CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

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INTRODUCTION

This chapter presents the likely effects on the natural and human environment that would result from implementing the Proposed Action or any of the alternatives discussed in Chapter 2. Described are short-term and long-term effects, direct and indirect effects, and cumulative effects, as applicable. Impacts are assessed in terms of their duration, intensity (or magnitude), and context (local, regional, or national effects). Mitigation measures designed to avoid or reduce impacts are provided. In addition to the best management practices used in development projects, the following mitigation measures identified in the RUCR were used as guidance in determining appropriate mitigation for individual impacts:

- Underground construction;
- Low-EMF designs;
- Low-visibility designs; and
- Off-site mitigation.

If impacts are not discussed, the analysis has indicated that none would occur or that their magnitude would be negligible.

Impact analyses and conclusions are based on interdisciplinary team knowledge of resources and the project area, review of existing literature, and information provided by experts at the BLM or other agencies. Any impacts described in this section are based on preliminary design of the alternatives. Effects are quantified where possible. In the absence of quantitative data, best professional judgment prevailed; impacts are sometimes described using ranges of potential impacts or in qualitative terms.

A level of uncertainty is associated with any set of data in terms of predicting outcomes, especially where natural systems are involved. The predictions in this analysis are intended to allow comparison of alternatives including the Proposed Action, as well as provide a method to determine whether activities proposed by the applicant would be expected to comply with applicable regulations (e.g., Clean Air Act). Terms referring to impact intensity, context, and duration are used in the effects analysis. Unless otherwise stated, the standard definitions for these terms are as follows:

Negligible: The impact is at the lower level of detection; there would be no measurable change.

Minor: The impact is slight but detectable; there would be a small change.

Moderate: The impact is readily apparent; there would be a measurable change that could result in a small but permanent change.

Major: The impact is severe; there would be a highly noticeable, permanent change.

Localized Impact: The impact occurs in a specific site or area. When comparing changes to existing conditions, the impacts are detectable only in the localized area.

Short-Term Effect: The effect occurs only during implementation of the alternative.

Long-Term Effect: The effect could occur for an extended period after implementation of the alternative. The effect could last several years or more and could be beneficial or adverse.

LAND USE

Summary

New overhead electrical transmission corridors and facilities (60-kV or larger) proposed on public lands would be discouraged in favor of using existing corridors, routing on private land, or constructing lines underground in visually sensitive areas. There would be no major impacts involving land ownership or BLM land use authorizations for the Proposed Action or alternatives. Under the Proposed Action and all alternatives, mitigation would be required to minimize the impacts associated with the proximity of the transmission line to occupied or inhabited structures that are part of residential developments, schools, daycare facilities, or healthcare facilities. Mitigation is required by the RUCR (Policy 2.3.6.5) for such structures within 150 feet of the transmission line centerline (Regional Utility Corridor Citizens Advisory Committee 1999). The Foothills Alternative would be less than 150 feet from the greatest number of these types of structures (approximately 103), the Proposed Action would be less than 150 feet of approximately 12 qualifying structures, and the Calle de la Plata Alternative would be less than 150 feet from the least number of such structures (approximately 2). However, in some cases, these structures are likely outbuildings (e.g., garages, sheds) and, as such, are not occupied or inhabited. SPPCo would consult with Washoe County, the City of Reno, and the City of Sparks regarding the Proposed Action and alternatives.

Impacts to land use and access and transportation are summarized in Table 4-1. The Northern Alternative would create the most short-term and long-term ROW disturbance (512 acres and 223 acres, respectively), while the Proposed Action would create the least short-term and long-term disturbance (408 acres and 165 acres, respectively). The Northern and Existing Corridor Alternatives would affect the most private land (160 acres each), while the Foothills Alternative and Proposed Action would affect the least private land (105 acres and 107 acres, respectively). The Existing Corridor Alternative would use considerably more existing transmission and distribution corridors than any other alternative, with 92 percent of its route along existing corridors, while the Calle de la Plata Alternative would use the least amount of existing corridors (49 percent of its route). All alternatives would have the same minor to moderate, localized, short-term impacts on access and transportation.

Table 4-1
Summary of Potential Land Use Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alternative Reno-Stead Airport Substation	No Action Alternative
Impacts per RUCR 150-foot separation requirement	●	○	○	●	●	●	●	●	○	○	○
Other impacts on land use	⦶/◑	○	○	⦶/◑	⦶/◑	⦶/◑	⦶/◑	⦶/◑	○	○	○
Impacts to access and transportation	⦶/◑	○	○	⦶/◑	⦶/◑	⦶/◑	⦶/◑	⦶/◑	○	○	○

LEGEND:

● = Major ⦶ = Minor + = Beneficial
◑ = Moderate ○ = Negligible **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

Land Use

Implementation of the Proposed Action would not change any land uses within the project area. In the short term, the Proposed Action would disturb a total of about 408 acres. The total area of the ROW would be approximately 165 acres, 34 acres (21 percent) of which is already disturbed. About 107 acres of the ROW would be on private land. These landowners could be subject to financial compensation by SPPCo. In the short term, the Proposed Sugarloaf Substation and Proposed Reno-Stead Airport Substation would disturb approximately four acres each and in the long term would disturb a total of about 2.5 acres each, both of which are minor, localized impacts. The Proposed Sugarloaf Substation would be located on privately owned land in the Spanish Springs Valley and the Proposed Reno-Stead Airport substation would be located on the Reno-Stead Airport; the Airport Authority of Washoe County owns the property.

The RUCR includes policies and guidelines for inclusion in the TMRP and is the de facto planning document for electrical transmission lines in the project area. An update of the TMRP was adopted May 9, 2002, requiring that the RUCR be reviewed for conformance with the updated TMRP and, once found in conformance, that it be adopted by reference. To date, that conformance review has not occurred. Until and unless the RUCR is adopted by reference, the TMRPA would not use it in reviewing the conformance of the proposed transmission line. As with any project of regional significance, the project would be evaluated for conformance with the goals and policies of the TMRP and for consistency with all applicable federal, state, and local laws pertaining to natural resource management.

There are 130 parcels, totaling 83 acres, that BLM does not manage and that this alternative traverses. Of those, 85 parcels contain an existing line, and 45 parcels would require a new easement. Of the parcels with existing lines, additional easements may or may not be required, depending on the conditions of the existing easement. Per Policy 2.3.5.2 of the RUCR, almost 19 miles (56 percent) of the proposed transmission line route would be along existing transmission and distribution lines, as detailed in Table 4-2. This distance constitutes a moderate long-term impact relative to Policy 2.3.5.2.

Per Policy 2.3-1 of the RUCR, none of the proposed transmission route or substations would be located in the Truckee River Corridor, on Peavine Mountain, along Mount Rose Highway, or in parks, so impacts would be negligible. However, as shown in Table 4-3, about 2.7 miles of the Proposed Action transmission line would parallel Pyramid Highway, a minor to moderate impact, depending on viewer perception. Airport flight zones are discussed in the Public Health and Safety section of this document.

In addition, about 28 percent of the Proposed Action transmission line would traverse the Reno SOI and Sparks SOI as designated in the TMRP (TMRPA 2002b), as shown in Table 4-4.

Policy 2.3.6.5 of the RUCR requires a 150-foot separation between the transmission line centerline for 120-kV overhead utilities and occupied or inhabited structures that are part of residential developments, schools, daycare facilities, or healthcare facilities (Regional Utility Corridor Citizens Advisory Committee 1999). Aerial photographs were used in conjunction with GIS of the transmission line route to determine the number of qualifying structures within 150 feet of the proposed centerline. To the best of the analysts' abilities, uninhabited structures such as outbuildings (e.g., garages and sheds) were eliminated from further consideration because they are not occupied or inhabited. Locations where the route crossed commercial or industrial land uses generally were not analyzed because the incidence of qualifying structures would be very low. Overall, the analysis

Table 4-2
Transmission Line Routes along Existing Transmission and Distribution Lines

Route	Total Length of ROW (miles)	ROW Length along Existing Transmission and Distribution Lines		Existing Disturbance along Existing Transmission and Distribution Lines (acres)
		Miles	Percent of Total ROW Length	
Proposed Action	34	19	56 %	34
Northern Alternative	46	33	72 %	60
Calle de la Plata Alternative	35	17	49 %	32
Southern Alternative	35	24	69 %	44
Foothills Alternative	38	22	58 %	40
Existing Corridor Alternative	38	35	92 %	63

Sources: BLM 2003e; SPPCo 2003

Table 4-3
Transmission Line Routes along Pyramid Highway

Route	Approximate Distance along Pyramid Highway
Proposed Action	2.7 miles
Northern Alternative	6.8 miles
Calle de la Plata Alternative	0.6 miles
Southern Alternative	4.5 miles
Foothills Alternative	2.8 miles
Existing Corridor Alternative	7.0 miles

Sources: BLM 2003e; SPPCo 2003

Table 4-4
Transmission Line Routes within the Reno and/or Sparks SOIs

Route	Approximate Distance in Reno SOI (miles)	Approximate Distance in Sparks SOI (miles)	Total Distance in a SOI (miles)	Percentage of Total ROW
Proposed Action	5.90	3.74	9.64	28%
Northern Alternative	2.02	1.65	3.67	8%
Calle de la Plata Alternative	5.90	1.65	7.55	22%
Foothills Alternative	10.34	4.90	15.24	40%
Southern Alternative	8.80	6.08	14.88	43%
Existing Corridor Alternative	13.45	18.08	31.53	83%

Sources: BLM 2003e; SPPCo 2003

represents a higher-than-actual number of structures because some structures that were included are likely outbuildings. The exact structures within the 150-foot corridor of the selected transmission route would be identified during the easement acquisition process prior to implementation. As shown in Table 4-5, there are approximately 12 qualifying structures within 150 feet of the proposed transmission line centerline, which violates Policy 2.3.6.5 and would therefore constitute a major impact.

The *Washoe County Comprehensive Plan* classifies land uses (Washoe County 2003d). Table 4-6 lists the approximate mileage that would be traversed by the Proposed Action and alternatives within each designated land use category for the county. A transmission line is considered a "use type," not a land use. The *Washoe County Comprehensive Plan* also defines land use compatibility. Because electric transmission lines are use types, they are not part of the county land use compatibility matrix.

The Proposed Action would be in compliance with all local comprehensive and master plans; however, it would be considered to be a project of regional significance and would require a finding of conformance with the regional plan by the RPC.

Access and Transportation

During construction, existing roads would be used to the maximum extent feasible to access and travel within the construction ROW. Existing four-wheel drive routes and two-track roads could require improvement by blading to widen or curve roads to allow equipment access or to accommodate the turning radius of trucks with flatbed trailers. There would be an increase in construction-related traffic in the project area vicinity during peak construction hours. Additional traffic would consist primarily of trucks hauling heavy equipment, machinery, or materials. Most traffic would occur between staging areas and the ROW and within the construction ROW itself rather than on roads in the project area (highways, county roads, and city streets). Impacts to area access and transportation would be minor to moderate, localized, and short term. New access roads and overland travel routes not required for future maintenance would be restored following construction so would not be used in the long term.

Northern Alternative

Land Use

In the short term, the Northern Alternative would disturb about 512 acres. The total area of the ROW over the length of the Northern route would be approximately 223 acres, 60 acres (27 percent) of which is already disturbed. About 160 acres of the ROW would be on private land. About 72 percent of the ROW would follow existing transmission or distribution line corridors, a minor long-term impact, relative to Policy 2.3.5.2, although about seven miles would be along the Pyramid Highway (Tables 4-2 and 4-3), a moderate to major impact, depending on viewer perception. Of the 199 parcels traversed (totaling 104 acres) and not managed by BLM, 149 parcels contain an existing line, and 50 parcels would require a new easement. Of the 149 parcels with existing lines, additional easements may or may not be required, depending on the conditions of the existing easement. About eight percent of the route would traverse the Reno SOI and Sparks SOI (Table 4-4). There are approximately 19 qualifying structures within 150 feet of the proposed transmission line centerline, which would therefore constitute a major impact. Compliance with local land use plans would be the same as the Proposed Action.

Access and Transportation

Impacts would be the same as the Proposed Action.

Calle de la Plata Alternative

Land Use

In the short term, the Calle de la Plata Alternative would disturb about 469 acres. The total area of the ROW over the length of the Calle de la Plata route would be approximately 170 acres, about 32 acres (19 percent) of which is already disturbed. About 112 acres of the ROW would be on private land.

Table 4-5
Qualifying Structures[1] within 150 Feet of Transmission Line Centerline

Route	Approximate Number of Qualifying Structures[1]
Proposed Action	12
Northern Alternative	19
Calle de la Plata Alternative	2
Foothills Alternative	103
Southern Alternative	88
Existing Corridor Alternative	52

[1] Policy 2.3.6.5 of the *Regional Utility Corridor Report* requires a 150-foot separation between the transmission line centerline for 120-kV overhead utilities and occupied or inhabited structures that are part of residential developments, schools, daycare facilities, or healthcare facilities (Regional Utility Corridor Citizens Advisory Committee 1999).

Sources: BLM 2003e; SPPCo 2003; Washoe County 2000b; W.M. Keck Earth Sciences and Mining Research Information Center 2003

Table 4-6
ROW Length by Land Use Category

	Approximate Length of ROW on Specific Land Use Category (miles)					
Land Use Category	**Proposed Action**	**Northern Alternative**	**Calle de la Plata Alternative**	**Southern Alternative**	**Foothills Alternative**	**Existing Corridor Alternative**
Route travels between two land use categories [1]	6.80	2.99	4.28	3.46	5.33	9.72
Vacant – Minor Improvements/Common Area	2.03	0.67	0.76	2.28	2.42	3.33
Low Density Rural	1.40	9.27	1.55	4.01	6.86	0.17
Medium Density Rural	0.38	1.19	0.34	0.85	0.62	0.15
High Density Rural	0.64	0.11	0.23	0.95	0.69	0.42
Low Density Suburban	0.48	0.54	0.18	0.95	1.21	0.96
Medium Density Suburban	0.00	0.00	0.00	0.95	0.08	0.49
High Density Suburban	0.00	0.00	0.00	0.00	0.00	0.10
Low Density Urban	0.00	0.00	0.00	0.00	0.00	0.47
High Density Urban	0.00	0.00	0.00	0.00	0.00	0.00
General Commercial	0.20	0.00	0.00	0.26	0.20	0.29
Office Commercial	0.00	0.08	0.00	0.00	0.08	0.00
Tourist Commercial	0.00	0.00	0.00	0.00	0.00	1.32
Industrial	1.59	0.24	1.60	1.87	1.56	1.61
Public and Semi-Public Facilities	0.00	0.00	0.00	0.00	0.00	0.38
Parks and Recreation/Open Space	0.00	0.00	0.00	0.36	0.36	0.00
Agricultural	3.02	1.97	1.97	3.02	3.02	1.06
Undeveloped	25.37	29.82	27.70	22.00	23.00	23.36

Source: SPPCo 2003

[1] In some locations, the transmission line route would traverse an area between two land use categories, and exact category placement cannot be determined. These areas have also been calculated as the two land use categories next to which the route would travel. Therefore, these distances are counted in this figure as well as in two other land use categories. The total miles of each route have been adjusted as necessary to account for these duplications.

About 49 percent of the ROW would follow existing transmission or distribution line corridors, a moderate long-term impact, relative to Policy 2.3.5.2, with less than one mile along the Pyramid Highway (Tables 4-2 and 4-3), a negligible to minor impact, depending on viewer perception. Of the 114 non-parcels traversed (totaling 86 acres) but not managed by BLM, 55 parcels contain an existing line, and 59 parcels would require a new easement. Of the 55 parcels with existing lines, additional easements may or may not be required, depending on the conditions of the existing easement. About 22 percent of the route would traverse the Reno SOI and Sparks SOI (Table 4-4). There are approximately two qualifying structures within 150 feet of the proposed transmission line centerline, which would therefore constitute a major impact. Compliance with local land use plans would be the same as the Proposed Action.

Access and Transportation

Impacts would be the same as the Proposed Action.

Southern Alternative

Land Use

In the short term, the Southern Alternative would disturb about 404 acres. The total area of the permanent ROW over the length of the Southern route would be approximately 170 acres, 44 acres (26 percent) of which is already disturbed. About 117 acres of the ROW would be on private land. About 69 percent of the ROW would follow existing transmission or distribution line corridors, a minor long-term impact, relative to Policy 2.3.5.2, with about five miles along the Pyramid Highway (Tables 4-2 and 4-3), a minor to moderate impact, depending on viewer perception. Of the 186 parcels traversed (totaling 79 acres) but not managed by BLM, 152 parcels contain an existing line, and 34 parcels would require a new easement. Of the 152 parcels with existing lines, additional easements may or may not be required, depending on the conditions of the existing easement. About 43 percent of the route would traverse the Reno SOI and Sparks SOI (Table 4-4). There are approximately 88 qualifying structures within 150 feet of the proposed transmission line centerline, which would therefore constitute a major impact. Compliance with local land use plans would be the same as the Proposed Action.

Access and Transportation

Impacts would be the same as the Proposed Action.

Foothills Alternative

Land Use

In the short term, the Foothills Alternative would disturb about 469 acres. The total area of the permanent ROW over the length of the Southern route would be approximately 184 acres, 40 acres (22 percent) of which is already disturbed. About 105 acres of the ROW would be on private land. About 58 percent of the ROW would follow existing transmission or distribution line corridors, a moderate long-term impact, relative to Policy 2.3.5.2, with about three miles along the Pyramid Highway (Tables 4-2 and 4-3), a minor to moderate impact, depending on viewer perception. Of the 195 parcels traversed (totaling 83 acres) but not managed by BLM, 136 parcels contain an existing line, and 59 parcels would require a new easement. Of the 136 parcels with existing lines, additional easements may or may not be required, depending on the conditions of the existing easement. About 40 percent of the route would traverse the Reno SOI and Sparks SOI (Table 4-4). There are approximately 103 qualifying structures within 150 feet of the proposed transmission line centerline, which would therefore constitute a major impact. Compliance with local land use plans would be the same as the Proposed Action.

Access and Transportation

Impacts would be the same as the Proposed Action.

Existing Corridor Alternative

Land Use

In the short term, the Existing Corridor Alternative would disturb about 431 acres, much of which is for

staging and string areas. The total area of the ROW would be approximately 184 acres, 63 acres (34 percent) of which is already disturbed. About 160 acres of the ROW would be on private land. About 92 percent of the ROW would follow existing transmission or distribution line corridors, a negligible long-term impact, relative to Policy 2.3.5.2, although about seven miles would be along the Pyramid Highway (Tables 4-2 and 4-3), a moderate to major impact, depending on viewer perception. Of the 110 parcels traversed (totaling 152 acres) but not managed by BLM, 83 parcels contain an existing line, and 27 parcels would require a new easement. Of the 83 parcels with existing lines, additional easements may or may not be required, depending on the conditions of the existing easement. About 83 percent of the route would traverse the Reno SOI and Sparks SOI (Table 4-4). There are approximately 52 qualifying structures within 150 feet of the proposed transmission line centerline, which would therefore constitute a major impact. Compliance with local land use plans would be the same as the Proposed Action.

Access and Transportation

Impacts would be the same as the Proposed Action.

Alternative Sugarloaf Substation

Land Use

The Alternative Sugarloaf Substation would be located on privately owned land. In the short term, it would disturb approximately four acres and in the long term would disturb about 2.5 acres, both of which are minor localized impacts. It would be in compliance with local land use plans.

Access and Transportation

There would be no impacts on access or transportation.

Alternative Reno-Stead Airport Substation

Land Use

The Alternative Reno-Stead Airport Substation would be located on public land. In the short term, it would disturb approximately four acres and in the long term would disturb about 2.5 acres, both of which are minor localized impacts. It would be in compliance with local land use plans.

Access and Transportation

There would be no impacts on access or transportation.

No Action Alternative

Land Use

No impacts on land use or land ownership would occur under the No Action Alternative. However, land use could be affected by other transmission projects developed to meet energy demand in the area.

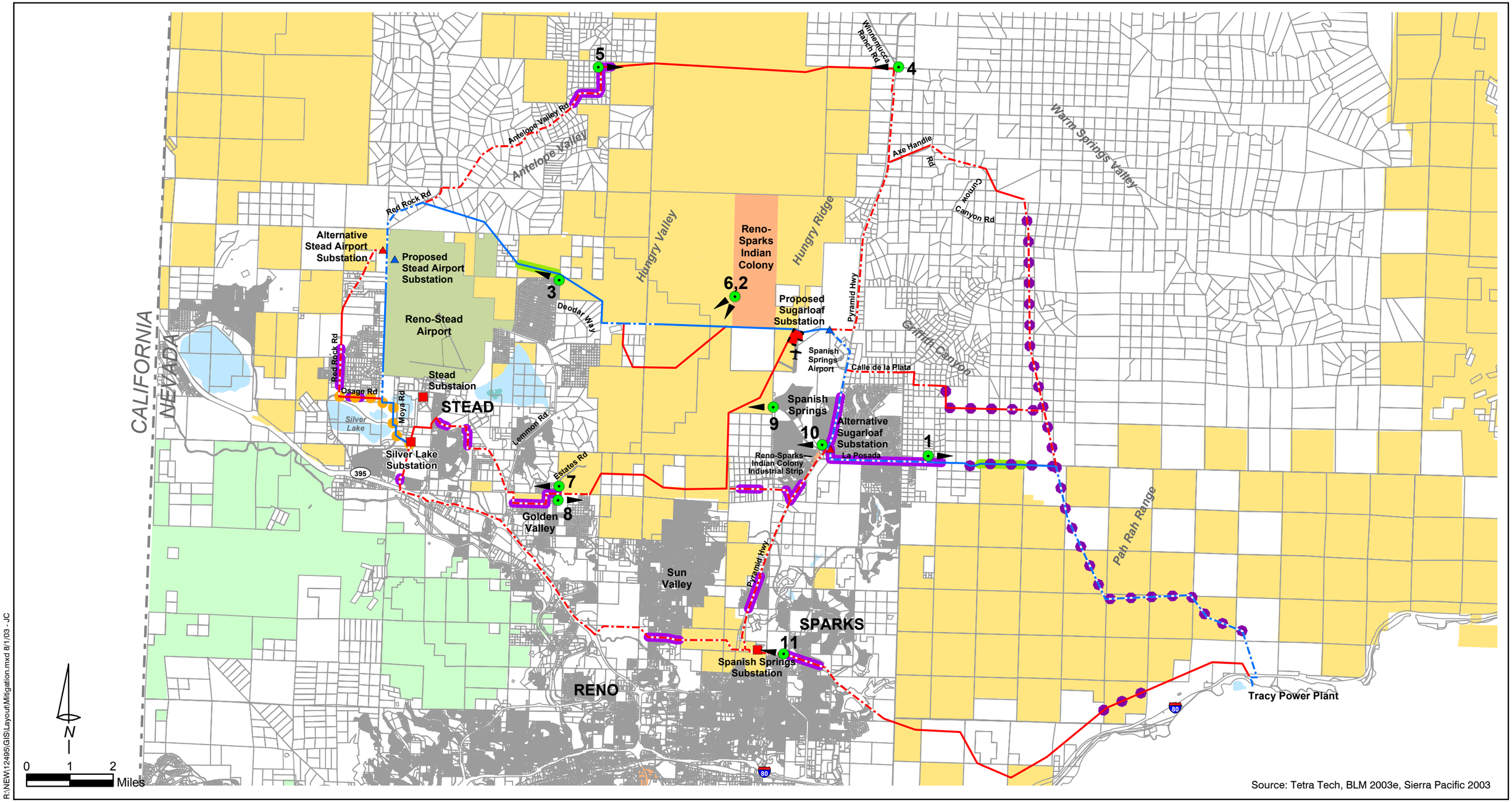
Access and Transportation

There would be no impacts on access or transportation.

Mitigation and Monitoring Measures

At locations where the RUCR's 150-foot separation policy (Policy 2.3.6.5) would not be met (for separation between 120-kV overhead utilities and residential developments, schools, daycare facilities, and healthcare facilities), SPPCo would either petition and receive a variance, conduct mitigation, or purchase at fair market value the structures within the 150-foot boundary. Variances would likely only be issued for areas where the line is within an existing identified corridor. Mitigation options outlined in the RUCR include constructing the transmission line underground, designing low-EMF lines, designing low-visibility lines, or conducting off-site mitigation. Based on the 150-foot separation policy and visual impacts (discussed below), a number of sites have been identified for possible mitigation (Figure 4-1).

Per Policy 2.3.6.6, the new utility corridors associated with the Proposed Action may require an amendment to the local master plans. A



Source: Tetra Tech, BLM 2003e, Sierra Pacific 2003

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Mitigation measures are designed to reduce impacts to identified resources within the project area.

Legend

Routes
- Proposed Route
- Proposed Route (incorporating existing line)
- Alternative Route
- Alternative Route (incorporating existing line)

Potential Mitigation
- Areas Containing Structures within 150ft of Proposed Transmission Line
- Areas of Visual Concern
- Flight Diverters
- Aircraft Safety
- Perch Deterrents

Other Features
- Existing Substation
- Proposed Substation
- Alternative Substation
- KOP Sites
- Photo Direction

Land Status
- Bureau of Land Management
- Native American Reservation
- Private
- County/City Parks
- US Forest Service
- Water
- Airport Authority of Washoe County

Tetra Tech, Inc

Recommended Locations for Transmission Line Mitigation

Tracy to Silver Lake 120 kV Transmission Line

Washoe County, Nevada

Figure 4-1

conformance review by the RPC for a project of regional significance would be required. Any master plan amendment required as a result of the Proposed Action must also be found by the RPC to be in conformance with the regional Plan. The proposed route and all alternative route corridors would be located and sized to satisfy future long-term potential maximum build-out requirements. SPPCo would consult with Washoe County, the City of Reno, and the City of Sparks regarding the Proposed Action and alternative transmission routes. No monitoring would be required.

Residual Impacts

No residual impacts are anticipated because the mitigation measures would resolve land use issues.

GEOLOGY AND SOILS

Summary

Potential geology and soil impacts are summarized in Table 4-7. Impacts would include localized increases in erosion and runoff rates at construction sites. Soils are susceptible to compaction and rutting, and compaction reduces soil productivity. Impacts would be highest during construction, and impact intensity would diminish as disturbed sites are stabilized and revegetated, consequently reducing erosion and runoff. Soil stabilization once construction has been completed would reduce the potential for erosion and impacts would be minor. The Northern Alternative has the greatest acreage of soils with high erosions potential within 600 feet of the route (1,071 acres), followed by the Proposed Action (938 acres), the Southern Alternative (853 acres), the Calle de la Plata Alternative (605 acres), and the Foothills Alternative (539 acres); and the Existing Corridor Alternative had the lowest acreage of soils with high erosions potential within 600 feet of the route (425 acres).

The Proposed Action, Calle de la Plata and Existing Corridor Alternatives have the greatest number of possible fault crossings identified in existing geologic mapping of the area (nine), followed by the Northern Alternative (eight); the Foothills and Southern Alternatives had the lowest number of possible fault crossings (five) (BLM 1999). Construction would be conducted using best management practices and in accordance with all relevant codes. Therefore, there would be no impacts on or from seismic conditions.

There are no geothermal or other mineral leases within the study area. The potential for impacting existing unpatented mining claims and active mines would be avoided by locating the proposed transmission line such that it would not conflict with existing active mining operations or proposed expansion plans. The Calle de la Plata Alternative, Proposed Action, Foothills Alternative, and Existing Alternative have the greatest number of unpatented active mining claims within a half mile of the route (18, 16, 15, and 13, respectively); and the Southern and Northern Alternatives had the lowest number of unpatented active mining claims within a half mile of the route (one and zero, respectively).

Table 4-7
Summary of Potential Geology and Soils Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Slope stability, mudslides, and landslides	◐	○	○	◐	◐	◐	◐	◐	○	○	○
Wind and water erosion of soils	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	○
Geologic faults/seismicity	○	○	○	○	○	○	○	○	○	○	○
Unpatented mining claims, mineral leases, mineral resources	◐	○	○	○	◐	◐	◐	◐	○	○	○

LEGEND:

● = Major ◐ = Moderate ◐ = Minor ○ = Negligible + = Beneficial **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

Ground disturbance during construction of the transmission lines and structures may create unstable cut-and-fill slopes, particularly in steep areas and areas underlain by weak rock material. Project construction would include grading the landscape to produce suitable footings for the transmission towers and construction pads for structure sites on steep slopes. Slope instability would be a short-term localized effect, occurring primarily during construction along high slope areas, including parts of the Pah Rah Range, Spanish Springs Valley, along the foothills south of Griffith Canyon and Antelope Valley. Approximately 692 acres of soils found on slopes of 15 percent or greater are within 600 feet of the Proposed Action. Landslides also could be initiated where construction undercuts slopes or where excessive fill is placed at the top of susceptible slopes. Construction activities on slopes greater than 15 percent would be required to comply with the Washoe County hillside development ordinance provisions for developing, preserving, and protecting hillsides and ridgelines, and permanent fill slopes would not exceed a maximum of 3:1. Therefore, the potential for slope stability impacts as a result of construction of the Proposed Action would be minor.

The Proposed and Alternate Sugarloaf Substation and Proposed and Alternate Reno-Stead Airport Substation sites are on level surfaces and not subject to instability.

In addition to instability, ground disturbance could increase the potential for soil erosion either by runoff or by wind. Wind erosion is likely to be a more prevalent mechanism for soil loss than rainfall because it occurs more frequently and is able to redistribute eroded soil more widely. In some areas, soil erosion resulting from ground disturbance may create permanent scars on the landscape, and loss of soil may prevent vegetation from becoming established on the disturbed area.

As described by the NRCS, wind erosion groups indicate the susceptibility of soil to wind erosion and the amount of soil lost. Groups 1 and 2 are extremely and very highly erodable by wind, and group 3 is highly erodible. For this analysis groups 1 and 2 are classified as highly erodible by wind, and group 3 is classified as susceptible to wind erosion. Erosion factor K indicates the susceptibility of a soil to erosion by water, with values ranging between 0.05 and 0.69 (Baumer 1980). For this analysis, a soil was assumed to have a high water erosion potential if the K-factor was greater than 0.37 (the midpoint of the range).

Project construction would include grading the landscape to produce suitable footings for the transmission towers and construction pads. Grading would remove vegetation and create cut-and-fill slopes from potentially highly erodible soil units. Wind and water erosion due to clearing and grading would be a short-term localized effect, occurring primarily during construction. Soil stabilization, once construction has been completed, would reduce the potential for erosion, and impacts would be minor.

Approximately 842 acres of soils that are highly erodible by wind, mainly near Hungry Valley and Spanish Springs, and 1,270 acres of soils susceptible to wind erosion, predominantly around Reno-Stead Airport and surrounding the Proposed Sugarloaf Substation, are within 600 feet of the transmission line route. The Proposed Sugarloaf Substation and Proposed Reno-Stead Airport Substation would be on a soil unit that is susceptible to wind erosion. About 96 acres of soils with high water erosion potential, primarily north of Reno-Stead Airport and in the Spanish Springs area, are within 600 feet of this alignment.

There are nine fault crossings along the transmission line routes (BLM 1999). All construction would be conducted using best management practices and in accordance with all relevant codes; therefore, there would be no impacts on or from seismic conditions.

Northern Alternative

High slope areas along the Northern Alternative include parts of the Pah Rah Range, Hungry Ridge and Hungry Mountain, and along Antelope Valley. Approximately 692 acres of soils found on slopes of 15 percent or greater are within 600 feet of the Northern Alternative. Construction activities on slopes greater than 15 percent would be required to comply with the Washoe County hillside development ordinance provisions for developing, preserving, and protecting hillsides and ridgelines, and fill slopes would not exceed a maximum ratio of 3:1. Therefore, the potential for slope stability impacts as a result of construction of the Northern Alternative would be short-term, localized, and minor. Approximately 923 acres of soils that are highly erodible by wind, mainly near Antelope Valley and along Pyramid Highway, and 1,750 acres of soils susceptible to wind erosion, predominantly around Reno-Stead Airport and along Pyramid Highway, are within 600 feet of the Northern Alternative. About 148 acres of soils with a high water erosion potential, near Antelope Valley, are within 600 feet of this alignment. Soil stabilization, once construction has been completed, would reduce the potential for erosion, and impacts would be minor.

There are eight fault crossings along the transmission line routes (BLM 1999); however, there would be no impacts on or from seismic conditions.

Calle de la Plata Alternative

High slope areas along the Calle de la Plata Alternative include parts of the Pah Rah Range, Griffith Canyon, Spanish Springs Valley, along the foothills south of the Reno Sparks Indian Reservation, and south of Antelope Valley. Approximately 750 acres of soils found on slopes of 15 percent or greater are within 600 feet of the Calle de la Plata Alternative. Construction activities on slopes greater than 15 percent would be required to comply with the Washoe County hillside development ordinance provisions for developing, preserving, and protecting hillsides and ridgelines, and fill slopes would not exceed a maximum ratio of 3:1. Therefore, the potential for slope stability impacts as a result of construction of the Calle de la Plata Alternative would be short-term, localized, and minor. Approximately 544 acres of soils that are highly erodible by wind, mainly near Hungry Valley, and 1,235 acres of soils susceptible to wind erosion, predominantly around Reno-Stead Airport and the Proposed Sugarloaf Substation, are within 600 feet of the Calle de la Plata Alternative. About 61 acres of soils with a high water erosion potential, north of Reno-Stead Airport, are within 600 feet of this alignment. Soil stabilization, once completed, would reduce the potential for erosion, and impacts would be minor.

There are nine fault crossings along the transmission line routes (BLM 1999); however, there would be no impacts on or from seismic conditions.

Southern Alternative

High slope areas within the Southern Alternative include parts of the Pah Rah Range, along the foothills south of Griffith Canyon, north of Sun Valley, north of Golden Valley, and within Lemmon Valley. Approximately 453 acres of soils found on slopes of 15 percent or greater are within 600 feet of the Southern Alternative. Construction activities on slopes greater than 15 percent would be required to comply with the Washoe County hillside development ordinance provisions for developing, preserving, and protecting hillsides and ridgelines, and fill slopes would not exceed a maximum ratio of 3:1. Therefore, the potential for slope stability impacts as a result of construction of the Southern Alternative would be short-term, localized, and minor. Approximately 748 acres of soils that are highly erodible by wind, mainly near Spanish Springs, and 1,134 acres of soils susceptible to wind erosion, predominantly at Reno-Stead Airport, near the Proposed Sugarloaf Substation, and near Spanish Springs, are within 600 feet of the Southern Alternative. About 105 acres of soils with high water erosion potential, near Spanish Springs, are within 600 feet of this alignment. Soil stabilization, once completed, would reduce the potential for erosion, and impacts would be minor.

There are five fault crossings along the transmission line routes (BLM 1999); however, there would be no impacts on or from seismic conditions.

Foothills Alternative

High slope areas within the Foothills Alternative include parts of the Pah Rah Range and along the foothills south of the Reno-Sparks Indian Colony, along the Lemmon Valley, and north of Golden Valley. Approximately 589 acres of soils found on slopes of 15 percent or greater are within 600 feet of the Foothills Alternative. Construction activities on slopes greater than 15 percent would be required to comply with the Washoe County hillside development ordinance provisions for developing, preserving, and protecting hillsides and ridgelines, and fill slopes would not exceed a maximum ratio of 3:1. Therefore, the potential for slope stability impacts as a result of construction of the Foothills Alternative would be short-term, localized, and minor. Approximately 469 acres of soils that are highly erodible by wind, mainly near Spanish Springs, and 1,412 acres of soils susceptible to wind erosion, predominantly west of Reno-Stead Airport and near the Proposed Sugarloaf Substation, are within 600 feet of the Foothills Alternative. About 70 acres of soils with high water erosion potential, near Spanish Springs, are within 600 feet of this alignment. Soil stabilization, once construction has been completed, would reduce the potential for erosion, and impacts would be minor.

There are five fault crossings along the transmission line routes (BLM 1999); however, there would be no impacts on or from seismic conditions.

Existing Corridor Alternative

High slope areas along the Existing Corridor Alternative include parts of Golden Valley, Panther Valley, Sun Valley, Spanish Springs Valley, and the Pah Rah Range. Approximately 5,891 acres of soils found on slopes of 15 percent or greater are within 600 feet of the Existing Corridor Alternative. Construction activities on slopes greater than 15 percent would be required to comply with the Washoe County hillside development ordinance provisions for developing, preserving, and protecting hillsides and ridgelines, and fill slopes would not exceed a maximum ratio of 3:1. Therefore, the potential for slope stability impacts as a result of construction of the Existing Corridor Alternative would be short-term, localized, and minor. Approximately 341 acres of soils that are highly erodible by wind, mainly near Spanish Springs, and 1,208 acres of soils susceptible to wind erosion, predominantly around Reno-Stead Airport, Spanish Springs, and Golden Valley, are within 600 feet of the Existing Corridor Alternative. About 84 acres of soils with high water erosion potential, at Spanish Springs, are within 600 feet of this alignment. Soil stabilization, once construction has been completed, would reduce the potential for erosion, and impacts would be minor.

There are nine fault crossings along the transmission line routes (BLM 1999); however, there would be no impacts on or from seismic conditions.

Alternative Sugarloaf Substation

The Alternative Sugarloaf Substation would be on soils that are highly erodible by wind.

Alternative Reno-Stead Airport Substation

The Alternative Reno-Stead Airport Substation would be on a soil unit that is susceptible to wind erosion.

No Action Alternative

There would be no impacts on geological conditions under the No Action Alternative.

Mitigation and Monitoring Measures

No mitigation and monitoring measures beyond those described in Chapter 2 would be required. Construction activities on slopes greater than 15 percent would be required to comply with the Washoe County hillside development ordinance provisions for developing, preserving, and protecting hillsides and ridgelines, and fill slopes should not exceed a maximum ratio of 3:1.

Residual Impacts

No residual impacts would occur.

WATER RESOURCES

Summary

The Truckee River is the only major perennial water body within the study area. Under every alternative, the transmission line would cross the Truckee River from the Tracy Power Plant at the same point on the river. At the river crossing a short section of 120-kV line, which was previously removed from service, would be replaced with the same gauge wire that would be used on the Tracy/Silver line. Either the existing wire would be used to pull in the new wire or construction personnel would wade the river with ropes to install the new wire. No transmission towers or equipment would be located or used in the river channel (Wehrkamp 2003).Summary Impacts to water resource are summarized in Table 4-8. With the exception of the Truckee River, most of the surface water drainage within the project area is limited to ephemeral flow during and immediately after major rainstorms. In general, precipitation evaporates or seeps into the ground, unless the ground becomes saturated, then overland flow can occur (EMA 2000). The Proposed Action could affect surface water by increasing soil erosion during construction, but best management practices would make the impact minor to negligible. Any blasting during construction could impact wells and natural springs. Identification, blast control, and monitoring would minimize this impact. The Proposed Action and alternatives would not affect water quality as a result of the use of hazardous materials during construction of the line or substations, and impacts related to flood events would be negligible. In addition, the project would not decrease groundwater resources.

Table 4-8
Summary of Potential Water Resources Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Impacts to surface water quality soil/erosion	◐	○	○	◐	◐	◐	◐	◐	○	○	○
Impacts to surface water quality hazardous materials	○	○	○	○	○	○	○	○	○	○	○
Impacts related to flooding	○	○	○	○	○	○	○	○	○	○	○
Impacts to water wells and springs	◐	○	○	◐	◐	◐	◐	◐	○	○	○
Depletion of groundwater resources	○	○	○	○	○	○	○	○	○	○	○

LEGEND:

● = Major ◐ = Moderate ◐ = Minor ○ = Negligible + = Beneficial **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

Construction associated with the Proposed Action could discharge sediments into various sources of water. During construction of the transmission line, soils would be disturbed and vegetation would be lost, leaving the soils susceptible to erosion and discharge into surface water. The most apparent area of impact would be surrounding the Truckee River transmission line crossing, but similar impacts could affect natural springs and other collections of surface

water, especially in areas with high slopes. Such areas along the proposed transmission line route include parts of the Pah Rah Range, Spanish Springs Valley, and along the foothills south of Griffith Canyon and Antelope Valley. Increased sediment deposition could have a minor impact on surface water quality.

The COM plan would outline best management practices to control runoff and sediment, thereby reducing the impact. Likewise, these measures would help contain any accidental spills of hazardous materials. Along the transmission line, large volumes of hazardous materials would not be used. Given implementation of best management practices, small volume of hazardous material use, and lack of perennial surface water features along the route, no impacts on water quality from hazardous materials would occur.

The transmission line would cross approximately a mile of 100-year flood zone (Figure 3-3) and across drainages that experience flash flooding. SPPCo would take all possible steps to avoid placing transmission towers within areas prone to flash floods. When placing towers in the floodplain or in flash flood areas is unavoidable, SPPCo would retain a geotechnical engineer to design appropriate protective measures for towers at risk. Examples of such protective measures include reinforcing the tower bases and constructing earthen berms to divert water around the towers. Therefore, no impacts on or from flooding would occur.

Blasting during construction could damage springs and wells, affecting their flow and production rates, especially if wells draw in shallow groundwater. There are approximately 753 identified water wells within half a mile of the Proposed Action. There are three identified water wells within a half-mile radius of the Proposed Sugarloaf Substation site and two within a half-mile radius of the Proposed Reno-Stead Airport Substation (NDWR 2003). Implementing BMPs and recommended mitigation would reduce the possible impact on wells and springs.

There would be no impacts on water resources from the Proposed Sugarloaf Substation or the Proposed Reno-Stead Airport Substation.

Northern Alternative

Impacts to water along the Northern Alternative would be similar to those along the Proposed Action. High slope areas along the Northern Alternative include parts of the Pah Rah Range, Hungry Ridge, and Hungry Mountain and along the Antelope Valley. The transmission line would cross approximately two miles of the 100-year flood zone (Figure 3-3). There are approximately 501 identified water wells within half a mile of the proposed Northern Alternative (NDWR 2003)

Calle de la Plata Alternative

Impacts to water along the Calle de la Plata Alternative would be similar to those along the Proposed Action. High slope areas along the northern Calle de la Plata Alternative include parts of the Pah Rah Range, Griffith Canyon, and Spanish Springs Valley and along the foothills south of the Reno Sparks Indian Reservation and south of Antelope Valley. The transmission line would cross approximately one mile of the 100-year flood zone (Figure 3-3). There are approximately 782 identified water wells within half a mile of the proposed Calle de la Plata Alternative (NDWR 2003)

Southern Alternative

Impacts to water along the Southern Alternative would be similar to those along the Proposed Action. High slope areas within the Southern Alternative include parts of the Pah Rah Range, along the foothills south of Griffith Canyon, north of Sun Valley, and north of Golden Valley, and within Lemmon Valley. The transmission line would cross approximately one mile of the 100-year flood zone (Figure 3-3). There are approximately 813 identified water wells within half a mile of the proposed Southern Alternative (NDWR 2003).

Foothills Alternative

Impacts to water along the Foothills Alternative would be similar to those along the Proposed

Action. High slope areas within the Foothills Alternative include parts of the Pah Rah Range and along the foothills south of the Reno-Sparks Indian Colony, along the Lemmon Valley, and north of Golden Valley. The transmission line would cross approximately two miles of the 100-year flood zone (Figure 3-3). There are approximately 794 identified water wells within half a mile of the Foothill Alternative (NDWR 2003)

Existing Corridor Alternative

Impacts to water along the Existing Corridor Alternative would be less than those along the Proposed Action. The only slope areas within the Existing Corridor Alternative are those along the foothills north and northwest of the Truckee River. The transmission line would cross approximately one mile of the 100-year flood zone (Figure 3-3). There are approximately 491 identified water wells within half a mile of the proposed Existing Corridor Alternative (NDWR 2003)

Alternative Sugarloaf Substation

The Alternative Sugarloaf Substation site is on a level surface and would not impact water quality from increased erosion during construction or operation of the site. The substation is within a 100-year floodplain and could be impacted by flooding and discharge any stored hazardous materials into the water. However, the impacts would be negligible, with implementation of the COM plan and other management practices mentioned under the Proposed Action. There are approximately five identified water wells within half a mile of the proposed Alternative Sugarloaf Substation site (NDWR 2003).

Alternative Reno-Stead Airport Substation

The Alternative Reno-Stead Airport Substation site is on a level surface and would not impact water resources. There are approximately three identified water wells within half a mile of the proposed Alternative Reno-Stead Airport Substation site (NDWR 2003).

No Action Alternative

Under the No Action Alternative, there would be no project impacts on surface water quality.

Mitigation and Monitoring Measures

Because of the relationship between soil erosion and surface water quality, successfully implementing runoff and erosion controls is important in protecting water quality. Standard mitigation would implement the most up to date measures (ex. Washoe County current grading standards from article 434.30) best suited to each individual location to eliminate or reduce erosion and runoff and to stabilize disturbed areas. A number of measures, including but not limited to the following, would be used alone or in combination to reduce the impact:

- Using best management practices, such as reducing vehicle use in sensitive areas;
- Revegetating disturbed areas as soon as possible;
- Installing sediment barriers, such as straw bales or silt fences, to prevent sediment from moving off-site;
- Timing construction activities, wherever possible, to reduce erosion by operating during low runoff periods; and
- Repairing any stream bank damage and stabilizing the site immediately.

SPPCo would identify all springs and water wells within 1,000 feet of a blasting zone. The contractor would avoid disturbing the soil within 100 feet of any spring or well without implementing BMPs. Prior to any blasting, all wells and springs would be identified. Only size-limited blasting would be allowed within 1,000 feet of a spring or well, unless a qualified hydrogeologist could demonstrate that no effect on the well or spring could be reasonably expected or that the effects could be reasonably mitigated. SPPCo would repair any spring or well damaged by construction.

No monitoring needs have been identified for this action.

Residual Impacts

No residual impacts are anticipated as a result of the Proposed Action and mitigation measures listed for water resources.

Placing transmission lines underground has been suggested as a form of mitigation in other resource sections (e.g., Land Use and Aesthetics). Undergrounding is not recommended along the one-mile stretch of new line that would pass through the 100-year flood zone due to liquefaction potential, the potential for vaults to get flooded, and lack of accessibility for maintenance during floods.

VEGETATION AND WETLANDS RESOURCES

Summary

Impacts to vegetation resources for all alternatives would include temporary and long-term habitat loss associated with construction, operation, and maintenance of the project (e.g., overland travel route, tower structure installation, staging areas, and substation expansions) as summarized in Table 4-9. The greatest number of impacts would occur in developed/ruderal and fire-affected vegetation communities. However, larger impacts on sagebrush communities would occur in the Northern and Calle de la Plata Alternatives due to frequent turns in the alignments, which requires more wire pulling areas. All Alternatives share in common the crossing of the Truckee River at Tracy. No other areas offer opportunities for wetlands or riparian areas due to the lack of watercourses.

Table 4-9
Summary of Potential Vegetation and Wetland Resources Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Impacts to sagebrush community	◐	◐	◐	◑	◐/◑	◐	◐/◑	◐/◑	○	○	○
Impacts to salt desert shrub community	◐	○	○	○	◐	○	○	○	○	○	○
Impacts to greasewood community	◐	◐	◐	◐	◐	◐	◐	◐	○	○	○
Impacts to juniper woodland community	◐	◐	◐	◐	◐/◑	◐	◐	◐	○	○	○
Impacts to fire-affected community	+	+	+	+	+	+	+	+	○	○	○
Impacts to developed/ruderal	◐	◐	○	◑	◐	◑	◑	◑	○	○	○
Impacts to agricultural	○	○	○	○	○	○	○	○	○	○	○
Impacts to wetlands/riparian	○	○	○	○	○	○	○	○	○	○	○

LEGEND:

● = Major ◐ = Minor + = Beneficial
◑ = Moderate ○ = Negligible **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

Direct impacts would be from ground disturbance and the physical removal of vegetation as a result of construction activities. The consequences could be the temporary or long-term loss of a native plant community. Previous revegetation efforts in the clay soils of Hungry Valley have met with limited success. As a result, the long-term impacts from vegetation clearing may increase in the portions of the Proposed Action passing through Hungry Valley, and revegetation may meet with limited success. Indirect impacts would be effects on wildlife and wildlife habitat due to alteration of habitats.

Common construction activities that could result in the direct or indirect loss or of vegetation resources include:

- Excavations for poles;

- Blading and grading of soil for vehicle access and construction areas at pole sites;
- Temporary stockpiling of soil or construction materials and sidecasting of soil and vegetation;
- Use of designated construction material yards;
- Soil compaction and dust; and
- Vehicle traffic and equipment and materials transport along the overland travel route.

Most impacts would occur within developed/ruderal and fire-affected vegetation communities, although the Proposed Action could have a short-term impact on about 90 acres of sagebrush. Table 4-10 lists the temporary impacts on dominant plant communities. Implementation of the Revegetation Plan (Appendix B) would mitigate and minimize the duration of the impacts. Revegetation would take into account site-specific requirements, such as the clay area in Hungry Valley, which could result in limited revegetative success.

Table 4-10
Acres of Estimated Temporary Disturbance to Plant Communities

Routes	Sagebrush	Salt Desert Shrub	Greasewood	Juniper Woodland	Fire - Affected	Developed/ Ruderal	Agricultural	Riparian/ Truckee River
Proposed Action	89.4	21.8	9.8	30.6	103.1	100.8	0	0.1
Northern Alternative	190	0.4	3.2	7.8	123.4	149	0	0.1
Calle de la Plata Alternative	141	21.8	9.8	59	109	115	0	0.1
Southern Alternative	61.3	0.4	9.8	54.2	85.7	182.8	0	0.1
Foothills Alternative	79.1	0.4	3.2	54.2	129.1	194.5	0	0.1
Existing Corridors Alternative	45.3	0	9.8	0	169.3	231.4	1.8	0.1

Note: Acreages are based on 30-foot overland travel route, stringing and staging areas, and substation construction (two at 5 acres each).

The only documented jurisdictional wetland and water of the US along the Proposed Action is the Truckee River. The Proposed Action does not include any dredge or fill activities within the Truckee River. There is the potential for small wetlands to be encountered along the route (for example within drainages). These drainages and areas of seasonal water (for example ponded water near Silver Lake) could be avoided during operation; however, there is the potential for riparian communities to be directly or indirectly impacted as a result of construction activities.

Long-term loss of upland plant communities would occur resulting from the construction, operation, or maintenance of the substations and transmission line, including use of the 15-foot wide access road. The poles utilized for a 120-kV line a relatively small in diameter and would only have a footprint approximately one foot in diameter. Each pole would have a long-term disturbance of less than two-tenths of an acre after reclamation. About 16 acres of sagebrush community would be lost, along with six acres of fire affected communities, and five acres of juniper woodland (Table 4-11). These communities are abundant in the project area and

Table 4-11
Estimated Acres of Long-Term Disturbance to Plant Communities

Routes	Sagebrush	Salt Desert Shrub	Greasewood	Juniper Woodland	Fire Affected	Developed/ Ruderal	Agricultural	Riparian/ Truckee River
Proposed Action	16.5	1.5	1.4	4.54	5.7	3.2	0	0
Northern Alternative	13.9	0	1.4	2.6	5.2	5.1	0	0
Calle de la Plata Alternative	13.9	1.5	0	6.6	3.2	3.8	0	0
Southern Alternative	9.8	0	1.4	3.2	4.5	5.5	0	0
Foothills Alternative	10.5	0	1.4	3.25	7.1	10.9	0	0
Existing Corridors Alternative	6.3	0	1.4	0	0	3.2	0	0

Note: Acreages are based on 2.5 acres for two substations (proposed, not alternatives) and a 15-foot retained overland travel route where existing utility structures do not exist.

are no rare or unique in status. No long-term impacts would occur to wetlands. Thus, long-term impacts on upland plant communities would be minimal and therefore no mitigation would be required.

The Proposed Sugarloaf Substation would occupy approximately 2.5 acres of both developed/ruderal and sagebrush communities. The proposed site is located near the Rocky Acres gravel pit where impacts from the mining activities are evident. The Reno-Stead Airport Substation would occupy approximately 2.5 acres of sagebrush community. Construction of both sites substation would require an additional 1.5 acres of short-term disturbance.

Northern Alternative

Impacts to vegetation along the Northern Alternative would be similar to those along the Proposed Action. Temporary and long-term impacts on specific vegetation communities are provided in Tables 4-10 and 4-11.

Calle de la Plata Alternative

Impacts to vegetation along the Calle de la Plata Alternative would be similar to those along the Proposed Action. Temporary and long-term impacts on specific vegetation communities are provided in Tables 4-10 and 4-11.

Southern Alternative

Impacts to vegetation along the Southern Alternative would be similar to those along the Proposed Action. Temporary and long-term impacts on specific vegetation communities are provided in Tables 4-10 and 4-11.

Foothills Alternative

Impacts to vegetation along the Foothills Alternative would be similar to those along the Proposed Action. Temporary and long-term impacts on specific vegetation communities are provided in Tables 4-5 and 4-6.

Existing Corridor Alternative

Impacts to vegetation along the Existing Corridor Alternative would be similar to those along the Proposed Action. Temporary and long-term impacts on specific vegetation communities are provided in Tables 4-10 and 4-11.

Alternative Sugarloaf Substation

The majority of the Alternative Sugarloaf Substation is characterized as developed/ruderal.

Alternative Reno-Stead Airport Substation

The substation would have a long-term impact on about 2.5 acres of sagebrush community.

No Action Alternative

Under the No Action Alternative, impacts on vegetation, wetland, or riparian resources would not occur.

Mitigation and Monitoring Measures

Before construction, a resource specialist would delineate and stake exclusion zones around riparian or wetland areas. The construction disturbance area would be reduced to a 20 foot ROW width in these sensitive areas. Spur roads or other extraneous routes would not be allowed in these areas. Best Management Practices (BMPs), suitable for the sensitive resources would be utilized in these areas (Nevada State Conservation Commission 1994). The applicable BMPs will be outlined in the COM Plan but would generally include: measures to reduce soil compaction, measures to reduce any off-site sedimentation, and minimize impacts on riparian or wetland plants. Loss of riparian habitat or functions/values would be avoided during construction, operation and maintenance of the Proposed Action.

Residual Impacts

After reclamation and revegetation, residual impacts would be minor. Any residual impacts would be temporary until the impacted plant community becomes established.

INVASIVE NONNATIVE SPECIES

Summary

Impacts to invasive nonnative species are summarized in Table 4-12. The primary impacts of construction on the spread of invasive weeds would be through vegetation removal and soil disturbance. A secondary impact could be the introduction of an invasive species that had previously not been found within the area. Any ground disturbance could create favorable conditions for invasive species to be introduced, to spread, or to become well established. All ground-disturbing activities could increase the potential for invasive weeds to infest or increase. However, vegetation clearing or ground-disturbing activities would be restricted to the minimum amount necessary so as to lessen potential impacts

Table 4-12
Summary of Potential Invasive Nonnative Species Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Introduction or spread of known existing invasive nonnative species by construction	◐	◐	◐	◐	◐	◐	◐	◐	○	○	○
Introduction or spread of unknown invasive nonnative species by construction	◐	◐	◐	◐	◐	◐	◐	◐	○	○	○
Impacts of native plant restoration and weed management following mitigation for construction	+	+	+	+	+	+	+	+	+	+	+
Introduction and spread of existing and unknown invasive nonnative species by operation and maintenance	○	○	○	○	○	○	○	○	○	○	○
Long-term residual impacts with continued maintenance and control of nonnative invasive plant species	+	+	+	+	+	+	+	+	+	+	+

LEGEND:

● = Major ◐ = Moderate ◐ = Minor ○ = Negligible + = Beneficial **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

Construction activities could result in the introduction and dispersal of invasive weeds. The greatest number of acres affected would be in developed/ruderal and fire-affected communities. Both communities are more prone to invasive weed infestation due to their proximity to human activities and altered native plant composition. Most of the private lands were not surveyed for noxious weeds. Because invasive weeds may not be present one year but may be present the next, it was not practical to inventory each alternative. State and federal laws legally mandate weed abatement, regardless of the affiliation of the property owner (e.g., public or private). Coordination among landowners is critical for effective prevention and control.

Invasive weeds could be introduced and dispersed during operation and maintenance of the project. Vehicle use in the right of way, and maintenance of the right of way could result in surface disturbance and transport of invasive weeds into previously uninfested areas during project operation. Implementation of the Reclamation Plan (Appendix B) and the mitigation and monitoring measures described below would prevent the spread of invasive weeds.

Northern Alternative

Invasive nonnative species impacts and proposed mitigation measures would be similar to those described under the Proposed Action.

Calle de la Plata Alternative

Invasive nonnative species impacts and proposed mitigation measures would be similar to those described under the Proposed Action.

Southern Alternative

Invasive nonnative species impacts and proposed mitigation measures would be similar to those described under the Proposed Action.

Foothills Alternative

Invasive nonnative species impacts and proposed mitigation measures would be similar to those described under the Proposed Action.

Existing Corridor Alternative

Invasive nonnative species impacts and proposed mitigation measures would be similar to those described under the Proposed Action.

Alternative Sugarloaf Substation

Invasive nonnative species impacts and proposed mitigation measures would be similar to those described under the Proposed Action.

Alternative Reno-Stead Airport Substation

Invasive nonnative species impacts and proposed mitigation measures would be similar to those described under the Proposed Action.

No Action Alternative

Under the No Action Alternative, current weed populations would remain the same size or grow in extent or density following current trends. Currently actions are being taken to eradicate noxious weed populations in many of these areas.

Mitigation and Monitoring Measures

To prevent the spread of noxious weeds into previously uninfested areas in the transmission line corridor and around substations during construction, SPPCo would implement the following measures. Noxious weed specialists, range ecologists, or botanists would survey the project study corridor, substation sites, new spur roads, existing access roads, and material yards and staging areas before construction to identify and delineate all noxious weed infestation areas and to clearly identify their locations using global positioning systems (GPS) so that locations may be identified on construction drawings. The infestation area would be staked to include an appropriate buffer because seeds may be present beyond the weed infestation. Construction would be prohibited within these zones. The measures outlined below would be used where avoidance is infeasible.

To prevent the spread of noxious weeds from unavoidable infestation areas into previously uninfested areas during construction, the following measures would be implemented. Before construction activities, SPPCo would apply an acceptable herbicide or employ conventional mechanical or cultural methods of noxious weed removal in construction areas, including the overland travel route, pole assembly areas, new spur roads, wire stringing, staging areas, substations, and other areas that would be disturbed by vehicles or equipment.

If noxious weeds cannot be removed or controlled before construction, the plants may be cut and disposed of in a landfill in sealed bags or disposed of or destroyed in another manner acceptable to the Nevada Department of Agriculture Bureau of Plant Industry and Nevada Cooperative Extension. Layers

of mulch, degradable geotextiles, or similar materials can be placed over the infestation area to minimize the spread of seeds and plant materials by equipment and vehicles during construction. These materials should be secured so they would not be blown or washed away.

Equipment and vehicles would be cleaned at designated high-pressure air or water wash stations away from waterways before they are used in the project area. Once in the project area, equipment and vehicles would be restricted to approved areas unless work requires entry into noxious weed infested areas. If equipment enters an area containing noxious weeds, it would be cleaned after it exits the area. The Nevada Division of Agriculture, the Nevada Cooperative Extension, or the BLM would decide whether or not to use the wash stations, which a qualified noxious weed specialist, range ecologist, or botanist would identify before construction began. The wash down would concentrate on the undercarriage, axles, frame, cross members, motor mounts, on and under steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs would be swept and refuse would be disposed of in waste receptacles.

Certified weed-free imported materials, such as straw bales and erosion control seed, would be used when and where needed during construction, reclamation, maintenance, and operations. Additionally, SPPCo would work closely with the Washoe-Storey Conservation District to identify appropriate seed mixes and revegetation techniques that might help prevent invasive species from infesting or reinfesting the right-of-way.

In order to prevent the spread of invasive weeds as a result of operation and maintenance of the project, SPPCo would regularly look for noxious weeds in the transmission line right-of-way, around substations, and along access roads used exclusively or primarily for project operations and maintenance. The observers would locate, map, monitor and treat noxious weeds introduced or spread by operation, maintenance, or other activities in these areas, whether the location is on BLM-managed lands or private lands. Landowners and SPPCo would have to coordinate for noxious weeds to be successfully treated. SPPCo should also observe the following:

- Educate operations and maintenance supervisors and managers on weed identification and the importance of controlling and preventing the spread of noxious weed infestations; and
- Reseed substantial areas (for example, those greater than half an acre) disturbed during operations and maintenance that are at risk to weed invasion, using the measures defined in the Reclamation Plan (see Appendix B).

Continue to coordinate with land management agencies and private landowners to ensure that the appropriate best management practices are implemented to minimize weed introduction and dispersal.

Follow-up noxious weed surveys should be conducted during the growing season construction and revegetation activities are completed to locate, map, monitor, and treat noxious weeds introduced or spread by project construction. Areas to be monitored would include the ROW and construction and access sites in the project construction corridor, material yards and staging areas, areas around substations, spur roads, and areas along improved or reclaimed existing access roads.

Noxious weed populations would be monitored annually until revegetation and weed abatement criteria have been met (see below). The monitoring would be conducted during the growing season for most weeds, between late May and mid-July. Current lists of weeds to be included in the noxious weed survey would be obtained from the BLM and Nevada Cooperative Extension. Additional information on noxious weed species' habitat requirements, blooming periods, and field identifying characters may be obtained from information provided by the Nevada Cooperative Extension,

Integrated Pest Management Office, and other references.

Surveys would be conducted on foot or by vehicle within the right-of-way along spur roads and improved or reclaimed access roads, and material yard and staging areas. Species names and locations of weed infestations would be mapped, for example, on USGS 7.5-minute quadrangle maps or aerial photographs or on maps made by using a GPS unit, and transferred to an updateable geographic information systems database. Photographs would be taken of targeted populations prior to treatments and one year following treatments.

The surveys may be conducted concurrently with reclamation monitoring activities. Weed management would be considered successful when the extent and density of the infestations, by species, are not greater than the baseline conditions measured just prior to project construction and revegetation criteria are met (see Appendix B, Reclamation).

Long-term management would be considered successful if the variety, extent, and density of weed infestations in the construction areas are within the range of conditions found on surrounding land. Monitoring comparisons with surrounding lands would be developed in cooperation with the surrounding private landowners. SPPCo would not be responsible for controlling infestations without a true cooperative effort by surrounding landowners. Within public lands, SPPCo would control all noxious weeds, introduced by SPPCo, in cooperation with the BLM, for the lifetime of the transmission line.

Residual Impacts

Residual impacts should be minimal after mitigation. It is likely that the noxious weed populations would be reduced as a result of this project due to the current need of noxious weed controls within the area.

WILDLIFE RESOURCES

Summary

Potential direct impacts on wildlife resources would result from the removal of vegetation that provides wildlife habitat as summarized in Table 4-13. In addition, wildlife may be harassed, displaced, or killed as a result of heavy equipment use during construction or maintenance. The presence of new transmission lines and substations would present bird collision and electrocution hazards. Indirect impacts include increased human activity in the ROW, which could affect wildlife nesting or foraging behaviors. Potential impacts specific to sage grouse are discussed in the Special Status Species Section.

Removing vegetation in areas used by wildlife reduces available habitat and may result in habitat fragmentation. Most habitat disturbance from construction would be temporary and minor in relation to the surrounding habitat. Another potential impact would be disturbing nesting birds by trimming or removing vegetation in areas containing active nests. Implementing the mitigation and monitoring measures described at the end of this section would reduce the majority of these impacts.

Table 4-13
Summary of Potential Wildlife Resources Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Long-term impacts on wildlife habitat	◫	◫	◫	◫	◫	◫	◫	◫	○	◫	○
Short-term impacts on wildlife habitat	◑	◫	◫	◑	◑	◑	◑	◫	○	◫	○
Bird electrocution hazard	○	◫	◫	○	○	○	○	○	◫	◫	○
Impacts to mule deer winter grazing habitat	◫	○	○	○	◫	◫	◫	○	○	○	○
Impacts to migratory birds (collision/nesting disturbance)	◫	○	○	◫	◫	◫	◫	◫	○	○	○

LEGEND:

● = Major ◫ = Minor + = Beneficial
◑ = Moderate ○ = Negligible **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

Wildlife habitat would be reduced and fragmented by clearing vegetation during construction and by maintaining the ROW. Common construction activities that could result in direct or indirect loss of vegetation are described in the Vegetation and Wetlands Resources section. In general, the size of the disturbance would be small compared to the amount of surrounding habitat. The disturbance corridor would be approximately 30 feet wide, varying in length by alternative. The amount of wildlife habitat affected would be larger for areas requiring new ROW construction, compared to those that use existing transmission routes. Impacts to wildlife would also vary based on the quality of wildlife habitat. Different vegetation communities provide different levels of habitat quality. In general, construction activities and vegetation clearing would

have a minimal effect on wildlife in developed or disturbed (ruderal), agricultural, and fire-affected areas because these vegetation communities provide only marginal wildlife habitat. Larger effects on wildlife would be observed in sagebrush, salt desert shrub, greasewood, juniper woodland and riparian habitats. Table 4-14 describes the extent of wildlife habitat that would be affected in the short term and the long term for each alternative.

Newly constructed transmission lines would create a bird collision hazard. Bird collisions may occur when a transmission line transects a daily flight path used by a concentration of birds or when migrants are traveling at reduced altitudes and encounter tall structures in their path. These collisions generally occur during inclement weather or low light levels (Avian Power Line Interaction Committee 1994). Bird electrocution was considered as a potential impact on raptors and other birds. The proposed pole configuration shown in Figure 2-7 would minimize the potential for electrocutions to occur as a result of wire to wire and conductor to ground connections along the transmission line. The proposed configuration would have minimum spread of eight feet vertically, 11 feet horizontally, and five feet wire to pole. As a result, the potential for bird electrocutions would be minor.

The risk of bird collisions is higher along wetlands and between other bodies of water used by waterfowl and shorebirds. In the study area, this occurs near the Silver Lake substation between Silver Lake and Swan Lake. Areas where collisions are most likely to occur include the sections of route that parallel the Moya Boulevard and the east to west portion of Osage Road.

The entire study area is within the Pacific Flyway for migratory birds, with Pyramid Lake, a major bird nesting area, approximately 20 miles north of the study area. As a result, construction of additional east to west transmission lines would increase the potential for migratory bird collisions.

Nesting raptors may be disturbed by construction activities that occur during the nesting season. Areas of particular concern include the Hungry Valley, Hungry Ridge and Lemmon Valley areas. Golden eagles and red-tailed hawks have been observed along the Proposed Action during field surveys (Tetra Tech Inc. field notes).

Land clearing or other surface disturbances may affect migratory bird nests and young birds. Under the MBTA, nests with eggs or young of migratory birds may not be harmed, nor may migratory birds be killed. The mitigation measures described at the end of this section would be implemented to prevent impacts on migratory birds.

Direct mortality of small mammals, reptiles, and other less mobile species is expected from construction vehicles and equipment. Temporary access road construction and grading could result in a loss of wildlife and wildlife habitat. However, direct wildlife mortalities and displacement are expected to be minor as a result of construction due to the minimal amount of habitat physically disturbed relative to the surrounding available habitat. Animals displaced by the project would be able to return to the construction area once construction has ceased. No mitigation measures would be necessary.

The Proposed Action would remove vegetation in mule deer winter grazing range in the Hungry Ridge area. This would temporarily reduce available forage (Table 4-15) and may temporarily displace mule deer. Because the disturbance width is not expected to exceed 30 feet, it is not likely that temporarily removing vegetation would result in observable habitat fragmentation. Implementing the following mitigation would reduce the potential for impacts.

Table 4-14
Wildlife Habitat Affected

Alternative and Impact duration	Wildlife Habitat Community							
	Sage Brush	Salt Desert Scrub	Greasewood	Juniper Woodland	Riparian/Truckee River	Fire-Affected*	Developed/Ruderal*	Agricultural
Proposed Action								
Short-Term	89.4	21.8	9.8	30.6	0.1	103.1	100.8	0
Long-Term	16.5	1.5	1.4	4.54	0	5.7	3.2	0
Northern Alternative								
Short-Term	190	0.4	3.2	7.8	0.1	123.4	149	0
Long-Term	13.9	0	1.4	2.6	0	5.2	5.1	0
Calle de la Plata Alternative								
Short-Term	141	21.8	9.8	59	0.1	94.9	105.7	0
Long-Term	13.9	1.5	0	6.6	0	3.2	3.8	0
Foothills Alternative								
Short-Term	79.1	0.4	3.2	54.2	0.1	129.1	194.5	0
Long-Term	10.5	0	1.4	3.25	0	7.1	10.9	0
Southern Alternative								
Short-Term	61.3	0.4	9.8	54.2	0.1	85.7	182.8	0
Long-Term	9.8	0	1.4	3.2	0	4.5	5.5	0
Existing Corridor Alternative								
Short-Term	31.6	0	3.2	0	0.1	42.6	154.4	1.8
Long-Term	6.3	0	1.4	0	0	0	3.2	0

*Fire-affected and developed/ruderal wildlife habitats would have a minimal effect on wildlife.

Table 4-15
Transmission Line Length Within Mule Deer Winter Grazing Range

Alternative	Miles	Temporary Impacts (Acres)	Long-Term Impacts (Acres)
Proposed Action	1.4	5.09	2.55
Northern Alternative	0	0	0
Calle de la Plata Alt.	1.4	5.09	2.55
Foothills Alternative	2.8	10.18	5.09
Southern Alternative	2.0	7.27	3.64
Existing Corridor Alternative	0	0	0

The Proposed Sugarloaf Substation would occupy approximately 2.5 acres of both developed/ruderal and sagebrush communities. This could affect wildlife that occupy this habitat, such as coyote, black-tailed jackrabbit, and sage thrasher. No mitigation measures would be necessary because, the amount of sagebrush habitat affected is small relative to the surrounding area. The substation may pose an electrocution hazard for some birds. The wires, bus work, and support structures would attract some bird species as they provide potential roosting, perching, and nesting sites. Birds may be electrocuted when making conductor-to-conductor or conductor-to-ground contact with uninsulated equipment. The Proposed Reno-Stead Airport Substation would occupy approximately 2.5 acres of sagebrush habitat. The impacts on wildlife would be similar to those described for the Proposed Sugarloaf Substation.

Northern Alternative

Table 4-14 lists the temporary and long-term impacts on wildlife habitat from this alternative. Other potential impacts and mitigation measures are described under the Proposed Action.

Calle de la Plata Alternative

Table 4-14 lists the temporary and long-term impacts on wildlife habitat from this alternative. Impacts to mule deer winter grazing range are similar to those described under the Proposed Action (Table 4-15). Other potential impacts and mitigation measures are described under the Proposed Action.

Southern Alternative

Table 4-14 lists the temporary and long-term impacts on wildlife habitat from this alternative. Impacts to mule deer winter grazing range are greater than those described under the Proposed Action (Table 4-15). The Southern Aternative crosses the Hungry Ridge mule deer winter grazing range near its southernmost extent. Other potential impacts and mitigation measures are described under the Proposed Action.

Foothills Alternative

Table 4-14 lists the temporary and long-term impacts on wildlife habitat from this alternative. Impacts to mule deer winter grazing range are approximately double those described under the Proposed Action (Table 4-15). The Foothills Alternative crosses the Hungry Ridge mule deer winter grazing range near its southernmost extent. Other potential impacts and mitigation measures are described under the Proposed Action.

Existing Corridor Alternative

Table 4-14 lists the temporary and long-term impacts on wildlife habitat from this alternative. Other potential impacts and mitigation measures are described under the Proposed Action.

Alternative Sugarloaf Substation

The Alternative Sugarloaf Substation would occupy an urban lot adjacent to a grocery store and Pyramid Lake Highway. The 2.5 acres of land needed for the substation would require the removal of some native plant species, but most of the site is characterized as

developed/ruderal. As a result, there is minimal use of the area by native wildlife. Impacts on wildlife resources would be negligible.

Alternative Reno-Stead Airport Substation

The Alternative Reno-Stead Airport Substation would occupy approximately 2.5 acres of sagebrush habitat. The impacts on wildlife resources would be similar to those described for the Sugarloaf Substation.

No Action Alternative

There would be no impacts on wildlife resources as a result of the No Action Alternative.

Mitigation and Monitoring Measures

Areas where vegetation is removed would be reseeded with appropriate plant species as described in the Reclamation Plan (Appendix B). Monitoring measures described in the Reclamation Plan would be implemented to ensure successful reclamation.

Bird flight diverters would be installed on static (uppermost wire) lines that parallel Moya Boulevard and the east to west portions of Osage Road near Silver Lake. Flight diverters should be of a design that improves the ability of birds to see the line in all light levels. The number and color configurations recommended by the manufacturer or researchers should be used. Diverters should be maintained or replaced for the life of the project.

Before construction begins in the Hungry Valley, Hungry Ridge, and Lemmon Valley areas, they should be surveyed for nesting raptors. If any are observed within one mile, construction and land clearing would be avoided until the nests are no longer active. If it were necessary to remove trees containing raptor nests, it would be done outside the nesting period.

Where feasible, land would be cleared outside the avian breeding season. In areas where land is cleared during the avian breeding season, a qualified biologist would survey the area. If active nests are located, or if other evidence of nesting is observed, a protective buffer would be delineated and the area would be avoided until nests were no longer active. The size of the buffer would be determined based on specific species requirements.

Construction within the Hungry Ridge mule deer winter grazing range would be scheduled outside the winter season, from approximately November 1 through April 15th.

Residual Impacts

After reclamation and revegetation, residual impacts resulting from vegetation removal and surface disturbance would be minor. Residual impacts would include increased potential bird collisions and electrocutions associated with the presence of new transmission lines and substations.

SPECIAL STATUS SPECIES

Summary

Impacts on special status species are generally associated with disturbances to individuals, populations, or habitat, as defined by the Endangered Species Act and BLM guidance on sensitive species. The only federally protected species that may be affected as a result of this project are the Carson wandering skipper (federally listed endangered butterfly) and Webber's ivesia (candidate for listing). The Carson wandering skipper occurs in grassland habitats potentially found near the Northern Alternative. A dedicated ACEC for this species is approximately five miles north of the Northern Alternative. As a result, it would not likely be affected. The Webber's ivesia is a plant species generally found in volcanic ash substrate in sagebrush scrub habitat. This species may occur in sagebrush habitats along any of the alternatives being considered. Sagebrush habitats would be surveyed to determine the presence or absence of this species before ground-disturbing activities begin.

Additionally, removing vegetation and engaging in other surface-disturbing activities may affect a few other special status species. In sagebrush habitats, the pygmy rabbit and sage grouse may be affected. Impacts to special status species are summarized in Table 4-16. All alternatives pass through portions of the Pah Rah sage grouse range, as identified by NDOW. Field investigators concluded that sage grouse are unlikely to occur in these areas due to a lack of suitable habitat. Sage grouse have been documented as avoiding areas within two miles of transmission lines. As a result, if the sage habitat in these areas improves to a level suitable for sage grouse, the presence of transmission lines could preclude the reintroduction of sage grouse to the area. The BLM is developing plans to rehabilitate sage grouse habitat in this area. Mitigation measures, including habitat monitoring and installing perch deterrents, would mitigate for these potential impacts.

In grassland habitats, western burrowing owl may be affected, if any are present. Juniper habitats may contain populations of altered andesite buckwheat, Ames milkvetch, Margaret's rushy milkvetch, and Sierra Valley mousetails.

Sensitive bat species potentially occurring in the area include the spotted bat, western small-footed myotis, long-legged myotis, and big brown bat. Roosting habitat for these species would not likely be affected. However, surface-disturbing activities and vegetation removal may temporarily reduce foraging habitat for species that glean insects from vegetation.

Table 4-16
Summary of Potential Special Status Species Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Impacts to sage grouse (not likely to occur in project area)	○/◐	○/◐	○/◐	○/◐	○/◐	○/◐	○/◐	○/◐	○/◐	○/◐	○
Impacts to pygmy rabbit (no suitable habitat observed)	○	○	○	○	○	○	○	○	○	○	○
Impacts to special status plant species (not observed during 2002-2003 surveys)	◐	○	○	◐	◐	◐	◐	◐	○	○	○
Impacts to special status invertebrate species (if present)	○	○	○	◐	○	○	○	○	○	○	○
Potential impacts on eagles and other raptors (if present during construction)	◐	○	○	◐	◐	◐	◐	◐	○	○	○

LEGEND:

● = Major ◐ = Moderate ◐ = Minor ○ = Negligible + = Beneficial **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

Two special status wildlife species are associated with sagebrush habitats. The pygmy rabbit is a federal species of concern associated with burrows in deep loose soils in tall sagebrush habitat. The sage grouse also uses sagebrush habitats for foraging, mating, and nesting. Surface-disturbing construction in sagebrush habitat would temporarily reduce habitat for these species and could affect individuals. Table 4-14 presents the amount and types of vegetation to be affected by ground-disturbing activities. Because these two species are mobile, it is likely that individuals would move outside the construction area. Based on Tetra Tech surveys little suitable habitat exists for the pygmy rabbit in the study area.

Under the Proposed Action, a new transmission line would be constructed through the Pah Rah sage grouse range. Field investigators concluded that sage grouse are unlikely to occur in the vicinity of the Proposed Action due to the current lack of suitable habitat. Sage grouse have been documented as avoiding areas within two miles of transmission lines due to raptor and raven predation. If sage habitat conditions improve to a level suitable for sage grouse, the existence of a transmission line could prevent sage grouse from occupying the area along the transmission line. Mitigation measures, including monitoring and installing perch deterrents, are described at the end of this section.

Four plant species of special concern associated with juniper vegetation communities may be found in the

project area. Table 4-14 shows the amount of juniper habitat to be affected for each alternative. These are altered andesite buckwheat, Ames milkvetch, Margaret's rushy milkvetch, and Sierra Valley mousetails. Tetra Tech observed no suitable habitat for the altered andesite buckwheat along any of the alternatives. If present, surface-disturbing activities, including motorized vehicle use on the ROW, in juniper habitats could affect individuals or populations of these plant species. Mitigation measures that include surveys in juniper habitats and avoidance are described at the end of this section.

Burrowing owls are known to occur in the Hungry Ridge area, but no suitable habitat was observed during Tetra Tech's field surveys. However, burrowing owls may be found in open habitats near the Proposed Action area. If owls are present in or near construction areas, surface-disturbing activities would temporarily reduce their habitat and could affect their burrows. The temporary reduction in habitat would be minimal compared to surrounding available habitat.

Webber's ivesia is a candidate for listing under the ESA. This plant species is associated with sagebrush habitats and may be found along the Proposed Action. Within the construction corridor of the Proposed Action are 89.4 acres of sagebrush habitat, and surface-disturbing activities, including motorized vehicle use on the ROW, there could affect this species (if present).

There are no sensitive species present at the Proposed Sugarloaf Substation or the Proposed Reno-Stead Airport Substation sites.

Northern Alternative

Potential impacts in juniper and sagebrush habitats would be similar to those described under the Proposed Action. Under the Northern Alternative the habitat types affected would include juniper (7.8 acres) and sagebrush (190 acres) (Table 4-14).

The federally listed endangered Carson wandering skipper occurs in grassland habitats and may be found in the project area, although the ACEC for this species is five miles north of the Northern Alternative. During initial surveys, no grassland habitats were specifically identified along this route. If present, removing grassland vegetation during construction would temporarily reduce the amount of habitat available to this species, if it is present in the area. Mitigation measures including surveys for Carson wandering skipper and reclamation of habitats are described at the end of this section and in the Reclamation Plan (Appendix B).

The Pah Rahs and Griffith Canyon provide potential habitat for golden eagle nesting. Additionally, two golden eagle nests were observed in the northern part of the Hungry Ridge area, on rock outcrops. Construction activities within two miles of active golden eagle nests could disturb its nesting and foraging. In order to avoid impacts on golden eagles, mitigation measures described at the end of this section would be implemented.

Calle de la Plata Alternative

Potential impacts in grassland, juniper, and sagebrush habitats would be similar to those described under the Proposed Action. Potential impacts on sage grouse are similar to those described under the Proposed Action. Under the Calle de la Plata Alternative, the habitat types temporarily affected would include juniper (59 acres) and sagebrush (141 acres) (Table 4-14).

Foothills Alternative

Potential impacts in grassland, juniper, and sagebrush habitats would be similar to those described under the Proposed Action. Potential impacts on sage grouse are similar to those described under the Proposed Action. Under the Foothills Alternative, the habitat types. affected would be juniper (54.2 acres) and sagebrush (79.1 acres) (Table 4-14).

Southern Alternative

Potential impacts in grassland, juniper, and sagebrush habitats would be similar to those described under the Proposed Action. Potential

impacts on sage grouse are similar to those described under the Proposed Action. Under the Southern Alternative, the habitat types temporarily affected would be juniper (54.2 acres) and sagebrush (61.3 acres) (Table 4-14).

Existing Corridor Alternative

Potential impacts in grassland, juniper, and sagebrush habitats would be similar to those described under the Proposed Action. Potential impacts on sage grouse are similar to those described under the Proposed Action, but a smaller area of the Pah Rah sage grouse range would be affected. Under the Existing Corridor Alternative, 45.3 acres of sagebrush habitat would be temporarily affected (Table 4-14).

Alternative Sugarloaf Substation

There are no sensitive species present at the site.

Alternative Reno-Stead Airport Substation

There are no sensitive species present at the site.

No Action Alternative

No impacts on special status species would result from the No Action Alternative.

Mitigation and Monitoring Measures

Following surface-disturbing activities in sagebrush habitats, the area would be replanted with sagebrush type native species. The selected route would be surveyed for the presence of pygmy rabbit prior to any vegetation clearing or ground disturbing activities. If pygmy rabbit is found to be present, the BLM would initiate Section 7 consultation with the USFWS.

Perch deterrents would be required for all transmission towers within the Pah Rah sage grouse range to mitigate for potential raptor and raven predation on sage grouse (Figure 4-1). Also, within the Pah Rah sage grouse range, sage habitat would be assessed during the periodic grazing allotment evaluations to determine sage grouse habitat suitability. Trends documenting the reestablishment of sage habitat, suitability for sage grouse and presence of sage grouse would be recorded.

Juniper habitats would be surveyed for altered andesite buckwheat, Ames milkvetch, Margaret's rushy milkvetch and Sierra Valley mousetails before surface-disturbing activities begin, and, if present, measures would be implemented to avoid impacts on these plants.

Prior to surface-disturbing activities in open habitats in the Hungry Ridge area, a biologist would survey the area for active owl burrows, and if active burrows are present, measures would be implemented to avoid impacts. In addition, following construction, the area would be reseeded with native plant species where vegetation has been removed.

Sagebrush habitats potentially containing Webber's ivesia would be surveyed prior to surface-disturbing activities, and, if it is present, measures would be implemented to avoid impacts on the population. In addition, BLM would consult with USFWS regarding this species prior to final approval of the COM Plan.

Before grassland vegetation is removed under the Northern Alternative, a biologist would survey the area for Carson wandering skipper. Additionally, following construction, the area would be reseeded with grassland species suitable for Carson wandering skipper. If present, BLM would consult with USFWS regarding this species prior to final approval of the COM plan.

In areas where special status plant species are found, mitigation measures to protect individual populations would be implemented. Measures could include the installation of fencing to protect against vehicle impacts along the ROW.

Under the Northern Alternative Construction and land-disturbing activities would be avoided during the golden eagle nesting period (March 1 to July 30) in areas within two miles of active golden eagle nests. A biologist would examine nests to determine activity prior to construction.

Residual Impacts

Implementing monitoring and mitigation measures would result in no anticipated residual impacts on sensitive species resources.

RANGE RESOURCES

Summary

Short-term construction impacts could affect range resources on land within any of the route or substation alternatives as summarized in Table 4-17. These impacts would be temporary, as revegetation would open up most disturbed areas to grazing. Long-term removal of foraging opportunities would be limited and in most cases affect less then two AUMs. Construction activities could impact any range improvements within the ROW.

Table 4-17
Summary of Potential Range Resources Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Temporary impacts on grazing allotments	○	○	○	○	○	○	○	○	○	○	○
Long-term impacts on grazing allotments	◐	○	○	◐	◐	◐	◐	○	○	◐	○
Impacts to AUMs	◐	○	○	◐	◐	◐	◐	○	○	◐	○
Impacts to range improvements	◐	○	○	◐	◐	◐	◐	○	○	◐	○

LEGEND:

● = Major ◐ = Moderate ◐ = Minor ○ = Negligible + = Beneficial **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

The transmission line would pass through five grazing allotments; Spanish Springs/ Mustang, Paiute, Plumas Station, Antelope Mountain, and Wedekind. Table 4-18 provides the approximate miles of transmission line per allotment and the temporary loss of public land in acres and Table 4-19 provides the projected long-term lost of grazing area and associated AUMs.

Construction of the Proposed Action would temporarily occupy 38.45 acres in the Spanish Springs/Mustang Allotment, 90.40 acres in the Paiute allotment, 1.79 acres in the Plumas Station Allotment, and 28.37 acres of the Wedekind allotment. The route would permanently occupy 3.90 acres in the Paiute allotment and 4.57 acres of the Wedekind allotment. The total number of AUM lost would be 1.51. This would be a minor impact and not require mitigation.

A variety of range improvements may be found on land that the transmission line may follow. Range improvements include but are not limited to fences and gates. In areas where construction of the transmission line and improvements coincide, sections may need to be removed or opened to accommodate construction traffic.

The proposed substations would be located on private land and not impact livestock grazing.

Northern Alternative

The proposed northern transmission line route would pass through six grazing allotments; Spanish Springs/Mustang, Paiute, Red Rock, Antelope

Table 4-18
Approximate Lengths of Transmission Line and Temporary Acreage of Disturbance of Grazing Allotments on Public Land

Allotments	Length of Route (miles)	Temporary Disturbance (acres)[1]
Proposed Action-		
Spanish Springs Mustang	4.64	38.45
Paiute	3.23	90.40
Antelope Mountain	0	0
Plumas Station	0.49	1.79
Wedekind	3.25	28.37
Northern Alternative-		
Spanish Springs Mustang	4.64	38.45
Paiute	5.21	74.97
Red Rock	0.85	31.13
Antelope Mountain	0	0
Plumas Station	0.77	19.06
Wedekind	0.49	1.79
Calle de le Plata Alternative-		
Spanish Springs Mustang	4.64	38.45
Paiute	3.42	101.47
Antelope Mountain	0	0
Plumas Station	0.49	1.79
Wedekind	3.25	38.18
Foothills Alternative-		
Spanish Springs Mustang	4.64	38.45
Paiute	7.05	85.22
Plumas Station	0.28	17.27
Wedekind	4.66	83.99
Southern Alternative-		
Spanish Springs Mustang	4.64	38.45
Paiute	2.73	36.77
Wedekind	4.66	83.99
Existing Corridor Alternative-		
Spanish Springs Mustang	0.89	3.25
Wedekind	2.92	94.26

Temporary Acreages include routes, stringing areas, and staging areas along public land.

Table 4-19
Approximate Length of Route, Long-term Loss of Land, and Loss of AUMs.

Allotments	Length of Route (miles)	Long-term loss of undisturbed land (acres)	Loss of AUMs
Proposed Action-			
Spanish Springs Mustang	4.64	0.00	0.00
Paiute	3.23	3.90	0.26
Plumas Station	0.49	0.00	0.00
Wedekind	3.25	4.57	1.25
Northern Alternative-			
Spanish Springs Mustang	4.64	0.00	0.00
Paiute	5.21	9.49	0.64
Red Rock	0.85	1.53	0.20
Plumas Station	0.77	0.00	0.00
Wedekind	0.49	0.00	0.00
Calle de le Plata Alternative-			
Spanish Springs Mustang	4.64	0.00	0.00
Paiute	3.42	5.90	0.40
Plumas Station	0.49	0.00	0.00
Wedekind	3.25	4.57	1.25
Foothills Alternative-			
Spanish Springs Mustang	4.64	0.00	0.00
Paiute	7.05	10.78	0.72
Plumas Station	0.28	0.00	0.00
Wedekind	4.66	2.13	0.58
Southern Alternative-			
Spanish Springs Mustang	4.64	0.00	0.00
Paiute	2.73	1.16	0.08
Wedekind	4.66	2.13	0.58
Existing Corridor Alternative-			
Spanish Springs Mustang	0.89	0.00	0.00
Wedekind	2.92	0.00	0.00

Mountain, Plumas Station, and Wedekind (Table 4-18). Construction of the Northern Alternative would temporarily occupy 38.45 acres of the Spanish Springs/Mustang allotment, 74.97 acres of the Paiute allotment, 31.13 acres of the Red Rock allotment, 19.06 acres of the Plumas Station allotment, and 1.79 acres of the Wedekind allotment. This action would only create a temporary impact, as disturbed grazing areas would be revegetated after construction.

The Northern Alternative would permanently occupy 9.49 acres in the Paiute allotment and 1.53 acres of the Red Rock allotment. The total number of AUM losses along the Northern Alternative would be less then one. The long-term loss of acres and AUMs would be a minor impact and not require mitigation.

Calle de la Plata Alternative

The proposed Calle de la Plata transmission line route would pass through five grazing allotments; Spanish Springs/Mustang, Paiute, Plumas Station, Antelope Mountain, and Wedekind (Table 4-18). Construction of the Calle de la Plata Alternative would temporarily occupy 38.45 acres of the Spanish Springs/Mustang allotment, 101.47 acres of the Paiute allotment, 1.79 acres of the Plumas Station allotment, and 38.18 acres of the Wedekind allotment. This action would only create a temporary impact as disturbed grazing areas would be revegetated after construction.

This alternative would permanently occupy 5.90 acres in the Paiute allotment and 4.57 acres of the Wedekind allotment. The total number of AUM

losses along the Calle de la Plata Alternative would be 1.65. The long-term loss of acres and AUMs would be a minor impact and not require mitigation.

Southern Alternative

The proposed southern transmission line Alternative would pass through three grazing allotments; Spanish Springs/ Mustang, Paiute, and Wedekind (Table 4-18). Construction of the Foothills Alternative would temporarily occupy 38.45 acres of the Spanish Springs/Mustang allotment, 36.77 acres of the Paiute allotment, and 83.99 acres of the Wedekind allotment. This action would only create a temporary impact as disturbed grazing areas would be revegetated after construction.

The Southern Alternative would permanently occupy 1.16 acres in the Paiute allotment and 2.13 acres of the Wedekind allotment. The total number of AUM losses along the Southern Alternative would be less then one. The long-term loss of acres and AUMs would be a minor impact and not require mitigation.

Foothills Alternative

The proposed foothills transmission line route would pass through four grazing allotments; Spanish Springs/ Mustang, Paiute, Plumas Station and Wedekind (Table 4-18). Construction of the Foothills Alternative would temporarily occupy 38.45 acres of the Spanish Springs/Mustang allotment, 85.22 acres of the Paiute allotment, 17.27 acres of the Plumas Station allotment, and 83.99 acres of the Wedekind allotment. This action would only create a temporary impact as disturbed grazing areas would be revegetated after construction.

The Foothills Alternative would permanently occupy 10.78 acres in the Paiute allotment and 2.13 acres of the Wedekind allotment. The total number of AUM losses along the Foothill Alternative would be 1.30. The long-term loss of acres and AUMs would be a minor impact and not require mitigation.

Existing Corridor Alternative

The proposed existing corridor transmission line route would pass through three grazing allotments; Spanish Springs/ Mustang, Paiute, and Wedekind (Table 4-18). Construction of the Existing Corridor Alternative would temporarily occupy 3.25 acres of the Spanish Springs/Mustang allotment and 94.26 acres of the Wedekind allotment. This action would only create a temporary impact as disturbed grazing areas would be revegetated after construction. The Existing Corridor Alternative would not permanently occupy any public land in either the Paiute or Wedekind allotments; therefore, there would be no loss of AUMs and no mitigation required.

Alternative Sugarloaf Substation

The Alternative Sugarloaf Substation would be constructed upon 2.5 acres of private land and would not impact livestock grazing.

Alternative Reno-Stead Airport Substation

The proposed Alternative Reno-Stead Airport Substation would be constructed upon 2.5 acres of public land within the Plumas Station Grazing Allotment. Construction of the substation would be temporary and would create a minimal impact on public grazing.

No Action Alternative

Under the no action alternative temporary impacts on grazing acreage as a result of project construction would not occur. However, range resource impacts could occur in other areas, as SPPCo would begin planning efforts to pursue other transmission and/ or generation projects to meet the need of the project.

Mitigation and Monitoring Measures

BLM range managers and SPPCo will coordinate with permittees to locate range improvements along the selected transmission line route. SPPCo shall ensure that all temporary openings have barriers across them to prevent the movement of livestock off public and private land. SPPCo shall repair all damaged or removed improvements after completion of construction activities.

Residual Impacts

No residual impacts are anticipated as a result of the Proposed Action and mitigation measures.

AESTHETIC RESOURCES AND NOISE

Summary

Aesthetic Resources

As part of the Proposed Action and alternatives, SPPCo would replace existing distribution line segments with the proposed transmission line segments, which would be taller and would have more lines. The replacement poles would be aesthetically and structurally similar to the existing poles. These changes in appearance would have minor impacts. Impacts to aesthetic resources are summarized in Table 4-20.The Proposed Action and alternatives would also involve erecting new transmission line segments and constructing new access roads and substations. For developed areas, the poles, lines, access roads, and substations would be similar to other cultural modifications, such as telephone poles and buildings. This would enable the Proposed Action's components to blend in with its surroundings, resulting in long-term minor impacts.

For sparsely developed and undeveloped areas, the poles, lines, access roads, and substations at times would be too distant to see from most areas frequented by the public, would be obstructed by hills, would be near roadways, offering limited viewing time, or would be constructed within an existing utility corridor. This would result in long-term minor impacts. However, there would be locations where readily apparent impacts on visual resources would occur. These locations would be east of La Posada for the Proposed Action, Southern Alternative, and Foothills Alternative and northwest of Matterhorn Boulevard for the Proposed Action and Calle de la Plata Alternative. Mitigation consists of designing and constructing the access roads to switchback up the hills.

The Foothills Alternative would involve constructing the most number of new transmission line segments on or next to lands with a Class III VRM designation, and the Calle de la Plata Alternative would involve constructing the second most number of new segments. This Existing Corridor Alternative would provide the highest degree of compliance with the visual policies of the RUCR. It would also have the fewest visual impacts because new transmission line segments would be constructed next to or would be replacing existing line segments.

The Alternate Sugarloaf Substation would have fewer visual impacts than the Proposed Sugarloaf Substation because construction of the Alternate Sugarloaf Substation would result in infill development of an open lot surrounded by commercial and residential development instead of development of the mostly open undeveloped area of the Proposed Sugarloaf Substation. Neither of the Reno-Stead Airport Substation sites would be more favorable with respect to impacts on visual resources.

Noise

Neither the Proposed Action nor the alternatives would result in major permanent impacts on ambient noise levels during operations as summarized in Table 4-21. Unlike larger transmission line projects, the lines associated with all of the routes transmit electricity soundlessly, so there would be no long-term noise impacts on ambient noise levels during operation of the transmission lines. However, there would be minor temporary impacts on ambient noise levels during construction of transmission line routes and substations within populated areas.

Table 4-20
Summary of Potential Aesthetic Resources Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Impact to BLM land VRM designations	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	○
Impact to non-BLM land	◑	◐	◐	◐	◑	◑	◑	◐	◐	◐	○
Impact to regional visual policies	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	○

LEGEND:

● = Major ◐ = Minor + = Beneficial
◑ = Moderate ○ = Negligible **N/A** = Not applicable

Table 4-21
Summary of Potential Noise Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Impact to ambient noise levels	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	○

LEGEND:

● = Major ◐ = Minor + = Beneficial
◑ = Moderate ○ = Negligible **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

Bureau of Land Management Visual Resources

Figures F1a, F1b, F2a, F2b, F3a, and F3b in Appendix F show the existing and simulated views involving BLM land for the Proposed Action. Figures F1a and F1b from KOP 1 (see Figure 3-7) are a southeastward view from the eastern end of La Posada and provide a simulated view for the Proposed Action. The BLM land closest to the east of KOP 1 has a Class III VRM designation and is approximately one mile away. The simulated view identifies how the visibility of the poles and lines diminishes as the distance from the KOP increases. This level of change to visual resources from the transmission line segment would conform to changes allowed in areas with a Class III VRM designation. Therefore, visual impacts from the transmission line segment on BLM land from KOP 1 would be minor.

The access road would be wider and, therefore, more noticeable than the poles on the BLM land to

the east of KOP 1. Also, the land to the east of KOP 1 gradually slopes upward, allowing for easier visibility of the access road. The access road would represent a noticeable, new cultural modification to the undeveloped area and would be visible to residents of Spanish Springs to the west. This level of change to visual resources would result in a noticeable permanent change to an area with a Class III VRM designation, and mitigation would be required to minimize impacts.

Figures F2a and F2b from KOP 2 are a southwestward view from one of the primary roads exiting the Reno-Sparks Indian Colony and provides a simulated view for the Proposed Action. The local terrain is rolling, and the road is curvilinear, offering sporadic views of the transmission line segment and access road. Also, the colony road is one of few vantage points in the area offering views of the transmission line segment and access road to the south of the colony. Therefore, visual impacts on land south of the colony from KOP 2 would be minor.

Figures F3a and F3b from KOP 3 are a northwestward view from Matterhorn Boulevard and provides a simulated view for the Proposed Action. The transmission line segment and access road would cross BLM land with a Class IV VRM designation. The BLM land is visible in the top of figures. The transmission line segment and access road would represent a new cultural modification to the undeveloped area and would be visible to motorists along Matterhorn Boulevard. The transmission line segment would not parallel the road, offering extended viewing opportunities, but rather would cross the road, limiting the duration of adjacent views. Transmission line poles and cross arms similar in color to the surrounding landscape would be used. The poles would cross the saddle of the ridge and not the hilltop, which would reduce its visibility. Due to distance, the poles near the top of the ridge would not be readily apparent from the KOP.

The access road would be wider and, therefore, more noticeable than the poles on the BLM land to the northwest of KOP 3. Also, the land to the northwest of KOP 3 rises dramatically, allowing for easier visibility of the access road. The access road would represent a noticeable, new cultural modification to the undeveloped hillside. This level of change to visual resources would result in a noticeable permanent change to the hillside, and mitigation would be required to minimize impacts.

Non-Bureau of Land Management Visual Resources

The Proposed Action would involve constructing a new transmission line segment between the Proposed Sugarloaf Substation and the Hungry Ridge foothills to the west. This segment would be approximately three-quarters of a mile from the highway. Also, the poles would be wood or weathering steel to allow them to blend in with the background of the hills and vegetation, so impacts on visual resources would be minor.

The poles for the transmission line along the western perimeter of the airport would be no greater than 50 feet tall at the end of the runway. The transmission line would not be immediately adjacent to the residences along Osage Road but rather would be set back on airport property. The centerline of the study corridor, which would ideally be the same as the new transmission line, is 25 feet inside the western edge of the airport property. This is the same distance in from the property line as the existing distribution line. When viewed from Osage Road, the foreground-middleground distance zone is not void of other structures. Other airport structures, such as buildings, runways, and air racecourse pylons are visible, so the transmission line would not be the first cultural modification to the area. Also, the western perimeter of the Reno-Stead Airport is designated for use by public facilities, so impacts on visual resources along most of the western perimeter of the Reno-Stead Airport would be minor.

The aesthetics of non-BLM land north and east of Silver Lake include lowland depressions where water

collects and aquatic plants grow, paved roads (such as Moya Boulevard), and industrial and shipping warehouses. Silver Lake is an ecologically sensitive area popular for bird watching. When the transmission line segment passes closest to Silver Lake, it would also be adjacent to industrial and shipping warehouses and would blend in with the developed nature of these areas. Also, there are few residential areas with views of this segment, so impacts on visual resources north and east of Silver Lake would be minor.

The non-BLM land east of La Posada is composed of rolling hills with short light brown to dark green vegetation and is vacant of cultural modifications. The transmission line segment and access road would cross over the hills east of La Posada. From the eastern end of La Posada, the visibility of the poles and lines to the east would diminish as the distance from La Posada increases. The access road would be wider and, therefore, more noticeable than the poles to the east. Also, the land to the east gradually slopes upward, allowing for easier visibility of the access road. This road would represent a noticeable, new cultural modification to the undeveloped hills to the east and would be visible to residents of Spanish Springs to the west. This level of change to visual resources would result in a readily apparent permanent change and would require mitigation.

The non-BLM land northeast of the Reno-Stead Airport is composed of rolling hills with short light brown to dark green vegetation and is vacant of cultural modifications, with the exception of the air race course pylons in the foreground-middleground distance zone when viewed from Antelope Valley Road, Red Rock Road, and Osage Road. The transmission line segment and access road would cross northwestward over the top and down the hills northeast of the airport and toward Red Rock Road. As the new transmission line segment and access road approach Red Rock Road and Antelope Valley Road, they would become increasingly visible. However, the foreground poles and lines when viewed from Red Rock Road are expected to blend in with the existing poles and lines along Red Rock Road. These changes in appearance would have minor impacts.

As part of the Proposed Action, SPPCo would also replace existing distribution line segments with the proposed transmission line segments along La Posada and Pyramid Highway, between the proposed Sugarloaf Substation and Pyramid Highway, through Hungry Valley, along Red Rock Road, and north of Silver Lake. The proposed transmission line segments would be taller and would have more lines. The replacement poles would be aesthetically and structurally similar to the existing poles. These changes in appearance would have minor impacts.

It is worth noting that unlike the transmission line segments along La Posada, along Red Rock Road, and north of Silver Lake, the segment along Pyramid Highway would be the most visible because of the volume of traffic along the highway and nearby residences. However, the developed community of Spanish Springs would flank most of the proposed transmission line segment along the highway. The proposed transmission line segment along the highway would minimally affect the already reduced opportunity for expansive views of the surrounding landscape as a result of the developed nature of the land on both sides of this portion of the highway; therefore, these changes in appearance would still have minor impacts.

Proposed Sugarloaf Substation

The substation would not be in the vicinity of residences along Pyramid Highway but would be set back approximately three-quarters of a mile from the highway. From certain locations along the highway, the substation would be shielded from view by a building between the highway and the substation. Substation design would use low profile components. The fencing materials, equipment, and structures within the substation would be nonreflective, where possible. Where feasible, equipment would be painted a BLM-approved color to blend in with predominant vegetation and soil

types. Existing vegetation outside of the proposed substation site and access road location would be preserved to the extent possible. After construction, disturbed areas would be revegetated. Night lighting at the substation would be limited to emergency maintenance or repairs. No night lighting would be used during normal operation of the substation, so there would be minor impacts on the aesthetic quality of the surrounding area.

Proposed Reno-Stead Airport Substation

The substation would not be immediately adjacent to the residences along Osage Road or Red Rock Road but would be set back approximately three-quarters of a mile and on airport property at a lower elevation than the road, minimizing direct views of it. Substation design would use low profile components. The fencing materials, equipment, and structures within the substation would be nonreflective, where possible. Where feasible, equipment would be painted a BLM-approved color to blend in with predominant vegetation and soil types. Existing vegetation outside of the proposed substation site and access road location would be preserved to the extent possible. After construction, disturbed areas would be revegetated. Night lighting at the substation would be limited to emergency maintenance or repairs. No night lighting would be used during normal operation of the substation, so there would be minor impacts on the aesthetic quality of the surrounding area.

Regional Visual Policies

There would be approximately six new transmission line segments constructed and approximately seven transmission line segments that would use existing overhead lines under the Proposed Action. There is a general balance between using current overhead lines and constructing new lines. The development of this route took into account the use of existing overhead lines and avoids constructing new transmission line segments that bisect populated areas; instead, new transmission line segments would be constructed around the perimeter of settled areas. One new transmission line segment near Deodar Way crosses a hilltop near a settled area in northern Lemmon Valley. Where possible, other utility lines would be collocated with the transmission line poles to reduce the number of poles in an area; therefore, there would be minor impacts on visually based policies in the RUCR.

As little land as possible would be disturbed to construct, operate, and maintain the substations under safe conditions. The siting of the substations takes advantage of existing features to shield them from view. From certain locations along the highway, the Sugarloaf Substation would be shielded from view by a building between it and the highway. The Reno-Stead Airport Substation would not be immediately adjacent to the residences along Osage Road or Red Rock Road but would be set back approximately three-quarters of a mile and on airport property at a lower elevation than the road, minimizing direct views of it from the road. Substation design would use low profile components. The fencing materials, equipment, and structures within the substation would be nonreflective, where possible. Where feasible, equipment would be painted a BLM-approved color to blend in with predominant vegetation and soil types. Vegetation outside of the proposed substation site and access road location would be preserved to the extent possible. After construction, disturbed areas would be revegetated. No night lighting would be used during normal operation of the substation, and lighting would be limited to emergency maintenance or repair activities. As a result, there would be minor impacts on policies in the RUCR.

In order to comply with development standards and requirements pertaining to visual resources mandated by the *Washoe County Comprehensive Plan* and *Washoe County Development Code*, the Proposed Action would coordinate its activities with the Washoe County Department of Community Development. This would include, but would not be limited to, submitting plans and design drawings to the department. The drawings would identify, for example, the new poles and lines that would be constructed east of La Posada. These poles and lines would not run along the top of the protected

ridgeline but rather up and over it, minimizing visual impacts from development. There would be no impacts on visual resource policies in the *Washoe County Comprehensive Plan* and *Washoe County Development Code* from the Proposed Action.

Noise

The operation of the transmission lines does not require personnel to be on-site permanently. Also, unlike larger transmission line projects, the lines associated with all of the routes do not make sounds during the transmission of electricity, so there would be no impacts on ambient noise levels. The proposed substations would be in remote locations and away from sensitive receptors. The construction and maintenance of the transmission lines and substations would involve noise-making activities from blasting and equipment used for drilling, earth moving, and hauling. This would occur along the transmission routes, along rights-of-way, in staging areas, and at substations.

The peak construction period is expected to last about six months for each phase of construction (assuming overhead construction) and to employ approximately 50 workers. Because of the linear nature of the project, workers, noise-making activities, and equipment are not expected to be in one place for a long amount time. Also, noise from blasting would be limited in frequency and would be short term (less than half a second).

To minimize impacts on ambient noise levels when near noise-sensitive receptors, SPPCo's standard work procedures include limiting activities producing noise to Monday through Saturday from 7:00 AM to 5:00 PM. Otherwise, work may occur for 12-hours per day on every day of the week. The specified hours of construction and maintenance would not apply to driving on access roads or work that does not substantially exceed exterior ambient noise levels. Construction equipment would be equipped with manufacturer-recommended (or other appropriate) mufflers. As a result, there would be minor temporary impacts on ambient noise levels during construction of transmission line routes adjacent to and through populated areas. Also, there likely would be minor temporary impacts on ambient noise levels during certain maintenance activities.

Northern Alternative

Bureau of Land Management Visual Resources

Figures F4a, F4b, F5a, and F5b in Appendix F show the existing and simulated views involving BLM land for the Northern Alternative.

Figures F4a and F4b from KOP 4 are a westward view from the Winnemucca Ranch Road and Pyramid Highway intersection and provide a simulated view for the Northern Alternative. The closest BLM land to KOP 4 that the transmission line segment and access road would cross has a Class III VRM designation; the BLM land is approximately half a mile to the west from KOP 4. This segment of the transmission line would not parallel the road, offering extended viewing opportunities, but rather would travel at a right angle to Pyramid Highway, limiting the duration of adjacent views. Transmission line poles and cross arms would be similar in color to the surrounding landscape. This level of change to visual resources on the BLM land half a mile away would conform to changes allowed in areas with a Class III VRM designation; therefore, visual impacts from the transmission line segment and access road on BLM land from KOP 4 would be minor.

Figures F5a and F5b from KOP 5 are an eastward view from Antelope Valley Road and provide a simulated view for the Northern Alternative. The BLM land closest to KOP 5 that the transmission line segment and access road would cross has a Class IV VRM designation and is approximately a quarter of a mile to the east. Although the transmission line and access road through Hungry Valley to the east and across ridges on both sides of the valley would represent a new cultural modification to a relatively undeveloped area, much of this BLM land is not visible from KOP 5; therefore, visual impacts on BLM land from KOP 5 would be minor.

Non-Bureau of Land Management Visual Resources

Because of topography and distance, the Curnrow Canyon Road transmission line segment for the Northern Alternative would not be visible from Pyramid Highway. Also, the land is sparely settled in the area of the Curnrow Canyon Road transmission line segment, so there would be minor impacts on the aesthetic quality of the surrounding area.

A new transmission line segment would be constructed along Destiny Court east of Antelope Valley Road. Approximately ten poles along Destiny Court would be visible from Antelope Valley Road. Utility poles and lines already flank Antelope Valley Road, and the valley is sparsely developed. The new poles along Destiny Court would be similar to existing poles along Antelope Valley Road. As a result, there would be minor impacts.

The Northern Alternative would involve constructing new transmission line segments along Axe Handle Road, Red Rock Road, and Osage Road. The new poles would be aesthetically and structurally similar to nearby utility poles. Also, from adjacent roadways, the transmission line segments would not affect middle-foreground views, so there would be minor impacts on the aesthetic quality of the surrounding areas.

The aesthetics of non-BLM land north and east of Silver Lake include lowland depressions where water collects and aquatic plants grow, paved roads (such as Moya Boulevard), and industrial and shipping warehouses. Silver Lake is an ecologically sensitive area popular for bird watching. When the transmission line segment passes closest to Silver Lake, it would also be adjacent to industrial and shipping warehouses and would blend in with the developed nature of these areas. Also, there are few residential areas with views of this segment, so impacts on visual resources north and east of Silver Lake would be minor.

Much of the Northern Alternative would involve replacing or co-locating existing overhead lines with the proposed transmission line segments. The proposed transmission line segments would be taller and would have more lines. The replacement poles would be aesthetically and structurally similar to the existing poles. These changes in appearance would have minor impacts.

Regional Visual Policies

There would be approximately five new transmission line segments constructed and approximately five transmission line segments that would use existing utility corridors for the Northern Alternative. Most of the transmission route uses existing utility corridors. For example, poles and lines would be replaced east of Griffith Canyon. By replacing these poles and lines, the ridgelines are protected from major additional development.

The development of this route took into account the use of existing utility corridors and new transmission line segments that bisect populated areas would be avoided; instead, these segments would be constructed around the perimeter of settled areas or in areas not readily visible. One new transmission line segment in Antelope Valley crosses a hilltop near Destiny Court. Where possible, other utility lines would be collocated with the transmission lines to reduce the number of poles in an area; therefore, there would be minor impacts on policies in the *Regional Utility Corridor Report*.

This alternative would have the same impacts on visual resource policies in the *Washoe County Comprehensive Plan* and *Washoe County Development Code* as would the Proposed Action.

Noise

Impacts would be the same as the Proposed Action.

Calle de la Plata Alternative

Bureau of Land Management Visual Resources

Figures F3a, F3b, F6a, and F6b in Appendix F show the existing and simulated views involving BLM land for the Calle de la Plata Alternative.

Impacts on visual resources for KOP 3 are addressed above for the Proposed Action.

Figures F6a and F6b from KOP 6 are a southwestward view from the Reno-Sparks Indian Colony and provide a simulated view for the Calle de la Plata Alternative. The BLM land closest to KOP 6 that the transmission line segment and access road would cross has a Class III VRM designation; the BLM land is approximately one mile to the southwest of KOP 6. The distance between KOP 6 and the transmission line segment and access road limits prominent views of the poles, wires, and access road. Also, rolling hills between KOP 6 and the transmission line route as it dips southwestward through Hungry Valley further limits the visibility of the transmission line segment from KOP 6. This level of change to visual resources from the transmission line segment and access road would conform to changes allowed in areas with a Class III VRM designation, so visual impacts from KOP 6 would be minor.

Non-Bureau of Land Management Visual Resources

The Calle de la Plata Alternative would involve constructing new transmission line segments and access roads east of the intersection of Pyramid Highway and Calle de la Plata. These segments would be at least a mile from Pyramid Highway. The residential areas closest to these segments are on the outskirts of the Spanish Springs community. The new poles would be aesthetically and structurally similar to nearby utility poles and in areas distant from residential areas. As a result, there would be minor impacts on the aesthetic quality of the surrounding area.

The Calle de la Plata Alternative would involve constructing new transmission line segments through Hungry Valley. The residential areas closest to these segments are on the outskirts of the Lemmon Valley community. The new poles would be in areas distant from residential areas. As a result, there would be minor impacts on the aesthetic quality of the surrounding area.

The Calle de la Plata Alternative would involve constructing a new transmission line segment and access road on non-BLM land northeast of the Reno-Stead Airport. Visual impacts would be similar to those discussed for the Proposed Action for this area.

Portions of the Calle de la Plata Alternative would involve replacing or co-locating existing overhead lines with the proposed transmission line segments. The proposed transmission line segments would be taller and would have more lines. The replacement poles would be aesthetically and structurally similar to the existing poles. These changes in appearance would have minor impacts.

Regional Visual Policies

The Calle de la Plata Alternative would have impacts similar to those of the Proposed Action with respect to the RUCR. This alternative would have the same impacts on visual resource policies in the *Washoe County Comprehensive Plan* and *Washoe County Development Code* as the Proposed Action. For example, poles and lines would be replaced southeast of Griffith Canyon. By replacing these poles and lines, the ridgelines would be protected from major additional development. Also, new poles and lines would be constructed south of Griffith Canyon. These poles and lines would not run along the top of the protected ridgeline, but rather up and over it, minimizing visual impacts from development.

Noise

Impacts would be the same as the Proposed Action.

Southern Alternative

Bureau of Land Management Visual Resources

Figures F1a, F1b, F7a, F7b, F8a, and F8b in Appendix F show the existing and simulated views involving BLM land for the Southern Alternative.

Impacts on visual resources for KOP 1 are addressed above for the Proposed Action.

Figures F7a and F7b from KOP 7 are a westward view from Estates Road and provide a simulated view for the Southern Alternative. The BLM land closest to KOP 7 that the transmission line segment would cross has a Class IV VRM designation; the rectangular BLM land is approximately a quarter mile west of KOP 7. The transmission line would be constructed around the perimeter of BLM land. Much of the eastern and southern perimeter of the BLM land is already developed with, for example, houses and other utility infrastructure. Transmission line poles and cross bars would be a dark color. This level of change to visual resources from the transmission line would conform to changes allowed in areas with a Class IV VRM designation, so visual impacts from KOP 7 would be minor.

Figures F8a and F8b from KOP 8 are an eastward view from Estates Road and provide a simulated view for the Southern Alternative. The BLM land closest to KOP 8 that the transmission line segment would cross has a Class IV VRM designation; the BLM land is visible in the top left side of the figures. No new access roads would be constructed for this segment of the transmission line segment because roads used for maintaining the existing line are already available. The simulated view does not constitute a significant change from the existing view because the new poles would not be dramatically taller and would be in the same location as the existing poles. This level of change to visual resources from the transmission line segment would conform to changes allowed in areas with a Class IV VRM designation; therefore, visual impacts from KOP 8 would be minor.

Non-Bureau of Land Management Visual Resources

The Southern Alternative would involve constructing a new transmission line segment northeast of the Silver Lake Substation. This area is developed with residential and commercial areas. The new poles would be aesthetically and structurally similar to existing utility poles nearby. Because of the developed nature of this area, the new transmission line segment would have minor impacts on the aesthetic quality of the area.

The Southern Alternative would involve constructing new transmission line segments and access roads on non-BLM land east of La Posada. Visual impacts would be similar to those discussed for the Proposed Action for this area.

Portions of the Southern Alternative would involve replacing or co-locating existing overhead lines with the proposed transmission line segments. The proposed transmission line segments would be taller and would have more lines. The replacement poles would be aesthetically and structurally similar to the existing poles. These changes in appearance would have minor impacts.

Regional Visual Policies

The Southern Alternative would have impacts similar to the Proposed Action with respect to the RUCR. This alternative would have the same impacts on visual resource policies in the *Washoe County Comprehensive Plan* and *Washoe County Development Code* as the Proposed Action.

Noise

Impacts would be the same as the Proposed Action.

Foothills Alternative

Bureau of Land Management Visual Resources

Figures F1a, F1b, F7a, F7b, F8a, F8b, F9a, F9b, F10a, and F10b in Appendix F show the existing and simulated views involving BLM land for the Foothills Alternative.

Impacts on visual resources for KOP 1 are addressed above for the Proposed Action. Impacts on visual resources for KOPs 7 and 8 are addressed above for the Southern Alternative.

Figures F9a and F9b from KOP 9 are a westward view from the intersection of Calle de la Plata and Eagle Canyon and provide a simulated view for the Foothills Alternative. The closest BLM land to KOP

9 that the transmission line segment and access road would cross has a Class III VRM designation; the BLM land is approximately one mile to the west from KOP 9. The distance between KOP 9 and the transmission line segment limits views of the wires and access road. Also, the color of the poles allows them to blend in with the vegetation and the background hills. This level of visual change would be consistent with changes allowed under a Class III VRM designation; therefore, visual impacts from KOP 9 would be minor.

Figures F10a and F10b from KOP 10 are a westward view from Firestone Drive in a neighborhood immediately west of Pyramid Highway and provide a simulated view for the Foothills Alternative. The closest BLM land to KOP 10 that the transmission line segment and access road would cross has a Class III VRM designation; the BLM land is over one mile to the west from KOP 10. The distance between KOP 10 and the transmission line segment dramatically limits prominent views of the poles, wires, and access road; therefore, visual impacts from KOP 10 would be minor.

Non-Bureau of Land Management Visual Resources

The Foothills Alternative would involve constructing a new transmission line segment northeast of the Silver Lake Substation. This area is developed with residential and commercial areas. The new poles would be aesthetically and structurally similar to existing utility poles nearby. Because of the developed nature of this area, the new transmission line segment would have minor impacts on the aesthetic quality of the area.

The Foothills Alternative would involve constructing a new transmission line segment and access road on non-BLM land east of La Posada. Visual impacts would be similar to those discussed for the Proposed Action for this area.

Portions of the Foothills Alternative would involve replacing or co-locating existing overhead lines with the proposed transmission line segments. The proposed transmission line segments would be taller and would have more lines. The replacement poles would be aesthetically and structurally similar to the existing poles. These changes in appearance would have minor impacts.

Regional Visual Policies

There would be approximately four new transmission line segments constructed and approximately four transmission line segments that would use existing utility corridors for the Foothills Alternative. There is a general balance between using current utility corridors and constructing new ones. The development of this route took into account the use of existing utility corridors and constructing new transmission line segments that bisect populated areas would be avoided; instead, new transmission line segments would be constructed around the perimeter of settled areas. Limited new transmission line construction through Golden Valley would occur. Where possible, other utility lines would be collocated with the transmission lines to reduce the number of poles in an area, so there would be minor impacts on policies in the RUCR.

This alternative would have the same impacts on visual resource policies in the *Washoe County Comprehensive Plan* and *Washoe County Development Code* as those of the Proposed Action.

Noise

Impacts would be the same as the Proposed Action.

Existing Corridor Alternative

Bureau of Land Management Visual Resources

Figures F11a and F11b in Appendix F show the existing and simulated views involving BLM land for the Existing Corridor Alternative. They show a westward view from Spanish Spring Road and provide a simulated view for the Existing Corridor Alternative. The closest BLM land to KOP 11 that the transmission line segment would cross has a Class III VRM designation and is over one mile

from KOP 11, so visual impacts on BLM land from KOP 11 would be minor.

Non-Bureau of Land Management Visual Resources

Construction would occur within a utility corridor between Sparks and the Tracy Power Plant, and existing electrical line segments would be replaced. For non-BLM land, this would occur at locations between Sparks and the Tracy power plant, along Pyramid Highway, and in Sun Valley, Reno, Golden Valley, and Stead. The new and replacement poles would be aesthetically and structurally similar to the existing poles. Because of the developed nature of most of the route, the transmission line would have minor impacts on the aesthetic quality of the areas. This alternative would provide the highest degree of compliance with the visual policies of the RUCR.

Regional Visual Policies

Only existing utility corridors would be used for the Existing Corridor Alternative. Where possible, other utility lines would be collocated with the transmission lines to reduce the number of poles in an area. In some areas, the new transmission lines would be attached to existing poles, and in other areas, new poles and lines would be added to the corridor; therefore, there would be minor impacts on policies in the RUCR.

This alternative would have the same impacts on visual resource policies in the *Washoe County Comprehensive Plan* and *Washoe County Development Code* as those of the Proposed Action.

Noise

Impacts would be the same as the Proposed Action.

Alternative Sugarloaf Substation

Bureau of Land Management Visual Resources

The Alternative Sugarloaf Substation would not be on BLM land, so there would be no impact on BLM visual resource management objectives.

Non-Bureau of Land Management Visual Resources

The Alternative Sugarloaf Substation would be constructed on a vacant lot adjacent to Pyramid Highway and between a commercial area and a residential area. The lot is covered with short dark green vegetation. Utility poles and lines are already adjacent to the site. Substation design would use low profile substation components, as appropriate. The fencing materials, equipment, and structures within the substation would be nonreflective, where possible. Where feasible, equipment would be painted a BLM-approved color to blend in with predominant vegetation and soil types. Vegetation outside of the proposed substation site and access road location would be preserved to the extent possible. After construction, disturbed areas would be revegetated. No night lighting would be used during normal operation of the substation and would be limited to emergency maintenance or repair activities. Construction of the Alternative Sugarloaf Substation would involve filling in a vacant lot surrounded by housing and commercial areas. As a result, there would be minor impacts on the aesthetic quality of the surrounding area and minor impacts on policies in the Regional Utility Corridor Report. The alternative would have the same impacts on visual resource policies in the Washoe County Comprehensive Plan and Washoe County Development Code as the Proposed Action.

Regional Visual Policies

As little land as possible would be disturbed to construct, operate, and maintain the substation under safe conditions. Constructing the Alternative Sugarloaf Substation would involve filling in a vacant lot surrounded by housing and commercial areas. Substation design would use low profile components. The fencing materials, equipment, and structures within the substation would be nonreflective, where possible. Where feasible, equipment would be painted a BLM-approved color to blend in with predominant vegetation and soil types. Vegetation outside of the proposed substation site and access road location would be preserved to the extent possible. After construction, disturbed

areas would be revegetated. No night lighting would be used during normal operation of the substation and would be limited to emergency maintenance or repair activities. As a result, there would be minor impacts on policies in the RUCR.

This alternative would have the same impacts on visual resource policies in the *Washoe County Comprehensive Plan* and *Washoe County Development Code* as those of the Proposed Action.

Noise

Alternative Sugarloaf Substation would be adjacent to Pyramid Highway, which is already a source of vehicle noise in the area. Therefore, there would be no impacts on ambient noise levels because of current noise levels.

Alternative Reno-Stead Airport Substation

Bureau of Land Management Visual Resources

As little land as possible would be disturbed to construct, operate, and maintain the substation under safe conditions. The siting of the substation takes advantage of existing features to shield the substations from view. The Alternative Reno-Stead Airport Substation would not be immediately adjacent to the residences along Osage Road or Red Rock Road but rather set back approximately three-quarters of a mile and at a lower elevation than the road, minimizing direct views of it from the road. Substation design would use low profile components. The fencing materials, equipment, and structures within the substation would be nonreflective, where possible. Where feasible, equipment would be painted a BLM-approved color to blend in with predominant vegetation and soil types. Vegetation outside of the proposed substation site and access road location would be preserved to the extent possible. After construction, disturbed areas would be revegetated. No night lighting would be used during normal operation of the substation and would be limited to emergency maintenance or repair activities. As a result, there would be minor impacts on the Class IV VRM designation for this BLM land.

Non-Bureau of Land Management Visual Resources

The Alternative Reno-Stead Airport Substation would have the same impacts on visual resources as the Alternative Sugarloaf Substation. Based on the resulting site conditions discussed above, the alternative would have minor impacts on policies in the Regional Utility Corridor Report. The alternative would have the same impacts on visual resource policies in the Washoe County Comprehensive Plan and Washoe County Development Code as the Proposed Action.

Regional Visual Policies

As little land as possible would be disturbed to construct, operate, and maintain the substation under safe conditions. The siting of the substations takes advantage of existing features to shield the substations from view. The Alternative Reno-Stead Airport Substation would not be immediately adjacent to the residences along Osage Road or Red Rock Road but would be set back approximately three-quarters of a mile and on airport property at a lower elevation than the road, minimizing direct views of it from the road. Substation design would use low profile components. The fencing materials, equipment, and structures within the substation would be nonreflective, where possible. Where feasible, equipment would be painted a BLM-approved color to blend in with predominant vegetation and soil types. Vegetation outside of the proposed substation site and access road location would be preserved to the extent possible. After construction, disturbed areas would be revegetated. No night lighting would be used during normal operation of the substation and would be limited to emergency maintenance or repair activities. As a result, there would be minor impacts on policies in the RUCR.

This alternative would have the same impacts on visual resource policies in the *Washoe County Comprehensive Plan* and *Washoe County Development Code* as those of the Proposed Action.

Noise

Impacts would be the same as the Proposed Action.

No Action Alternative

The No Action Alternative would not have any impacts on visual conditions or noise levels in the project area.

Mitigation and Monitoring Measures

In order to minimize the impacts from the access road on visual resources east of La Posada at KOP 1 and northwest of Matterhorn Boulevard at KOP 3, SPPCo would design and construct the access roads to switch back along the BLM land east of La Posada and on the hillside northwest of KOP 3 (Figure 4-1). This would minimize the noticeability of the access road by current and future residents to the west in Spanish Springs. There would be minor impacts on visual resources after implementing this mitigation measure.

Future development of the area around La Posada is expected to include additional utility infrastructure similar to the proposed transmission line and more obvious forms of cultural modifications, such as homes and streets. The beneficial impacts of placing the transmission line underground would be temporary, so it is not recommended. Additionally, Matterhorn Boulevard does not offer extended viewing opportunities of the hillside in KOP 3, so placing the transmission line underground is not recommended.

No mitigation measures or monitoring would be required for noise.

Residual Impacts

Although the above mitigation does not include placing the lines underground, other resource sections mitigate potential impacts by placing the lines underground. This could result in residual adverse effects on the aesthetics of an area. Appendix A contains a photo of the structure used for connecting aboveground lines with underground lines. The use of this structure at both ends of a line segment that is placed underground could have visual impacts more adverse than not placing a line segment underground. Portions of the Proposed Action, Northern, Calle de la Plata, Southern, and Foothills Alternatives may involve establishing a new utility corridor. This could result in the future use of the new corridor by other utilities, such as natural gas or telecommunications. These future utility corridor users could place structures within the corridor that could adversely affect visual resources.

HAZARDOUS MATERIALS AND WASTE

Summary

The COM plan that would be submitted to BLM as part of the project would contain detailed information about the procedures and methods for using, transporting, storing, and disposing of hazardous materials and wastes. There would be minor impacts involving hazardous materials and wastes for the Proposed Action or alternatives as summarized in Table 4-22.

Table 4-22
Summary of Potential Hazardous Materials and Waste Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Impact to hazardous materials and wastes	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	○

LEGEND:

● = Major ◐ = Minor + = Beneficial
◑ = Moderate ○ = Negligible **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

The proposed transmission line routes and substations would be on primarily undeveloped land where no hazardous materials are suspected, so the Proposed Action would not expose workers to any preexisting hazardous materials and wastes not associated with the Proposed Action during construction, operation, and maintenance.

SPPCo would comply with local, state, and federal regulations regarding the use, transport, storage, and disposal of hazardous materials and wastes. The COM plan that would be submitted to BLM as part of the project would contain detailed information about the procedures and methods for using, transporting, storing, and disposing of hazardous materials and wastes. Properly implementing these standard operating procedures would result in minor impacts.

All Alternatives and Alternative Substations

The alternative transmission line routes and substations would have the same impacts as the Proposed Action.

No Action Alternative

There would be no change in the presence or use of hazardous materials at Proposed Action sites. There would be no impacts involving hazardous materials and wastes under the No Action Alternative.

Mitigation and Monitoring Measures

No mitigation or monitoring is required because standard operating procedures would be implemented.

Residual Impacts

No residual impacts are anticipated.

PUBLIC HEALTH AND SAFETY

Summary

Comprehensive and properly implemented standard operating procedures would result in minor impacts involving fire. Site safety impacts would be minor because SPPCo would comply with Nevada Department of Transportation roadway work zone safety requirements and right-of-way permits. SPPCo would also comply with both the National Electrical Code and the National Electrical Safety Code at project sites. The calculated electric fields for the Proposed Action are less than the most stringent state standards, so there would be minor impacts involving electric fields. The calculated magnetic field (27.8 mG) for the Proposed Action at the edge of the ROW is substantially less than the most stringent state standard of 150 mG. FAA mitigation for airspace safety includes placing orange balls on the lines or placing the lines underground when the lines and poles do not comply with the distance to height of pole ratio requirement of 20:1. Also, site safety mitigation would involve making the guy wires used to anchor the transmission line poles more visible.

Table 4-23
Summary of Potential Public Health and Safety Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Impact to fire	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	○
Impact to EMF	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	○
Impact to airspace safety	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	○
Impact to site safety	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	○

LEGEND:

● = Major ◐ = Minor + = Beneficial
◑ = Moderate ○ = Negligible **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

Fire

Construction, operation, and maintenance of the transmission lines and substations for the Proposed Action could increase the potential for a fire in the area of the project. Construction and maintenance could start a fire from equipment sparks, workers smoking, or ground disturbances that allow nonnative fire prone vegetation to establish itself. During operation and maintenance, a less likely way for a fire to start could be from a flashover (an unintended electric arc) to the ground, direct contact between combustible material and an energized phase conductor, or ignition of a flammable liquid. Comprehensive and properly implemented standard operating procedures would minimize this risk, so impacts would be minor.

Electric and Magnetic Field Exposure Limits

Lateral profiles were calculated for the electric field and magnetic field. A lateral profile is a plot of the calculated maximum field as a function of distance away from the ROW center. All electric field calculations were made at the Institute of Electrical

and Electronics Engineers standard of 1 meter (3.28 feet) above ground level and at transmission line mid-span.

Table 4-24 below shows the electric field showing the lateral profile of the calculated field extending away from the proposed 120-kV transmission line. The calculated electric field value for the ROW edge is 0.3 kV/m. The ROW edge is 20 feet from the transmission line centerline. The maximum calculated electric field value on the ROW is 0.3 kV/m. Although there are no federal standards limiting occupational or residential exposure to 60-Hz EMF, at least six states have set standards for transmission line electric fields. The calculated electric fields for the Proposed Action are less than the most stringent state standards, so there would be minor impacts involving electric fields.

Table 4-24
Electric Field Calculations
for the Three Transmission Line Configurations (kV/m)

Configuration Type	ROW Edge	Maximum on ROW	ROW Edge	At 100 Feet from Centerline
120 kV alone	0.49	0.55	0.42	0.07
120 kV with 25 kV underbuild	0.3	0.3	0.26	0.07
Existing 25 kV	0.11	0.11	0.11	0.006

Source: Sierra Pacific 2003

Table 4-25 shows the magnetic field lateral profile of the calculated field extending away from the proposed 120-kV transmission line with 25 kV underbuild for both normal and maximum loading conditions (444 amperes and 542 amperes respectively for the 120 kV and 240 amperes and 300 Amperes for the 25 kV). Underbuild occurs when distribution lines are attached to a pole underneath the transmission lines. Under maximum loading conditions, the calculated magnetic field value for the ROW edge is 17.8 mG, and the maximum calculated magnetic field value on the ROW is 18.7 mG. The ROW edge is 20 feet from the transmission line centerline. Although there are no federal standards limiting occupational or residential exposure to 60-Hz EMF, two states have standards for magnetic fields at the edge of the ROW. The calculated magnetic field for the Proposed Action at the edge of the ROW is substantially less than the most stringent state standard of 150 mG. Therefore, there would be minor impacts involving magnetic fields.

The surrounding equipment, supporting structures, substation fence, and other nearby objects typically shield the electric field from substation equipment. The dominant sources of electric fields near a substation are typically the overhead electrical power lines that enter and exit a substation, and, as described above, the transmission lines would have minor impacts involving electric fields.

The magnetic field from substation equipment is typically low at locations beyond the substation property due to the placement of the equipment centrally within the station. Fields from substation equipment act as point sources and attenuate quickly with distance from the equipment. The dominant sources of magnetic fields near a substation are typically the overhead electrical power lines that enter and exit the substation and, as described above, the transmission lines would have minor impacts involving magnetic fields.

Implementing mitigation described below would further reduce potential impacts involving EMF.

Table 4-25
Summary of Magnetic Field Calculations for the Transmission Line (mG)

Configuration Type and Loading Condition	ROW Edge	Maximum on ROW	ROW Edge	At 100 Feet from Centerline
120 kV (normal load)	22.3	27.4	20.8	3.6
120 kV (maximum load)	27.8	34.2	22.6	4.5
120 kV with 25 kV underbuild (normal load)	14.8	15.4	14.8	2.8
120 kV with 25 kV underbuild (maximum load)	17.8	18.7	17.9	3.3
Existing 25 kV (maximum load)	11.7	20.3	12.3	1.1

Source: Sierra Pacific 2003

Airspace

SPPCo would submit Federal Aviation Administration form 7460-1, Notice of Proposed Construction, at least 30 days prior to submitting an application for a construction permit. Also, SPPCo would comply with Federal Aviation Regulation Part 77, Objects Affecting Navigable Airspace.

The Proposed Action would cross the western edge of the Reno-Stead Airport. The transmission line route on the western edge of the airport would be within the safety zone for the air racecourses. The Proposed Action would use 50-foot-high poles at the end of the east/west runway, resulting in minor impacts on airspace safety.

The Proposed Action would cross land north and east of the airport. There would be no impact on air racecourse safety for this area because the Proposed Action would not be within the safety zone for the air race courses. Also, SPPCo would comply with Federal Aviation Regulation Part 77, Objects Affecting Navigable Airspace.

The Spanish Springs Airport is west of Pyramid Highway, north of Eagle Canyon Drive in Spanish Springs, east of Hungry Ridge, and southwest of the Proposed Sugarloaf Substation. The Proposed Action would involve erecting west-east trending utility poles and lines immediately north of the airport. The 50-foot poles and lines would have an impact on airspace safety because they would be within 1,000 feet of the end of the runway. However, SPPCo would be required to coordinate its activities with the FAA before constructing near the airport. SPPCo would implement mitigation recommended by the FAA to protect aircraft. These include marking the lines with orange balls or placing the transmission lines underground. Therefore, impacts would be minor.

The proposed Sugarloaf substation's structures would not be in the flight path of airplanes taking off from or landing at the Spanish Springs Airport. The proposed Sugarloaf substation would have no major impacts on airspace safety at the Spanish Springs Airport.

The proposed Reno-Stead Airport Substation's structures would be equal to or less than 50 feet tall. Also, SPPCo would comply with Federal Aviation Regulation Part 77, Objects Affecting Navigable Airspace. The proposed Reno-Stead Airport substation would have no major impacts on airspace safety at the Reno-Stead Airport.

Site Safety

Construction, operation, and maintenance can affect general public safety along the transmission line routes, in staging areas, and at substation sites. This would involve, for example, safe passage past construction sites along roadways, fencing around substations to prevent unauthorized access, and proper installation and operation of equipment to prevent electrical shock or fire. These potential impacts would be minor because SPPCo would comply with Nevada Department of Transportation roadway work zone safety requirements and right-of-way permits. SPPCo would also comply with the National Electrical Safety Code at project sites. Additionally, mitigation described below would result in minor potential impacts on site safety.

Northern Alternative

Fire

The alternative transmission line routes would have the same impacts as the Proposed Action.

Electric and Magnetic Field Exposure Limits

The alternative transmission line routes are expected to have similar calculated EMF values and therefore are expected to have the same impacts as the Proposed Action.

Airspace

The Northern Alternative would cross the western edge of the Reno-Stead Airport but on much less airport land than the other transmission line routes. The transmission line route on the western edge of the Reno-Stead Airport would be within the safety zone for the air racecourses. This would have a minor impact because there are already utility poles and lines (approximately 30 feet east of the western property line fence) that are within the safety zone for the air racecourses. The Northern Alternative would use 50-foot-high poles at the end of the runway. SPPCo would comply with Federal Aviation Regulation Part 77, Objects Affecting Navigable Airspace. Also, SPPCo would submit Federal Aviation Administration form 7460-1, Notice of Proposed Construction, at least 30 days prior to submitting an application for a construction permit.

Site Safety

The alternative would have the same impacts as the Proposed Action.

Calle de la Plata Alternative

Fire

The alternative transmission line routes would have the same impacts as the Proposed Action.

Electric and Magnetic Field Exposure Limits

The alternative transmission line routes are expected to have similar calculated EMF values and therefore are expected to have the same impacts as the Proposed Action.

Airspace

The Calle de la Plata Alternative would have the same impacts on airspace safety as the Proposed Action.

Site Safety

The alternative would have the same impacts as the Proposed Action.

Southern Alternative

Fire

The alternative transmission line routes would have the same impacts as the Proposed Action.

Electric and Magnetic Field Exposure Limits

The alternative transmission line routes are expected to have similar calculated EMF values and therefore are expected to have the same impacts as the Proposed Action.

Airspace

The Southern Alternative transmission line route would have the same impacts on airspace safety at the Reno-Stead Airport as the Proposed Action.

Site Safety

The alternative would have the same impacts on site safety as the Proposed Action.

Foothills Alternative

Fire

The alternative transmission line routes and substations would have the same impacts as the Proposed Action.

Electric and Magnetic Field Exposure Limits

The alternative transmission line routes are expected to have similar calculated EMF values and therefore are expected to have the same impacts as the Proposed Action.

Airspace

The Foothills Alternative would have the same impacts on airspace safety at the Spanish Springs Airport and Reno-Stead Airport as the Proposed Action.

Site Safety

The alternative would have the same impacts on site safety as the Proposed Action.

Existing Corridor Alternative

Fire

The alternative transmission line routes would have the same impacts as the Proposed Action.

Electric and Magnetic Field Exposure Limits

The alternative transmission line routes are expected to have similar calculated EMF values and therefore are expected to have the same impacts as the Proposed Action.

Airspace

The Existing Corridor Alternative would have the same impacts on airspace safety at the Reno-Stead Airport as the Proposed Action would have.

Site Safety

The alternative would have the same impacts as the Proposed Action.

Alternative Sugarloaf Substation

Fire

The alternative substations would have the same impacts as the Proposed Action.

Electric and Magnetic Field Exposure Limits

The alternative substation is expected to have similar calculated EMF values and therefore is expected to have the same impacts as the Proposed Action.

Airspace

The Alternative Sugarloaf Substation would not be near an airport, so there would be no impact on airspace safety.

Site Safety

The Alternative Sugarloaf Substation would have the same impacts on site safety as the Proposed Action's substations.

Alternative Reno-Stead Airport Substation

Fire

The alternative substations would have the same impacts as the Proposed Action.

Electric and Magnetic Field Exposure Limits

The alternative substation is expected to have similar calculated EMF values and therefore is expected to have the same impacts as the Proposed Action.

Airspace

The Alternative Reno-Stead Airport Substation would be outside the air racecourse safety zone. Also, SPPCo would comply with Federal Aviation Regulation Part 77, Objects Affecting Navigable Airspace. The substation would have no major impact on airspace safety.

Site Safety

The Alternative Reno-Stead Airport Substation would have the same impacts on site safety as the Proposed Action's substations.

No Action Alternative

Fire

There would be no change in the potential for fire at Proposed Action sites. There would be no major impacts involving fire under the No Action Alternative.

Electric and Magnetic Field Exposure Limits

There would be no change to sources of EMF. There would be no impacts involving EMF under the No Action Alternative.

Airspace

There would be no change to airspace safety at Proposed Action sites. There would be no impacts involving airspace safety under the No Action Alternative.

Site Safety

There would be no impacts involving site safety under the No Action Alternative because there would be no project sites.

Mitigation and Monitoring Measures

In order to comply with Policy 2.3.6.5, SPPCo would implement mitigation identified in the land use section.

In order to minimize the impacts from the poles and lines on airspace safety at the northern end of the runway at the Spanish Springs Airport, SPPCo would implement mitigation recommended by the FAA. These include marking the lines with orange balls or placing the transmission lines underground when the lines and poles do not comply with the distance to height of pole ratio requirement of 20:1.

Site safety mitigation would involve making the guy wires used to anchor the transmission line poles more visible. If guy wires cross over any designated access roads, they would be marked or flagged, or signs would be posted, indicating the presence of the guy wires.

Residual Impacts

No residual impacts are anticipated since the mitigation measures would minimize impacts involving EMF. There would be no impact on Policy 2.3.6.5 after implementing this mitigation measure.

AIR RESOURCES

Summary

Most air resource impacts resulting from the project would occur during construction. Impacts to air resources are summarized in Table 4-26.Construction equipment used in any activity would generate oxides of nitrogen (NO_X), sulfur dioxide (SO_2), particulate matter (PM_{10}), carbon monoxide (CO), and ozone (O_3). The amount of emissions would be directly related to the type of construction equipment and its operating hours, and the type of construction activity (e.g., blading). Additionally, vehicles traveling along unpaved roads and within the ROW would create fugitive dust affecting PM_{10} concentrations. Emissions from construction would not exceed the annual federal or county thresholds and would be considered short-term minor impacts. The only notable emission source from operation would be from maintenance vehicles traveling along the transmission line road and generating fugitive dust. The amount of emissions would be negligible; therefore, there would be no long-term impacts on air resources.

Table 4-26
Summary of Potential Air Resources Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Construction Impacts	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	○
Operation and Maintenance Impacts	○	○	○	○	○	○	○	○	○	○	○

LEGEND:

● = Major ◐ = Minor + = Beneficial
◑ = Moderate ○ = Negligible **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

Construction

Construction activities associated with the transmission route and proposed substations would result in temporary emissions of NO_X, VOCs, CO, PM_{10}, SO_2. Emissions would vary daily based on type of equipment and the duration it is operated. The annual emissions from construction would not exceed the annual federal or county thresholds and would be considered short-term minor impacts.

Operation and Maintenance

Two line people using ATVs or line trucks would conduct maintenance surveys once per year. Additionally, in areas that are difficult to access, a helicopter could be employed to fly the transmission line in order to conduct maintenance surveys. The ATVs would operate on gasoline or diesel fuel and would be powered by either 4-stroke or 2-stoke engines. These vehicles would produce NO_X, SO_2, CO, VOCs, and PM_{10} emissions, and emissions from 2-stroke engines would be as much as 10 times greater than those from 4-stroke machines. However, the limited number of crewmembers and trips per year would result in negligible air resources impacts.

Travel along the unpaved access and line roads would produce fugitive dust. Ground broken up by the ATVs or trucks would be susceptible to wind

scour and entrainment into the air. Given the limited trips per year (for line inspections and any maintenance needs), this impact would be negligible.

Operation of the transmission line could result in corona activity (a partial discharge of electrical energy that ionizes air close to conductors). Corona activity can produce very small amounts of ozone and NO_X gas in the region of the electrical conductors. Naturally occurring ozone concentrations in urban areas are commonly around or greater than 100 ppb, and are 10 to 30 ppb in rural areas. The national and county standard for ozone is a one-hour peak concentration of 120 ppb, not to be exceeded on more than one day per year. The standard for NO_X is 140 ppb. Ozone and NO_X calculations for a 180-mile, 345-kV transmission line project in Nevada were modeled to determine concentrations from corona activity. The result of modeling indicated that the transmission line would generate 1 ppb of ozone and less-than 1 ppb of NO_X (BLM 2001). These values are well under the federal and county standards. The Tracy to Silver Lake transmission line is a fraction of the distance and voltage of the modeled conditions and would result in even less ozone and NO_X emissions. For this reason operation of the transmission line would not impact air resources. No mitigation measures are proposed or required for impacts from operation and maintenance of the transmission line.

Northern Alternative

Potential short-term and long-term impacts from the Northern Alternative are the same as those for the Proposed Action.

Calle de la Plata Alternative

Potential short-term and long-term impacts from the Calle de la Plata Alternative are the same as those for the Proposed Action.

Southern Alternative

Potential short-term and long-term impacts from the Southern Alternative are the same as those for the Proposed Action.

Foothills Alternative

Potential short-term and long-term impacts from the Foothills Alternative are the same as those for the Proposed Action.

Existing Corridor Alternative

Potential short-term and long-term impacts from the Existing Corridor Alternative are the same as those for the Proposed Action.

Alternative Sugarloaf Substation

The Alternative Sugarloaf Substation would have short-term impacts from construction activity similar to those discussed for the Proposed Action. There would be no long-term impacts from operation or maintenance.

Alternative Reno-Stead Airport Substation

The Alternative Reno-Stead Airport Substation would have short-term impacts from construction activity similar to those discussed for the Proposed Action. There would be no long-term impacts from operation or maintenance.

No Action Alternative

There would be no construction activity or operational air resources impacts from the No Action Alternative.

Mitigation and Monitoring Measures

The following mitigation measures are recommended to reduce PM_{10} emissions and impacts on local residents and businesses:

- Water active construction areas as needed or apply a nontoxic soil stabilizer;
- Cover trucks hauling loose materials or maintain two feet of freeboard;
- Sweep adjacent paved streets with water sweepers in the event soil materials are carried onto them;
- Apply soil stabilizers to or reclaim or revegetate inactive construction areas that will not under go further activity for an extended period of time or indefinitely;

- Cover or apply soil stabilizers to exposed stock piles;
- Limit traffic speeds in the construction area and along access roads; and
- Limit unnecessary or excessive construction equipment idling time.

No monitoring needs have been identified for this action.

Residual Impacts

Residual impacts would be limited to increased combustion source emissions and fugitive dust from ATVs or line trucks used to access the maintenance roads and potential fugitive dust directly related to the success of revegetation efforts (revegetation stabilizes the soil so that loose dust and soil particles are less likely to be moved by wind, etc). Although the transmission line roadway would not be public and is meant for operation and inspection purposes only, it would be a potential roadway for OHV use. Also, until vegetation is reestablished, exposed soils would be susceptible to entrainment into the ambient air and would become fugitive dust sources. This impact would be negligible to minor.

RECREATION AND AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Summary

Any of the alternatives could cause temporary construction-related delays in visitor access to dispersed recreational opportunities. All alternatives could increase long-term access to public lands from upgrades in access roads to the power line right-of-way. The power lines would not traverse any designated recreational areas or ACECs under any alternative. Long-term recreation use patterns on land near the power lines would likely change due to increased access and decreased visual quality. The impacts to recreation and areas of critical environmental concern are summarized in Table 4-27. The quality of the recreational experience from these changes would depend on the user's perception. Impacts are for the most part similar among alternatives, with the locations of localized impacts differing among each. However, the Existing Corridor Alternative traverses less public land than the other alternatives and thus would have less impact on public land; but these differences would be small.

Table 4-27
Summary of Potential Recreation and ACEC Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Prop Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Decreased access to dispersed recreation during line construction	◐	○	○	◐	◐	◐	◐	◐	○	○	○
Increased accessibility for dispersed recreation from access roads	◐/+	○	○	◐/+	◐/+	◐/+	◐/+	◐/+	○	○	○
Impacts related to decreased quality of recreational experience from visual impacts of power lines	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	○
Changes in dispersed recreational use patterns	◐/+	○	○	◐/+	◐/+	◐/+	◐/+	◐/+	○	○	○
Impacts on BLM lands designated for disposal to state and local government for recreational purposes	○/◐	○	○	○/◐	○/◐	○/◐	○/◐	○/◐	○	○	○

LEGEND:

● = Major ◐ = Minor + = Beneficial
◑ = Moderate ○ = Negligible **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

Recreation

During transmission line stringing operations, it could be necessary to close some smaller roads, which could temporarily restrict access to local dispersed recreational areas. These areas would likely be accessible by alternative routes, and the closures would be temporary, so that these impacts would be short term and minor.

Existing roads would be upgraded and new roads would be built to provide access to the right-of-way. These roads could increase accessibility into areas that were previously inaccessible and would provide

increased opportunities for dispersed recreational use. No long-term decreases in access would occur. On public land this increased accessibility would generally be compatible with dispersed recreation. The access roads could attract increased OHV use in the long term. The quality of the recreational experience from increased OHV use would vary among users' perceptions. These access roads would not traverse or restrict access to existing developed recreation sites because none exist in the study area.

The Proposed Action would not traverse BLM or any other agency's designated recreational area, it would not traverse any areas designated as closed to OHV use, nor does it traverse any Washoe County Parks and Recreation facilities. The line would pass within 50 miles of a number of recreation areas and would traverse roadways that provide access to these areas. These areas include parks and other recreational areas managed by BLM, USFS, State of Nevada, and Washoe County. The line would not be close enough to most of these lands to have any effect, but it could be close enough to some Washoe County parks to be viewed from the parks and thus would have minor visual and noise impacts on the quality of the recreational experience, especially during construction. The parks are in highly altered suburban neighborhoods, which lack pristine views.

The power lines themselves would have minor long-term effects on visitors' choices of locations for dispersed recreational activities. Visitors would be less likely to conduct activities near the power lines where scenic views and more pristine conditions are desired. However, visitors desiring easier access and easy navigation would use the ROW for hiking and OHV use. Most of these ROWs are on public lands where dispersed recreational activities are allowed. The quality of the recreational experience from these changes would depend on the user's perception. No ROWs would allow access to ACECs, or any other protected areas or developed recreational areas. Most of the ROWs on private land run alongside existing roads, and thus do not provide new access to OHVs.

The Proposed Sugarloaf Substation and the Proposed Reno-Stead Airport Substation are on private property, which offers no recreational opportunities and thus would have no effect on recreation.

The Proposed Action would traverse the boundary of two tracts of BLM land, southeast of the Reno-Sparks Indian Colony and near the northwestern corner of the Reno-Stead Airport. The state and local governments have designated both of these tracts for disposal through the Recreation and Public Purposes Act to be used for recreation (Figure 3-8). Because these routes traverse only the edges of these tracts, their impacts on potential future recreational use would be negligible to minor.

Areas of Critical Environmental Concern

The Proposed Action does not traverse any ACECs. The route does traverse within approximately one mile of the Pah Rah High Basin Petroglyph District Area ACEC to the north and east. Because the protected resource within this ACEC is a petroglyph, temporary disturbances, such as noise, would not have any direct or indirect effects on it. All other ACECs are at least ten miles from the Proposed Action transmission line and, as such, would not be affected by the project.

The Proposed Sugarloaf Substation is approximately six miles from the nearest ACEC and the Proposed Reno-Stead Airport Substation is approximately 12 miles from the nearest ACEC, so no effects would occur.

Northern Alternative

The Northern Alternative would traverse the boundary of a tract and bisect another tract of BLM land near the northwestern corner of the Reno-Stead Airport. The state and local governments have designated both of these tracts for disposal through the Recreation and Public Purposes Act to be used for recreation (Figure 3-8). Because these routes traverse tracts that are already urbanized, their impacts on potential future recreational use are negligible to minor.

In general, recreation and ACEC impacts are similar to those described for the Proposed Action.

Calle de la Plata Alternative

The Calle de la Plata Alternative would traverse the boundaries of two tracts of BLM land, southeast of the Reno-Sparks Indian Colony and near the northwestern corner of the Reno-Stead Airport. The state and local governments have designated both of these tracts for disposal through the Recreation and Public Purposes Act to be used for recreation (Figure 3-8). Because these routes traverse only the edges of these tracts, their impacts on potential future recreational use would be negligible to minor.

In general, recreation and ACEC impacts are similar to those described for the Proposed Action.

Southern Alternative

The Southern Alternative would traverse the boundaries of two tracts of BLM land, north of Sun Valley and near the northwestern corner of the Reno-Stead Airport. The state and local governments have designated both of these tracts for disposal through the Recreation and Public Purposes Act to be used for recreation (Figure 3-8). Because these routes traverse only the edges of these tracts, their impacts on potential future recreational use would be negligible to minor. In general, recreation and ACEC impacts are similar to those described for the Proposed Action.

Foothills Alternative

The Foothills Alternative would traverse the boundary of a tract and bisect another tract of BLM land near the northwestern corner of the Reno-Stead Airport. The state and local governments have designated both of these tracts for disposal through the Recreation and Public Purposes Act to be used for recreation (Figure 3-8). Because these routes traverse only the edges of these tracts, their impacts on potential future recreational use would be negligible to minor. In general, recreation and ACEC impacts are similar to those described for the Proposed Action.

Existing Corridor Alternative

This route would also pass near but not through county parks in residential areas and would not pass through any designated recreational area. However, this route passes through less public land than the Proposed Action or the other alternatives and thus would likely have less effect on public land recreation. No impacts on ACECs are anticipated. The Southern Alternative would traverse the boundary of two tracts of BLM land, north of Sun Valley and near the northwestern corner of the Reno-Stead Airport. The state and local governments have designated both of these tracts for disposal through the Recreation and Public Purposes Act to be used for recreation (Figure 3-8). Because these routes traverse only the edges of these tracts, their impacts on potential future recreational use would be negligible to minor.

Alternative Sugarloaf Substation

The Alternative Sugarloaf Substation is in an urban area, which provide little if any recreational opportunities and thus would not affect recreation. The substation would not impact any ACECs.

Alternative Reno-Stead Airport Substation

This alternative substation is on BLM land and, as such, could have a greater effect on recreation than the Proposed Reno-Stead Airport Substation. The state and local governments have designated this tract for disposal to be used for recreation. Its location adjacent to a major street and near an airport limits the potential recreational use of the site, so effects on recreation would be negligible. The substation would not impact any ACECs.

No Action Alternative

Under the No Action Alternative, existing recreation conditions would generally remain the same and not be impacted.

Mitigation and Monitoring Measures

Access roads would be designed to withstand OHV use without causing degradation to natural resources, such as soil erosion.

Residual Impacts

Although the transmission line roadway would not be public and is meant for operation and inspection purposes only, it could be a potential roadway for OHV use or other recreational activities.

SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Summary

The Proposed Action could affect social and economic resources by increasing the number of people and level of economic activity in Washoe County area during project construction as shown in Table 4-28. These effects are anticipated to be beneficial because the Proposed Action would increase spending and income levels in the area. There could be a minor decrease in property values along the ROW, but SPPCo would provide financial compensation to private property owners along the ROW, as determined by a qualified appraiser or the courts. The number of parcels that would require easements would range from about 110 parcels for the Existing Corridor Alternative to 199 parcels for the Northern Alternative. The number of easement acres that would be required would range from about 79 for the Southern Alternative to 152 for the Existing Corridor Alternative. The Proposed Action would require 83 acres of easement land from 130 parcels. The Proposed Action and Calle de la Plata Alternative provide the highest degree of system reliability because no double circuiting would be required, and they would be the cheapest to build (cost estimates do not include land acquisition or other indirect costs). The cost of the Existing Corridor Alternative would be twice the Proposed Action, but this alternative would likely require the least land acquisition. Even though, no disproportionate social or economic effects on a minority or low-income population have been identified, the power line would be partially within the SOI of the Reno Spark Indian Colony, and concerns from colony members may arise during the project. The following table provides a summary of the potential environmental justice and socioeconomic impacts.

Table 4-28
Summary of Potential Socioeconomic and Environmental Justice Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
System reliability/cost recovery	+/+	○/○	+/○	◑/○	+/+	◑/○	◑/○	◑/◑	N/A	N/A	●
Population and economic activity	+	+	+	+	+	+	+	+	+	+	○
Property values	⦶	○	○	⦶	⦶	⦶	⦶	○	○	○	○
Growth inducement	○	○	○	○	○	○	○	○	○	○	○
Environmental justice	○	○	○	○	○	○	○	○	○	○	○

LEGEND:

● = Major ⦶ = Minor + = Beneficial
◑ = Moderate ○ = Negligible **N/A** = Not applicable

Direct and Indirect Impacts

Proposed Action

System Reliability and Cost Recovery

The Proposed Action would provide a reliable system to meet current and future electrical demands within the Spanish Springs and Stead areas. The

estimated cost of the power line would be about $9.4 million (ECI 2003). This cost is only for construction of the power line and does not include costs associated with property acquisition, mitigation, and other permit requirements. Cost recovery should be attainable. Cost recovery through the rate structure requires approval by the Public Utilities Commission of Nevada (PUCN) and is based on a standard of "prudent utility practice," defined as follows: "1. Any practice, method or act engaged in or approved by a significant portion of the electric utility industry for the time in which the practice is used; or 2. Any practice, method or act which, in the exercise of reasonable judgment and in light of the facts known at the time that the decision was made, could be expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and efficiency, and practices and acts generally accepted in the Western System Coordinating Council region" (NRS 703.025). Cost recovery that is not approved by the PUCN must be borne by the project proponent and, by extension, its shareholders.

Population and Economic Activity

The Proposed Action would increase population and economic activity within Washoe County during the 12-month duration of the power line construction. The Proposed Action would require a relatively small addition to the Washoe County construction workforce. Because the effect on the workforce would be minimal, the overall project-induced direct and indirect effects on the Washoe County economy are also expected to be minimal and beneficial.

Power line and substation construction is expected to increase construction employment by approximately 60 employees, which represents an approximate increase of 0.341 percent of the 17,600 workers in the Washoe County construction workforce in 2000. Some of the construction jobs may be filled by workers already residing within Washoe County, while some workers may come from outside of Washoe County to fill new jobs or as contracted employees from outside the region. Even if all 60 workers relocated to the project area from somewhere else, Washoe County has the infrastructure (e.g., housing, schools, and public services) to absorb them without any socioeconomic impact. Like most construction employment, the Proposed Action would be temporary and is not expected to result in a permanent increase in the population, employment, or spending within the region.

Based on the 0.341 percent increase in construction employment, the Proposed Action is projected to result in a relatively minimal addition to the overall population and economic activity in the region. The minor increases and the currently adapted economy of the area to such projects indicate that all social and economic effects are expected to be minimal and beneficial; accordingly, no mitigation is required.

Property Values

A review of current property value impact studies and the issue of high voltage power lines indicates that property values can be affected by the proximity to a power line and that the effects can be positive or negative, depending on site-specific conditions. Negative impacts on property values can result from views toward a power line and from the uncertainty of power line-related health hazards. Positive private property impacts can result from an adjacent power corridor creating a large open area near a property, potential recreational uses within or adjacent to the corridor, and increased separation between houses that are adjacent to a corridor. Other factors, such as terrain, vegetation, size of power line towers or pylons, views from a particular property, and views toward power lines, conductors, or towers, also greatly influence private property values (De Rosiers 2002). Data gathered by SPPCo consultants in 1999 also indicated that multiple factors affect property values in the Washoe County area and that adjacency to a power line is not the only factor that can affect a property value increase or decrease (Johnson-Perkins and Associates 1999). As discussed in Chapter 2, SPPCo would provide financial compensation to private property owners when acquiring an easement, as determined by a qualified appraiser, by negotiation, or the courts. The appraisal process

would include identifying the direct cost of purchasing an easement from a property owner and, where necessary, a calculation and compensation for consequential losses incurred on the remaining property as a result of power line construction. Table 4-29 compares the properties that would be affected by easement acquisition for all of the alternatives.

As shown in the table, the number of parcels that would require easements would range from about 110 for the Existing Corridor Alternative to 199 for the Northern Alternative. The number of easement acres that would be required would range from approximately 79 for the Southern Alternative to 152 for the Existing Corridor Alternative. The Proposed Action would require 83 acres of easement land from 130 parcels. Affected property owners would be compensated during the easement acquisition process, as described above. Table 4-29 also provides parcel land use data for the parcels that could require easement acquisition. Residential, commercial, and industrial properties are expected to require a higher easement acquisition price than less developed land uses, such as agricultural and open space uses.

For properties adjacent to the Proposed Action, where no easement acquisition is required, property values could decrease and would not be offset by the appraisal process described above. Under the Proposed Action, the power line would extend east of residential suburban properties along the western edge of the Reno-Stead Airport. Assessing the actual property value decrease, if any, would require a formal appraisal or property value study. Alternatively, undergrounding the power line in this area could mitigate potential impacts on property values. All other locations along the route would be either rural areas, areas with an existing power line that would be upgraded to serve the Proposed Action, or commercial/industrial areas. For such areas, the impact on private property values is expected to be minimal and would not affect the long-term value of adjacent properties. No mitigation in these areas is required.

Growth Inducement

Implementing the Proposed Action would not have a direct or indirect impact on growth in the region. The Proposed Action is being implemented to meet the existing and future power needs of the region. These needs are based on land use planning conducted by Washoe County and municipal governments. Therefore, the project growth has been planned for under the assumption that electrical power would be available. The Proposed Action is responding to this planned growth.

Environmental Justice

The Reno-Sparks Indian Colony is identified as a minority and low-income population within the project area; however, no environmental effects are expected to disproportionately affect the Reno-Sparks Indian Colony or any other minority or low-income populations within the project area. Accordingly, no environmental justice effects would occur and no mitigation is necessary.

Northern Alternative

System Reliability and Cost Recovery

The Northern Alternative would include about five miles of double circuiting, which would introduce some risk to system reliability. The estimated cost of the power line would be about $13.7 million, making it one of the more expensive alternatives (ECI 2003).

Population and Economic Activity

Potential impacts on social and economic resources from the Northern Alternative are expected to be similar to the beneficial impacts described under the Proposed Action.

Property Values

As shown in Table 4-29, the Northern Alternative would require 104 acres of easement land from 199 parcels. Affected property owners would be compensated during the easement acquisition process, as described in the Proposed Action.

The Northern Alternative includes two locations where a new power line would be installed adjacent

to suburban properties and would not require easement acquisition. The first location includes an east to west stretch of the power line parallel to and

Table 4-29
Number of Parcels and Total Acreage Requiring Easement Acquisition

	Number of Parcels Requiring Easement Acquisition by Land Use Category (excluding BLM land)— New Power Line Route Requiring 40 foot Easement/Existing Power Line Route Requiring 20 foot Easement												Total Acreage of Easement Acquisition
	City - Public Roads	Vacant or Minor Improvements	Rural Residential	Suburban Residential	Urban Residential	Commercial	Industrial	Public and Semi-Public Facilities	Parks, Recreation, Open Space	Agricultural	Undeveloped	Total Parcels Requiring Easement Acquisition	
Proposed Action	1/5	1/11	0/16	0/15	0/0	0 /2	4 /0	1 /0	0/0	1/3	37/33	45 85	83
Northern Alternative	2/7	3/2	13/53	3/13	0/0	0 /1	2 /0	1 /0	0/0	0/3	26/70	50/149	104
Calle de la Plata Alternative	1/3	1/1	6/14	0/5	0/0	0 /0	4 /0	1 /0	0/0	0/2	46/30	59/55	87
Foothills Alternative	2/7	4 17	6/20	3/38	0/0	0 /3	7 /1	2 /0	1/0	1/3	33/47	59/136	83
Southern Alternative	1/8	1/19	1/29	0/42	0/0	0 /3	7 /1	2 /0	1/0	1/3	20/47	34/152	79
Existing Corridor Alternative	1/0/4	1/0/6	0/0/10	0 /0/29	0 /0/2	0 /0 /2	1 /3 /0	0 /1 /2	0/0/0	1/0/0	11/8/28	15/12/83	152

Number of parcels were determined assuming a 20-foot easement for existing lines, 40-foot easement for new lines, and a 125-foot easement for new line built under the existing corridor alternative.
Acreages were calculated by multiplying the length of each route by easement parameters set forth in assumption number 1 above.

north of Osage Road. The second location includes a very small stretch of power line along Red Rock Road of approximately four to five suburban properties. In these locations, the impact on suburban property values would be similar to those described for affected properties for the Proposed Action. All other locations of the proposed route would be either rural areas or areas with an existing power line that would be upgraded to serve the Proposed Action. For such areas, the impact on private property values is expected to be minimal and would not affect the long-term value of adjacent properties. No mitigation is required.

Growth Inducement and Environmental Justice

As discussed for the Proposed Action, the alternative would not induce growth or impact minority or low-income populations.

Calle de la Plata Alternative

System Reliability and Cost Recovery

The Calle de la Plata Alternative would not involve any double circuiting and would provide reliable power. The estimated cost of the power line would be about $9.7 million, in line with the Proposed Action (ECI 2003).

Population and Economic Activity

Potential impacts on social and economic resources for the Calle de la Plata Alternative are expected to be similar to the beneficial impacts described under the Proposed Action.

Property Values

As shown in Table 4-29, the Calle de la Plata Alternative would require 87 acres of easement land from 114 parcels. Affected property owners would be compensated during the easement acquisition process, as described in the Proposed Action.

The power line would be adjacent to the residential properties west of the Reno-Stead Airport that are described for the Proposed Action, with similar impacts on property values. The rest of the route would be in either rural areas or areas with an existing electrical line. For such areas, the impact on private property values is expected to be minimal and would not affect the long-term value of adjacent properties.

Growth Inducement and Environmental Justice

As discussed for the Proposed Action, the alternative would not induce growth or impact minority or low-income populations.

Southern Alternative

System Reliability and Cost Recovery

The Southern Alternative would include about 14 miles of double circuiting which would hinder system reliability. The estimated cost of the power line would be about $12.2 million, about $4 million more then the Proposed Action (ECI 2003).

Population and Economic Activity

Potential impacts on social and economic resources for the Southern Alternative are expected to be similar to the beneficial impacts described under the Proposed Action.

Property Values

As shown in Table 4-29 the Southern Alternative would require 79 acres of easement land from 186 parcels. Affected property owners would be compensated during the easement acquisition process, as described in the Proposed Action.

The power line would be adjacent to the residential properties west of the Reno-Stead Airport, which are described for the Proposed Action, with similar impacts on property values. In addition, another area of potentially decreased residential property values not requiring easement acquisition would be along the north and south sides of Stead Boulevard, from Lear Road to approximately 300 yards to the east. All other locations along the route would be either rural areas or areas with an existing electrical line. For such areas, the impact on private property values is expected to be minimal and would not affect the long-term value of adjacent properties.

Growth Inducement and Environmental Justice

As discussed for the Proposed Action, the alternative would not induce growth or impact minority or low-income populations.

Foothills Alternative

System Reliability and Cost Recovery

The Foothills Alternative would include about 12 miles of double circuiting which would hinder system reliability. The estimated cost of the power line would be about $12.7 million, about $4 million more then the Proposed Action (ECI 2003).

Population and Economic Activity

Potential impacts on social and economic resources for the Foothills Alternative are expected to be similar to the beneficial impacts described under the Proposed Action.

Property Values

As shown in Table 4-29, the Foothills Alternative would require 83 acres of easement land from 195 parcels. Affected property owners would be compensated during the easement acquisition process, as described in the Proposed Action.

The Foothills Alternative includes three locations where a new power line would be installed adjacent to suburban properties and would not require easement acquisition. The first area would be along the north and south sides of Stead Boulevard, from Lear Road to approximately 300 yards to the east. The second location includes an east to west stretch of the power line parallel to and north of Osage Road. The third location includes a very small stretch of power line along Red Rock Road of approximately four to five suburban properties. In these locations, the impact on property values would be similar to those described for the Proposed Action. All other locations along the route would be either rural areas or areas with an existing electrical line. For such areas, the impact on private property values is expected to be minimal and would not affect the long-term value of adjacent properties.

Growth Inducement and Environmental Justice

As discussed for the Proposed Action, the alternative would not induce growth or impact minority or low-income populations.

Existing Corridor Alternative

System Reliability and Cost Recovery

The Existing Corridor Alternative would include about 26 miles of double circuiting including about ten miles of 120/345-kV lines. This alternative would provide the least amount of system reliability and cost about $20.1 million, making it the most expensive alternative at over two times more then the Proposed Action (ECI 2003). As discussed in Chapter 2, the increased cost is primarily because about 10 miles of the route would involve constructing a double circuit 120/345-kV line while the 345-kV line is being energized.

Population and Economic Activity

Potential impacts on social and economic resources for the Existing Corridor Alternative are expected to be similar to the beneficial impacts described under the Proposed Action.

Property Values

As shown in Table 4-29, the Existing Corridor Alternative would require 152 acres of easement land from 110 parcels. For the Existing Corridor Alternative, all properties that could experience a value change because the alternative would also require easement acquisition. Affected property owners would be compensated during the easement acquisition process, as described in the Proposed Action.

Growth Inducement and Environmental Justice

As discussed for the Proposed Action, the alternative would not induce growth or impact minority or low-income populations.

Alternative Sugarloaf Substation

The Alternative Sugarloaf Substation is not expected to have any socioeconomic impacts. The effects on adjacent property are expected to be negligible

because the proposed location is not adjacent to a any residence.

Alternative Reno-Stead Airport Substation

The Alternative Reno-Stead Airport Substation is not expected to have any socioeconomic impacts. The effects on adjacent property are expected to be negligible because the proposed location is not adjacent to any residence.

No Action Alternative

Under the No Action Alternative, the identified increased population and economic activity would not occur, and the Washoe County economy would not experience the beneficial effects anticipated for the Proposed Action. The existing electrical infrastructure would not be able to meet future development and demand in the Spanish Springs and Stead areas.

Mitigation and Monitoring Measures

There is a correlation between the visual appearance of a power line and negative effects on property values (De Rosiers 2002; Mitteness and Mooney 1998); therefore, applying mitigation measures, such as screening or placing a proposed power line underground, could mitigate visual impacts on property value. Areas that could benefit from mitigation are discussed under Land Use, Recreation, and Aesthetic Resources. No monitoring needs have been identified for this action.

Residual Impacts

No residual impacts would occur to socioeconomic conditions.

CULTURAL RESOURCES

Summary

The Proposed Action and alternatives would have moderate impacts on cultural resources in the project area as a result of construction activities (particularly subsurface excavation), increased access to archaeological sites following road improvements, and visual impacts on cultural resources as shown in Table 4-30. These activities could result in adverse effects on archaeological sites and sites of traditional religious and cultural importance to Native Americans. Because of the similarity of these potential impacts and the overlapping segments resulting in the same sites being exposed to project activity under different alternatives, all the alternatives are considered to have a moderate impact on cultural resources. The BLM would prepare mitigation for these impacts following surveys of the project alignment, in consultation with the SHPO; such mitigation would generally involve avoiding or documenting the sites. The Calle de la Playa Alternative may have a slightly greater impact on cultural resources because of the rock art located directly within the construction alignment; however, this impact is considered to be mitigable to the moderate level, in consultation with the SHPO.

Table 4-30
Summary of Potential Cultural Resources Impacts

IMPACT ISSUES	Proposed Action	Proposed Sugarloaf Substation	Proposed Reno-Stead Airport Substation	Northern Alternative	Calle de La Plata Alternative	Southern Alternative	Foothills Alternative	Existing Corridor Alternative	Alternative Sugarloaf Substation	Alt. Reno-Stead Airport Substation	No Action Alternative
Direct impacts on archaeological resources from construction	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	○
Indirect impacts on archaeological sites from increased access	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	○
Impacts to Native American religious concerns	⦶	⦶	⦶	⦶	⦶	⦶	⦶	⦶	⦶	⦶	○
Impacts to paleontological resources	⦶	⦶	⦶	⦶	⦶	⦶	⦶	⦶	⦶	⦶	○

LEGEND:

● = Major ⦶ = Minor + = Beneficial
◑ = Moderate ○ = Negligible **N/A** = Not applicable

Direct and Indirect Impacts

Activities associated with project construction and operation would have an impact on prehistoric and historic cultural resources if they were to diminish the integrity of the property's location, design, setting, materials, workshop[1], feeling or association, or if they were to harm characteristics that qualify the property for inclusion on the National Register of Historic Places (36 CFR 800.9[b]). Potential impacts on cultural resources that are generally common to all alternatives include the following:

- Direct impacts on surface and subsurface contexts and prehistoric and historic sites; Increased access to archaeological sites due to road improvements; and
- Visual impacts on cultural resources.

[1] Under 36 CFR 800.9[b], the term "workshop" is meant to equate to technology and workmanship.

Because many alternatives share common segments, certain sites may be affected regardless of which alternative is ultimately selected. Similarly, linear resources, such as the NCO railroad, intersect each of the alternatives and each requires context-specific evaluation for contributing elements in order to determine the project impacts. Direct impacts on prehistoric and historic properties, both surface and subsurface, could occur under any of the project alternatives. Construction activities, including road improvements, tower placements, anchoring facilities, substation development, and cable pulling, could disturb NRHP-eligible cultural resources, including sites of traditional religious and cultural importance to tribes. These impacts are most common during the construction and rehabilitation phases of the project but may also occur during future maintenance activities. The nature of direct impacts cannot be completely assessed prior to final route selection and determination of tower and foundation locations. Many direct impacts can be minimized by tower and facility placement and avoidance signs or other appropriate measures, such as fencing.

The construction of a transmission line in the vicinity of an NRHP-eligible property can affect the setting of the site. Because setting (or similar characteristics) is often an important element of an NRHP-eligible property, especially those eligible under criteria a, b, or c, the intrusion of a transmission line may alter the experience of users of the property.

Proposed Action

Due to the developed nature of large portions of the project area, there are a limited number of NRHP-eligible or unevaluated properties within or intersecting the Proposed Action corridor. There are nine sites recommended eligible or unevaluated within the study area within the Proposed Action Alternative. These sites would require avoidance or additional study prior to construction. The Proposed Action could affect both known and currently unidentified cultural resources. There is a possibility of discovering additional intact deposits, features, and human remains during construction. Should intact deposits, features, or human remains be encountered during construction, all work in the immediate area would temporarily halt pending consultations with BLM cultural resource staff to determine an appropriate course of action. Mitigation in this case would be required.

Increased traffic and accessibility to the project corridor due to road construction or improvements may result in indirect impacts on cultural resources. Corridor development could increase vehicle traffic in areas where travel is currently uncommon. A greater number of people traveling along the corridor increases the potential for unauthorized collection and vandalism at significant sites as well as unknown sites that may exist beyond the current study area. Increased traffic includes both construction personnel and informal traffic that would occur long after project construction is completed. Unauthorized excavation or collection of artifacts at eligible and unevaluated sites would be an impact.

Northern Alternative

Construction impacts and mitigations for impacts on surface and subsurface cultural resources from this alternative would be similar to impacts from the Proposed Action. Under the Northern Alternative, there are six sites recommended eligible or unevaluated within the study area.

Calle de la Plata Alternative

Construction impacts and mitigations for impacts on surface and subsurface cultural resources from this alternative would be similar to impacts from the Proposed Action. Under the Calle de la Plata Alternative, there are 14 sites recommended eligible or unevaluated within the study area. One of those sites includes the Griffith Canyon Rock Art site, which could be adversely affected by the presence of the power line in the vicinity. BLM would consult with the SHPO and interested parties in order to identify a treatment plan to document the resource and to mitigate this effect. Southern Alternative

Construction impacts and mitigations for impacts on surface and subsurface cultural resources from this alternative would be similar to impacts from the Proposed Action. Under the Southern Alternative, there are seven sites recommended eligible or unevaluated within the study area.

Foothills Alternative

Construction impacts and mitigations for impacts on surface and subsurface cultural resources from this alternative would be similar to impacts from the Proposed Action. Under the Foothills Alternative, there are seven sites recommended eligible or unevaluated within the study area.

Existing Corridor Alternative

Construction impacts and mitigations for impacts on surface and subsurface cultural resources from this alternative would be similar to impacts from the Proposed Action. Under the Existing Alternative, there are eight sites recommended eligible or unevaluated within the study area.

Alternative Sugarloaf Substation

There are no cultural resources within the Alternative Sugarloaf Substation.

Alternative Reno-Stead Airport Substations

There are no unevaluated or eligible cultural resources within the Alternative Reno-Stead Airport Substation.

No Action Alternative

Under No Action, the BLM would continue to manage cultural resources on its properties in compliance with federal laws and regulations. Because there would be no construction of the transmission line, some construction-related impacts on cultural resources would be avoided.

Native American Religious Concerns

Proposed Action

Formal consultation with the Reno-Sparks Indian Colony, the Pyramid Lake Paiute Tribe, and the Washoe Tribe of Nevada and California is ongoing. One resource of concern has been identified in the general project area; no other specific resources or areas of concern have been identified as a result of the consultation process. While consultation is still ongoing, it is possible to discuss the general types of impacts that may occur on Native American religious concerns.

The Proposed Action would change vegetation patterns and wildlife distribution within the construction area. Such changes, individually and collectively, could affect the integrity of power spots, disrupt the flow of spiritual power, and displace spirits. These effects may have an impact on Northern Paiute and Washoe spiritual life and cosmology and could limit their potential to participate in traditional religious activities.

Spirits can be benevolent or malevolent, depending on how they are treated. Many rituals are directed at controlling use of power and balancing potentially dangerous spiritual powers that pervade nature. Religious behavior is focused on maintaining integrity of power spots, presence of spiritual powers, relationship with owner-spirits of plants and animals, and life-giving forces. Tribes consider modifying such power relationships to be dangerous. Altering the intricate web of power relationships that occur over a landscape affects the basic relationship between the tribes and Mother Earth. The potential to balance malevolent powers that pervade nature becomes diminished; the very character of the spiritual realm could be modified. Native Americans have identified several resources as relevant within the context of Native American religious concerns and Indian trust responsibilities. They include impacts on soil, air, water, vegetation, wildlife, cultural resources, and Native American religious concerns.

Based on results of scoping, public meetings, research, and Native American consultation, the following impacts on Native American religious concerns may be associated with the Proposed Action:

- Permanent modification of the local topography, especially in the mine areas;
- Impacts on air quality and noise levels;
- Changes in vegetation patterns and wildlife habitat within Hungry Valley;
- Impacts on prehistoric cultural resources and the excavation and removal of archaeological material; and
- Impacts on the distribution and flow of spiritual power within Hungry Valley and the ability of Native Americans to participate in traditional religious activities.

Northern Alternative

Impacts and mitigations for impacts on Native American religious concerns from this alternative are similar to impacts from the Proposed Action.

Southern Alternative

Impacts and mitigations for impacts on Native American religious concerns from this alternative are similar to impacts from the Proposed Action.

Foothills Alternative

Impacts and mitigations for impacts on Native American religious concerns from this alternative are similar to impacts from the Proposed Action.

Existing Corridor Alternative

Impacts and mitigations for impacts on Native American religious concerns from this alternative are similar to impacts from the Proposed Action.

Alternative Sugarloaf Substation

Impacts and mitigations for impacts on Native American religious concerns from this alternative are similar to impacts from the Proposed Action.

Alternative Reno-Stead Airport Substations

Impacts and mitigations for impacts on Native American religious concerns from this alternative are similar to impacts from the Proposed Action.

No Action Alternative

Under No Action, the BLM would continue to manage Native American religious concerns on its properties, in compliance with federal laws and regulations. Because the transmission line would not be constructed, construction-related impacts would be avoided.

Paleontological Resources

As noted in the Cultural Resources section, there are some paleontological resources within project area but no documented resources within Proposed Action or alternatives. A COM plan would be developed before the project begins, and this plan would include monitoring for paleontological resources. If paleontological resources were discovered during project construction, activities would cease, a qualified professional would evaluate the resource, and it would be excavated or otherwise dealt with, in compliance with BLM policy.

Mitigation and Monitoring Measures

Cultural resources would be damaged or destroyed by the Proposed Action under all the alternatives. Most cultural resources within the APE are eligible for their data alone and can be mitigated to a "no adverse effect," under Section 106 of the National Historic Preservation Act. For those few sites that may be eligible under National Register Criteria a, b, and c, residual adverse effects may still occur despite mitigation. A treatment plan to mitigate adverse effects on NRHP-eligible sites would be developed in consultation between the BLM and SHPO. Treatment options may include, but are not limited to, avoidance, data recovery, and, in the case of visual effects, visual barriers or burial of the power line.

In the event that any cultural resources that may qualify as NRHP-eligible prehistoric or historic properties are discovered during project construction, potentially destructive construction work in the vicinity of the find would be stopped immediately. A physical marker, such as exclusionary flagging, would be erected to prohibit potentially destructive activities from occurring until a BLM

cultural resource specialist allows construction activities to resume. In coordination with the BLM and SHPO, the project archaeologist would evaluate the potential significance of the find and would determine what treatment measures, if any, are appropriate.

If human remains are encountered, all federal and state laws and regulations that deal with the treatment and disposition of human remains and associated burial objects would be complied with fully. These laws include the Native American Graves Protection and Repatriation Act (PL 101-601), which is the primary federal legislation pertaining to Native American graves, human remains, and associated funerary objects, and Nev. Rev. Stat. Ann. 383.150 et seq., Protection of Indian Burial Sites. Any discovery of human remains on federal lands would be managed in compliance with the provisions of NAGPRA, while discoveries on private lands would be handled in compliance with state law.

The BLM and local tribes are in consultation currently. No mitigation and monitoring measures beyond those described in the Proposed Action and Environmental Protection Measures sections of Chapter 2 have been identified to reduce impacts on Native American Religious Concerns.

Residual Impacts

Although the transmission line roadway would not be public and is meant for operation and inspection purposes only, it could be a potential roadway for access to cultural sites.

THE RELATIONSHIP BETWEEN SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

This section compares the potential short-term effects of the alternatives analyzed in this EIS on the environment with the potential effects on its long-term productivity. The BLM must consider the degree to which the Proposed Action or alternatives would sacrifice a resource value that might benefit the environment in the long-term, for some short-term value to the proponent or the public.

Implementation of the Proposed Action or alternatives would require use of the environment for construction, operation and maintenance of the substations, and the transmission line corridors. Most land disturbance would be short-term and be concurrent with site preparation and construction of the facilities. These effects include soil disturbance, increased erosion potential, water use, vehicle and equipment emissions, fugitive dust, and habitat disturbance. Measures would be employed to minimize disturbances and reclaim or improve vegetation cover, soil, and wildlife habitat on these lands within five years. To the extent that disturbances can be reclaimed, other productive use of these lands would not be precluded in the long-term. Regional economies could be expected to experience short-term benefits from related expenditures and employment opportunities during construction.

Where possible, the proposed transmission line corridor would follow existing easements or rights-of-way and facilities would be placed on disturbed land. Overall productivity would remain similar to existing conditions where land uses are not substantially changed. Where new land is taken for facilities or is designated as a utility corridor, most other productive uses would be precluded. Some agricultural and grazing uses could continue and other utilities could use the corridor, potentially reducing the use of other land for this purpose. There is potential for mitigated permanent loss of cultural resources. There would be some loss of existing vegetation, soil, and quality of habitat available for wildlife, but most of the study area has vegetation cover and habitat that is common to the region. The placement of transmission lines could cause visual impacts. These resources would be committed along the length of the corridor and at the substations for the life of these facilities or their successors. If no longer needed, these lands would be restored to a suitable condition consistent with zoning or adjacent land use. Full recovery of these lands and restoration of any lost habitat or associated wildlife is not assured.

The Proposed Action and alternatives would help meet electrical power distribution infrastructure needs in the region, maintain and enhance productivity, and provide long-term economic benefits. Overall, the Proposed Action's use of the environment has very little adverse impact on the maintenance and enhancement of long-term productivity. Implementation of the No Action alternative would require fewer resource commitments but would be associated with future infrastructure deficiencies and the reduced ability to provide electrical power for residential, commercial and industrial uses regionally.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects this use could have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural resource). The Proposed Action and alternatives would not result in a large commitment of nonrenewable resources.

Land would be disturbed during construction and during the life of the facilities and their successors. There would be some loss of existing vegetation, habitats, and wildlife resources. Some facilities may require the conversion of land that is currently in agricultural production. Land not needed for operation and maintenance of the facilities would be reclaimed immediately after construction. At the end of the useful life of the facilities these lands could be reclaimed as well. While every effort would be made to recover native vegetation and habitat, full restoration of preexisting conditions is not assured.

Project construction would require the irretrievable commitment of fossil fuels (diesel and gasoline), oils, and lubricants used by construction equipment and by workers commuting to the site. Construction materials and some equipment that may not be productively recycled would be consumed by the project. Ongoing operation and maintenance of the facilities would use marginal amounts of fuels, lubricants and other nonrenewable consumables.

Cultural resources may be impacted by the Proposed Action or alternatives. Compliance with management measures requires consultation with affected communities, the identification and evaluation of cultural resources, and adherence with procedures for resolving any adverse effects and mitigating impacts. Mitigations, however appropriate, often preclude preservation or other future desirable management options. There would be a potential for irretrievable loss of the regional resource base for future scientific use and interpretation and for irretrievable loss of resources of value to contemporary Native American groups.

During the project's operational life, the transmission line and substations would accommodate the transmission of additional electrical power generated from a variety of sources. These sources may be renewable, such as hydroelectric and geothermal or nonrenewable such as natural gas, oil or coal. Under current energy policy, the use of non-renewable resources at power generation stations would be substantial, but this use is not part of this Proposed Action or alternatives. No power generation facilities are evaluated in this EIS and any use of nonrenewable resources to generate power is not part of this action.

The Proposed Action and alternatives would provide more electrical capacity and reliability to the region. To the extent that the improvements would accommodate projected population growth and demand, the project would contribute indirectly to future potential resource loss associated with the development of housing, businesses, industry and infrastructure. These would include the potential loss of native vegetation and habitat, conversion of agricultural lands, changes in air quality, noise levels, and cultural resources.

Cultural resources are by their nature irreplaceable, so altering or eliminating any such resource, be it National Register eligible or not, represents an irreversible and an irretrievable commitment.

CUMULATIVE IMPACTS

The Council on Environmental Quality regulations implementing NEPA requires that the cumulative impacts of a Proposed Action be assessed (40 CFR Parts 1500-1508). A cumulative impact is an "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions" (40 CFR § 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR § 1508.7).

CEQ's guidance for considering cumulative effects states that NEPA documents "should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant" (CEQ 1997). In this section, the study area and project area for each resource is the same as that described in Chapter 3. The area from which potential cumulative projects were drawn is generally the northern Truckee Meadows. Cumulative projects

considered in the analysis are listed in Table 4-31. Under the No Action Alternative, there would be no development of a transmission line route or substations and no net cumulative impacts.

Land Use

Proposed Action and Alternatives

When considered with other projects that could be authorized in the utility corridor, the Tracy to Silver Lake transmission line would cumulatively disturb a minimum of 1,300 acres (this represents an extreme minimum because of lacking quantification of land disturbance associated with many cumulative projects listed in Table 4-31). Long-term disturbance to land and related land use disruption would be between 6 and 31 acres under the Proposed Action and alternatives, which represents, at most, 2 percent of the total change regionally. As such, the project would represent a minor change in regional land use and long-term land disturbance.

When considered with other cumulative projects that also involve disturbance to traffic patterns because of an increase in construction-related traffic, the Tracy to Silver Lake transmission line project would cumulatively affect local transportation and access in the short term. Because these effects would be localized and short term, the project would represent no long-term changes to regional transportation, and access and would not contribute to cumulative transportation and access impacts.

Table 4-31
Reasonably Foreseeable Future Actions

Project	Project Location	Project Description	Projected Completion Date
Reno Clay Plant Project	Hungry Valley, Washoe County	Develop two open pit mines, a processing facility, and haul and access roads and continue exploration activities.	No specific timeline developed.
Regional Utility Development	Washoe County	The Tracy to Silver Lake corridor would become a designated regional utility corridor, and other utilities or expanded electrical service would be encouraged. Most of the Tracy to Silver Lake corridor would not be suited to higher voltage transmission lines.	No specific timeline developed.
North Valleys Water Pipeline	No location yet confirmed.	Plans to import about 8,000 acre-feet of water annually from Fish Springs Ranch in Honey Lake Valley for the Stead and Lemmon Valley areas	Still in the planning stage—no timeline developed.
Pyramid Highway Corridor Management Plan	Although the exact alignment is not known, the conceptual alignment is parallel to but east of the Foothills Alternative alignment considered in this EIS.	Develop a new six-lane roadway from Sun Valley, north to Eagle Canyon Road and Calle de la Plata.	No date yet specified for completion.
Reno-Stead Airport Development	Reno-Stead Airport	Twenty- to 30-year plan to develop additional areas within the airport as an industrial complex, including retail and warehouse distribution facilities.	No specific timeline developed.

Table 4-31
Reasonably Foreseeable Future Actions *(continued)*

Project	Project Location	Project Description	Projected Completion Date
Tuscarora Gas Pipeline	Extend from Lemmon Valley, across the southern end of Hungry Valley and Spanish Springs Valley, and through the southern Pah Rah Range.	A 100-psi natural gas line.	1995
Alturas 345-kV Transmission Line	Extended along Highway 395 in the North Valleys, terminating at Valley Road Substation	Development of a 345-kV transmission line using 130-foot steel pole structures to supply power to the North Valleys.	Completed in 1998
Donovan Ranch	Approx. half-a-mile north of the intersection of Calle de la Plata and Pyramid Highway, on the east side of Pyramid Highway, just to the south and across from the Rocky Ridge intersection.	Subdivision will have 390 single-family homes within the Spanish Springs area. Lot sizes will range from 13,000 square feet to 61,000 square feet, with an average lot size of 16,990 square feet. The project has approximately 206 acres of common open space and 32 acres of street area.	
Eagle Canyon III	Located west of Pyramid Highway, north of Eagle Canyon Drive, on the east and west sides of West Calle de la Plata.	To develop a 517-lot single-family residential subdivision on a 214-5cre portion of a 1,961-acre parcel within the SSSP.	
Eagle Canyon II	Located west of Pyramid Highway, north of Eagle Canyon Drive, and south of Nevada Flyers Airstrip.	To develop a 511-lot single-family residential subdivision on a 247-acre portion of a 2,327-acre parcel within the SSSP.	
Pebble Creek	Located on the west side of Pyramid Highway, about 1.4 miles north of Calle de la Plata Road.	To develop 344 lots on a 383-acre project site. The lots range in size from 35,000 square feet (.8 acre) to 71,257 square feet (1.6 acres).	
Oppio Development	In Sparks, south of La Posada and east of Pyramid Highway.	To develop 200 to 250 single-family homes.	Estimated completion date between 2006 and 2007.
Reno-Sparks Indian Colony Water Supply	West side of Hungry Valley.	Develop two wells on the west side of Hungry Valley and construct an 8- to 10-inch-diameter pipeline to transport water from the wells to the Indian Colony.	End of summer 2003.

Geology and Soils

Proposed Action and Alternatives

The Proposed Action, in combination with cumulative projects involving clearing, grading, and construction, could add incrementally to soil loss from erosion. In particular, the Reno Clay Plant Project, Pyramid Highway Corridor, Reno-Stead Airport Development, Donovan Ranch, Eagle Canyon III, Eagle Canyon II, Pebble Creek, and Oppio Development could add incrementally to short-term soil loss. The transmission line and substation alternatives that would expose the greatest area of erodible soils would add the highest incremental soil loss. The Northern Alternative has the highest acreage of erodible soils, followed by the Proposed Action, the Southern Alternative, the Foothills Alternative, and the Calle de la Plata Alternative. The Existing Corridor Alternative had the lowest acreage of erodible soils. All substations would be on soil units that are susceptible to wind erosion. The Alternate Sugarloaf Substation would be on a soil unit that is considered highly susceptible to wind erosion. Standard clearing, grading, and construction practices, including recontouring, erosion control, and reseeding, would minimize the potential for increased erosion during grading and construction.

Water Resources

Proposed Action and Alternatives

Other projects in the cumulative impact project area could affect groundwater resources, including the flow of springs and wells. The impact would be highly variably, depending on the type and configuration of the project and its relation to local groundwater resources. While there is a potential for an impact, the effect would have to be evaluated for each project. In general, mining projects (such as the Oil Dri project) have the most potential to affect groundwater resources, both through direct use of water and interception of the groundwater table. The cumulative land development projects identified in Table 4-31 also may draw heavily on local water resources. Because mitigation is included in the Tracy to Silver Lake project, the assumption is that the impact on groundwater resources for other new projects would be minimal.

Cumulative projects also may contribute to hazards to people and facilities from construction in flood and flash flood hazard areas. The hazard is local and would affect only individual projects or parts of them, so no additive effects are expected.

Vegetation and Wetland Resources

Proposed Action and Alternatives

Other proposed projects listed above could have more impacts on vegetation resources by removing the last of the healthy, native plant communities when all vegetation is taken up for project construction. There would be little cumulative effects on vegetation resources for this project or for any of the alternatives. The long-term trends within the area are to continue urban/suburban expansion, which would have a greater effect on vegetation resources than the Proposed Action or other alternatives; therefore, the long-term effects on vegetation resources would be minimal. No cumulative effects would occur as a result of this project.

Invasive Nonnative Species

Proposed Action and Alternatives

Ground-disturbing activities, increased access, and increased urbanization could contribute to increasing invasive nonnative species. Weed populations could expand and new populations could take hold in areas that become disturbed by construction activities, recreation and OHV use, grazing, or other activities favorable to invasive weed expansion. These impacts may not be mitigated unless all parties cooperate in accepted weed control measures. Based on the mitigation measures committed to in this document, the Proposed Action and all alternatives should not contribute cumulatively to the expansion of invasive nonnative species.

Wildlife and Wildlife Resources

Proposed Action and All Alternatives

Increased accessibility to public lands would provide new residents in the four proposed subdivisions, Donovan Ranch, Eagle Canyon III, Eagle Canyon II, and Pebble Creek, in Spanish Springs, and the nearby Oppio Development in Sparks, access to public lands for recreation. All alternatives traverse lands near these subdivisions so that all their effects would be similar. The closed OHV areas in the vicinity of the Spanish Springs area could experience increased illegal OHV use. Access roads to the transmission route could attract increased OHV use in the long term, including that from new housing developments. Increased OHV use could increase impacts on wildlife and wildlife habitat. OHV use, depending on the location, could be detrimental to reseeded native vegetation, preventing the restoration of cleared areas. In addition, OHV use outside the ROW from increased access could affect wildlife habitats by damaging vegetation and compacting soils. Because these impacts would generally be the result of illegal OHV use, predicting their extent is not feasible.

Special Status Species

Proposed Action and Alternatives

Cumulative impacts would be similar to those discussed under Wildlife and Wildlife Habitat.

Range Resources

Proposed Action and Alternatives

The cumulative projects would not all be built at the same time, and most would be built on private land. The Reno Clay Plant project, Honey Lake Valley Water Pipeline, and the Reno-Sparks Indian Colony Water Supply projects could cumulatively affect public grazing areas and AUMs. But cumulative impacts would be minor because the projects would be subject to restoration activities, as required by the BLM.

Aesthetic Resources and Noise

Proposed Action and Alternatives

Cumulative projects would occur in the vicinity of the Proposed Action. This includes the land between Pyramid Highway and the Foothills Alternative and portions of Hungry Valley. These areas would experience the most impacts on visual resources because of the concentrated amount of new residential and industrial infrastructure activity. Cumulative impacts on scenic vistas and the aesthetic quality of the areas could be minimal if proper design plans are developed, proper construction practices are employed, and the Washoe County Department of Community Development is consulted during these projects.

Plans are being made to develop the area around La Posada and is expected to include additional utility infrastructure, similar to the proposed lines, and more obvious forms of cultural modifications, such as homes and streets. This development would have a greater impact on the aesthetics of the hillside than the Proposed Action.

Additionally, if the power line route were to be designated a utility corridor in the RUCR, future impacts to aesthetics would increase. Portions of the Proposed Action, Northern, Calle de la Plata, Southern, and Foothills Alternatives may involve establishing a new utility corridor. This could result in the future use of the new corridor by other utilities, such as natural gas or telecommunications. These future utility corridor users could place structures within the corridor that could adversely affect visual resources.

Public Health and Safety and Hazardous Materials and Waste

Proposed Action and Alternatives

Cumulative impacts involving wildfires and hazardous materials could be minimal if the local cities and Washoe County continue to provide increased fire fighting services as development

increases and sufficient space remains for the disposal of wastes.

Air Resources

Proposed Action and Alternatives

Most cumulative projects involve construction of Donovan Ranch, Eagle Canyon III, Eagle Canyon II, and Pebble Creek, in Spanish Springs, and the nearby Oppio Development in Sparks. The Honey Lake Valley Water Pipeline and the Reno-Sparks Indian Colony Water Supply projects would also disturb soil during trenching and pipeline laying. Construction emissions would have the greatest impact on air quality. New project construction would be required to meet federal, state, and local air permit requirements. As a result, cumulative impacts on air quality would be minimal because these projects would have short-term, localized construction effects on air quality. Once the projects are built, operational effects on air quality would also be minimal.

Recreation and Areas of Critical Environmental Concerns

Proposed Action and All Alternatives

Increased accessibility to public lands would provide new residents in the four proposed subdivisions with access to public lands for dispersed recreation activities. All alternatives traverse lands near these subdivisions, so these effects would be similar. The closed OHV areas in the vicinity of the Spanish Springs area could experience increased illegal OHV use. Access roads to the transmission route could attract increased OHV use in the long term, including that from new housing developments. There would be no cumulative effects on recreation from any of the proposed or alternative substations.

Because there would be no long-term effects on ACECs under the Proposed Action or any other alternatives, no cumulative effects would occur.

Socioeconomics and Environmental Justice

Proposed Action and Action Alternatives

The Proposed Action and alternatives would have approximately the same cumulative impacts on socioeconomic resources. The cumulative projects listed represent a mixture of housing and infrastructure development projects that are typical for a fast-growing region such as the Reno-Sparks area and the larger area of Washoe County. Major construction projects in the county are expected to include growth-serving construction, such as utility and infrastructure projects, road and highway projects, institutional construction (such as hospitals and universities), and in the Reno/Sparks area, hotel and casino construction. Because of the extremely high rates of growth experienced in the Reno/Sparks area during the last ten years, the regional economy and local businesses are adapted to the temporary nature of these large construction projects and to the transient social service and housing needs of some construction employees. The cumulative provision of increased housing in the region would help provide additional housing for the projected population increases, including the population of construction workers. Within the context of Washoe County, the cumulative social and economic affects are expected to be minimal and beneficial.

Cultural Resources

Proposed Action and All Alternatives

The Proposed Action would contribute to cumulative impacts on cultural resources in the region at the northern and eastern periphery of the Truckee Meadows. NRHP-eligible and unevaluated prehistoric properties (those treated as eligible prior to complete evaluation) may be affected by both surface and subsurface disturbance. Eligible historic properties in the region are often affected most by surface alteration. Future projects, including facility upgrading, maintenance, and tributary corridors, may result in episodic and localized disturbance of both surface and subsurface contexts; however, it is often the surface alteration from such activities as road construction and maintenance and increased vehicle

traffic where known and unknown prehistoric and historic properties might be encountered.

- The cumulative impacts on cultural resources vary due to the land status in developed and undeveloped areas. Cumulative impacts may occur on those portions of the project area occupying public lands managed by the BLM. Due to the relatively undeveloped nature of public lands, the likelihood of encountered cultural resources of high integrity is greater. Project development would increase access to areas containing these resources by improving roads; direct and indirect impacts would include increased disturbance due to off-road vehicle access and increased potential for artifact collection and vandalism. Cumulative impacts are minimal in developed areas of public and private lands due to the presence of improved roads, commonly used unimproved roads and trails, suburban housing tracts, industrial centers, and other development. Many of these areas have been subjected to cultural resources studies, where sites have been documented and often mitigated.

Proposed Action and Calle de la Plata Alternative

The Reno Clay Plant Project would have impacts on cultural resources, as documented in the Class III Cultural Resource Inventory produced for that action (McCabe 2001). There are NRHP-eligible sites in the Oil-Dri project area, and some have been discovered in the surrounding area of Hungry Valley (Young 2002). Most of these sites consist of prehistoric components eligible under Criterion D of Section 106 of the NHPA; many of the sites have been subjected to mitigation through archaeological excavation and data recovery for past and recently proposed projects. Other undiscovered NRHP-quality prehistoric sites may be found in the greater Hungry Valley area during utility development, Reno-Stead Airport development, and Reno Sparks Indian Colony water supply expansion. Construction of Tuscarora's Hungry Valley Lateral resulted in an extensive cultural resources program that included data recovery and avoidance measures at a number of NRHP-eligible sites (Young 2002). The cultural resources studies involved with lateral construction provided some compelling evidence of the existence of intact archaeological record with implications for our understanding of the Late Archaic period of regional prehistory.

Proposed Action and Calle de la Plata/Southern Foothills Alternatives

Residential and industrial development in both Lemmon Valley and Spanish Springs Valley would likely affect prehistoric and historic resources. Previous inventories for developed properties have shown a high number of archaeological sites, with a small proportion containing elements of NRHP-quality. Although regulatory mechanisms for protective or mitigative measures are not as robust for privately held parcels (they often lack the federal and state regulatory framework found on public lands), NRHP-eligible properties can be mitigated through data recovery or avoidance measures.

Northern and Existing Corridor Alternatives

The Northern and Existing Corridor Alternatives likely have the least cumulative impact. With the exception of increasing traffic and access to currently undeveloped areas, the Northern Alternative has revealed little evidence of NRHP-eligible properties (only the northern-most segment of this alternative has been inventoried). The Existing Alternative follows an established corridor and is expected to have little cumulative impact on cultural resources. Only a portion of this alternative has been inventoried, but the presence of a utility line and access roads along most of the route reduces the potential for new cumulative impacts, though direct environmental impacts may be expected.