EXECUTIVE SUMMARY

1. INTRODUCTION/BACKGROUND

This Environmental Impact Report/Environmental Impact Statement (EIR/S) describes the environmental setting and consequences of the construction and operation of the proposed Alturas Transmission Line Project. Sierra Pacific Power Company (SPPCo) has proposed this electric power transmission line to improve the existing operational capacity and reliability of its power transmission system and provide for anticipated growth in demand for electric power.

This document was prepared by the California Public Utilities Commission (CPUC) and the U.S. Department of the Interior, Bureau of Land Management (BLM), pursuant to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), respectively. The purpose of this joint EIR/S is to report the results of the CPUC's and BLM's independent assessment of the potential environmental impacts that would result from the construction, operation, and maintenance of the proposed Alturas Transmission Line Project. The impact analysis is accompanied by the identification of feasible mitigation measures which, if incorporated into the project, would avoid or minimize impacts. This EIR/S also assesses alternatives to the Proposed Project and identifies those with the potential to eliminate or minimize impacts.

This document considers comments made by agencies and the general public during the public scoping and Draft EIR/S comment periods. During the scoping process, four public meetings were conducted to receive input on the environmental issues associated with the Proposed Project and the alternatives that should be considered. The Draft EIR/S was released on March 3, 1995, for a 60-day public comment period, which was extended an additional 30 days to June 2, 1995. Public comments on the contents of the Draft EIR/S were encouraged; four public comment hearings were held in April to solicit oral and written comments. This Final EIR/S responds to all of the comments received on the Draft EIR/S in the form of specific responses to each comment received and the modifications to the text of the Draft EIR/S presented herein (text changes are denoted by bars in the right margin). Table ES-1 summarizes the public participation process for this EIR/S.

The BLM is the lead Federal agency for the preparation of this EIR/S in compliance with the requirements of NEPA and the Council on Environmental Quality (CEQ) regulations for implementing NEPA [40 Code of Federal Regulations (CFR) 1500-1508]. The U.S. Forest Service (USFS), the Bonneville Power Administration (BPA), and the Sierra Army Depot (SIAD) are cooperating Federal agencies.

The CPUC is the lead State of California agency for the preparation of this EIR/S in compliance with the requirements of CEQA (Public Resources Code Section 21000 et seq.) and implementing guidelines [California Code of Regulations (CCR), Title 14, Section 15000 et seq.]. The CPUC is responsible for coordinating the review of this document by State responsible and trustee agencies, which include the California Department of Fish and Game, the California Regional Water Quality Control Board (Lahonton Region) California State Lands Commission, and the Department of Transportation.

Table ES-1 EIR/S Public Participation Process Summary

Date	Item
March 17, 1994	Notice of Preparation (NOP) of Draft EIR issued by the CPUC*
March 30, 1994	Notice of Intent (NOI) to prepare a Draft EIS issued by the BLM*
April 1994	Notice of Public Scoping Meetings published in the following local newspapers: • Lassen County Times • Modoc County Record • The Mountain Messenger • Reno Gazette Journal
April 24, 1994	NOI published in the Federal Register
May 17- 25, 1994	Public scoping meetings to determine the scope of the EIR/S held in Susanville, Alturas, Reno/Sparks, and Loyalton area
May 27, 1994	End of public scoping period/scoping comments due (see Appendix B, Scoping Report for results)*
January 27, 1995	Project Newsletter mailed out to project mailing list (1400 people)
February 28 - March 12, 1995	Publication dates for notice on release of Draft EIR/S, Informational Workshops and Public Hearings in: • Lassen County Times • Modoc County Record • The Mountain Messenger • Reno Gazette Journal • The Sacramento Bee
March 3, 1995	Draft EIR/S released for public review* • Notice of Completion of the EIR/S issued by the CPUC • Notice of release of Draft EIR/S/Notice of Informational Workshops and Public Hearings sent to property owners within 600 feet of the transmission line
March 9, 1995	Notice of Availability of Draft EIR/S issued by the EPA and BLM and published in the Federal Register
March 13 - 16, 1995	Informational Workshops on the Draft EIR/S in Alturas, Susanville, Loyalton, and Reno/Sparks area
April 17 - 20, 1995	Public Hearings on the Draft EIR/S in Alturas, Susanville, Loyalton, and Reno/Sparks area
April 27, 1995	Notice of 30-day Extension of Draft EIR/S Public Review Period mailed out to project mailing list (1700 people)
April 30 - May 4, 1995	Publication date for notice of 30-day extension of Draft EIR/S public review period in: • Lassen County Times • Modoc County Record • The Mountain Messenger • Reno Gazette Journal • The Sacramento Bee
June 2, 1995	End of 60-day public review period for Draft EIR/S
November 1995	Final EIR/S released* • Notice of Availability of Final EIR/S issued by the EPA and BLM, mailed out to project mailing list (1720 people), and published in the Federal Register • Notice of Determination for Final EIR/S issued by the CPUC

* Project documents were made available for public viewing, upon their release, at the following document repository sites:

Modoc County Library
212 W. 3rd St.
Alturas, CA 96101

Lassen County Library
225 S. Roop St.
Susanville, CA 96130

Loyalton City Hall
210 Front St.
Loyalton, CA 96118

Washoe County Library
4001 S. Virginia St.
Reno, NV 89502

CPUC
505 Van Ness Avenue
San Francisco, CA 94102

BLM - Susanville District
705 Hall Street
Susanville, CA 96130

BLM - Susanville District
Alturas Resource Area Office
708 W. 12th Street
Alturas, CA 96101-3102

BLM - Lahontan Resource Area
1535 Hot Springs Road, # 300
Carson City, NV 89706

Toiyabe National Forest
1200 Franklin Way
Sparks, NV 89431

Modoc National Forest
800 West 12th St
Alturas, CA 96101

This EIR/S will be used by various Federal, State and regional agencies in considering approvals the project, which includes certification of this EIR/S (for CEQA only), during the CPUC's regularly scheduled December, 1995 hearing.

2. DESCRIPTION OF PROPOSED PROJECT AND PROJECT ALTERNATIVES

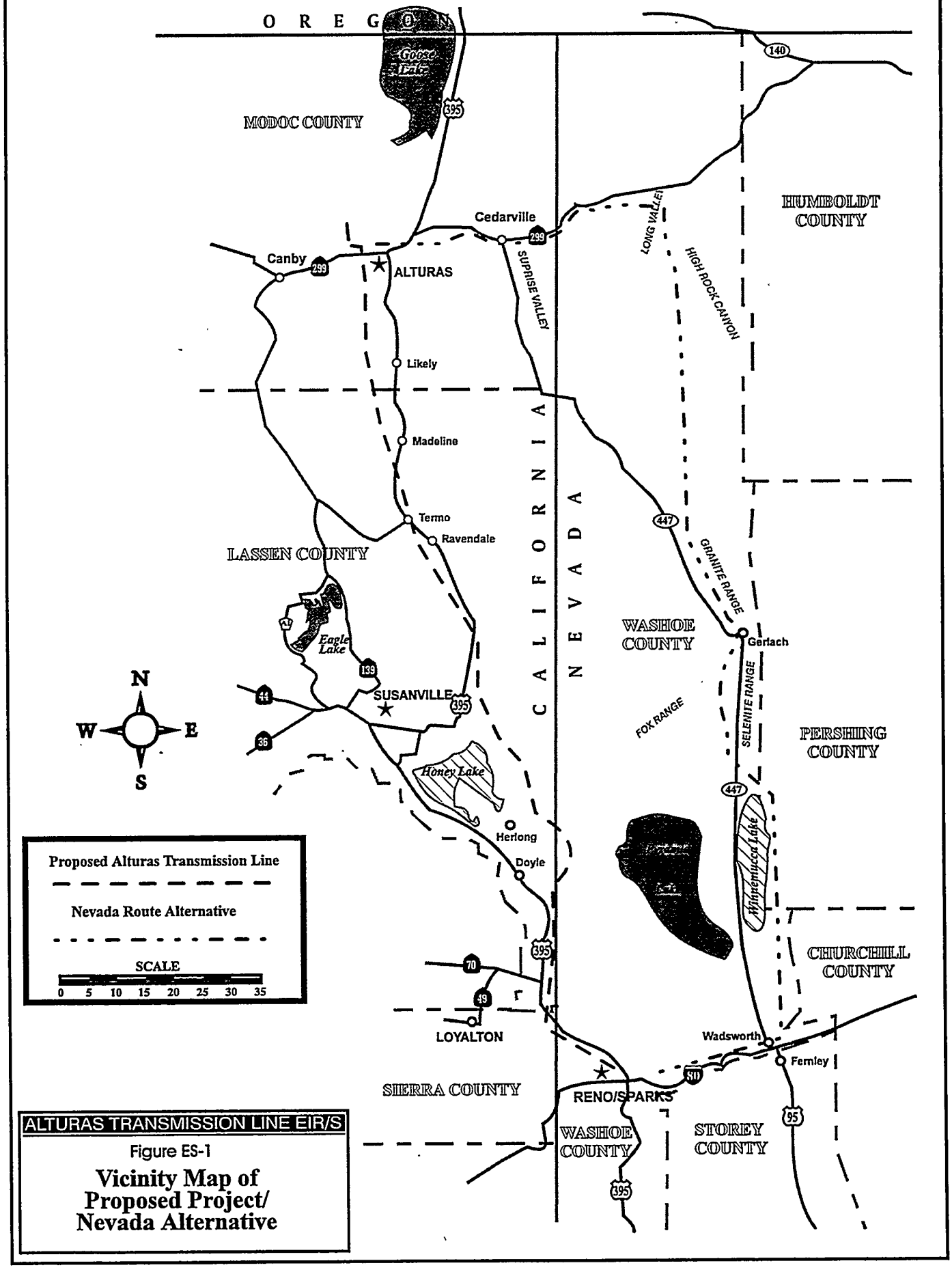
2.1 PROJECT DESCRIPTION

SPPCo proposes to construct and operate a 345,000 volt (345 kV) overhead electric power transmission line from the vicinity of Alturas, California to Reno, Nevada; the first two-miles would be a 230 kV line. This project has been proposed by SPPCo to supplement an existing lack of transmission capability when servicing wholesale customers and to accommodate anticipated growth in the Reno area. The line would connect SPPCo's electrical system with the BPA and PacifiCorp power systems in Oregon and Washington. The proposed transmission line route is approximately 165 miles long and is shown in Figures ES-1 and ES-2. In its application, SPPCo presented the Proposed Project as a linear series of segments (A, C, E, K, L, N, O, Q, R,, T, W, X, Y), where each segment is defined by a series of angle points (the locations where the line changes direction; e.g., CØ1, CØ2, etc.). This nomenclature has been carried forward in this EIR/S.

The majority of the Proposed Project (approximately 140 miles) would follow in a general north-south direction through northeastern California, from a few miles northwest of the City of Alturas to the California-Nevada state line near Border Town, Nevada. Before reaching Border Town, the line would also extend into Nevada for a few miles east of the Fort Sage Mountains (see Figure ES-1). From Border Town, the line would travel in a southeasterly direction until it reaches Reno, Nevada. Within California, the line would traverse Modoc, Lassen, and Sierra Counties; within Nevada, the project would traverse Washoe County.

Except for the first two-miles, the proposed transmission line would be suspended from 70- to 130-foot high structures (depending on terrain), spaced on average about every 1,200 feet; the first two-miles would have 80-85 foot high, wood H-frame structures spaced about every 700 feet. Approximately 730 structures would be required. The suspended line would include three pairs of conductor cables and two shield wires, one of which would also contain a fiber-optic cable. The Proposed Project includes construction of two new substations in California, one northwest of Alturas and one in Sierra County, California, just west of Border Town, Nevada. In addition, SPPCo's existing North Valley Road Substation north of Reno would be expanded. Minor modifications would also be made to substations owned by the BPA and by PacifiCorp in southern Oregon and northeastern California.

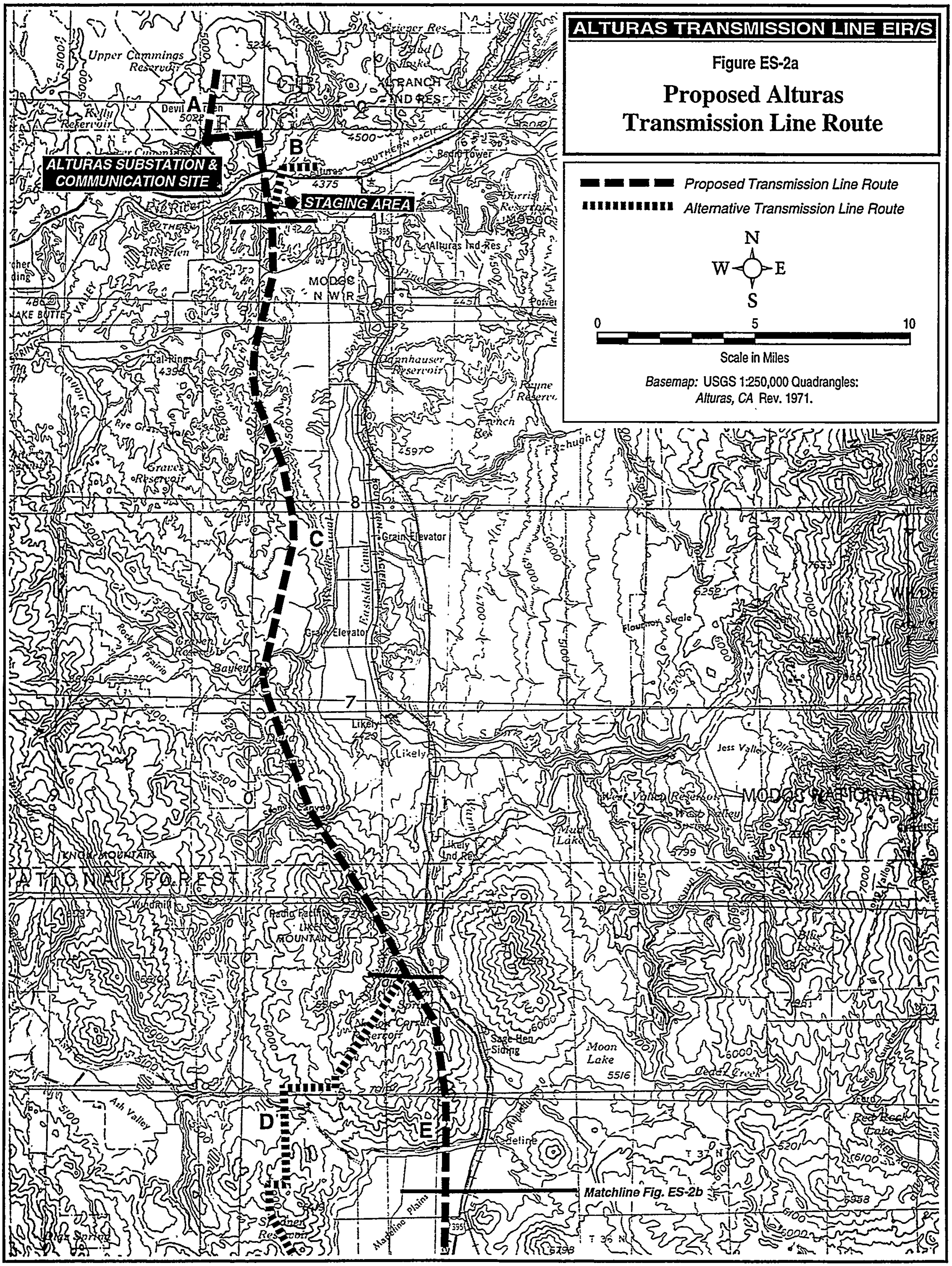
The Proposed Project would include the installation of a fiber optic system for communication purposes. The fiber optic system would also provide a fault detection information system and provisions for communication between construction or maintenance personnel.

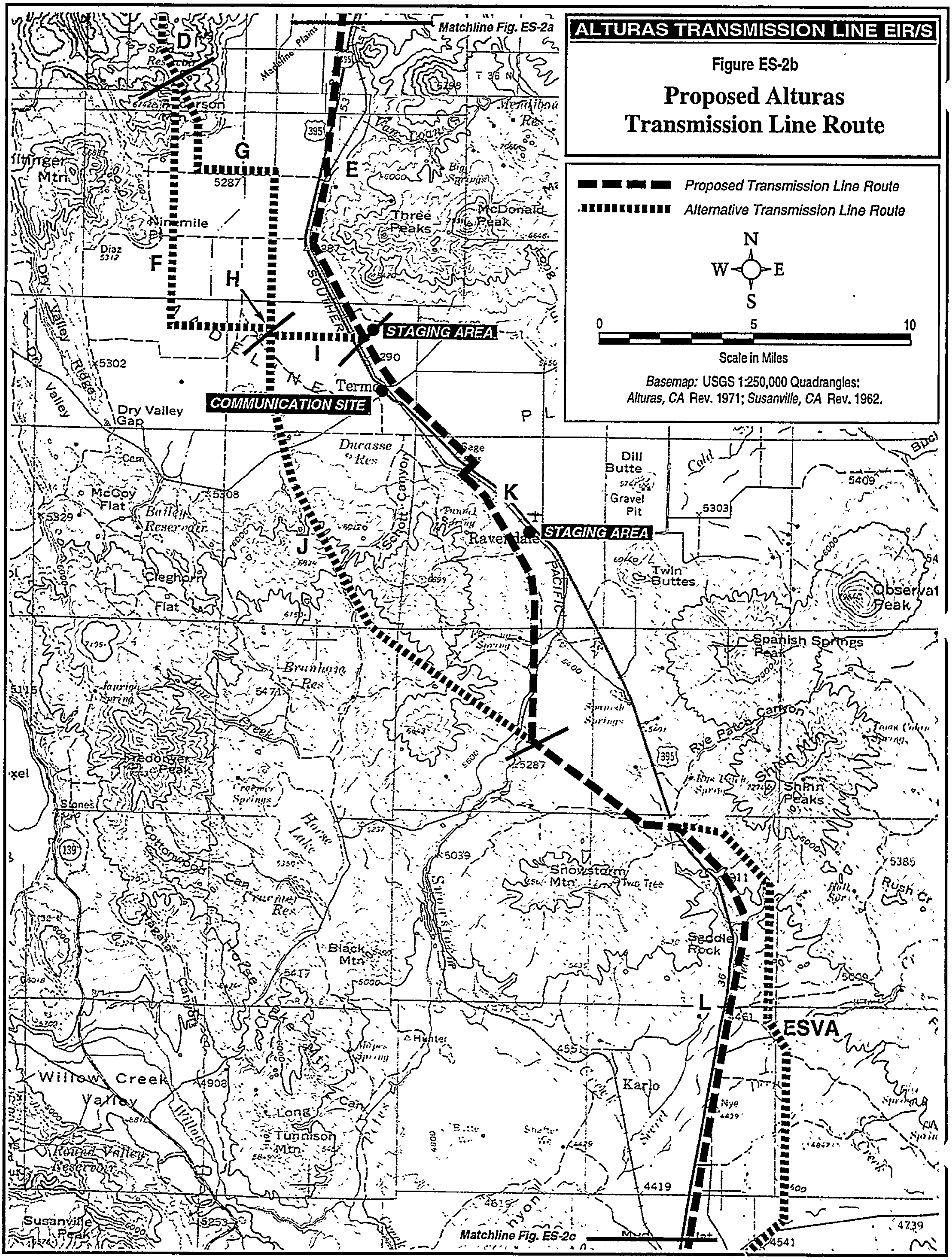


ALTURAS TRANSMISSION LINE EIR/S

Figure ES-1

Vicinity Map of Proposed Project/ Nevada Alternative


ALTURAS TRANSMISSION LINE EIR/S
Figure ES-2a
Proposed Alturas Transmission Line Route
Proposed Transmission Line Route
Alternative Transmission Line Route
N
W
E
S
0
5
10
Scale in Miles
Basemap: USGS 1:250,000 Quadrangles: Alturas, CA Rev. 1971.
ALTURAS SUBSTATION & COMMUNICATION SITE
STAGING AREA
A
B
C
D
E
Matchline Fig. ES-2b
Upper Cummings Reservoir
Alturas
4375
Grain Elevator
Likely
Moon Lake
5516
Sage Hen Siding
MODOC NATIONAL FOREST
Ash Valley
Jess Valley


ALTURAS TRANSMISSION LINE EIR/S
Figure ES-2b
Proposed Alturas Transmission Line Route
Proposed Transmission Line Route
Alternative Transmission Line Route
N
W
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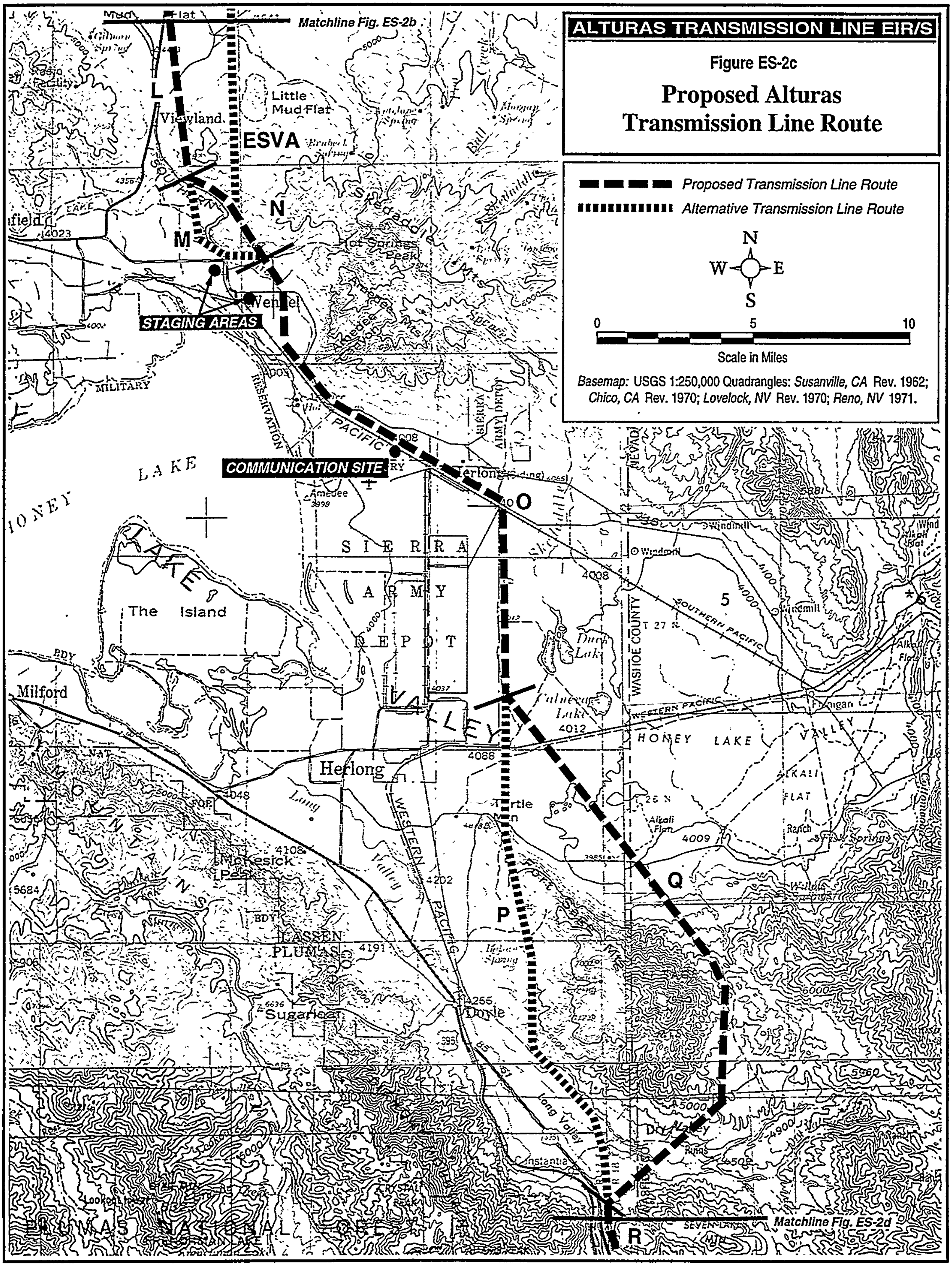
5
10
Scale in Miles
Basemap: USGS 1:250,000 Quadrangles:
Alturas, CA Rev. 1971; Susanville, CA Rev. 1962.
Matchline Fig. ES-2a
Matchline Fig. ES-2c
STAGING AREA
STAGING AREA
COMMUNICATION SITE
ESVA
D
E
F
G
H
I
J
K
L


ALTURAS TRANSMISSION LINE EIR/S
Figure ES-2c
Proposed Alturas Transmission Line Route
Proposed Transmission Line Route
Alternative Transmission Line Route
N
W
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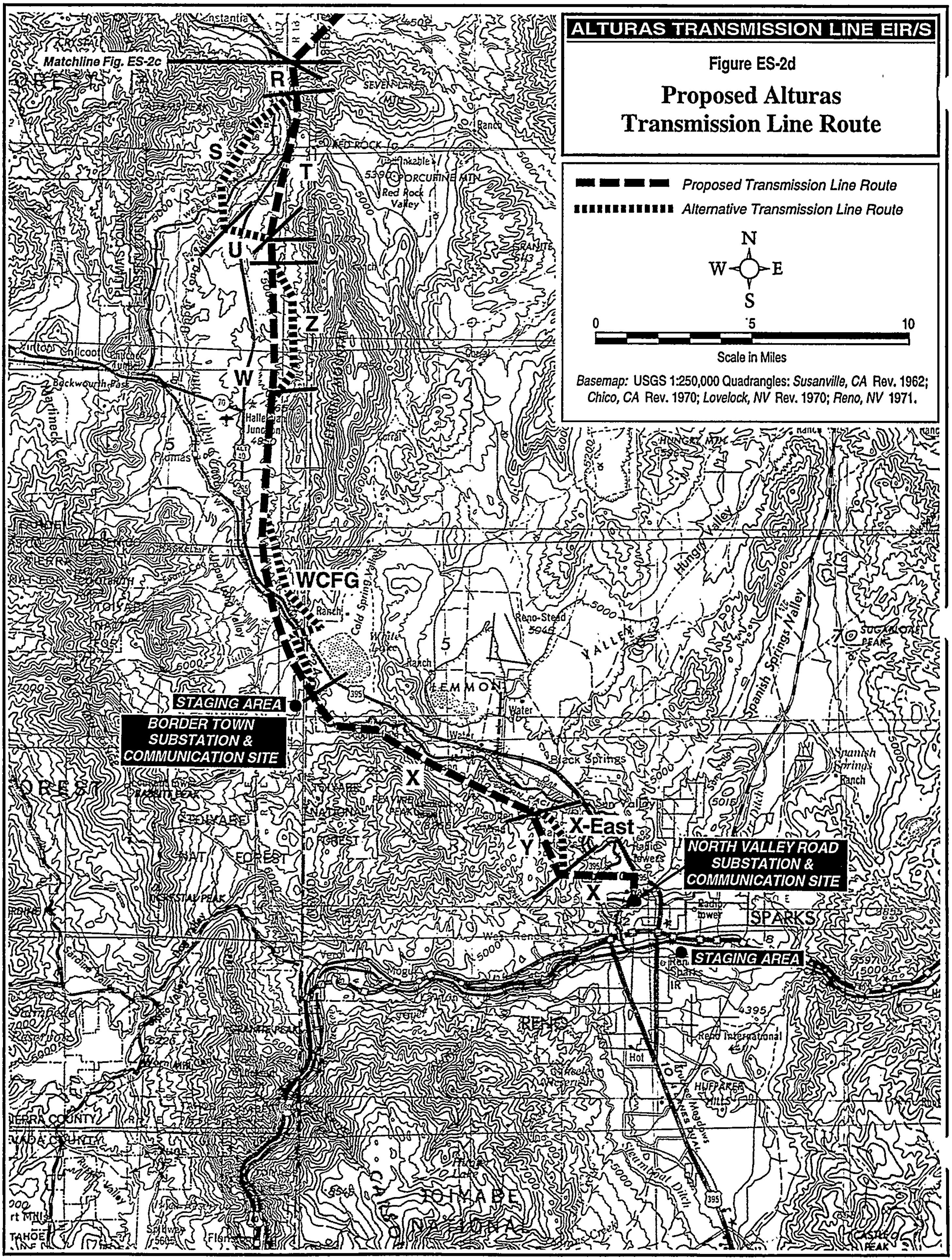
10
Scale in Miles
Basemap: USGS 1:250,000 Quadrangles: Susanville, CA Rev. 1962; Chico, CA Rev. 1970; Lovelock, NV Rev. 1970; Reno, NV 1971.
Matchline Fig. ES-2b
Matchline Fig. ES-2d
L
M
N
O
P
Q
R
ESVA
STAGING AREAS
COMMUNICATION SITE
Little Mud Flat
Viewland
Wendel
Hot Springs Peak
Herlong
Milford
The Island
SIERRA ARMY DEPOT
HONEY LAKE VALLEY
WASHOE COUNTY
NEVADA
SOUTHERN PACIFIC
WESTERN PACIFIC
Doyle
Constantia
Dry Valley
Long Valley
McKesick Peak
LASSEN
PLUMAS
Sugarloaf
PLUMAS NATIONAL FOREST
MILITARY
RESERVATION
Amedee
Alkali Flat
Duck Lake


ALTURAS TRANSMISSION LINE EIR/S
Figure ES-2d
Proposed Alturas Transmission Line Route
Proposed Transmission Line Route
Alternative Transmission Line Route
N
W
E
S
0
5
10
Scale in Miles
Basemap: USGS 1:250,000 Quadrangles: Susanville, CA Rev. 1962; Chico, CA Rev. 1970; Lovelock, NV Rev. 1970; Reno, NV 1971.
Matchline Fig. ES-2c
R
S
T
U
Z
W
WCFG
STAGING AREA
BORDER TOWN SUBSTATION & COMMUNICATION SITE
X
X-East
Y
X
NORTH VALLEY ROAD SUBSTATION & COMMUNICATION SITE
STAGING AREA
SPARKS
RENO
Hungry Valley
Spanish Springs Valley
Cold Spring Valley
Reno-Stead
Black Springs
Sun Valley
LEMMON
Reno International

2.2 PROJECT ALTERNATIVES

Based on CEQA and NEPA requirements, a range of reasonable alternatives was selected for full analysis in this EIR/S. A screening process was employed to focus on alternatives capable of eliminating or reducing significant adverse impacts associated with the Proposed Project. Factors considered in this screening procedure included potential for environmental advantages, technical feasibility, and achievement of basic project and public policy objectives. Alternatives considered included alternative route alignments and substation sites, alternatives that could replace the entire Proposed Project, and the No Project Alternative. A total of 50 alternatives were considered in the screening process. Following is a description of those alternatives selected for in-depth analysis as a result of this screening process.

2.2.1 Alternative Route Alignments and Substation Sites

Figure ES-2 illustrates the routes of the alternative segment alignments and substation sites discussed below.

Alturas Alternative Alignment (Segment B)

Alternative Segment B would replace the majority of Proposed Segment A and would initiate at a location on the west side of Alturas, north of Hwy 299, where it would interconnect to the BPA system. From the intertie, Alternative Segment B would proceed west about 1.5 miles, then turn south, and cross Hwy 299 and the Pit River. It would rejoin the proposed route adjacent to the Three Sisters area, about three miles southwest of Alturas. On Alternative Segment B, there would be a substation site (Mill Site) as an alternative to the proposed Alturas Substation (Devils Garden site) on Proposed Segment A.

Alternative Segment B: 4.6 miles Proposed Segment A: 7.1 miles

Madeline Plains Alternatives (Segments D, F, G, H, I)

Numerous alternative route alignments have been identified by the Applicant for the western area of the Madeline Plains. These segments, in combination, would replace Proposed Segment E. As illustrated on Figure ES-2, Alternative Segment F would provide the most westerly alignment, in comparison to Alternative Segment G. The east-west orientation of Alternative Segment I would reconnect the Madeline Plains Alternatives to the Proposed Project alignment on the east side of the Madeline Plains. The alternatives were developed to reduce potential impacts to wetlands areas and to minimize land use conflicts along the proposed route.

Alternative Segments D,F,G,H,I: 25 miles (approx.) Proposed Segment E: 18.1 miles

Ravendale Alternative Alignment (Segment J, I)

Alternative Segments J and I would replace Proposed Segment K and would traverse hills near Branham Reservoir west of Ravendale. As illustrated on Figure ES-2, Alternative Segment I would provide a connection between the Proposed Project eastern alignment to Alternative Segment J to the west. These alternative segments would provide a more concealed route to the more visible Proposed Segment K that parallels U.S. 395, before diverging from the Highway in the vicinity of Ravendale.

Alternative Segment J, I: 19.2 miles Proposed Segment K: 15.4 miles

East Secret Valley Alignment (Segment ESVA)

This alternative would move Proposed Segment L about 1.5 miles east of its current location adjacent to the east side of U.S. 395. This eastern alignment would depart from the proposed route at Angle Point LØ1 north of Snowstorm Mountain and would traverse the east side of Secret Valley, rejoining the proposed route at Angle Point NØ2. The BLM recommended Alternative Segment ESVA to mitigate significant visual impacts in Secret Valley along U.S. 395 and at the Tule Patch Spring Rest Stop.

Alternative Segment ESVA: 23.0 miles Proposed Segments L, N: 21.1 miles

Wendel Alternative Alignment (Segment M)

Alternative Segment M would be located on the west side of the railroad tracks between Wendel and Viewland and would essentially provide a Honey Lake Valley alternative to the Proposed Segment N crossing of the Skedaddle Mountains. Alternative Segment M was proposed to avoid potential cultural resources impacts.

Alternative Segment M: 3.6 miles Proposed Segment N: 3.2 miles

West Side of Fort Sage Mountains Alignment (Segment P)

Alternative Segment P would replace Proposed Segment Q and would be located on the western flanks of the Fort Sage Mountains. Alternative Segment P would cross the east side of Long Valley over Turtle Mountain, connecting with Proposed Segment R near Seven Lakes Mountain. Alternative Segment P was suggested to reduce the potential land use impacts associated with transmission line routing east of the Fort Sage Mountains.

Alternative Segment P: 17.6 miles Proposed Segment Q: 21.0 miles

Long Valley Alignments (Segments S, U, Z, and WCFG Alternative)

Alternative Segments S and U are located on the west side of U.S. 395 in the Hallelujah Junction area and rejoin the Proposed Project route just north of the Lassen Red Rocks Scenic Area. Alternative Segments S and U would replace Proposed Segment T and were proposed to avoid visual and land use impacts in the Lassen Red Rocks Scenic Area.

Alternative Segment Z is a slight variation of Proposed Segment W, developed by the Applicant to reduce land use conflicts.

Alternative Segment WCFG would replace a portion of Proposed Segment W across the Hallelujah Junction Wildlife Area. Alternative Segment WCFG was recommended by the CDFG to reduce conflicts with the Wildlife Area.

Alternative Segments	S,U:	5.9 miles	Proposed Project Segment T:	4.9 miles
	Z:	4.5 miles	W (Angle Point WØ1 to WNØ4):	3.8 miles
	WCFG:	4.2 miles	W (Angle Point WØ3 to XØ1):	4.0 miles

Peavine Peak Alternative Alignment (Segment X-East)

Alternative Segment X-East would replace Proposed Segment Y and would bring the route further down the slope from Peavine Peak into an existing transmission line corridor. From Angle Points XØ9 to XØ12, Alternative Segment X-East provides a more easterly alternative to Proposed Segment Y, crossing the eastern foothills of Peavine Peak.

Alternative Segment X-East: 2.3 miles Proposed Segment Y: 2.1 miles

Substation Alternatives

Alturas Substation Alternative (Mill Site). The Alturas Substation Alternative, known as the Mill Site, is located adjacent to Alternative Segment B. The site would be located south of Hwy 299 and immediately north of the western end of 4th Street, west of Alturas. The alternative site is approximately eight acres in size. Facilities to be located on this site would be the same as those for the Proposed Project Alturas Substation.

Border Town Substation Alternative (SPPCo Site). An alternative site for the proposed Border Town Substation is adjacent to the southern end of the proposed site. The alternative site is about 176 acres in size and is owned by SPPCo; the required fenced area for the substation would be approximately eight acres. Facilities to be located on this site would be the same as those for the Proposed Project Border Town Substation.

2.2.2 No Project Alternative

The No Project Alternative required for consideration under CEQA and NEPA would mean that the proposed Alturas Transmission Line Project would not be built. Under the No Project Alternative, no adverse environmental impacts from the construction and operation of the Proposed Project would occur. However, SPPCo would still need to augment existing facilities and add new transmission and generation capacity to compensate for existing system limitations and future growth.

In the Proponent's Environmental Assessment (PEA), SPPCo identified the numerous projects that they studied during the process of selecting their preferred project, the proposed Alturas Transmission Line Project. In particular, SPPCo, together with representatives of other interconnected utilities, conducted preliminary studies on various types of projects to evaluate technical feasibility, ability to satisfy existing and projected system needs, and costs. Based on this analysis, SPPCo identified the Alturas Transmission Line Project as its preferred project to bring forward for permitting.

This Final EIR/S evaluates those alternative projects that SPPCo eliminated from further consideration, as well as the Nevada Route Alternative that was identified during the scoping process for this Draft EIR/S. Types of alternative projects considered included generation, system enhancement, alternative technologies, and transmission alternatives. These various alternatives were assessed for their ability to reasonably satisfy the Proposed Project objectives, and reduce or eliminate environmental impacts (CEQA alternative screening criteria). Of all the system alternatives considered, only the following Transmission Alternatives could satisfy at least one of the three primary project objectives:

- Los Angeles Department of Water and Power (LADWP) Corridor Alternatives
  - Nevada Route Alternative
  - Summer Lake-Valley Road Alternative
- Midpoint-Valmy Alternatives
- Burns-Oreana Alternative
- Pacific DC Intertie Tap Alternative
- Frenchman Tap Alternative
- Tracy-Silver Lake Alternatives.

While the noted Transmission Alternatives would not provide environmental advantage, in comparison to the Proposed Project, a summary of their merits and disadvantages is provided as information in the event that the No Project Alternative is deemed preferable by the decision makers.

3. SUMMARY COMPARISON OF THE PROPOSED PROJECT AND ALTERNATIVES

3.1 INTRODUCTION

This Section summarizes the environmental advantages and disadvantages of the various alternatives evaluated in this EIR/S and identifies the environmentally superior project alternative pursuant to CEQA Guidelines, Section 15126. This discussion is provided to help the reader understand the major differences in impacts that are anticipated among the project alternatives.

The selection of the environmentally superior alternative is based upon the impact assessment presented in Part C of this EIR/S (Environmental Analysis). Part C provides a comprehensive and detailed assessment of impacts and mitigation measures for the Proposed Project and each alternative route alignment and substation site (summarized in Section 4 of this Executive Summary). The Impact Summary Tables (which are part of this Executive Summary) tabulate in concise form all of the significant impacts and mitigation measures identified in Part C, organized by class of impact and environmental issue area.

In Part D of this EIR/S, a comprehensive comparison of alternatives focuses on the significant impacts and major differences, or trade-offs, in impacts. The comparative analysis presented in Part D is intended to provide decision makers with information so that they may make balanced, reasoned decisions on the transmission line applications that have been submitted to the CPUC and BLM.

It was necessary to weigh the various impacts to determine the overall environmentally superior alternative. The issue areas of biological, cultural, land use, and visual resources are major factors in this comparison due to the potential magnitude or severity of impacts in these areas. In addition, impacts that are of long duration, or are widespread, are considered to be more important in the comparative analysis than short-term, localized impacts. However, short-term impacts were considered in context of their collective effect, especially in those cases where the long-term impacts were comparable. It will be up to decision makers to make final determinations on the environmental, economic, and policy tradeoffs associated with the project and alternatives.

The analysis in this Section is divided into two sections: Section 3.2.1 presents a comparison of the alternative route alignments considered for the proposed Alturas Transmission Line Project, and Section 3.2.2 compares the Proposed Project with the No Project Alternative (this discussion includes a comparison of the previously noted Transmission Alternatives to the Proposed Project).

3.2 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

3.2.1 Comparison of Alternative Route Alignments

As discussed in Part D of this EIR/S (Comparison of Alternatives), different alternative route alignments are superior in certain issue areas, and in some issue areas there are only slight differences among the

alternatives. In order to meet the CEQA requirement of identifying an environmentally superior alternative, we focused on the importance of issue areas (e.g., biological resources, land use, and visual resources) that have potential long-term, widespread significant impacts. Even in these limited issue areas, determining a superior alternative was difficult because of the tradeoffs associated with different transmission line alignments.

Based on the comparison analysis presented in Part D for alternative route alignments, the following route alignments and substation sites, listed from north to south, are considered environmentally superior under CEQA (and are the NEPA lead agency-preferred project alternative, except where noted):

Route Alignments

- **Proposed Segment A,** due primarily to the fact that this route would avoid many of the visual and land use impacts associated with Alternative Segment B that cannot be fully mitigated.
- **Proposed Segment C** (no alternative alignment was identified that offered the potential for overall environmental advantage).
- **Proposed Segment E,** a somewhat clear choice due to shorter length and avoidance of significant biological effects that would result from Alternative Segments D, F, G, H, and I which would cross a variety of habitats and cause substantial potential impacts to bird species moving up, down, and across the area.
- **Proposed Segment K,** a narrowly superior choice over combined Alternative Segments J and I because of avoidance of substantial grading and associated long-term biological disturbance along Segment J, and avoidance of significant bird collisions associated with east-west trending Segment I and the northern portion of north-south trending Segment J in the southern Madeline Plains.
- **Proposed Segment L,** because of environmental advantages to biological and cultural resources.
- **Proposed Segment N,** because of clear environmental advantages to visual resources, land use, and cultural resources.
- **Proposed Segment O** (no alternative alignment was identified that offered the potential for environmental advantage).
- **Proposed Segment Q,** due to substantial advantages in the issue areas of land use and visual resources.
- **Proposed Segment R** (no alternative alignment was identified that offered the potential for environmental advantage).
- **Alternative Segments S and U,** considered the **NEPA lead-agency preferred alternative** because of the avoidance of significant, unmitigable impacts on visual and recreational resources in the immediate vicinity of the formally-designated Lassen Red Rocks Scenic Area, which is managed by BLM. Additionally, the BLM has determined that Proposed Segment T would conflict with visual management objectives identified in the Lahontan Resource Management Plan for the designated scenic area. **Proposed Segment T** is considered the **CEQA environmentally superior alternative** by CPUC - as the CEQA lead agency, with a lesser mandate (relative to BLM in this case) to protect visual and recreational resources - based on concerns regarding potentially higher levels of impact on biological, cultural, and transportation resources associated with Segments S and U.

- **Proposed Segment W**, except for Alternative Segment Z as discussed below (no other alternative was identified that offered the potential for environmental advantage; W considered superior over Alternative WCFG due to avoidance of land use and visual impacts associated with WCFG).

- **Alternative Segment Z**, due to the avoidance of a residential subdivision and associated land use conflicts.

- **Proposed Segment X** (no alternative alignment was identified that offered the potential for environmental advantage).

- **Proposed Segment Y**, because of the avoidance of significant land use and visual impacts associated with Alternative Segment X-East in the vicinity of Hoge Road.

Substations

- **Proposed Alturas Substation (Devils Garden Site)** due to avoidance of significant land use and visual impacts associated with the alternative substation's (Mill Site) location in close proximity to sensitive land uses and public views.

- **Proposed Border Town Substation (BLM parcel)** due to its location farther from residential uses in the area.

3.2.2 Comparison of No Project Alternative to Proposed Project

When considering the alternative projects that SPPCo would need to implement to reduce existing system limitations and accommodate future growth, the proposed Alturas Transmission Line Project is considered to be environmentally superior to the No Project Alternative.

Under the No Project Alternative, the impacts associated with the construction and operation of the Proposed Project would not occur. However as discussed in Section A.6 of the Final EIR/S, SPPCo would need to augment its existing facilities and add new transmission and generation capacity to compensate for existing system limitations and future growth. Section B.3 of this EIR/S discusses the various system alternatives that SPPCo assessed in its selection of the Alturas Transmission Line Project as its preferred project. The system alternatives considered included generation, system enhancement, alternative technologies, and transmission. These alternatives, in addition to the Nevada Route Alternative that was identified during the scoping period, were assessed in this EIR/S for their ability to satisfy the existing and projected needs of SPPCo's electric power distribution system (see Section A.6, Purpose and Need and Sections B.3.4.3 through B.3.4.6). This analysis concluded that only the various Transmission Alternatives evaluated in Section B.3.4.6.2 were capable of supplementing SPPCo's system in such a manner that existing limitations could be mitigated and future growth accommodated. This evaluation was conducted to provide information on the possible options available to SPPCo in the event that the No Project Alternative is deemed preferable by the decision makers.

In Section B.3.4.6.2, the transmission alternatives capable of satisfying the project objectives were assessed for their potential environmental impacts. Since these alternatives have only been preliminarily studied by SPPCo, no site-specific information was available. Therefore, the evaluation of these alternatives in Section B.3.4.6.2 is limited to a qualitative assessment. Based on the analysis presented in Section B.3.4.6.2 none of the Transmission Alternatives were found to offer environmental advantage

in comparison to the Proposed Project and therefore, were eliminated from further consideration under CEQA (see Section B.3.2 for a discussion of CEQA alternative screening criteria. Considering the analysis in Section B.3.4.6.2 as well as the issue area-by-issue area analysis of the No Project Alternative in Section C.2 - C.13, the Proposed Project is considered to be environmentally superior to these alternatives (including the No Project Alternative). The following factors were taken into consideration in reviewing the candidate Transmission Alternatives in the event the No Project Alternative was selected.

(1) **Potential Environmental Impacts.** In order for the Proposed Project, or any transmission or generation alternative, to improve service reliability to the Reno/Lake Tahoe area, connection to SPPCo's North Valley Road Substation would be required. This need is based on existing limitations of the Tracy-to-North Valley Road connections and projected load increases in the Reno/Lake Tahoe area. For each Transmission Alternative identified, in order to access the North Valley Road Substation, the route would likely need to cross a severely constrained and rapidly growing area of northern Sparks and Reno. These growing urban areas are also located within the Truckee Meadows Air Basin, a non-attainment classified air basin for both State and Federal ambient air quality standards. This routing could result in significant property ownership constraints and potentially significant land use (densities range from 3 to 21 dwelling units per acre), visual, and air quality impacts. In addition, given that the alternative would be traversing an urban area, electric and magnetic field (EMF) concerns would be significant, since the separation distances between the alternative and sensitive receptors would be restricted because of existing development.

(2) **Utility Corridor Concerns.** The Transmission Alternatives would travel primarily within designated utility corridors. Under each transmission alternative scenario (individual or collective), the construction of about 15 miles of transmission line (in most cases 345 kV line) would be required from Tracy to SPPCo's North Valley Road Substation, traversing the City of Sparks and northern Reno area. An existing SPPCo transmission line corridor could be utilized by the alternatives. This corridor contains a 345 kV transmission line and a 120 kV transmission line. To comply with WSCC Operating Criteria, adequate separation distances between transmission lines would be required to avoid simultaneous failures. In rural environments, separation distances range from the span between structures of approximately 1,000 feet; (LADWP recommended) to 2,000 feet (approved for the Southwest Intertie Project in most locations). In urban environments, the proposed Transmission Alternatives could be sharing an existing corridor that includes 345 kV and 120 kV lines. This corridor traverses existing urban development and in many places encroaches to the edge of the existing development (generally residential; 3 to 21 dwelling units per acre). The expansion of the corridor to include an additional 345 kV line (or multiple smaller lines) could require the demolition of existing residences.

(3) **Permitting, Design, and Construction Timelines.** SPPCo has only conducted preliminary technical feasibility analyses for the Transmission Alternatives considered in this EIR/S, except for the Nevada Route Alternative which was identified during EIR/S scoping. Given the time required to permit, design, and construct projects of this magnitude, SPPCo estimates that these alternative facilities would not be available for operation until the year 2000. Given SPPCo's existing system limitations,

SPPCo is currently unable to operate within prudent, WSCC Operating Criteria. This existing system shortcoming will be exacerbated as loads continue to grow (see Section A.6, Purpose and Need). Because SPPCo is a WSCC member utility, failure of the SPPCo system could also have ramifications on the service provided by other WSCC utilities. Interruptions of service in the Reno/Lake Tahoe area would impose economic impacts on all affected commercial and industrial activities. In addition, such interruptions could affect the responsiveness of emergency services. However, since permitting time lines are the responsibility of the Applicant, the timing implications of the Transmission Alternatives has been given only minimal consideration in this analysis.

4. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (By Issue Area)

4.1 AIR QUALITY

The proposed Alturas Transmission Line would be constructed within three air basins between Reno, Nevada and Alturas, California. The project would generate localized pollutant emissions from the construction equipment over a period of about one year. Vehicular emissions associated with maintenance and repair of the transmission line would be the only long-term sources of emissions during the operational phase of the project.

4.1.1 Proposed Project

The emissions were calculated for each of the construction activities. Right-of-way (ROW) construction/ road preparation was the activity with the highest levels of emissions for total suspended particulate (TSP) and fine particulates less than 10 microns in diameter (PM_{10}). The two activities with the highest levels of potential adverse impacts would be ROW construction/road preparation and wire installation. Based on the significance criteria identified for construction activities, the impacts associated with most construction emissions are minor because of their temporary nature. Impacts resulting from PM_{10} would be significant, but would be reduced through implementation of mitigation measures.

Several air quality agencies require that any proposed project with the potential to produce significant levels of PM_{10} take into consideration all reasonable precautions to prevent or minimize emissions of fugitive dust during construction. Sierra County Air Pollution Control District and Washoe County District Health Department's Air Quality Management Division require applicants to submit a dust plan that describes the mitigation measures that would be implemented at the site for the Proposed Project. With this mitigation, the PM_{10} impacts associated with the construction of the project are not considered to be significant.

The Proposed Project would have no stationary sources of emissions and minimal amounts of vehicular emissions associated with maintenance activities. Therefore, no impacts from the operation of the transmission lines are anticipated.

The addition of new sources of emissions in non-attainment areas, such as the Truckee Meadows Air Basin in Nevada, could be significant because it could exacerbate existing conditions. However, based on the temporary nature of construction emissions and the insignificant level of operation emissions, the impact to this non-attainment area is not considered to be significant. Total construction emissions generated on Federal land located within the Truckee Meadows air basin would fall substantially below the general conformity "de minimus" emissions thresholds. Therefore, the project is in conformity with the California and Nevada State Implementation Plans (SIP).

Impacts from cumulative projects have also been evaluated. The proposed Tuscarora Natural Gas Pipeline would parallel the Proposed Project along several intermittent sections, totaling about 37 miles. Construction of the Tuscarora Pipeline Project is expected to be completed by December, 1995. Some reclamation activity, such as reseeding small portions of the pipeline route, could occur concurrently with the Proposed Project. If such an overlap of construction activities occurred, there would be a temporary increase in emissions, that could impact sensitive receptors for no more than a maximum of a few months. Several subdivision projects have also been proposed in Modoc County in the vicinity of the Proposed Project. Cumulative impacts from project construction could be significant, but implementation of mitigation measures should reduce the impacts to a less than significant level. Given the insignificant level of emissions associated with transmission line operations, no cumulative impact is anticipated.

4.1.2 Project Alternatives

The alternative alignments and substation sites would be constructed in the same counties and air basins as the Proposed Project. Differences in construction emissions would occur when segment lengths are longer or shorter than the proposed route, or if the alternative passes through rough terrain that needs significant amount of grading. Alternative Segment B is the only alternative that would result in fewer construction emissions than the proposed route (Proposed Segment A) because it is shorter in length. All of the other alternative alignments would be longer in length than the portions of the Proposed Project that they would replace, resulting in higher levels of construction emissions. Construction emissions would be mitigable through the implementation of dust control plans. There are very few differences between the emissions at alternative substation sites and the proposed locations. Given the insignificant level of emissions associated with transmission line operations, nominal differences in proposed and alterative segment lengths would have only a minor net effect on operation emissions.

Under the No Project Alternative, the air quality impacts described above would not occur. However, similar impacts could occur in other geographic locations as the Applicant augments their system to remedy existing system limitations and to accommodate for future growth.

4.2 BIOLOGICAL RESOURCES

4.2.1 Proposed Project

Vegetation Resources. The proposed transmission line would traverse portions of the Modoc Plateau and the western Basin and Range Regions. The existing vegetation of the proposed route is largely undisturbed except for the introduction of non-native species, cattle grazing, the suppression of natural fires, and a minor amount of intensive agriculture. The Proposed Project would result in potentially significant impacts on special status plants, natural plant communities, and wetlands, and their associated habitat values for wildlife. Potential impacts are associated with activities that would cause surface removal, surface disturbance, increased access, erosion and sedimentation, and introduction of non-native plant species. Most of the potential impacts on vegetation would occur during construction, but vegetation resources would continue to be affected during the operation of the transmission line facility.

Approximately 431 acres of temporary surface removal would occur during construction of the Proposed Project. An estimated 33.4 acres would be permanently removed. Surface disturbance caused by non-bladed overland travel would impact an estimated 113.4 acres. Temporary surface removal and disturbance would be primarily associated with construction activities. Primary causes of surface removal would be intermittent blading for overland travel during construction and workspace required for structure setup. Wherever possible, existing access roads would be utilized. Where no roads presently exist, vehicles would travel off-road. Surface removal would occur in areas where it is necessary to clear rocks and other barriers to allow overland travel, and in some cases permanent overland access routes would be established. Approximately 30 acres of temporary and permanent surface removal would occur as a result of construction of the two proposed substations. Surface removal impacts would be mitigated by a avoidance, restoration, and offsite compensation—in that order. Permanent removal of vegetation would be mitigated by offsite compensation. Surface disturbance would be evaluated following construction to identify sites that would require further monitoring or restoration.

Routes used for overland travel during construction and operation of the transmission line would improve vehicle access to portions of the project area. Potentially significant impacts associated with increased accessibility of the project area include increased surface disturbance of natural plant communities and special status plants, increased erosion and sedimentation, and increased potential for introduction of non-native species. Potential for increased access would be mitigated by replacing existing barriers to overland travel where they have been removed, and by placement or enhancement of natural barriers such as large rocks at access points. New access roads, bladed areas, and improved existing roads would generally be restored to preconstruction conditions.

Potential erosion and sedimentation would be caused by overland travel, clearing and grading for structures, and other activities that would disturb the soil surface and reduce vegetation cover. Potential vegetation impacts include degradation or loss of habitat for special status plant species and degradation of jurisdictional wetlands. Increased erosion and sedimentation would be mitigated by development and implementation of an erosion control plan.

The Proposed Project could also result in the introduction of plant species not native to the Modoc Plateau and Basin and Range regions. Establishment of non-native plant species is facilitated by disturbance and the use of materials and equipment contaminated with seeds or other plant materials. Introduction of non-native plants is a potentially significant impact on natural communities. To reduce the potential for introduction of non-native species, a program will be implemented to educate construction personnel, clean equipment, screen construction materials, and rapidly revegetate disturbed areas.

The Proposed Project would result in an incremental increase in cumulative regional impacts of development on natural plant communities, special status plant species, and wetlands. The potential impacts are relatively small compared to the level of impacts anticipated from the Tuscarora Gas Pipeline Project, which would parallel portions of the transmission line route, but are more substantial than other projects proposed for the region. Potentially significant cumulative impacts would be mitigated by avoidance, restoration, and offsite compensation.

Wildlife. The communities traversed by the proposed transmission line provide habitat, including home ranges, breeding territories, and migration corridors, for a wide variety of wildlife species, some with large and regionally significant populations. Examples of species of concern include several big game species (e.g., mule deer and pronghorn antelope), and upland game species (e.g., sage grouse). Other special status species that rely upon the area during certain seasons include the threatened greater sandhill crane which has important breeding and migration habitat in the vicinity of the Proposed Project. A number of birds of prey use the habitats in the vicinity of the project on a year-round resident or seasonal basis. The endangered (proposed for "threatened" status) bald eagle is present in the project area during winter. The endangered peregrine falcon and the threatened Swainson's hawk, which nest in the vicinity of the Proposed Project, are present during the spring and summer.

Impacts on wildlife would include the effects of displacement of animals during construction, loss of habitat as described above, increased access to wildlife, and overall increased human presence. These impacts would be mitigated by restricting access to sensitive areas, construction schedule restrictions, and environmental education of crews. Many of the sensitive habitat areas can be spanned during line construction to avoid or reduce impacts. Riparian areas including perennial streams would be avoided by project design thereby avoiding impacts to fish and amphibian species. However, some terrestrial habitat would be removed due to construction of structure pads and substations, and other permanent disturbance such as new access roads. Such losses of habitat would be mitigated through onsite restoration and offsite compensation.

The proposed transmission line would also increase potential for bird collisions with transmission lines, particularly in the Pit River Valley west of Alturas. The threatened population of greater sandhill cranes which nests in the vicinity would be at risk for collision as would nesting and migrating waterfowl and sensitive populations of resident birds of prey such as the Swainson's hawk, golden eagle, and peregrine falcon. Potential impacts on bird species would be mitigated by marking transmission lines with colored spiral vibration dampers; habitat compensation would be required to mitigate impacts on greater sandhill cranes. Large birds of prey would be at risk for electrocution since these animals are inclined to perch

on transmission line structures and at substations. This impact would be mitigated by spacing of conducting lines and special construction measures at substations.

In the vicinity of the Proposed Project there are a number of other projects, the most significant of these being the Tuscarora Natural Gas Pipeline Project. Since the Tuscarora project is also a linear facility in the same vicinity as the proposed transmission line, cumulative impacts to wildlife and habitat would result. As discussed for vegetation, impacts on wildlife habitat would be mitigated by a combination of avoidance, restoration, and offsite compensation.

4.2.2 Project Alternatives

Alturas Alternative (Segment B). The Alternative Segment B near Alturas would decrease impacts on juniper woodland by more than 20 acres and would also reduce surface disturbance and removal impacts on big sagebrush scrub, montane meadow, volcanic gravels, and low sagebrush scrub plant communities as compared with Proposed Project Segment A. Use of Alternative Segment B would also reduce the potential for indirect impacts on special status plants including lilliput lupine, prostrate buckwheat, and doublet. Overall loss of wildlife habitat would potentially be 4 times greater if Segment A were chosen, primarily due to the location of the Hilltop Substation within big game habitats. Bird species that would potentially be affected by use of this segment include Swainson's hawk, bald eagle, and sandhill crane. However, due to on-going changes in land management due to a USFWS easement recently purchased in the vicinity, bird collision potential would be possibly more substantial for Alternative Segment B than for Proposed Segment A.

Madeline Plains Alternative Alignments (Segments D, G, F, H, I). Approximately 46 separate occurrences of four special status plant species were identified along the Madeline Plains alternative alignments. The comparable portion of the proposed route (Segment E) has a total of 15 separate occurrences of six species of special status plants. As with the proposed route, the alternative segments would traverse seasonal and perennial wetland habitats on the Madeline Plains. The Madeline Plains alternatives would result in impacts to big sagebrush scrub, Cusick's stickseed, twin arnica, volcanic daisy, and purple loco. Those species would not be affected by Segment E of the proposed route. The Madeline Plains Alternative would not affect Raven's lomatium, which would be affected by the proposed route. A total of 20 acres of habitat within this group of alternative segments would be affected as a result of overland travel, and construction activities. This includes a lengthy stretch of relatively remote juniper woodland habitat in an area of rugged topography on Alternative Segment D, featuring numerous small drainages, several springs, and American badger habitat. Approximately 16 acres of wildlife habitats would be impacted in association with this alternative. Impacts on wildlife populations (including bird collisions) and special status species would be increased by selection of these route segments as compared with use of Proposed Segment E. Alternative Segments F and G would have significantly more impact on sage grouse, pronghorn antelope, mule deer, and birds of prey, such as the golden eagle.

Alternative Segments G and I traverse agricultural lands. Migrating shorebirds, greater sandhill cranes, and wintering raptors have been observed in the vicinity of these segments. Segment F would cross an

area which is recognized by the resources agencies as important sage grouse winter habitat and brood rearing habitat. This southern portion of the Madeline Plains is dominated by sage brush vegetation types and represents some of the most important sage grouse brood rearing habitat in the region (BioSystems, 1994). The Madeline Plains Alternative Alignments would result in a loss of 0.004 acre of sage grouse habitat. One sage grouse lek is located within 0.5 mile of Segment F near FMP 9. These issues were considered in the impact analysis and were factored into the determination that the Proposed Segment E would result in fewer impacts to wildlife.

Ravendale Alternative Alignment (Segments J, I). Seven occurrences of four special status plant species occur on Segment J, compared to ten occurrences of five special status plants on the corresponding Proposed Segment K. One of the species, Holmgren's skullcap, is associated with clay soils referred to as volcanic vertisols. Two acres less of the volcanic vertisol plant community would be potentially disturbed by the Ravendale Alternative relative to the comparable portion of the proposed route. Special status plant species observed on Segment K of the proposed route that were not observed on the Ravendale Alternative include clay-loving buckwheat (*Eriogonum collinum*), Pine Creek evening primrose, and volcanic daisy. However, the Ravendale Alternative would result in increased disturbance of big sagebrush scrub, juniper woodland, and silver sagebrush scrub. This alternative would also disturb an additional population of Suksdorf's milkvetch, which would not be affected by Segment K. Although impacts to sage grouse would be significantly reduced if Segment J were chosen, impacts on wildlife would be somewhat greater than those associated with Segment K, due to the more rugged topography, access development, and the new human disturbance this alternative would bring to a more pristine area. Approximately 4.92 acres of wildlife habitat would be impacted if Alternative Segment J were chosen. Proposed Segment K would impact 0.86 acre.

East Secret Valley Alignment (Segment ESVA). Alternative Segment ESVA would cause significantly greater impacts to plant communities and special status plant species than the Proposed Segment L. Potential impacts to wetlands and wildlife habitat would be greater than for the proposed route due to the greater isolation and absence of existing access routes, the greater roughness of the terrain which will necessitate more surface disturbance and removal for overland travel, and the slightly greater length of the route. Segment ESVA would cross directly over one active sage grouse lek, and pass within 1/4 mile of one currently inactive lek. Leks are crucial to sage grouse breeding, and raptors perching on and hunting from the powerline would be likely to eliminate all sage grouse use of the leks. This would have significant adverse impacts on the sage grouse population in the Secret Valley area.

Wendel Alternative Alignment (Segment M). Two occurrences of a special status plant species were identified on Alternative Segment M, compared to a single occurrence of the same species on Proposed Segment N of the proposed route. This species was spiny milkwort, a CNPS List 2 species, which occurs on gravely or rocky soils near the northern convergence of the two alignments. This alternative would affect five more acres of big sagebrush scrub and sand dune plant communities than Segment N of the proposed route. Impacts to chenopod scrub would be less than on Segment N. Other potential impacts due to increased access or non-native species introduction would be similar to those of the proposed route. Impacts on wildlife would not be significantly different from Proposed Segment N.

Approximately 2.64 acres of wildlife habitat (mule deer winter range) would be impacted by Segment M. One additional acre would be impacted if Segment N were chosen.

West Side of Fort Sage Mountains Alternative Alignment (Segment P). Alternative Segment P would eliminate impacts on one population of Nelson's evening primrose. It would also reduce or eliminate potential disturbance of nearly two acres of sand dune, four acres of sagebrush-bitterbrush community, and 11 acres of juniper woodland. This alternative would increase impacts on big sagebrush scrub by approximately four acres, as compared with the impacts of the proposed route (Segment Q). Portions of this route have been identified as pygmy rabbit habitat, which could be substantially disturbed; the amount of this habitat type which is present is greater than for Proposed Segment Q. Furthermore, this alternative would affect 4 acres of mule deer habitat, including crossing the Doyle Wildlife Area for about 4.5 miles.

Long Valley Alternative Alignments (Segments S, U, Z, and WCFG). Vegetation resources affected by the Long Valley alternative segments would not differ substantially from those of the proposed route (Segments T and W). All of the alignments would result in impacts on juniper woodland and sagebrush-bitterbrush plant communities. However, the WCFG alignment would eliminate surface disturbance of approximately 0.7 acre of montane meadow plant community that occurs on Segment W of the proposed route. These alternative segments would potentially affect local bird populations including waterfowl, bank swallows, and willow flycatcher. Alternative Segments S and U would cross Long Valley Creek once each, with increased potential for waterfowl, shorebird, and raptor collisions. Alternative Segment WCFG would result in fewer wildlife impacts because it would reduce impacts one-third on the Hallelujah Junction Wildlife Area and associated mule deer winter range. Alternative Segment Z would have no discernible difference in biological impacts in comparison with the proposed route. Approximately 22 acres of mule deer winter range would be affected by the Proposed Segment W. However, only approximately 7 acres would be impacted in association with WCFG.

Peavine Peak Alternative Alignment (Segment X-East). The Peavine Peak Alternative would not substantially change potential impacts on special status species or natural plant communities associated with the proposed alignment (Segment Y). Both alignments would similarly affect altered andesite plant communities and big sagebrush scrub. The alternative segment would also cross several ponderosa pine stands. There were no special status wildlife species observed using these habitats during field surveys. There would be no significant differences in impacts on wildlife compared with those of Proposed Segment Y.

Alternative Alturas Substation Site (Mill Site). This former lumber mill site contains no sensitive natural plant communities or special status plant species. Unlike the proposed Devils Garden site on Segment A, this alternative site is dominated by non-native species. Selection of this site would not result in any significant impacts on natural plant communities, wetlands, or special status species and would decrease the loss of juniper woodlands associated with the proposed substation alternative site. This alternative site also includes very little wildlife habitat. However, this site is located within the Pit River Valley west of Alturas, adjacent to habitat used by several sensitive bird species. It is likely that the site occurs

within daily flight paths for these species. Therefore, this site would probably feature greater bird electrocution and collision potential when compared with the proposed Devils Garden site. In addition, greater raptor predation on special status species would occur in the Pit River corridor, if the substation resulted in creation of additional perches.

Border Town Substation Alternative Site. With respect to Biological Resources, this alternative would have no discernible differences in impacts from those of the proposed Border Town substation site.

No Project Alternative. The No Project Alternative would cause no immediate impacts on Biological Resources. However, within the next three to six years it is likely that SPPCo would plan and construct a major transmission line project to accommodate regional growth in energy needs. It is anticipated that such a project would result in significant direct and indirect impacts on vegetation and wildlife resources similar to those associated with the Proposed Project. Because the location of such a project is unknown, a quantitative evaluation of the impacts to wildlife associated with construction and operation cannot be conducted.

4.3 CULTURAL RESOURCES

4.3.1 Proposed Project

The proposed transmission line would traverse portions of the Modoc Plateau and the western Basin and Range Regions. The area has probably been populated for 10,000 years or more by various Native American groups. At the time of Euroamerican settlement in the 19th century, much of the area was occupied or utilized by a number of ethnographic groups, including the Maidu, Modoc, Paiute, Pit River, and Washoe. The period of historic settlement in the area was marked by farming and ranching activity particularly along the Pit River and in the Honey Lake Valley, mining activity, and development of transportation networks. In contrast to the incursions of modern development in western California, the Proposed Project area has received relatively little modern development. Accordingly, the area supports a fairly rich and diverse cultural resource base that has not been obliterated by modern development.

The Proposed Project would result in potentially significant impacts on prehistoric and historic cultural resources that appear to be eligible for inclusion on the National Register of Historic Places. Potential impacts are associated with activities that would cause surface disturbance, surface and/or subsurface removal, increased access, and intrusions on integrity of setting, feeling or association for sites whose significance may be tied to factors other than the potential of the site to yield important information. It is anticipated that most of the potential significant impacts on significant cultural resources would occur during construction, although operational and maintenance activities, increased public access, and permanent intrusions on a site's ambiance could also occur.

The results of the cultural resources inventory for the Proposed Project, including literature reviews and comprehensive field studies, resulted in the identification of 266 cultural resource sites. One hundred and fifty-four of these sites are prehistoric sites, 53 are historic sites, and 59 are multi-component

prehistoric/historic sites. Preliminary evaluations indicate that 26 of the prehistoric sites appear to be eligible for inclusion on the National Register of Historic Places (NRHP) and another 36 are recommended for further evaluation to make preliminary statements regarding their NRHP eligibility. Fourteen of the multi-component sites provisionally appear to be NRHP-eligible and another 17 remain unevaluated, but may possess qualities that would make them eligible for the NRHP. Four of the historic sites appear to be NRHP-eligible and seven may possess qualities that would make them eligible for the NRHP pending further evaluation. In addition to the sites described, 619 isolated finds (both prehistoric and historic) were recorded along the proposed route.

The greatest concentration of prehistoric and multi-component sites are located on the A, C, and E segments in the Modoc Plateau area. Secondary concentrations of prehistoric and multi-component sites are found along the K and L segments. Another secondary concentration of prehistoric sites is found along the Q segment in the Fort Sage Mountain area. Historic sites on the proposed route tend to be concentrated along the O segment in Honey Lake Valley. With the exception of the N, R, and T segments and the North Valley Road substation location, all Proposed Project components exhibit some occurrences of cultural resource sites.

Impacts on significant cultural resource sites (sites that meet NRHP eligibility criteria) would be mitigated through avoidance, by selection of structure sites, design of construction access, data recovery, limitation of access, and crew education. For sites whose significance is tied to factors other than the potential of the site to yield important information, mitigation would be accomplished through avoidance and project design. These mitigation measures would be governed by a multi-agency Programmatic Agreement being developed by the BLM and implemented by a comprehensive mitigation monitoring program under the direction of the CPUC and BLM.

4.3.2 Project Alternatives

Alturas Area Alternative Alignment (Segment B). KEC-1703: this multi-component site contains two probable prehistoric hunting blinds, an obsidian projectile point fragment and a bottle base.

Madeline Plains Alternative Alignments (Segments D, G, F, H, I). Thirty sites have been recorded on Alternative Segment D, 10 of which appear to be significant. Two sites have been recorded on Alternative Segment G, one of which appears to be significant. The other site recorded on Alternative Segment G appears to be non-significant. The Madeline Plains Alternative Alignments have the potential to result in significant impacts on 11 sites. In contrast, Proposed Segment E would have the potential to result in significant impacts on 12 sites. The Madeline Plains Alternative Alignments would result in greater potential impacts to cultural resources than Proposed Segment E.

Ravendale Alternative Alignment (Segment J). Alternative Segment J contains four sites, two of which appears to be significant and which could experience significant impacts. In contrast, Proposed Segment K would have the potential to result in significant impacts on nine sites (two potential Class I).

East Secret Valley Alignment (Segment ESVA). Alternative Segment ESVA contains seven sites which appear to be significant (one potential Class I) and could experience significant impacts. In contrast, Proposed Segment L would have the potential to result in significant impacts to 13 sites; however, Alternative Segment ESVA sites contain a higher percentage of significant data.

Wendel Alternative Alignment (Segment M). Alternative Segment M contains two sites which appear to be significant and could experience significant impacts. The six other sites recorded on this alternative appear to be non-significant. In contrast, no sites would be significantly impacted by Proposed Segment N.

West Side of Fort Sage Mountains Alternative Alignment (Segment P). Alternative Segment P contains three sites that have been recommended for further evaluation but could experience significant impacts. Twelve other sites were recorded on Alternative Segment P which all appear to be non-significant. In contrast, Proposed Segment Q would result in potentially significant impacts to five sites.

Long Valley Alternative Alignments (Segments S, U, Z, and WCFG Alternative). Alternative Segment S contains one site that appears to be NRHP-eligible and another requiring further evaluation, both of which could experience significant impacts. Three other sites on Alternative Segment S were also recorded but appear to be non-significant. Alternative Segment U contains three sites which appear to be non-significant. Alternative Segment Z contains a single site which appears to be eligible to the NRHP and could suffer significant impacts. Alternative Segment WCFG contains three sites recommended for further evaluation which could also experience significant impacts. Five other cultural resource sites were recorded on Alternative Segment WCFG which appear to be non-significant. In contrast, Proposed Segment T and that portion of Proposed Segment W to which the Long Valley Alignments are an alternate could result in significant impacts to only one site, which is common to both Proposed Segments W and Alternative Segment Z.

Peavine Peak Alternative Alignment (Segment X-East). Four sites were recorded on Alternative Segment X-East, none of which appears to be significant. In contrast, Proposed Segment Y could result in significant impacts on three sites.

Alturas Substation Alternative Site (Mill Site). One site was recorded at the Alturas Substation Alternative site which appears to be significant and could result in a significant. In contrast, the proposed Devils Garden Substation site could also result in significant impacts to one site.

Border Town Substation Alternative Site. Use of this site would have the potential of resulting in minor adverse impacts on four non-significant sites, whereas use of the proposed Border Town Substation would have the potential of minor impact on one non-significant site.

No Project Alternative. The No Project Alternative would cause no immediate impacts on Cultural Resources. Over the short-term (one to three years) the No Project Alternative would not likely result in new surface disturbance and associated potential for cultural resource impacts. Over the long-term the

No Project Alternative could include the construction of a major transmission facility comparable to the Proposed Project with similar types of ground-disturbing cultural resource impact potential. It is assumed that similar to the Proposed Project, significant impacts to cultural resources could be mitigated through the same kinds of mitigating measures described for the Proposed Project.

4.4 ENERGY AND UTILITIES

4.4.1 Proposed Project

Most of the proposed transmission line route is in a low density rural environment having relatively few utility lines. A significant impact would occur if an underground or overhead utility in a roadway or railway ROW were to be accidentally disrupted during excavation work when installing structures or foundations for substations. This can be avoided by mapping existing utilities on construction plans, by having the Applicant notify all utility owners at least 72 hours prior to planned work whenever there is the possibility that construction could disrupt an existing utility line, and by maintaining regulated separation between project conductors and those of existing overhead electrical transmission and distribution lines.

Electrical transmission is relatively efficient. Energy requirements during construction and operation would not exceed the capacity of other utility services, disrupt operations, result in inefficient or unnecessary consumption of energy, nor require significant amounts of nonrenewable resources.

No cumulative energy and utility impacts are expected if the recommended mitigation is implemented.

4.4.2 Project Alternatives

The characteristics of existing utilities along alternative segments and substation sites are similar to those of the Proposed Project. Impacts on public utilities and energy for all alternative route segments would be less than significant after mitigation. Energy requirements would also be similar.

The No Project Alternative would cause no immediate energy and utility impacts. However, such impacts could be realized in the future as other energy projects could be started or augmented under the No Project Alternative. Applying recommended mitigation to each project would ensure that existing utility services would not be disrupted during construction.

4.5 GEOLOGY, SOILS, AND PALEONTOLOGY

The project area extends across two geologic provinces, the Modoc Plateau in the north and the Great Basin on the south. The Proposed Project would traverse the southern part of the Modoc Plateau, an area that is transitional with the Great Basin. The geology, soils, and paleontology are very similar along the entire Proposed Project and alternative route segments. The geological formations along the Proposed Project and alternative routes are basically of two types; hard volcanic rocks, and unconsolidated

sediments or moderately consolidated sedimentary rocks. The hard rocks are generally in the hills and the soft rocks and sediments in the valleys. Most of the valleys contained lakes during the Pleistocene ice ages and the sedimentary deposits are largely lake and associated basin-margin deposits. The Proposed Project would traverse approximately 35% hard rock and 65% sediments or sedimentary rocks.

The geologic structure in the area is primarily a basin-and-range type structure characterized by fault-block tectonics resulting in alternating mountains (ranges) and valleys (basins) separated by faults. However, in contrast to typical basin and range areas which are typified by predominantly normal faulting (i.e., vertical displacements), the project area has several major lateral-slip faults. These occur primarily in a narrow, northwest-trending belt called the Walker Lane. Major faults in this system are the Honey Lake, Likely, and Warm Springs Valley fault zones. These faults, as well as others in the region, are capable of generating large-magnitude ($M > 7$) earthquakes, which could generate earthquakes with strong ground shaking and would probably be associated with large surface displacements (5 to 15 feet).

Large volcanic eruptions have not occurred in the project area in Quaternary time, but the Cascade Range (abutting the area to the west), has been the locus of violent explosive eruptions during historical times and the recent geologic past.

The types of rocks and geologic structure of the site region are not conducive to minerals formation or abundant fossils. Minerals along the route comprise local deposits of pozzolan and aggregate. Although fossils do occur in the sedimentary deposits, they are uncommon and are not known to be scientifically important. Potentially significant geothermal energy resources occur in Honey Lake Valley.

4.5.1 Proposed Project

Significant but mitigable geological impacts are of two basic types: natural events which will occur whether or not the project is built, and impacts resulting from construction of the project. The first type includes fault displacement, earthquake shaking, liquefaction, landslides, expansive soils, and corrosive soils. The impacts of these on the Proposed Project can be reduced to a level that is not significant by avoidance or by proper engineering design. The potential impacts of construction comprise disturbance of surficial geological formations, inducing slope failures, blasting, restriction of access to minerals or paleontological resources, and erosion. These can all be mitigated to levels that are not significant; mitigation measures include development and implementation of erosion control, rehabilitation, and blasting plans to minimize grading and off-road travel, and establishing procedures for controlling erosion (such as emplacement of erosion barriers, topsoil stockpiling, and revegetation). Minerals and paleontologic resources can be avoided.

The only significant geological impact that is not completely avoidable or mitigable is an ash fall from a large volcanic eruption in the Cascade Range to the west of the Proposed Project. Such an event, although exceedingly rare, would affect all facilities, including non-project facilities, down wind (i.e., to the east) of the source. Impacts could be minimized but some residual affects would be unavoidable.

There are no significant unmitigable geological cumulative impacts. Construction of both the Tuscarora Pipeline and the Alturas Transmission Line along the same approximate routes may reduce geological impacts in the long-term over those resulting from construction along two separate routes.

4.5.2 Project Alternatives

Geological, soils, and paleontological resources are generally regional features, and not locally unique. Therefore, the project alternatives cover basically the same geological terrains, formations, and structures. In most cases, the impacts and mitigations of the alternatives are similar to those of the Proposed Project. Specifically, Alternative Segment B has a minor environmental advantage over Proposed Segment A, because additional blasting would be required for Proposed Segment A; Alternative Segments D, G, F, H, I, and J cross the same faults and geologic formations as Proposed Segments E and K. However, Alternative Segment D crosses a greater distance of hard volcanic rock and would require much more grading and blasting than Proposed Segment E. Alternative Segment J crosses a larger number of potentially active faults than Proposed Segment K, but the fault that would be crossed by Proposed Segment K is a much larger feature. Alternative Segment ESVA would require additional grading and blasting to Proposed Segment L. Alternative Segment M and Proposed Segment N are similar but Proposed Segment N would require more grading. Proposed Segment Q is similar to Alternative Segment P; both cross major faults, but Alternative Segment P would require more grading and coincides closely with a fault of unknown potential and thus may require specific geological studies like Proposed Segment Q. Alternative Segments S, U, Z, and WCFG have essentially the same geologic characteristics as Proposed Segments T and W with no clear differences. Alternative Segment X-East and Proposed Segment Y are basically identical geologically. The alternative Alturas Substation site (Mill Site) would result in slightly greater impacts than the proposed site because additional erosion, siltation, and pollution could occur. The alternative Border Town site (SPPCo site) is basically identical geologically to the proposed site. In summary, although there are minor differences, the Proposed Project and the alternatives are very similar in terms of anticipated impacts.

Under the No Project Alternative, geologic impacts of the Proposed Project would not occur; however, similar impacts could be expected in other areas as SPPCo augments their existing system to accommodate for future growth.

4.6 HYDROLOGY

The project area is within two major drainage basins, the Central Valley and the Lahontan basins. Drainage of the Central Valley drainage basin is toward the west into the Great (Central) Valley of California. The Pit River is one of the few rivers in the project area that drains to the west. Most of the surface drainage is toward the east into the Lahontan Basin, one of the major internal drainage basins of the Great Basin (an area characterized by numerous valleys with enclosed ground water basins). Although the Proposed Project and alternatives would cross numerous stream channels, most of these are intermittent features that flow only during the winter rainy season or after snowmelt. Many of the intermittent streams may have been affected by agriculture and grazing. Only ten of the streams that

would be crossed by the Proposed Project are perennial streams and there are seven areas designated as 100-year floodplains.

The Proposed Project would extend through four major ground water basins: the Alturas, Madeline Plains, Secret Valley, and Honey Lake. The project area is within a basin and range type topography where most of the basins were filled with lakes during the Pleistocene ice ages when the climate was cooler and wetter. Over the past 10,000-15,000 years, all but the largest lakes have dried up and the ground water that had saturated the valley-fill sediments below the surface has slowly experienced a net decline. The area is now arid to semiarid with high rates of evapotranspiration and slow rates of ground water recharge.

4.6.1 Proposed Project

Most potential hydrologic impacts of the Proposed Project are not significant, or can be mitigated to a level that is not significant, by avoiding streams, wetlands, and areas of shallow ground water. Where such areas must be crossed, they can generally be spanned by the longer 1200-foot spacing between structures such that the project would have little hydrological impact. However, five of the larger floodplains are too wide to avoid, and as many as 30 structures may have to be placed within 100-year floodplains. In addition, the Proposed Project would cross wide areas in the Madeline Plains and the Honey Lake Valley with shallow ground water (< 30 feet). Also, many areas between structure locations would need to be crossed by construction equipment, exposing the areas to erosion which could lead to sediment loading of streams and wetlands downslope. Where these areas cannot be avoided or spanned, measures can be undertaken to mitigate the impacts to an insignificant level. These measures include erosion control, river-bed crossing plans, limiting construction to periods of low water flow, prohibition of refueling and equipment maintenance near streams and wetlands, development of Best Management Practices, and Blasting Plans.

With respect to cumulative impacts, the only other project that appears to have significant impacts in conjunction with the Proposed Project is the Tuscarora Pipeline. The cumulative impacts can be reduced to an insignificant level by application of mitigation measures described above for the Proposed Project.

4.6.2 Project Alternatives

The hydrologic features of the region cannot generally be avoided by alternatives which take other routes across the same valleys. As such, the alternatives have the same basic potential hydrological impacts and require the same mitigations as the Proposed Project. For example, both Proposed Segment A and Alternative Segment B must cross the Pit River and associated 100-year floodplain; however, the Alternative Segment B crossing would be wider. Although Alternative Segment D crosses much less floodplain and less areas of shallow ground water of the Madeline Plain than Proposed Segment E, the alternative route must eventually be completed across the Plains through an interconnection with Alternatives F, G, H, I, or J. Alternative Segment ESVA and Proposed Segment L would impose essentially the same hydrological impacts except that the alternative could affect ground water flow, since

additional blasting would be required. Alternative Segment M would cross the margin of northeastern Honey Lake Valley, but like its counterpart, Proposed Segment N, it does not appear to have significant hydrological impacts. Alternative Segment P crosses an extensive part of the Honey Lake Valley dry-lake bed, much like Proposed Segment Q, and thus would have the same impacts on shallow ground water and would require the same mitigation. Alternative Segment S crosses the perennial Long Valley Creek twice via its connection with Alternative Segment U and thus would cause greater impacts than the Proposed Segments T and W. Alternative Segments Z and WCFG are nearly identical to comparable parts of Proposed Segment W. However, parts of Alternative Segment WCFG cross the lowlands of Long Valley and thus may have a greater potential for disturbance of surface slows and ground water. Alternative Segment X-East is similar to Proposed Segment Y. The alternative Alturas Substation site (Mill Site) would have additional hydrological impacts to that of the proposed site because it is located in lowlands. The alternative Border Town site (SPPCo site) is basically identical hydrologically to the Proposed site. In summary, the hydrological impacts of alternative segments and substations would be similar to those along the Proposed Project, offering few significant hydrological advantages.

Under the No Project Alternative, the hydrological impacts described above would not occur; however, similar impacts could be realized in other areas as the Applicant augments their existing system.

4.7 LAND USE, RECREATION, AND EDUCATIONAL, RELIGIOUS, OR SCIENTIFIC USES

The land crossed by the proposed and alternative transmission line routes is about 44 percent private land and 56 percent public land. The proposed and alternative routes cross mainly private land under county jurisdiction and public land managed by the U.S. Bureau of Land Management (BLM), USFS, SIAD, and California State Lands Commission. The land in the area of the proposed routes is predominantly undeveloped. The main uses of the undeveloped private land are grazing, open space, and wildlife habitat. The main uses of the undeveloped public land are grazing, recreation, open space, and wildlife habitat. The primary recreational uses in the area of the proposed and alternative routes are big game, upland game, and waterfowl hunting; hiking; horseback riding; photography; off-road vehicle driving; and pleasure driving. Undeveloped, partially developed, and developed residential subdivisions on private land occur scattered in the area around the proposed and alternative routes. Pockets of rural residential development and commercial development occur around the towns and cities crossed by or near the proposed and alternative routes. More urban residential and commercial development occurs along the proposed and alternative routes in the City of Reno, Nevada.

4.7.1 Proposed Project

The significant, mitigable land use impacts of constructing the Proposed Project include the temporary loss of the use of grazing land adjacent to the ROW, loss of grazing animals through open fences or gates, and temporary loss of the use of cropland. Mitigation measures proposed for these significant impacts call for: coordinating with BLM, USFS, and the permittees to ensure protection of range improvements and livestock water sources; constructing temporary barriers across sections of removed fencing; and closing gates after they are opened. Construction would also result in non-significant

disturbances to residential and recreational uses (e.g., increases in noise, dust, odors, and traffic; visual intrusion of equipment and materials; restricted, blocked, or detoured access). Mitigation measures proposed to reduce construction disturbances to residential uses include: mailing notices regarding future project construction to property owners, residents, and tenants; posting bulletins in neighborhoods; publishing notices in newspapers; and appointing a public affairs officer. Impacts to recreational uses could be reduced by posting bulletins regarding future project construction along the access routes to known recreational destinations that would be restricted, blocked, or detoured; and developing alternative transportation routes.

Operating the Proposed Project would result in the significant, non-mitigable degradation of the quality of residential uses as a result of a permanent change in the character of the residential environment due to the visual impacts of the project structures and public EMF concerns. Designing the Proposed Project such that the transmission line structures are not placed within 300 feet of existing residences is proposed by SPPCo to partially reduce this significant impact. Significant recreation impacts would occur at the formally-designated Lassen Red Rocks Scenic Area due to adverse effects on the scenic quality of this area. Significant land use impacts would also occur to State Wildlife Areas (Doyle and Hallelujah Junction) due to the degradation of the State land from the presence of the project facilities and associated conflicts with established State directives regarding wildlife areas. This impact could be mitigated by providing the CDFG with compensatory land contiguous to the Wildlife Areas. Significant recreational land use impacts would also occur because of a change in character of the environment at the Tule Patch Spring Rest Area, Infernal Caverns Battleground and Memorial Monument, Lassen Red Rocks Scenic Area, Peavine Mountain Area, Rancho San Rafael Park, and Daggert Canyon.

Non-significant land use impacts of operating the Proposed Project include: disturbances to residential and recreational uses during maintenance of the line (e.g., increases in noise, dust, odors, and traffic); degradation of the quality of recreational uses as a result of a change in the character of the recreational environment due to the visual impacts of the project structures and their interference with recreational activities; temporary, intermittent loss of the use of grazing land as a result of disturbance to grazing animals during line maintenance; and permanent loss of the use of grazing land and cropland due to the presence of the project structures. Mitigation measures proposed to reduce disturbances to residential, recreational, and agricultural uses during line maintenance are included in the environmental impact analyses of Air Quality, Noise, and Transportation and Traffic.

Constructing new access roads, upgrading existing roads, blading rough areas for overland travel, and placing permanent transmission structures along the ROW would result in significant disturbances to residential, recreational, and agricultural uses as a result of an increase in opportunities for human access to relatively undeveloped areas. Mitigation measures proposed for the significant increase in human access are included in the environmental impact analyses of Biological Resources and Cultural Resources.

The Proposed Project may be inconsistent with Modoc County General Plan policies and BLM Lahontan Resource Management Plan Standard Operating Procedures (SOPs) regarding construction activities. In addition, the Proposed Project would conflict with Federal regulations regarding Wilderness Study Areas

(WSA) by crossing a portion of the Skedaddle WSA, depending on the location of the actual project centerline within the 660-foot wide study corridor. This conflict could be avoided by moving the Proposed Project ROW centerline to the southwest along Segment O within the existing study corridor.

The significant cumulative impacts of the Proposed Project include: cumulative disturbances during construction of the Proposed Project and other future projects in Modoc County and Lassen County, and potential EMF concerns to an increased population in the project area. Mitigation measures proposed for cumulative project impacts call for coordinating with the proponents of Proposed Projects within, adjacent to, or near the transmission line ROW or substation sites to minimize cumulative construction impacts; and considering a minimum setback of 300 feet from the transmission line or substations of any future occupied structure on parcels crossed by the Proposed Project. The cumulative disturbances during construction of the Proposed Project and other future projects in Sierra County would not be significant.

4.7.2 Project Alternatives

Constructing and operating the Alturas Alignment (Alternative Segment B), Wendel Alignment (Alternative Segment M), and West Side of Fort Sage Mountains Alignment (Alternative Segment P) would also result in land use impacts. Constructing Alternative Segment B would result in the non-significant temporary loss of use of the driving range of the Arrowhead Golf Course during project construction. The significant, mitigable land use impacts of Alternative Segment B include the permanent loss of a small portion of the driving range of the Arrowhead Golf Course due to the presence of the project structures. Designing the Proposed Project such that the project structures are placed outside or on the boundary of the driving range of the Arrowhead Golf Course is proposed as mitigation for this significant impact. The East Secret Valley Alignment (Alternative Segment ESVA) would avoid significant land use impacts associated with Proposed Segment L, but would cross a small portion of the Five Springs WSA, thus conflicting with BLM regulations. This impact could be avoided by relocating Alternative Segment ESVA slightly to the west.

Constructing Alternative Segment M would result in non-significant impeded movement of truck traffic to and from the Wendel Solid Waste Transfer Station. The mitigation measure proposed to reduce this traffic impedance calls for notifying the Lassen County Public Works Department regarding the schedule for constructing Alternative Segment M and the extent of use of Wendel Road. Degradation of the recreational experience of riders at the Fort Sage Off-Highway Vehicle Area would be a significant impact of constructing and operating Alternative Segment P. Riders would be disturbed and restricted in their use of trails during project construction, and the presence of the project structures would restrict their use of the trails and pose hazards to their safety. Designing the Proposed Project such that project structures are not placed within or adjacent to the motorcycle and all terrain vehicle trails, dirt access roads, or paved access roads of the Fort Sage Off Highway Vehicle Area is proposed as mitigation.

Alternative Segments S and U would eliminate the recreation impacts associated with the proposed crossing of the Red Rocks Scenic Area by Segment T. Alternative Segment WCFG would impose additional land use impacts to residences in Border Town.

The alternative substation sites (Mill site in Alturas and SPPCo site in Border Town) would both impose additional land use impacts since both sites would be located closer to more sensitive receptors than the proposed substation sites.

Under the No Project Alternative the land use impacts would not occur. However, as SPPCo augments its system to remedy existing limitations and to accommodate for future growth, similar land use impacts could occur in other areas.

4.8 NOISE

4.8.1 Proposed Project

There are approximately 10 sensitive receptors (mostly residences or groups of residences) within close proximity to the Proposed Project corridor that would experience severe noise levels during project construction. A significant short-term (construction) noise threshold was defined as an increase in ambient daytime level of 15, or more, dBA (decibels, A-weighted). The impacted receptors are scattered non-uniformly along the route. A significant noise level would be temporary (one to several days) for those receptors within 2,000 feet of the centerline in a quiet, rural environment. Recommended mitigation would reduce noise impacts to a level that is less than significant. This would consist of reducing equipment noise to the maximum feasible extent by confining construction activities to approved daytime hours; notifying persons near the Proposed Project ten days prior to impending construction; providing tips on reducing noise intrusion and on how to inform SPPCo of a timing conflict with an outdoor event; and procedures for asking questions and resolving complaints.

Noise is one of the ways in which construction activities would disturb wildlife species (see Section 4.2, above). Measures proposed to reduce biological impacts would also reduce noise disturbance in sensitive habitats.

Helicopters would be used in transporting and erecting transmission structures in some remote or biologically sensitive areas. These locations, however, are generally remote and the noise impact would be brief, resulting in non-significant impact.

Noise along the transmission line during operations would be produced by corona discharge in wet weather. This impact is considered non-significant, as the circumstances under which corona noise would raise the ambient level by 10 dBA or more are exceptional. Vehicles used in maintenance, in an annual inspection of the transmission line, and in repair activities would also produce non-significant noise levels. Helicopter noise, generated in an annual inspection flyby, would also be non-significant.

Cumulative noise impacts would occur if utility construction, utility repair projects, roadway construction projects, or construction on a property near the corridor were to occur simultaneously with construction of the transmission line. The combined noise effect, however, would not be significantly greater than that produced by the louder of the two projects. Thus, cumulative incremental noise effects are not

significant. Use of the Tuscarora Pipeline staging area in Ravendale by the Proposed Project would extend the duration of noise impacts affecting residents, however, after mitigation the impact would be non-significant.

4.8.2 Project Alternatives

The number of sensitive receptors along individual alternative route segments are in some cases more, and in other cases less than those near the comparable segments of the Proposed Project route. Degree of impact is approximately proportional to the number of sensitive receptors along each alternative segment that would experience more than 15 dBA of additional construction noise when compared to the number for the proposed route segment that would be replaced. Alternative segments that would involve greater construction noise impact because of more nearby human receptors are: Alternative Segment B (ten versus one for Proposed Segment A); Alternative Segments F and G (four plus one, respectively, versus none for Proposed Segment E); Alternative Segment ESVA (one versus eight for Proposed Segment L); Alternative Segment X-East (two versus none for Alternative Segment Y). The alternative segments with a lesser noise impact are Alternative Segment J (none versus one for Alternative Segment K) and Alternative Segment ESVA (1 versus 7 for the affected portion of Alternative Segment L). No noise impacts would occur affecting people along the other alternative segments, as well as those for the proposed route that would be replaced. Wildlife along some alternative segments would experience greater impact, as described more fully in Section 4.2.2. Noise impacts for the alternative substation sites are expected to be similar to the proposed substation sites. The alternative substation site in Border Town, however, would need careful design and mitigation to not impact a nearby residence.

Under the No Project Alternative, the noise impacts of the Proposed Project would not occur. However, similar noise impacts could occur in different locations to those described above, as the Applicant supplements their system to accommodate for existing and projected system needs.

4.9 PUBLIC SAFETY AND HEALTH

4.9.1 Proposed Project

Overhead transmission lines are an element of the electric supply system that provides service to homes and businesses. In recent years, a growing interest has evolved regarding the potential effects associated with the electrical environment around high voltage power lines—in particular, the potential health effects associated with electric and magnetic fields (EMFs).

Power frequency EMFs are phenomena that occur when electricity is produced and transported. Electric fields are created when there is a difference in the amount of electrical charge on objects. The term electric field, as is commonly used, refers to electric field intensity and is measured in units of volts or kilovolts per meter (kV/m). Electric fields exist any time there is a voltage difference between objects. For example, when an appliance is plugged in, **but not** turned on, an electric field still exists in the vicinity of the device and wiring leading to it. The term magnetic fields, as commonly used, refers to

magnetic flux density which in the United States, is measured in the unit of milligauss (mG). Magnetic fields exist when electrical current flows through a device or on wires (e.g., when an appliance is plugged in and turned on).

EMF calculations were performed on the proposed Alturas Transmission Line Project for the proposed structure configurations: the 345 kV and 230 kV H-frame horizontal, and 345 kV single-pole vertical configurations. The results showed that the maximum 345 kV electric field measured at the edge of the 160 foot H-frame right-of-way would be 1.18 kV/m; the maximum measurement within the ROW would be 4.54 kV/m. For the 230 kV H-frame right-of-way (125 feet wide) the maximum electric field at the edge of the right-of-way would be 2.4 kV/m; the maximum measurement within the right-of-way would be 4.83 kV/m. The magnetic fields measured at the edge of the 160 foot H-frame right-of-way would be a maximum of 17 mG; while the maximum within the right-of-way would be 86 mG.

While there are no regulations in California or Nevada that regulate EMFs, there are a few states that do have regulations limiting electric and/or magnetic field exposures at the edge of transmission ROWs. These regulations limit field levels of new lines to the same levels that occur along ROWs of existing lines. With the exception of the residential electric field standard of 1 kV/m in Montana, at the edge of the right-of-way the Proposed Project meets the existing standards for all states. However, since the Proposed Project would be located at least 300 feet from most sensitive receptors, including residential areas (exceptions are a single-family residence on Segment L and an apartment complex on Segment X), at this distance the electric field values would be below the 1 kV/m Montana standard.

Regulations in California and Nevada have not been established because long-term health effects of EMFs have not been conclusively determined. Epidemiological studies continue to be conducted, as are studies of the biological mechanisms that may be causing health effects. Since the existing body of evidence does not conclusively support a link between health effects and magnetic fields, the CPUC has recommended that utilities use low-cost or no-cost mitigation measures for reducing EMFs when constructing new electrical facilities. SPPCo has incorporated several techniques for reducing EMF levels into the design of the Proposed Project. These measures, include optimizing conductor phasing, changing conductor configuration, and reducing the spacing between conductors.

In addition to the possible EMF effects associated with the Proposed Project, other possible Public Safety and Health impacts are audible noise, radio and television interference, ozone production, cardiac pacemaker interference, induced currents and voltages in conductive objects, fuel ignition, shock hazards, and hazardous materials. Many of these impacts are addressed in Federal and State Regulations and in the National Electric Safety Code (NESC). Accordingly, the Proposed Project would be required to meet current regulations with prescribed design, construction and post-construction procedures.

The only cumulative impact associated with the Proposed Project, related to Public Safety and Health would involve the subsequent installation of the Tuscarora Gas Pipeline Project. Due to the close proximity of the two Proposed Projects, the possibility exists for currents and voltages to be induced on the pipeline from the transmission line. NESC requires that transmission lines be designed so that no

more than 5 milli-amperes of short circuit current will flow through a person's body when contacting an object of large dimensions beneath a transmission line. With proper grounding techniques on the pipeline, this requirement can be met.

4.9.2 Project Alternatives

The analysis also investigated the impact of EMFs for the proposed alternative routes, substation sites, and the No Project Alternative required by CEQA. All routing alternative and substation sites would have similar EMF impacts due to the similarity between line designs, local terrain and population densities. No EMF impacts would occur under the No Project Alternative. However, EMF impacts could occur in the future since transmission lines would need to be constructed at other locations to replace the capacity that was to be provided by the Proposed Project.

In summary, the EMF impacts of the Alturas Transmission Line Project can be limited through proper design and routing. In addition, the associated effects of audible noise, radio and television interference, ozone production, cardiac pacemaker interference, induced currents and voltages in conductive objects, fuel ignition, shock hazards, and hazardous materials would result in non-significant impacts.

4.10 SOCIOECONOMICS AND PUBLIC SERVICES

4.10.1 Proposed Project

The project corridor includes, from north to south, the California counties of Modoc, Lassen, and Sierra, and Washoe County in Nevada. The Reno area in Washoe County represents the only urban area in the study area, accounting for almost 90 percent of the employment and 87 percent of the population in the corridor. Employment patterns in the more rural California counties are seasonal, with unemployment peaking in winter. Government jobs represent more than 40 percent of the jobs in the rural counties, compared to less than 14 percent in Washoe County, which is highly dependent on jobs in tourist services and trade. The number of jobs in Modoc County decreased over the past 10 years, while the growth in jobs in Lassen County can be attributed to expansion of a state prison.

In terms of population characteristics, Modoc and Sierra Counties are slow growing counties with a large proportion of elderly residents. Housing prices and rents are relatively low in the three California counties, and more than 20 percent of the housing stock in Modoc and Lassen counties are mobile homes, reflecting their rural character.

Most of the corridor is very rural, with few public services. Fire protection is within the jurisdiction of the Bureau of Land Management for much of the corridor, with other areas within the jurisdiction of the California Department of Forestry and Fire Protection, U.S. Forest Service (Modoc and Toiyabe National Forests), the Nevada Division of Forestry, the City of Reno Fire Department, and several rural fire departments. Police protection for most of the corridor is provided by county sheriff's departments.

The primary socioeconomic impacts of the project would be the direct and indirect impact of the construction employment required to build the transmission line and substations. Approximately 110 person years of construction labor would be required, with a maximum or 185 workers during the month of June 1996 if the Proposed Project proceeds on schedule. Teams of workers would provide their functions along the 165 mile corridor. While Reno has a large available construction labor force, most work in the northern counties would be provided by non-resident workers temporarily living in Susanville and Alturas. At most, 40 workers would be seeking temporary housing in these communities, which should provide a minor beneficial impact.

The value of the project improvements would be approximately $120 million, and property values would increase to reflect this level of investment. This would include acquisition of property and easements, which would provide compensation to property owners whose property value would be adversely affected by a transmission line. Depending on the alternative selected, there could be viewsheds affected by the transmission line, which could result in significant impacts on property values in a very limited number of cases where acquisition is not warranted. These impacts would be reduced to an insignificant level by the applicant siting project facilities in such a manner as to minimize visual impacts.

The Proposed Project is not expected to have significant adverse impacts on any public services and should provide a minor beneficial impact to local government finance, providing property tax revenues in excess of required public services.

The Tuscarora Natural Gas Pipeline Project will be completed by December, 1995, so there will not be any cumulative impacts on population growth or demand for public services.

4.10.2 Project Alternatives

There would be few discernable differences between the alternatives in terms of socioeconomics and public services. Each of the alternative alignments, would pass through the same counties, and thus the setting would be the same. The labor force requirements would be comparable, and none of the alternatives would cause significant disruption of business or residential patterns in the corridor. Depending on the location of substations and miles of transmission line in each county, the fiscal benefits of the project would be shared in a different ratio. None of the alternatives would have significant impacts on public services.

Under the No Project Alternative, all current socioeconomic and public service trends would continue in the California counties as they are at present. In the Reno area, a shortage of electricity could restrict future growth rates.

4.11 TRANSPORTATION AND TRAFFIC

4.11.1 Proposed Project

The Proposed Project would have an impact on the study area's transportation system as the construction and operation of the project would affect public roadways, rail lines, and navigable airspace. Construction impacts would occur where the route crosses or parallels roadways.

The traffic impacts that could occur during construction include roadway blockages, increased congestion, decreased safety, blocked access to property, disruptions to pedestrian/bicycle circulation, and interference with emergency response vehicles. The duration of these impacts would be one to three days. Construction impacts would be significant, but mitigable. In addition, there would be adverse, but non-significant impacts caused by increased traffic volumes, construction activities within proximity to rail lines, and the need to park or store vehicles and equipment during construction.

During operation, the Proposed Project would have negligible traffic impacts unless a major accident or structural failure were to occur and a roadway or rail line would be blocked for an extended period of time. This impact would be significant and unmitigable.

According to the guidelines of the Federal Aviation Administration (FAA), the Proposed Project would have a significant impact on aviation activities if a structure, crane, or wire were to extend into navigable airspace. This impact would occur at the following locations: (1) Segment A passes within 7,000 feet of a runway at the Alturas Municipal Airport (2) Segment K as it passes within 4,000 feet of a runway at the Ravendale Airport; and (3) Segment O as it passes within 5,500 feet of the Amedee Airfield at Sierra Army Depot. In addition, wires could obstruct navigable airspace if they hang across a depression in terrain (valley, canyon, etc.). Navigable airspace impacts would be significant, but mitigable.

Although the airspace around private landing strips is not subject to the FAA restrictions, it should be noted that Segment C of the Proposed Project passes within 700 feet of the Wesinger personal landing strip southwest of Alturas. In addition, wires and structures may create a safety hazard for crop sprayers and other private aircraft. These impacts would be adverse, but not significant since private facilities are not regulated and do not fall within the auspices of FAA.

Cumulative traffic impacts would occur on the roadways and rail lines affected by the Proposed Project if other construction activities such as roadway construction or property development projects were to be implemented simultaneously with the Proposed Project. The cumulative traffic impacts would be significant, but mitigable.

4.11.2 Project Alternatives

The traffic and rail impacts of the alternative segments and substations would be virtually the same as for proposed route except that different locations would be affected. While traffic and rail impacts could be

slightly more or less for each alternative site, these impacts could be mitigated to a less than significant level.

With regard to aviation impacts, Alternative Segment B passes within 3,700 feet of a runway at the Alturas Municipal Airport, as opposed to 7,000 feet for Proposed Segment A; Alternative Segment G would disrupt existing crop spraying operations by Lyneta Farms; Alternative Segment J would eliminate the constraints associated with Proposed Segment K (which runs within 4,000 feet of the Ravendale Airport); and Proposed Segment Q would travel closer to Herlong Airport than Alternative Segment P. The aviation impacts associated with the other alternative segments and substations would be comparable to the Proposed Project.

Under the No Project Alternative the traffic, rail, and aviation impacts associated with the Proposed Project would not occur. However, comparable traffic, rail, and aviation impacts could occur in other areas as the Applicant augments its existing system with other transmission and/or generation projects.

4.12 VISUAL RESOURCES

Impacts to visual resources within the Proposed Project study area could result from various project activities including: structure and line construction, substation construction, establishment of construction staging areas and access roads, and project operation. The factors considered in determining impacts to visual resources included: (1) scenic quality of the project site and vicinity, (2) available visual access and visibility (including frequency and duration that the landscape is viewed), (3) viewing distance and degree to which the Proposed Project would dominate the view of the observer, (4) the resulting contrast of the proposed activities or facilities with existing visual resources, and (5) the level of public interest in the existing landscape characteristics and concern over potential changes.

Construction impacts on visual resources would result from the presence of equipment, materials, and work force at the substation sites, staging areas, and along the route; as well as the temporary alteration of landforms and vegetation along the ROW. Construction activities would be most visible along those portions of the Proposed Project adjacent to major travel corridors (such as U.S. 395 and Hwy 299) or in close proximity to communities (such as Alturas). The visual impacts associated with construction would be minor, due to the relatively short duration of project construction. Additionally, several mitigation measures are presented to further reduce anticipated visual impacts.

Long-term visual resource impacts would result from the introduction of substations, transmission line structures, conductors and new or upgraded access roads into the existing viewsheds from residences, urban areas, travel corridors and recreation areas. Impact significance would depend on the quality and sensitivity of the existing visual resources, the degree to which the project components contrast with the established resource values, and the extent to which the impacts can be seen. In those cases where long-term significant visual impacts occur, opportunities for impact mitigation are fairly limited and consist of: (1) relocating the route to a less impact-sensitive location, (2) lowering structure heights, and (3)

installing vegetation of sufficient height immediately adjacent to the viewing point to screen views of the project.

4.12.1 Proposed Project

Much of the proposed route would result in visual impacts that are adverse, but not significant because the route segment is minimally noticeable, creates low degrees of visual contrast and landscape change, and has limited visual access (primarily due to remote location and a relatively few number of viewers). Portions of Proposed Segment A would result in significant, but mitigable visual impacts caused by structure skylining above ridgelines. However this impact could be mitigated by reducing the structure heights. Proposed Segment L from Angle Point LØ1 to LØ8 would also result in significant visual impacts that could be mitigated by substituting the East Secret Valley Alignment (Alternative Segment ESVA) for Proposed Segment L.

Portions of the proposed route would cause significant, unmitigable visual impacts due to the transmission line's visual prominence as a foreground feature in areas characterized by high scenic quality and high visual access (characteristically along major travel corridors or in the vicinity of established communities). In such locations the transmission line would typically result in a significant degradation of scenic quality and cause a moderate to strong degree of visual contrast and landscape change. Proposed route segments that would result in significant unmitigable visual impacts include: Segment A (AØ3 to AØ6), Segment C (CØ8 to CØ9), Segment E (EØ2 to EØ8), Segment K (EØ8 to KØ5), Segment N (NØ2 to MØ3), Segment O (MØ3 to OØ3), all of Segments R and T, and Segment X at the Border Town Substation. Of particular note, Segment T would result in significant unmitigable impacts to the formally-designated Lassen Red Rocks Scenic Area.

4.12.2 Project Alternatives

Alturas Area Alternative Alignment (Segment B). This alignment would result in significant, unmitigable visual impacts, due to its visual prominence in scenic views from major travel corridors and residential areas in the vicinity of Alturas.

Madeline Plains Alternative Alignments (Segment D, F, G, H, and I). Of the four alternative route segments comprising the Madeline Plains Alternative Alignments (Segments D, F, G, H, and I), only Segment I would result in significant visual impacts. Segments D, F, G, and H would result in adverse, but non-significant impacts and would reduce visual impacts compared to Proposed Segment E.

Ravendale Alternative Alignment (Segment J). This alignment would result in adverse, but non-significant visual impacts and would reduce visual impacts compared to Proposed Segment K.

East Secret Valley Alignment (Segment ESVA). Alternative Segment ESVA would substantially reduce significant, unavoidable visual impacts along U.S. 395 associated with Proposed Segment L.

Wendel Alternative Alignment (Segment M). That portion of the Wendel Alternative Alignment converging on Wendel Road (Angle Point MØ2 to MØ3) would result in significant, non-mitigable visual impacts as viewed from Wendel Road. The remainder of Alternative Segment M would result in adverse, but non-significant visual impacts.

West Side of Fort Sage Mountains Alternative Alignment (Segment P). Most of this alignment (Angle Point PØ2 to PØ9) would result in significant, unmitigable visual impacts. The remainder of this alignment would result in adverse, but non-significant visual impacts.

Long Valley Alternative Alignments (Segments S, U, Z, and WCFG). Segments S, U and WCFG would result in significant, unmitigable visual impacts. With respect to Segments S and U, it should be noted these impacts would be to an area of lesser sensitivity that is not formally designated as a scenic area as is the area crossed by the corresponding Proposed Project Segment T. Segment Z would result in adverse, but non-significant visual impacts.

Peavine Peak Alternative Alignment (Segment X-East). This alignment would result in significant, unmitigable visual impacts.

Substation Alternative Sites. The Alturas Substation Alternative (referred to as the Mill Site Alternative), would result in significant, unmitigable visual impacts. In comparison, the proposed Alturas Substation would result in adverse, but non-significant visual impacts. The Border Town Substation Alternative would be located adjacent to the Proposed Border Town Substation site and would result in the same degree of visual impact as the Proposed Project—adverse, but non-significant.

No Project Alternative. Under the No Project Alternative, the visual impacts described above would not occur. However, similar visual impacts could occur in other geographic locations as the Applicant pursues short- and long-term system upgrades needed to accommodate the projected system loads that the Proposed Project is designed to address.

4.13 POTENTIAL FOR IMPACTS ON MINORITY AND LOW-INCOME POPULATIONS

An analysis was conducted to address the question of whether the impacts of the Proposed Project and alternatives may disproportionately affect minority populations and low-income populations by analyzing the distributional patterns of these populations on a regional basis. The unit of analysis in this EIR/S for impacts on minority populations and low-income populations is the census tract. Baseline data provided to conduct the analysis are from the 1990 U.S. Census of Population and Housing (1992 revisions).

Minority and income data tend to be fairly homogeneous for Modoc, Lassen, and Sierra Counties and are also similar to data for other rural northeastern California counties. The North Valley Substation, where the Proposed Project would terminate, is located in census tract number 15 in Reno, Nevada. Census tract number 15 has the highest minority percentage of any potentially affected tract in the study area, and has a considerably low income level. By looking at minority and income data at a finer level

of detail than the census tract (block group data), it is evident that the high minority and low-income populations are concentrated in the southern portion of census tract 15 (south of McCarran Blvd.), far away from the potential effects of the Proposed Project. In general, the demographic analysis demonstrates that the distribution of minority and low-income populations along the Proposed Project route, including consideration of alternative routes and projects, does not offer the potential for disproportionate impact.

5. IMPACT SUMMARY TABLES

This Section includes the Impact Summary Tables for the Proposed Project and alternative alignments and substation sites. These tables tabulate in concise form all of the significant impacts and mitigation measures identified in Part C, organized by class of impact and environmental issue area.

Class I Impacts: Significant, Cannot Be Mitigated To A Level That Is Not Significant

Impact Description	Project Phase	Impact Location (Segment)	Scope	Mitigation Measure	Residual Impact
No Class I impacts identified in the following issue areas: Air Quality, Biological Resources, Energy & Utilities, Hydrology, Noise, Public Safety and Health, Socioeconomics & Public Services					
CULTURAL RESOURCES					
Disturbance to context, setting, feeling, or association of cultural resource sites	C,O	Proposed Segments K,O Alternative Segments ESVA, S	Local, regional	**C-1** Avoid all significant/ unevaluated cultural resource sites by flagging/monitoring. **C-2** Treat unevaluated or NRHP sites as significant cultural sites. If avoidance is not possible, implement site-specific steps to reduce impacts. **C-6** Place permanent facilities as far as possible from significant cultural resource sites.	Significant, if residual adverse effects remain
LAND USE, RECREATION					
Degradation of quality of residential land uses resulting from permanent change in character of residential environment	O	All Proposed and Alternative Segments	Local and regional; long-term	**L-8** As proposed, design Proposed Project such that transmission line structures are not placed within 300 feet of existing residences. The separation distance between receptors and the centerline shall be maximized for receptors located less than 300 feet from the centerline.	Significant
Degradation of quality of recreational land uses resulting from permanent change in character of recreational environment	O	Proposed Segments A, C,E,K,L,O,Q,T, and W Alternative Segments B, D,F,G,J,P,Z	Long-term	**L-11** Provide Toiyabe National Forest with compensatory land suitable for recreational uses.	Significant
TRANSPORTATION AND TRAFFIC					
An accident or structural failure could potentially result in blockages of highways and/or rail facilities.	O	All Proposed and Alternative Segments	Local, short term	**T-12** Prepare an emergency response plan which addresses disruptions to the transportation system in case of a major accident or failure. Maintain constant readiness to implement plan if necessary.	Significant if major accident occurs

Impact Description	Project Phase	Impact Location (Segment)	Scope	Mitigation Measure	Residual Impact
VISUAL RESOURCES					
Significant degradation of scenic quality and creation of moderate-to-strong visual contrast and landscape change. Generally has high degree of visual access.	O	Proposed Segments: AØ3-AØ6, CØ8-CØ9, EØ2-EØ8, EØ8-KØ5, LØ1-LØ8, NØ2-MØ3, MØ3-OØ3, PØ9-RØ2, RØ2-TØ2, VØ5-XØ1. Alternative Segments: Segment B(all), Segment I (all), MØ1-MØ2, PØ2-PØ9, RØ2-SØ1, SØ2-SNØ1, Segment U (all), WNØ5-WNØ8, Segment X-East (all).	Regional; long-term	**V-10** Prepare a Landscaping Plan for the Border Town Substation to minimize the visual impact of the substation on Border Town residents and U.S. 395 motorists.	Significant
Diminished scenic quality of views from Tule Patch Spring Rest Stop and from Hwy 395.	O	Proposed Segment L	Local; long-term	No mitigation available	Significant

Class II Impacts: Significant, Can Be Mitigated To A Level That Is less Than Significant

Impact Description	Project Phase	Impact Location (Segments)	Scope	Mitigation Measure	Residual Impact
AIR QUALITY					
Particulate emissions from construction activity	C	All Proposed and Alternative Segments	Local, Regional	**A-1** Submit a Construction, Operation, and Maintenance Plan, detailing measures to mitigate potential impacts. Describe schedule for watering and water transportation and storage. **A-2** Reduce particulate emissions (dust) by applying water to disturbed construction areas until the soil coatings or other approved dust control measures are applied. Cover stockpiled soil; cover soil loads while in transit. **A-3** Increase dust control watering when wind speeds exceed 15 miles per hour, depending upon the soil moisture content. **A-4** Confine construction activities to the specified areas within the ROW and substation sites with the exception of staging areas and ROW access.	Not Significant
BIOLOGICAL RESOURCES					
Temporary and permanent loss of plant communities	C,O	Proposed Segments A,C,E,K, L,N,Q,R,T,W,X,Y,Z; Devils Garden and Border Town Substations Alternative Segments D,G,J, ESVA,M,P,S,U,Z,WCFG,X-East	Local	**B-1** Flag allowable travel routes and construction areas to avoid surface removal of significant plant communities; where not avoided, use restoration and offsite compensation per Community and Habitat Restoration Plan (with contingency plan) and Offsite Compensation Plan to be prepared by SPPCo under the supervision of responsible agencies. **B-2** Avoid surface removal of volcanic vertisol plant communities; flag allowable travel routes and construction areas to avoid; cease activities if ruts greater than 6" deep for more than 100 feet.	Not significant
Temporary and permanent loss of special status plants and habitats	C,O	Proposed Segments C,E,K, and L Alternative Segments D,J, and ESVA	Local	**B-3** Avoid special status species if possible; flag allowable travel routes and construction areas prior to construction; if not avoided, use restoration and offsite compensation, per restoration and compensation plans.	Not significant
Overland travel disturbance to plant communities	C,O	All Proposed and Alternative Segments	Local	**B-4** Reduce surface impacts on plant communities by using avoidance, restoration, and offsite compensation or enhancement, per restoration and compensation plans	Not significant

Impact Description	Project Phase	Impact Location (Segments)	Scope	Mitigation Measure	Residual Impact
Overland travel disturbance to special status plants and habitats	C,O	Proposed Segments A,E,K,L, and Q Alternative Segments B,D,F,I, J,M,P	Local	**B-5** Reduce surface impacts on plant communities by using a combination of avoidance, restoration, and offsite compensation or enhancement.	Not significant
Increased access to sensitive vegetation resources	C,O	All Segments except Proposed Segment R and Alternative Segments H and U	Local	**B-6** Replace existing barriers to overland travel following blading and place new barriers at access points to non-bladed overland travel routes.	Not significant
Erosion and sedimentation	C,O	All Proposed and Alternative Segments except Alternative Segments H and I	Local	**B-7** Implement Soil Conservation and Erosion Control Plan (see Mitigation Measure **G-11**).	Not significant
Introduction of non-native plant species	C,O	All Proposed and Alternative Segments	Local	**B-8** Implement Noxious Weed Control Plan, flag existing weed populations, and control equipment and materials transported to the project corridor during and after construction	Not significant
Loss of mule deer winter, holding, and migration habitat	C,O	Proposed Segments A,C,E,K, L,N,O,Q,R,W Alternative Segments F,G,H,J, M,P	Local	**B-9** Restoration/reclamation to include forbs and shrubs appropriate for each habitat type and offsite compensation, per Mitigation Measure **B-1**	Not significant
Loss of pronghorn winter, migration, and kidding habitat	C,O	Proposed Segments A,C,E,K, L,N Alternative Segments B,D,G,J	Local	**B-10** Same as for **B-9**, with restoration to include browse and other species preferred by pronghorn.	Not significant
Loss of sage grouse brood habitat	C,O	Proposed Segments A,C,E,K, L,N Alternative Segments F,G,H,I, J,ESVA	Local	**B-11** Same as for **B-9**, with restoration of sage and forbs required by young grouse.	Not significant
Loss of pygmy rabbit habitat	C,O	Proposed Segments L,N,O,Q Alternative Segments ESVA, M,P	Local	**B-12** Flag allowable construction areas and existing roads whenever possible; remove pygmy rabbits where avoidance is not possible.	Not significant
Overland travel disturbing big game habitat	C,O	Proposed Segments A,C,E,K, L,O,Q,R,W Alternative Segments B,F,G,J, ESVA,M,P	Local	**B-13** Monitor natural recovery and locate areas where restoration may be needed. Offsite compensation for failed recovery.	Not significant

Impact Description	Project Phase	Impact Location (Segments)	Scope	Mitigation Measure	Residual Impact
Disturbance to special status species and habitats, including special status bats, pygmy rabbits, raptor nest sites, and sage grouse lek locations	C,O	All sensitive sites on all Proposed and Alternative Segments	Local	**B-14** Flag allowable travel areas to avoid habitat per species-specific buffers and seasonal avoidance periods; utilize biological monitor during construction. **B-15** Overland travel to be limited to areas identified in biological monitoring plan. Riparian and perennial stream habitats to be avoided.	Not significant
Direct mortality of individual animals	C,O	All Proposed and Alternative Segments, substations, access roads, staging areas	Local	**B-16** Construction specifications to include speed limits, firearms and pet restrictions, and litter removal program. Include construction worker training.	Not significant
Indirect impacts on wildlife as a result of increased human presence	C,O	All sensitive sites on all Proposed and Alternative Segments	Local	**B-17** Construction to be scheduled to avoid critical seasons and establish buffer distances for sensitive areas (see **B-14, B-15**, above)	Not significant
Indirect impacts on wildlife due to increased access to remote habitat	C,O	All segments with improved or new access roads	Local	**B-18** Improved roads to be returned to preconstruction condition. Existing barriers to be replaced. See also **B-6** above.	Not significant
Bird electrocution at substations	O	All Proposed and Alternative substation locations	Local	**B-19** Substation designed to eliminate attraction of perching and roosting to minimize electrocution hazard.	Not significant
Potential bird collisions with transmission lines	O	Proposed Segments A,C,E,K, O,Q,T,W,X Alternative Segments B,F,G, I,ESVA,S,U,X-East	Local	**B-20** Mark powerlines with bird flight diverters. **B-21** Use Rock Creek modification to Proposed Segment A. **B-22** With application of **B-20**, offsite compensation would be required to reduce residual impacts to level that is not significant for greater sandhill cranes.	Not significant
Increased perching opportunities for raptors and ravens, and displacement of sage grouse.	O	Proposed Segments A,C,E,K, L,N,O Alternative Segments B,D,F, G,H,I,J,ESVA,P	Local	**B-23** Install perch deterrents on structures located within a 2 - mile radius of sage grouse leks and in vicinity of waterfowl nesting habitat.	Not significant
		Proposed Segments C,E,K,L,N		**B-24** Prepare and implement Habitat Enhancement Plan for sage grouse habitat.	
CULTURAL RESOURCES					
Construction activities disturbing or removing surface or subsurface significant/unevaluated cultural resource sites	C,O	Proposed Segments A,C,E,K, L,O,Q,W Alternative Segments B,D,G, J,ESVA,M,P,S,Z,WCFG	Local, Regional	**C-1** Avoid all significant/ unevaluated cultural resource sites by flagging/monitoring. **C-2** Treat unevaluated or NRHP eligible sites as significant cultural sites. If avoidance is not possible, implement site-specific steps to reduce impacts.	Not significant

Impact Description	Project Phase	Impact Location (Segments)	Scope	Mitigation Measure	Residual Impact
Construction, operation, maintenance or public use disturbing significant or unevaluated cultural resource sites	C,O	Proposed Segments A,C,E,K, L,O,Q,W Alternative Segments B,D,G, J,ESVA,M,P,S,Z,WCFG	Local, Regional	**C-1** and **C-2**, above **C-3** Restrict vegetation management activities in sensitive areas to pedestrian access only. Avoid sensitive cultural resource locations during maintenance activities requiring overland travel.	Not significant
Unauthorized collection and/or vandalism of significant or unevaluated cultural resource sites	C	Proposed Segments A,C,E,K, L,O,Q,W,Y Alternative Segments B,D,G,J, ESVA,M,P,S,Z,WCFG	Local, Regional	**C-4** Prior to construction, inform crews of cultural resource values/regulatory protections and procedures regarding avoidance of sensitive cultural resources. **C-5** Post-construction: block public access to all new or improved access roads.	Not significant
Disturbance to context, setting, feeling, or association of cultural resource sites	C,O	Proposed Segments K,O Proposed Segment C,ESVA,S	Local, Regional	**C-1** and **C-2**, above **C-6** Place permanent facilities as far as possible from significant cultural resource sites. **C-7** Acquire land and develop interpretive trail at Infernal Caverns Battlefield area.	Not significant
Cumulative disturbance of cultural resource sites resulting from construction of future projects	C,O	Entire region	Local, Regional	**C-1** through **C-6**, above	Not significant
ENERGY AND UTILITIES					
Conflict with existing utilities with potential for disruption of service during construction	C	All Proposed and Alternative Segments	Local, regional short-term	**U-1** The Applicant shall submit final construction plans to all affected utilities for their review and shall obtain written approval 30-days prior to the commencement of construction. In addition, the Applicant/contractor shall provide 72-hour written notice to all utility owners whenever construction activities are scheduled within 100 yards of an existing utility. **P-2**, below	Not significant
Cumulative impacts of simultaneous construction projects	C	All Proposed and Alternative Segments	Local, regional, short-term	**T-13**, below	Not significant
GEOLOGY, SOILS, AND PALEONTOLOGY					
Fault displacement collapsing transmission line structures	O	Proposed Segments A,C,E,N, O,Q,X Alternative Segments D,J,M,P, S,U,Z,WCFG	Local, short-term	**G-2** Avoid placement of structures within active fault zone. **G-3** Avoid placement of structures within potentially active fault zones, where possible. **G-4** Conduct geological and/or geotechnical studies to determine amount of fault displacement; design transmission line to withstand expected maximum fault displacement.	Not significant Not significant Not significant

Impact Description	Project Phase	Impact Location (Segments)	Scope	Mitigation Measure	Residual Impact
Strong ground shaking collapsing transmission line structures or substations	O	All Proposed and Alternative Segments	Regional, short-term	G-5 Conduct geotechnical study to determine seismic criteria for designing structures to withstand strong ground shaking. G-6 Determine and apply earthquake-resistant design.	Not significant Not significant
Landslides/slope instability damaging structures	C,O	Proposed Segments C,E,L,N, Q,R,T,W,X Alternative Segments E,D,J,M, P,X-East	Local, short-term	G-7 Perform engineering geological and/or geotechnical investigations for structures on slopes within known landslide areas. G-8 Develop blasting plan to avoid causing landslides or rock falls.	Not significant Not significant
Loss of or reduced accessibility to mineral resources	C,O	Proposed Segments R,T,W,X, and Border Town Substation Alternative Segments M,S,U, WCFG, and Alternative Border Town Substation	Local, long- or short-term	G-9 In siting structures and ROW access roads, avoid existing and planned mineral extraction sites and access routes.	Not significant
Ash fall from major volcanic eruption in region	C,O	All Proposed and Alternative Segments	Regional, short-term	G-10 Develop Emergency Preparedness Plan	Impact minimized but ash fall could result in temporary shutdown of line
Construction will result in grading and ground disturbance/erosion	C	All Proposed and Alternative Segments	Regional, long-term	G-11 Develop Soil Conservation and Erosion Control Plan; minimize new grading and road upgrading; use special equipment; revegetate.	Not significant
Steel or concrete corrosion resulting from corrosive soils	O	Proposed Segments A,C,E,K, L,N,O,Q,T,W Alternative Segments D,F,G,H, I,J,M,P,S,X-East	Local, long-term	G-13 Test soils for corrosion potential; design to prevent corrosion where potential is high.	Not significant
Damage to project from expansive soils	O	Proposed Segments A,E,K,L, O,Q,R,T,X Alternative Segments D,F,G,H, I,J,M,X-East	Local, long-term	G-14 Test soils for shrink-swell potential; design facilities to withstand expansivity.	Not significant
Loss, destruction, or alteration of paleontological resources	C,O	Proposed Segments A,C,L,M, O,Q,R,T,W Alternative Segments J,P, and Alternative Border Town Substation (SPPCo site)	Local, long-term	G-15 Develop paleontologic data inventory and sampling plan; inspect drill cuttings and excavations.	Not significant
Cumulative effects of blasting and erosion	C	All Proposed and Alternative Segments	Regional, long-term	G-1, G-8, G-11, above	Not significant

Impact Description	Project Phase	Impact Location (Segments)	Scope	Mitigation Measure	Residual Impact
HYDROLOGY					
Scour and erosion of stream beds	C,O	Proposed Segments A,C,L,N, Q,R,T,W,X Alternative Segments B,D,M, P,S,U,Z,WCFG, and Alternative Border Town Substation (SPPCo site)	Local, short-term	**G-11**, above **H-1** Prepare Stream Crossing and Wetlands Protection Plan. **H-2** Maximize distance of ROW from waterways.	Not significant
Flooding of construction activities at stream crossings; flood damage to structures	C,O	Proposed Segments A,K,L,O,Q Alternative Segments B,F,G,H, I,P,S,WCFG	Local, short-term	**H-3** Construction to occur only during low flow periods. **H-4** Permanent structures and facilities shall be located outside of stream and river beds. Structures located in flood plains shall be designed based on site-specific analyses. See also **H-1, H-2,** and **G-11**	Not significant
Sediment loading of surface waters could result from construction	C	All Proposed and Alternative Segments	Local, short-term	See **G-11**, above See also **B-7**, above, regarding habitat rehabilitation	Not significant
Accidental contamination of surface waters and ground water	C	All Proposed and Alternative Segments	Local, short-term	**H-5** Perform refueling away from streams. **H-6** Develop Best Management Practices; clean up spills; obtain 404 and storm water permits.	Not significant
Ground water flow affected by construction, drilling, or blasting	C,O	Proposed Segments A,W,X Alternative Segments B,D,F,G, H,I,ESVA,P,U,WCFG	Local, long-term	**G-8 and H-1**, above **H-7** Avoid locating structures in wetlands; avoid travel in wetlands; construct during dry seasons.	Not significant
		Proposed Segments A,C,E,K, L,Q Alternative Segments D,J,P		**H-8** Avoid blasting; if necessary, prepare a Blasting Plan for each site.	
Cumulative construction impacts resulting in increased sediment in streams, excess soil disposal, and water contamination	C	Entire region	Local, short-term	**H-1, H-3** through **H-8,** and **G-11**	Not significant
LAND USE, RECREATION, AND EDUCATIONAL, RELIGIOUS, OR SCIENTIFIC USES					
Temporary loss of grazing land use and disturbance to grazing animals during construction	C	Proposed Segments A,C,K,L, O,Q,R,T,W,X,Y Alternative Segments D, J, ESVA,M,P,S,U,V	Regional; short-term	**L-5** Coordinate with BLM and permittees to ensure protection of range improvements and livestock water sources.	Not significant

Impact Description	Project Phase	Impact Location (Segments)	Scope	Mitigation Measure	Residual Impact
Loss of grazing animals through open fences or gates temporarily removed during construction	C	Whenever route crosses grazing fencing	Regional; short-term	**L-6** Construct a temporary barrier across sections of removed fencing so that grazing animals cannot move through the open section of fencing; immediately after completing construction in an area, repair the section of removed fencing. **L-7** Close all gates immediately after they are opened to allow construction vehicles and equipment access to a construction area.	Not significant
Temporary loss of use of cropland use during construction	C	Proposed Segments A,E,K,O Alternative Segments B,F,G, H,I,W,X	Regional; short-term	**L-8a** Reimburse farmers along the ROW for crops lost due to Project construction (a stipulation in easement agreements with farmers). **L-8b** Work with County Cooperative Extension Service to develop construction schedule that would avoid prime crop planting, growing, and harvesting seasons.	Not significant Not significant
Degradation of the recreational experience for riders at the Fort Sage OHV Area	O,C	Alternative Segment P (Fort Sage OHV Area)	Short-term; long-term	**L-10** Design Proposed Project to prevent placement of structures within or adjacent to motorcycle or ATV riding trails or roads. **L-4** Provide notice of construction activities and access restrictions on specific roads or trails in Fort Sage OHV area.	Not significant
Disturbances to residential, recreational, and agricultural uses as a result of increased human intrusions into relatively undeveloped areas, as a result of constructing or upgrading roads, blading rough areas, and visual presence of the line	C,O	All Proposed and Alternative Segments	Regional; long-term	See **B-6, B-18, C-4, C-5,** and **V-1** through **V-10**	Not significant
Degradation of State Wildlife Areas due to presence of line structures	C,O	Proposed Segments Q,W Alternative Segments P,WCFG	Long-term	**L-12** Provide CDFG with compensatory land contiguous to the Wildlife Areas to compensate for degraded areas.	Not Significant
Cumulative disturbances during construction of the Proposed Project and other future projects in Modoc and Lassen Counties	C	Entire region	Local and regional; short-term	See **L-2** through **L-4,** above **L-13** Coordinate with the proponents of other proposed projects within one mile of the ROW or substation sites to minimize cumulative construction impacts. **L-14** Counties should establish a 300-foot minimum setback for any future occupied structures along the ROW. **L-15** if construction of proposed project is delayed, coordinate with U.S. Natural Resource Conservation Service so that construction of Proposed Segment X does not overlap construction of Evans Creek Dam.	Not significant

Impact Description	Project Phase	Impact Location (Segments)	Scope	Mitigation Measure	Residual Impact
NOISE					
Disturbance of sensitive noise receptors by construction noise	C	All Proposed and Alternative Segments	Local	**N-1** Conduct all construction activities involving motorized equipment between the hours of 7 a.m. and 7 p.m. Monday through Saturday, or for a shorter period if so stipulated in the applicable noise ordinance. **N-2** Maintain proper mufflers on all internal combustion and vehicles engines used in construction to reduce noise to the maximum feasible extent. **N-3** Notify by mail sensitive receptors potentially subject to construction noise impact. Notice shall give schedule and locations, and provide tips on reducing noise.	Not significant
PUBLIC SAFETY & HEALTH					
Potential for induced currents and voltages on conducting objects that are not properly grounded, and are located near the proposed 345 kV and 230 kV transmission lines.	O	All Proposed and Alternative Segments	Local; long-term	**P-1** Identify objects that have the potential for induced voltages and work with the affected parties to determine proper grounding procedures. Notify property owners of date line is to be energized, name and phone number of Applicant contact person, and guidelines for future activities within ROW.	Not significant
Potential for public safety hazards and accidents, such as shock hazard, fuel ignition, and fire hazard.	C,O	All Proposed and Alternative Segments	Local; long-term	**P-2** The Applicant will incorporate CPUC General Order 95 and National Electric Safety Code requirements into Project Design and Construction Plans. **P-3** Prepare a Fire Prevention and Suppression Plan acceptable to the BLM, USFS, and Counties. **P-4** Equipment vehicles, gas-powered equipment and flues with USDS-approved spark arresters. **P-5** Maintain both a fire watch and fire fighting equipment at locations specified. **P-6** Fire fighting equipment and operators to be made available for fighting fires in the vicinity of the Project. **P-7** During conditions of extreme fire danger when fire restrictions are in place, limit or suspend construction and maintenance, unless Applicant obtains a hazardous fire condition special use permit.	Not significant
Potential for release of hazardous substances	C,O	All Proposed and Alternative Segments	Local; long-term	**G-8/H-8, H-6, P-3** above **P-8** Prepare a waste Minimization and Energy Conservation Plan acceptable to the CPUC and BLM	

Impact Description	Project Phase	Impact Location (Segments)	Scope	Mitigation Measure	Residual Impact
SOCIOECONOMICS AND PUBLIC SERVICES					
Property values could be adversely affected by the Proposed Project	C,O	Isolated locations on most Proposed and Alternative Segments	Local	**S-1** Avoid proximity to neighboring residential parcels; relocate structures, reduce structures, reduce structure heights, provide screening.	Not significant
Fires could be caused during construction, placing additional demand on public services	C	All Proposed and Alternative Segments	Local or regional	**S-2** Fire Prevention and Suppression Plan (see P-3, above) shall include measures addressing safety/training, response strategy, interagency coordination.	Not significant
Minor disruption of grazing and crop activity	C	Proposed Segments A,E,K,O Alternative Segments B,F,G, H,I,W,X	Local; short-term	**L-5** and **L-7** above	Not significant
TRANSPORTATION AND TRAFFIC					
Increased accident risk for motorists, pedestrians, and bicyclists during construction	C	All Proposed and Alternative Segments	Local, short-term	**T-1** Prepare, obtain approval for, and implement detailed Transportation Management Plans.	Not significant
Roadway blockages and traffic congestion during construction	C	All Proposed and Alternative Segments	Local, short-term	**T-2** Avoid lane closures or blockages where possible, minimize duration of closures, provide detours, and avoid peak period lane closures.	Not significant
Blocked access to properties adjacent to construction zone	C	All Proposed and Alternative Segments	Local, short-term	**T-3** Advance notification to property owners and tenants who would have restricted access during construction. Provide alternative access if feasible.	Not significant
Obstructed pedestrian or bicycle routes and reduced safety during construction	C	All Proposed and Alternative Segments	Local, short-term	**T-4** Provide alternative pedestrian/ bicycle routes where blockages occur and use appropriate signs and markings.	Not significant
Restricted access for emergency response units during construction	C	All Proposed and Alternative Segments	Local, short-term	**T-5** Advance notification and coordination with emergency service providers. Remain prepared to immediately provide emergency access for any property isolated by construction activities.	Not significant
Interference with navigable airspace and decreased safety for aviation activities	C,O	Proposed Segments C,E,K, O,Q,X Alternative Segment B	Local, long-term	**T-9** Design and construct the structures and wires so that no object will penetrate the navigable airspace around a public or military airport, as defined by the FAA. **T-10** Notify the Western-Pacific Region of the FAA if any feature of the project will exceed an obstruction standard or encroach upon navigable airspace, as defined by the FAA. Use high-visibility markings and lighting to improve visibility to pilots, as directed by the FAA. **T-11** Position structures at locations that would prohibit wires from extending more than 200 feet above the ground, where feasible.	Not significant

Impact Description	Project Phase	Impact Location (Segments)	Scope	Mitigation Measure	Residual Impact
Cumulative impacts of simultaneous construction projects	C	Entire region	Local, short-term	**T-13** Maintain coordination with agencies responsible for encroachment permits on each affected roadway and with utility companies.	Not significant
VISUAL RESOURCES					
Excessive visual access to Alturas Substation and transmission line structures resulting from the clearing of juniper adjacent to Crowder Flat Road as part of access road construction.	C,O	Proposed Alturas Substation (Crowder Flat Road to substation site)	Local or regional; short-term	**V-2** Confine construction activities and materials storage to within substation sites, staging areas, and specified areas within the transmission line ROW. **V-4** Whenever possible, construct access or spur roads at appropriate angles from the originating, primary travel facilities to minimize extended, in-line views of newly graded terrain. **V-5** Limit structure heights to 70 feet between milepost MP-1 and Angle Point HSØ1 and maintain a sufficient density of juniper between the proposed substation site and Crowder Flat Road immediately west of the substation site. **V-6** Construct the Alturas Substation access road with appropriate angles and curves to prevent a direct line of sight to the substation from the intersection with Crowder Flat Road.	Not significant
Potential to view light and glare from night-time illumination of Alturas Substation, Border Town Substation, and the Alternative Alturas Substation.	O	Proposed and Alternative Substation sites (Alturas Substation and Crowder Flat Road; Border Town Substation and Upper Long Valley access roads; Alternative Alturas Substation and State Route 299, Mill Street, and Fourth Street)	Local; long-term	**V-7** Ensure that all lighting structures for night-time illumination of the substation are fitted with appropriate lamp shields to minimize light scatter and glare.	Not significant
Proposed Segment O would encroach into Skedaddle Wilderness Study Area (inconsistent with BLM VRA Class I management objectives)	O	Proposed Segment O (in vicinity of OØ1)	Local; long-term	**V-9** Relocate Angle Point OØ1 further south in order to avoid encroachment into the Skedaddle WSA.	Not significant

Class IV Impacts: Beneficial Impacts

Impact Description	Project Phase	Impact Location (Segment)	Scope	Mitigation Measure	Residual Impact
SOCIOECONOMICS AND PUBLIC SERVICES					
Temporary employment of local workers	C	All Proposed and Alternative Segments	Local	None needed	None
Temporary increase in local demand for consumable materials and increased business at motels and restaurants	C	All Proposed and Alternative Segments	Local	None needed	None
Increased sales and property tax revenues to counties and States	C,O	All Proposed and Alternative Segments	Local, regional	None needed	None