not be issuing a permit for NFS land, thus any potential new alternatives or mitigation measures developed through CEQA would apply to activities located on private land in Sierra County. NV Energy will work with Sierra County and/or the Lahontan Regional Water Quality Control Board following the NEPA process to complete the CEQA process if it is required for the agency selected alternative. All necessary permits and authorizations, including CEQA (if required) will be required as conditions of approval for the permit issued by the USFS.
Kloos	Vern	36	2	The City would prefer either the Mitchell or Peavine alternatives as they would have the least visual, construction or other perceived (e.g. EMF) impacts on City of Reno residents. These two routes also provide complete separation of this proposed 120 KV line from the existing 114 and 106 120 KV lines which supports the primary reason of providing separate and redundant power sources in case of fire or other failure to one of these 120 KV lines.	Comment noted. Visual and EMF impacts are disclosed in Sections 3.2 and 3.4 of the EIS, respectively. See response to comment 2-11 regarding purpose and need for the project as it relates to placement of the proposed transmission line next to the existing #114 and #106 120 kV transmission lines.

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Kloos	Vern	36	3	Both the Peavine/Poeville and the Poeville alternatives would have greater visual, construction and other perceived (e.g. EMF) impacts on residents of the City of Reno; and would be within the same corridor in the Verdi area and along the Truckee River. Locating this new line for several miles in the same corridor as the 114 and 106 120 KV lines would also partially defeat the purpose of providing separate redundant power sources in case of failure to all of these lines due to their close proximity when combined in the same corridor.	Comment noted. See Response to Comment 36-2.
Kloos	Vern	36	5	As discussed in the applicable permits section of the document, this comment verifies that a Special Use Permit (SUP) would be required to be approved for any section of the 120 KV line located in the City of Reno, because the line is defined as a "Major Utility". In addition to the SUP requirement RMC 18.08.202(e)(13) requires Major Utilities: (a) to be located in an existing utility corridor or facility site adopted in the Regional Plan; (b) shall not be located in the Truckee River Corridor unless it can be demonstrated there will be no detrimental residual impact; (c) shall maintain a 10 foot separation from the property line of licensed K-12 schools, day care centers, residential structures and hospitals; and (d) Major Utilities that cannot meet the requirements of 13 (b) and (c) shall be mitigated with underground construction, low EMF designs, low visibility designs and/or off-site mitigation as described in the Regional Plan. In addition to the above, an amendment to the Regional Plan to create any new utility corridors would have to be approved prior to or concurrent with the processing of the SUP(s) within the City's jurisdiction. It should be noted that any road grading or other construction activity associated with the project located within the City of Reno jurisdiction which involves one or more of the following would require approval of an SUP for: (1) non-residential	Comment noted. Table 1.9-1 in the EIS has been revised to list the additional special use permits NV Energy may be required to obtain within the City of Reno.

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				development located adjacent to or on residentially zoned property; and (2) cuts of 20 feet or more or fills of 10 feet or more. Other potential SUP's that may be triggered would be for grading disturbance of a major drainage way(s), disturbance of wetlands and/or hillside development. All of the applicable SUP's could be processed at the same time as one application.	
Kloos	Vern	36	6	In addition to the above, another issue that should be investigated relates to the location of the preferred route (Poeville) on the City's Open Space and Greenways Plan on the north and southwest sides of Peavine Mountain.	Sections 3.3.4.5 and 3.3.4.6 of the EIS have been revised, including the analysis of the location of the Poeville Alternative and Peavine/Poeville Alternative on the City's Open Space and Greenways Plan.
Cruz	Darrel	37	1	However this alternative also states it will require road widening. The document doesn't explain why the roads need widening or where the road will be widened. In either case the document also states potential for archeological resources associated with road work. We ask to avoid any archeological sites.	To accommodate construction vehicles, existing roads would be temporarily widened to 30 feet-wide. Roads to be widened associated with the Poeville Alternative are shown on Figure 2.6-1. Cultural resource inventories have been completed for all aspects of the project, including road widening. National Register-eligible sites would be avoided if possible. If avoidance is not feasible, mitigation will be developed as a part of a HPTP. Tribes will continue to be consulted throughout the Section 106 process.
Cruz	Darrel	37	2	Require a site monitor during the road widening segment.	Archaeological and Tribal Monitors are an anticipated component of project implementation; however, the details and scope of monitoring will be addressed in the Memorandum of Agreement (MOA).
Cruz	Darrel	37	3	Poeville will use the current Alturas Alignment which has known archeological sites that have eligibility status. We are concerned how work will be conducted in these areas and how the archeological sites will be avoided and or protected. We ask to be consulted with when the project may have affects to the archeological sites and resources.	The USFS will continue to consult with you when necessary and appropriate.
Cruz	Darrel	37	4	We are requesting site monitors when construction is in or near any archeological sites.	Archaeological and Tribal Monitors are an anticipated component of project implementation; however, the details and scope of monitoring will be addressed in the MOA.

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Cruz	Darrel	37	5	Volume I, Page 46, Pedestrian Survey: we have never been in favor of using 30 meter transects; there is too much spacing between survey team and things can be missed. I have inserted this note for future reference survey work conducted.	Thank you for your comment. Your concern has been documented. However, using 30-meter transects when conducting these types of surveys is the agency approved and professionally accepted methodology for identifying cultural resources.
Cruz	Darrel	37	6	We wish to maintain consultation during the development of the HPTP. In addition, we ask to be kept informed of all inadvertent discoveries of during construction work.	A Historic Properties Treatment Plan (HPTP) will only be prepared if the finding of effect determination results in the potential for adverse effects to occur to an eligible site. The USFS will maintain consultation with the Washoe Tribe of Nevada and California throughout the Section 106 process.
Cruz	Darrel	37	7	The document provides language for the Native American Graves Protection and Repatriation Act (NAGPRA). In the event of inadvertent discoveries we wish to be contacted as soon as possible to assist with mitigation measures.	An Inadvertent Discovery Plan will be developed for Native American Graves Repatriation Act (NAGPRA) and non-NAGPRA cultural resources. The Plan will be included in the MOA between the Humboldt-Toiyabe National Forest, California and Nevada SHPOs, NV Energy and Tribes. Notification of such discovery will be given to Tribes as quickly as possible.
Cruz	Darrel	37	8	We would also like to see eagle/raptor deterrents installed on the power poles to protect eagles from potential electrocution.	To protect raptors, including golden eagles, from electrocution, design feature WL 9 (Appendix B) requires that transmission line and pole structures be constructed in conformance with the guidelines contained in Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006, prepared by the Avian Power Line Interaction Committee (2006).
Eben	Michon	38	1	At this time, the RSIC is reserving our comments until given the opportunity to understand the projects impact.	Consultation is ongoing between the USFS and Reno-Sparks Indian Colony.

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Eben	Michon	38	2	The DEIS states that there were no Traditional Cultural Properties (TCP's) identified in the project areas by previous studies and that no discussion is being carried forward in the impact analysis (page 3-41; Cultural Resource Inventories). Members of Paiute, Washoe and Shoshone peoples have been interviewed regarding the traditional and cultural uses of the area, including a report (Administratively Confidential). Had the RSIC been given the opportunity to review the Report (dated March 2013), before December 2014, the RSIC would have remarked that there are TCPs for the Paiute, Washoe and Shoshone peoples located in the area. Consistent with Native American Tradition most of the project area is a significant cultural resource. While not formally designated, it has all the elements associated with, and it appears to be eligible as a TCP. Several Native American generations (past, present and future) continue to utilize and depend on the area. The RSIC is requesting that further research be conducted to assist in formal designation of TCPs in the project area. TCPs should be addressed in the effects analysis.	An Ethnographer has been hired to assist in formal identification and evaluation TCPs. This effort will be completed prior to signing the ROD. Due to the potential sensitivity, the effects analysis will not be publicly disclosed in the FEIS, but will be made separately. Mitigation will be included in the HPTP if TCPs may be affected by the project. Per agreements made in the field, the USFS sent Reno-Sparks Indian Colon the Cultural Resource Inventory Report on November 28, 2012. There appears to be some miscommunication. Consultation is ongoing between the USFS and the Reno-Sparks Indian Colony.
Eben	Michon	38	3	According to the Report and DEIS, the Poeville Alternative has identified the most cultural resources in this ROW. The Report states that there were 6 alternative corridors surveyed both in Nevada and California. In accordance with the DEIS, the Poeville Alternative identified 53 archaeological resources (28 Native American, 21 historic and 4 multi-component). The RSIC understands that the archaeological resources were identified on both USFS and Private lands. Unnecessary evaluation must be avoided unless approval of the project is going to result in significant disturbance.	Mitigation of identified cultural resources would only be required for the selected alternative and only if a Finding of Effect Determination resulted in potential adverse effects occurring to an eligible site.

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Eben	Michon	38	4	The RSIC is the closest affiliated sovereign nation that represents members and descendants of Washoe, Paiute and Shoshone people.	The USFS acknowledges and respects that the Reno-Sparks Indian Colony, Washoe Tribe of Nevada and California and Pyramid Lake Paiute Tribe have an interest in the project area.
Eben	Michon	38	5	The RSIC is on the record for ongoing consultation for the Project and at this time, is requesting that our Unanticipated Discovery Plan be included in this project's mitigation plans, such as the Cultural Resources (CU) Section of the DEIS Appendix B, page B-8, and future Historic Preservation Treatment Plans as follows: Discovery of Native American Cultural Resources	An Inadvertent Discovery Plan will be developed for NAGPRA and non-NAGPRA cultural resources. The Plan will be included in the MOA between the Humboldt-Toiyabe National Forest, CA and NV SHPOs, NV Energy and Tribes. Notification of such discovery will be given to Tribes as quickly as possible.
Eben	Michon	38	6	The RSIC is requesting that a qualified Native America Monitor(s) be on site during any and all initial ground disturbance.	Native American monitors are welcome to be onsite during any portion of construction implementation. However, a monitoring plan will be developed as part of the MOA, including the identification of roles and responsibilities. Design feature CU 4 (Appendix B) states that "an approved archeologist will work with construction crews when crews are within 600 feet of the boundary of a known eligible historic cultural site. Tribal monitors may also be working with construction crews as cultural resource monitors."
Eben	Michon	38	7	A qualified Native America Monitor(s) will be present during the initial ground disturbance. These monitor(s) will be on-site prior to and throughout any initial surface ground disturbance.	The MOA will outline the monitoring component of the project. See comment 38-6.

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Eben	Michon	38	8	The RSIC and the qualified Native America Monitor(s) will be included as an authorized representative who is empowered to halt all activities in a discovery situation. The RSIC Cultural Resource Program will be notified within 1 hour of the discovery. The RSIC is the closest affiliated & federally recognized tribe with a federally designated Tribal Historic Preservation Office (THPO). If any Native American cultural resources are discovered during the initial ground disturbance activity, or excavations throughout the project, the monitor(s) will be allowed to inspect all cultural resources (along with the qualified project staff and archaeologist) and the site to determine the extent of the discovery. The Native America Monitor(s) will be present during all undertaking related activities	An Inadvertent Discovery Plan will be developed for NAGPRA and non-NAGPRA cultural resources. The Plan will be included in the MOA between the Humboldt-Toiyabe National Forest, CA and NV SHPOs, NV Energy and Tribes. Notification of such discovery will be given to Tribes as quickly as possible. The MOA will outline the monitoring component of the project. See comment 38-6.
Eben	Michon	38	9	The qualified Native America Monitor(s) will assess all mitigation measures, comments and solutions with the project staff. Data recovery will be observed by the qualified Native America Monitor(s).	Human remains and associated funerary items will be handled per NAGPRA law.
Eben	Michon	38	10	The RSIC is requesting there be no scientific study or destructive analysis on any cultural items or human remains that are discovered or removed from this proposed project site.	Human remains and associated funerary items will be handled per NAGPRA law.
Eben	Michon	38	11	Notwithstanding applicable laws, the RSIC will have the opportunity to remove and secure ownership of any Native American cultural resources for the purpose of preservation and education.	Human remains and associated funerary items will be handled per NAGPRA law. Please refer to design feature CU 7 (Appendix B), Nevada Revised Statutes (NRS) in Chapter 383.
Eben	Michon	38	12	Private landowners will be afforded the opportunity to consult with the RSIC on ownership of Native American cultural resources. As part of the acquisition of the ROW, NV Energy shall negotiate with private landowners to secure any the Native American cultural items for the benefit of the RSIC.	Human remains and associated funerary items will be handled per NAGPRA law. Please refer to Appendix B CU 7, NRS in Chapter 383.
Eben	Michon	38	13	Work can resume upon completion of removal of Native American cultural resources.	An Inadvertent Discovery Plan will be included in the MOA.

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Eben	Michon	38	14	In the event that Native American human remains and associated funerary objects are discovered, the RSIC THPO/Cultural Resource Program will be notified within one (1) hour of this unanticipated discovery. The qualified Native America Monitor(s) and the RSIC THPO/Cultural Resource Program will be a part of the initial discussions with any State, County, Federal and local representatives of any unanticipated discovery.	USFS will comply with the NAGPRA and would implement a method for repatriation as outlined in the MOA.
Eben	Michon	38	15	In the event that Native American human remains must be recovered or removed, the RSIC respectfully asks authorization to take care of this in a culturally sensitive manner, abiding by all State, Federal and Tribal laws. This will ensure the RSIC's spiritual and cultural responsibility and respect to the human remains. This will also address confidentiality of the reburial.	Human remains and associated funerary items will be handled per NAGPRA law. Please refer to Appendix B CU7, NRS in Chapter 383.
Eben	Michon	38	16	Private landowners will be afforded the opportunity to consult with the RSIC on ownership of Native American human remains and funerary items. As part of the acquisition of the ROW, NV Energy shall negotiate with private landowners to secure any of the Native American human remains and funerary items for the benefit of the RSIC.	Human remains and associated funerary items will be handled per NAGPRA law. Please refer to Appendix B CU7, NRS in Chapter 383.
Eben	Michon	38	17	Again, the RSIC is requesting there be no scientific study or destructive analysis on any cultural items, human remains or funerary items that are discovered or removed from this proposed project site.	Human remains and associated funerary items will be handled per NAGPRA law. Please refer to Appendix B CU7, NRS in Chapter 383. Basic archaeological methods will be employed to document the discovery.

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Eben	Michon	38	18	The RSIC is asking that pictures and drawings be prohibited of any unanticipated find or discovery of Native American human remains.	Human remains and associated funerary items will be handled per NAGPRA law. Please refer to Appendix B CU7 in compliance with Nevada Revised Statute Chapter 383. Basic archaeological methods will be employed to document the discovery
Eben	Michon	38	19	To this extent, the RSIC (as the closest affiliated tribe) has an interest in Native American cultural resources protection and management of this Project. The RSIC respectfully requests that the Project Proponent cover all expenses related to the Tribal Monitor(s).	Human remains and associated funerary items will be handled per NAGPRA law. Please refer to design feature CU 7 (Appendix B) in compliance with Nevada Revised Statue Chapter 383. Notification is made with the NV SHPO Office. The MOA will address the monitoring component of the project.
Eben	Michon	38	20	Again, the RSIC is reserving our comments until there is a discussion carried forward in the DEIS regarding in the impact analysis of the Project and its relationship TCPs.	Identification and evaluation of potential TCPs is a currently ongoing and will be completed prior to signing the Record of Decision. If TCPs are identified, and will be affected by the project, then mitigations will be included in the MOA and HPTP.

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Lissner	Robert	39	1	Lifestyle has been aware of the proposed Transmission line for some time, but was unaware that the facility would not be built immediately adjacent to the Alturas 345kV corridor which also bisects the property. In a meeting with the proponents from NV Energy last week, we were shown what is indicated as the Peavine Alternative. This alternative shows that on the most northerly portion of the property impacted by the alignment it is adjacent to the Alturas corridor. However about midway through it deviates, for no apparent reason, placing it 420 feet further to the west (centerline to centerline)	Your letter was received outside of the specified comment period for the DEIS, and therefore, does not afford you standing during the objection period. NV Energy's depiction of the Peavine Alternative, which is the same as the Peavine/Poeville Alternative in this area, is correct. The centerline of the Peavine Alternative is not equally parallel to the centerline of the Alturas Line and diverges from the Alturas Line as it travels southeast towards the Forest boundary. The Peavine Alternative has not shifted from what was presented during scoping or the DEIS. However, the scale of Figures 2.1-1 and 2.1-2 makes it impossible to clearly show the divergence. Zoomed in aerials showing the alternatives were available to the public during scoping and DEIS public meetings. The routing of the Peavine Alternative was based on topography.
Lissner	Robert	39	2	As we have indicated to the proponents, this alignment has a very severe impact upon the development potential of the site which is already impacted by the Alturas Transmission line. In combination with the now proposed Peavine alternative the corridors render approximately 55.4 acres of otherwise developable land useless. This constitutes the removal of 20% of the total land area within these three parcels which are currently master planned for single family residential development at 3 units per acre. With this letter, we want to make it abundantly clear to the United States Forest Service and NV Energy that we are adamantly opposed to the current alignment and we are proceeding with our development plans as if the corridor were located adjacent to the Alturas corridor, or on the California side of the state line (also our property), either of which would and should be a better location.	In that section of the Peavine Alternative, a 300 foot-wide study corridor was used. The possibility of making a minor adjustment within this study corridor may be possible and could be explored with NV Energy during the easement acquisition process. NV Energy would purchase easements based on the appraised value of the land.